Building systems to address functional decline and dependence in ageing populations

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Universal Challenge: Sustainable Long-Term Care

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Background Paper

Content

Summary

Ageing will pressure LTC sustainability

Long-term care (LTC) accounts for a small but significant proportion of total health expenditure in most industrialized countries. The sector will face serious challenges in the years to come. Several factors will accrue to the spending pressure: demographic ageing, low productivity growth relative to the rest of the economy, and a slow growth in the supply of informal carers. Projections of future LTC expenditure across developed countries suggest that LTC outlays are forecasted to more than double in the coming 40 years.

The purpose of this paper is twofold. Firstly, to describe the future challenges that lie in the way of LTC. Secondly, to provide theoretical perspectives and empirical observations of policies set up to support informal care, reduce spillovers, ensure sufficient funding, and spur productivity and innovation.

Informal and formal care gap expected in developed countries

Section 1 describes the main challenges that LTC systems will face in the coming decades. Population ageing affects both developed and developing countries. In the 27 EU countries the share of the 75 year olds and over is projected to more than double between 2010 and 2060. A larger fraction of old adults in the population implies a reorganization of LTC services. The main cause of population ageing is increasing life expectancy, in some countries combined with large 'baby boom' generation. Healthy ageing will mitigate some of the impact of ageing on the demand for LTC, although the effect of demographic factors will be dominant. Informal care will be subject to supply constraint in the coming period. Societal changes such as declining family size, changing living arrangements with decreased co-residence of elderly with their children, higher divorce rates, increasing female labor market participation, and a possible decline in the willingness to care are likely to diminish the supply of informal carers. Apart from societal changes, the decline in informal care by the younger generation is caused by a decrease in the share of the working age population. Informal care by partners is expected to increase, but the supply of informal care will likely grow much slower than the demand. The divergence between developments in supply and demand for informal care will lead to an informal care gap over time. We cannot thus assume that informal carers will plug the LTC funding gap in the coming decades. It is, however, very much likely that formal care (human) resources will shrink if the fraction in the workforce remains constant. ANCIEN projections – which assume a constant ratio of care workers to care users – forecast that the number of care workers has to at least double between 2010 and 2050 in Germany, the Netherlands, and Poland. Specific measures to increase the LTC sector's attractiveness should be thought of.

Increased private funding of LTC in countries with well-developed systems?

Future funding of countries' LTC schemes poses challenging questions on the financial sustainability of these services. LTC expenditures represent a significant financial risk for the elderly. Most developed countries have typically relied on public funding and informal care. The ageing of the population and the increasing financial distress of national budgets, however, are spurring countries to look for alternatives to fund LTC. Private funding has attracted considerable interest in the past years. The market for private LTC insurance is rather small because of individual's myopia that impairs the understanding of low-probability high-loss events. Moreover, the existence of public LTC insurance, the availability of public support, and informal care can distort the individual's willingness to take out private insurance. Asymmetric information and uncertainty about future costs further push insurers to impose restriction on accessibility. Premium volatility is another element that makes private LTC insurance unattractive. Targeted solutions to help increase take up of private insurance in LTC comprise tax credits, government's regulation of private LTC insurance, group insurance, private-public partnerships,

information provision, and the combination of LTC insurance with other financial products.

Support for informal carers is very important

Informal care forms the backbone of LTC services in many countries. Informal carers giving intensive care cause important spillovers into the labor workforce. Female participation to the labor force is limited because women usually provide informal care. Lower employment rates often go hand-in-hand with less full-time employment, which limits career paths. Job choices become restricted and informal carers might choose less well paid jobs. The informal carers' deterioration of mental health is a point of concern as well. There are several measures put in place to support the work of informal carers and to acknowledge their important contribution to overall LTC. Cash and in-kind services are given either to the care recipient or to the informal carer to empower LTC users and financially compensate the carers' loss of work due to their caring activities. Additional measures such as flexible working schedules, employment support, and the facility to organize one's leave from work are intended to compensate informal care spillovers.

Difficult to increase LTC productivity

LTC is sensitive to the Baumol effect, with wages rising in line with the general economy despite LTC not achieving significant productivity gains. This results in an increase in costs for a given level of output. Evidence across OECD countries shows there is a great potential for the use of (information) technology in LTC. The majority of instruments developed to increase productivity in LTC focused on the reorganization of work processes within institutions, the use of ICT to help workers streamline and reduce workload, and to substitute nurses for nursing assistants where possible. To date, there is not unfortunately that much evidence on productivity improvements in LTC.

Conclusion

Our analysis leads to the conclusion that there are some important steps to undertake if we want LTC to be sustainable in the long-run. First, support measures for informal carers are essential in elderly care. If the informal care reservoir cannot be sustained, formal elderly care systems will come under greater pressure. Second, increasing the productivity of elderly care is a major challenge. Technology and process innovations to increase efficiency and patient-centeredness of LTC services should be stimulated. Third, developed countries should look into the possibilities to complement public and private funding of LTC and address the market failures of private LTC insurance. Fourth, spillover effects of informal care into the labor force and mental health of informal carers, and spillovers of LTC into neighboring policy areas such as social care, housing, and social security (pensions) should be taken into consideration and properly addressed.

1. Introduction

The world is aging at unprecedented speed and currently long-term care (LTC) services in many countries seem to lack the capacity to absorb this trend. This is not only a matter of financial and organizational resources. Informal care as provided by family and friends still forms the backbone of many LTC systems and is under threat in many countries. Meanwhile, rising expectations on the level of amenities and services compound the challenges of increasing fiscal pressures due to higher demand for long term care relatively fewer informal caregivers.

This paper explores the main issues and solutions regarding sustainable LTC. We combine theoretical perspectives with empirical observations based primarily on country cases and policies. Because there are substantial differences in LTC systems between countries – Table 1 for example offers an illustration for some European countries – this means that there are significant opportunities for learning by comparing and contrasting diverse approaches. While the focus is on high-income countries, the paper offers useful learning for middle- and low-income countries that have lower fiscal capacity but are beginning to be confronted with growing demand for care.

Table 1 Typology of LTC systems in Europe

Nature of the system	Countries	Characteristics
Oriented towards informal care, low private funding	Belgium, Czech republic, Germany, Slovakia	Low public spending, low private funding, high informal care use, high informal care support, cash benefits modest
Generous, accessible and formalized	Denmark, the Netherlands, Sweden	High public spending, low private funding, low informal care use, cash benefits high
Oriented towards informal care, high private funding	Austria, UK, Finland, France, Spain	Low public spending, high private funding, high informal care use, low informal care support, cash benefits high
High private funding, informal care seems a necessity	Hungary, Italy, Poland	Low public spending, high private funding, high informal care use, low informal care support

Source: Kraus et al., 2010

This paper is organized as follows: Section 2 elaborates the challenges ahead. Starting with the well-known trend of aging (section 2.1) we show that healthy aging might only slightly flatten the need for LTC (section 2.2). The potential decline in the availability of informal care is a worrisome development and its supply will not be able to keep pace with projected need (section 2.3). This implies that LTC – currently being a mix of public and private sources, with informal care as a firm 'second pillar' – probably needs substantial reforms in the years ahead (section 2.4). In all cases countries will need to free up additional resources for LTC or improve efficiency and productivity (section 2.5). Under current projections it is unlikely that the workforce necessary to service future LTC needs will be available (section 2.6).

Section 3 covers the main issues from both theoretical and empirical perspectives. One of the main concerns is how to create workable private markets that complement the public LTC systems – characterized by an increasingly funding constraint – and the diminishing supply of informal care. The available evidence shows that this is a difficult task (section 3.1). Section 3.2 covers the role of informal care and the experiences with the different

policy efforts to stimulate and sustain caregivers. Section 3.3 handles the productivity challenges in LTC.

Section 4 summarizes our findings. There are no easy answers or fixes and that all traditional policies that have thus far been implemented in high-income countries have not yet successfully addressed all upcoming challenges. Continuous innovations and learning from useful practices are needed in order to reconcile the need for cost-sustainability with increasing patient needs.

We conclude that sustainable LTC systems depend on: 1) supporting informal care; 2) increasing productivity in the provision of care; 3) facilitate private funding possibilities; 4) addressing spillover effects of informal care. We argue that in light of future demographic and societal changes, all countries will be under the continuing pressure to make substantial steps in these directions.

Appendix I consists of five short country case studies which are used to illustrate the main issues described in section 3. In each case study a typical policy or country's characteristic is analyzed: reducing low-care facilities (Belgium), personal budgets (Netherlands), means-testing (England), private LTC insurance (France), and informal care (Italy). The main characteristics of these five countries are presented in Appendix II.

2. The challenges ahead

2.1 Ageing on the rise

Populations are ageing rapidly, not just in developed countries, but all over the world. By 2050, the expected increase in the number of persons aged 60 or over will be even larger in developing countries than in the developed countries (UNFPA, 2012). Table 2 shows the share of the population aged 75 years or older in eight selected European countries. The share of persons 75 years and older in 2010 was relatively low in Poland and the Netherlands, and relatively high in Italy. In 2040, the largest share of persons 75 years and older will be in Germany. In 2060, almost one fifth of the population in Poland, Italy, and Germany will be 75 years or older. In the 27 EU countries the share of the 75+ more than doubles between 2010 and 2060. A considerable part of the increase takes place between 2020 and 2040. These figures are comparable to projected increases in OECD countries.

Table 2 Share of population, 75 years and older

	2010	2020	2040	2060
Sweden	8.5	9.6	13.0	14.6
Netherlands	6.9	8.4	14.8	15.9
Belgium	8.7	8.9	13.2	14.7
Germany	8.8	12.1	17.7	19.6
France	8.8	9.3	14.4	15.9
UK	7.8	8.7	12.5	13.8
Poland	6.3	7.0	13.9	19.9
Italy	10.0	11.4	15.5	19.7
EU27	8.2	9.5	14.4	17.7

Source: Eurostat (Europop 2010, convergence scenario)

2.2 Modest impact of healthy ageing

The main cause of population ageing is increasing life expectancy. However, it is not to be expected that all these additional life years are unhealthy years. Healthy ageing will mitigate some of the impact of ageing on the demand for LTC, although the fact that the share of the population living longer will grow means that healthy ageing might only partly mitigate the effect of demographic changes. Even though we can expect future older individuals to be healthier than earlier generations, there are simply going to be many more (very) old people. This causes an increase in the absolute number of persons needing help. Bonneux et al. (2012) calculated several scenarios analyzing the link between life expectancy and disability for four countries as part of the ANCIEN project[1]; they define disability as having one or more limitations in activities of daily living (ADL)[2]. Some of the results are given in table 3. Table 3 shows the development of the number of older persons and the number of disabled elderly persons under different scenarios. For example, in Germany the number of persons aged 65 or older is expected to increase by 46 percent to 48 percent by 2040, depending on the scenario. The expected increase in the number of older persons with one or more ADL limitations is 39 percent in the most optimistic (biological) scenario and 60 percent in the baseline (DELAY) scenario. The biological scenario assumes that age-related disability is determined by the remaining years before death. The incidence of disability declines as fast as mortality. Even in this optimistic scenario, the number of 65+ persons with ADL disabilities

[1] The ANCIEN project, which focuses on the future of long-term care for the elderly in Europe, was funded by the European Commission under the 7th Framework Programme (FP 7 Health-2007-3.2.2, Grant no. 223483). The results of the project can be found on: http://www.ancien-longtermcare.eu/publications.

[2] These ADL-limitations are limitations in dressing, eating, bathing, indoor transferring and toileting/continence.

increases by 39 percent in Germany to 76 percent in the Netherlands till 2040. These increases are smaller than in the more pessimistic scenarios, but still considerable.

Table 3 Indices of older persons (65+) and older persons with ADL limitations in 2040 (compared to 2008) under different scenarios

	Netherlands index 65 +	index ADL	Germany index 65 +	index ADL	Poland index 65 +	index ADL
index 2008	100	100	100	100	100	100
PREV	195	229	147	178	178	202
CHRON	194	239	146	184	178	211
BIOL	196	176	148	139	181	174
DELAY	195	199	147	160	175	192

Source: Bonneux et al. (2012)

PREV: constant age-specific prevalence ratios of disability
CHRON: increase in life expectancy, but no decrease in incidence of disability (pessimistic scenario)
BIOL: increase in life expectancy, with an equally large decrease in incidence of disability (rather optimistic scenario)
DELAY: increase in life expectancy, with a smaller decrease in incidence of disability (base line scenario)

2.3 Lagging supply of informal care

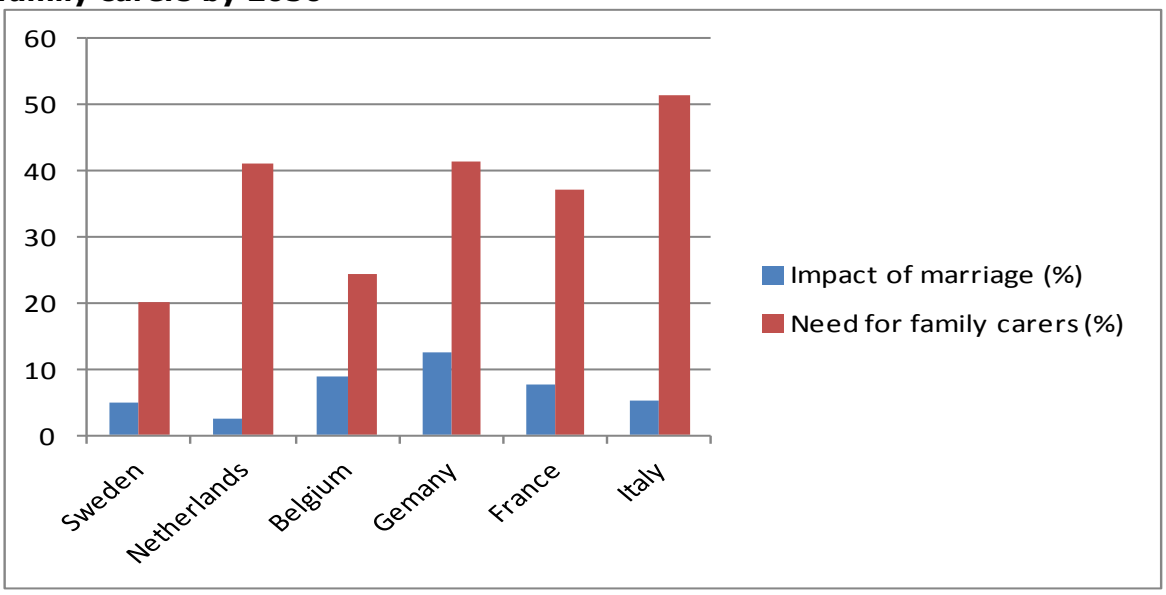
There is no unique definition of informal care across OECD countries. Sound international comparisons become thus difficult to make. Some elements, however, recur in the definition of informal care. Informal care is care mainly provided by family, close relatives, friends or neighbors. It is usually care given by non-professionals. It is often unpaid work, although there are differences across geographical areas, and usually there are no entitlements to social rights. Informal carers perform a wide range of activities, varying from helping with shopping to assisting someone in his activities of daily living (Triantafillou et al., 2010). The role played by informal carers to frail elderly is very important. Its evolution, however, has been acknowledged but rarely pursued in the appraisals of various forms of LTC (Smith and Wright, 1994; van den Berg, 2005; Bobinac, 2012).

Informal care plays an important role in most European countries. Demographic developments do not just affect the need for LTC, but also the potential for informal care supply. Partners and children (in law) are important sources of informal care. However, the availability of family care for the elderly is expected to decline. This expected decline is caused by a decrease in the share of the working age population and a number of societal changes such as declining family size, changing living arrangements with decreased co-residence of elderly with their children, higher divorce rates, increasing female labor market participation, increase of the retirement age, and a possible decline in the willingness to care (Colombo et al., 2011). This decline will only partly compensate for the growth in the number of co-survival of spouses, especially as men live longer. Colombo et al. (2011) made projections that show the changes in available spouse care and in the need for informal care by 2050 (figure 1). The need for family carers is expected to increase by roughly 20 percent in Sweden and over 50 percent in Italy. Expected increases in spouse care are smaller: between 2 percent and 12 percent. The divergence between decreasing supply of informal care and increasing demand for informal care will lead to an informal care gap over time.

The informal care gap is illustrated by the ANCIEN projections. The use of informal personal care by older persons was compared to the projections for the supply of

informal personal care to older individuals by people aged 50 and over (table 4). Even though the supply by persons younger than 50 could not be analysed, it is useful to make such a comparison. It turns out that the use of informal care is expected to grow much faster than the supply of such care, both in the Netherlands and in Germany. If nothing changes in the propensity to use or supply informal personal care, an informal care gap will open up in the future in the Netherlands and in Germany.

Figure 1, Projected developments in spouse care for the elderly and in need for family carers by 2050



Note: "Need for family carers" indicates the change in family carers necessary by 2050 in order to maintain the existing carer/care recipient ratio. This depends on the demographic trends, the existing proportions of individuals with restrictions in activities of daily living (ADL) and those of unpaid care. A relatively high need for family carers can reflect an existing low proportion of family carers among the oldest elderly (e.g. Germany and the Netherlands) or a high proportion of the oldest elderly having ADL restrictions (e.g. Italy). "Impact of marriage" indicates expected change in the availability of potential carers (spouses) by 2050. The difference between the two indicates the size of the potential care gap.
Source: Adapted from Colombo et a. (2011)

Table 4 Changes in informal personal care provision to an older person and in informal personal care use by older people 2010 -2060 (in %)

	carers	care-users
Netherlands	39.4	65.6
Germany	25.3	50.9

Source: Pickard and King (2012), table 7.2

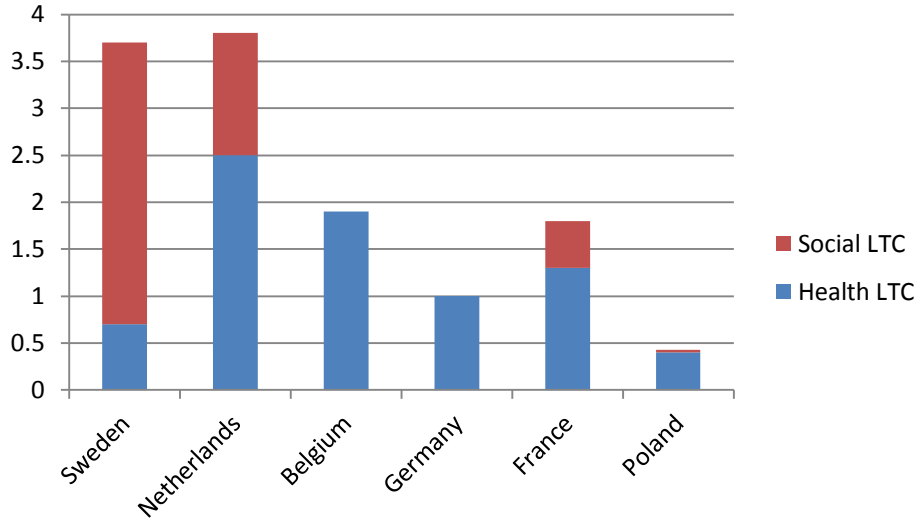
2.4 Expenditure on LTC: reform is needed

European countries differ widely in their public expenditure on LTC. Sweden and the Netherlands are large spenders with more than 3.5% percent of GDP spent on public LTC (figure 2). The Netherlands spends about one third of public expenditures on social LTC, the not-directly health-related part of LTC such as home help. Belgium and France are more moderate spenders with less than 2 percent of GDP. Germany only spends 1 percent of GDP on public LTC and Poland less than 0.5 percent. In Germany, the share of private expenditures for LTC is relatively high (table 5), meaning that the rather low public expenditures are supplemented by relatively high private expenditures. In addition, the use of informal care is high in Germany.

Table 5, based on results of the ANCIEN project, only concerns personal care and nursing care for older individuals. The private expenditures on LTC are 30 percent in Germany,

while this is 11 percent in the Netherlands. Poland takes a middle position with 20 percent.

Figure 2 Public expenditure on LTC as a share of GDP, 2009 (or nearest year)



Source: OECD Health Data 2011 (Total expenditures for Sweden are correct, however the partition between Social and Health LTC may be due to the use of other methodology (CBS, 2012))

Table 5 Private expenditures on personal and nursing care for older persons, simulations for 2010

	private exp. (% of total)
Netherlands*	11%
Germany	30%
Poland**	20%

Source: Geerts and Willemé (2012a), tables 6.12 and 6.13
* only income-dependent co-payments
** only care in institutions

Modest expenditures on LTC are frequently combined with a high use of informal care. Table 6 shows the use of informal care of older people for seven selected countries, based on the SHARE survey[3]. Table 6 shows two aspects: 1) the share of older persons who receive informal help with personal care (either from inside or outside the household), and 2) the share of persons who receive informal practical help from outside the household (e.g. help with shopping, household chores or paperwork)[4]. The use of practical help from outside the household is relatively high in all countries. This use is highest in Germany and lowest in Italy within these selected countries. Informal help with personal care is less frequent, as may be expected. Informal personal care is highest in Poland (16 percent) and lowest in Sweden and the Netherlands (around 3 percent). Almost 15 percent of older persons receive informal help with personal care in Italy.

[3] SHARE is a large panel of older Europeans that contains information on their limitations, health problems and LTC use.
[4] SHARE does not include questions on practical help from inside the household. The question about receiving personal care from outside the household is only answered by the family respondent within the household without a question about who exactly receives this help. We assumed that all persons within the household with ADL limitations received this help in cases where informal help with personal care from outside the household was given.

Table 6 Percentage of older people that uses informal care (weighted)

Country	Practical help, from outside household (%)	Personal care (%)
Sweden	31.1	3.1
Netherlands	28.8	3.2
Belgium	30.8	7.0
Germany	37.1	9.0
France	22.5	7.3
Poland	28.2	16.3
Italy	21.8	14.6

Source: Faber and Mot (2012), table 4.5, based on SHARE wave 2

2.5 Projections of future expenditures on LTC

The European Commission regularly makes projections for public LTC expenditures in the EU Member States according to different scenarios. Table 7 presents the results for 2060 for three scenarios. These projections point to a significant increase in LTC spending, from 1.8 percent of GDP in 2010 to between 3.2 and 4.4 percent of GDP by 2060, depending on the scenario. They are consistent with projections for OECD countries. The reference scenario of the Ageing Working groups (AWG) assumes that half of the increase in life expectancy is spent in good health. In the constant disability scenario all extra years are assumed to be healthy years. The 'shift to formal care' scenario assumes that the availability of informal care will decline, leading to a shift to formal care in the first ten years of the projection period.

In the AWG reference scenario public expenditure on LTC about doubles in many countries between 2010 and 2060. Exceptions are the UK, Sweden, and Italy where the projected increases are smaller. The constant disability scenario is more optimistic, showing that the increase in public spending between 2010 and 2060 is smaller, but not by much. This again points to the dominance of demographic developments. In the shift to formal care scenario, public expenditure in 2060 will be considerably higher than in the other scenarios. In the Netherlands, public expenditure on LTC in 2060 is projected to be over 9 percent in the formal care scenario.

Table 7 Public spending on LTC under different scenarios as % GDP, 2060

	level 2010	AWG reference	constant disability	shift to formal care
Sweden	3.9	6.4	6.1	7.6
Netherlands	3.8	7.9	7.4	9.1
Belgium	2.3	5.0	4.7	5.9
Germany	1.4	3.1	3.0	4.0
France	2.2	4.2	4.1	5.7
UK	2.0	2.7	2.5	3.9
Poland	0.7	1.7	1.6	2.9
Italy	1.9	2.8	2.7	3.9
EU27	1.8	3.4	3.2	4.4

Source: European Commission (2012)

2.6 The expected informal and formal care gap

A growing informal care gap is expected, as the desired use of informal care is expected to increase faster than the supply. One way to solve this problem would be to increase the supply of formal care to compensate for this shortfall. However, in that case a

sufficient number of formal care workers must be available. The ANCIEN project used projections of the use of formal care to gain some insight in the required increase in the number of care workers. These projections assume that the use of care in the future will be no more supply-constrained than the current use of care. In other words, in these projections supply adjusts to follow demand. Another assumption is that the use of care will change only in line with the characteristics of older persons (e.g. age and limitations)[5].

Based on the ANCIEN care use projections and assuming a constant ratio of care workers to care users, the number of care workers would have to double or more between 2010 and 2050 in Germany, the Netherlands, and Poland (table 8). These findings are consistent with OECD projections that estimated a doubling in demand for LTC workers (i.e. the increase in the percentage of full-time equivalent nurses and personal carers to the total projected working population) by 2050 (Colombo et al., 2011).

To find out to what extent the supply of care workers can be expected to increase, the ANCIEN project used very simple projections that assume a constant share of the labor force working in LTC. Table 8 shows that under these assumptions the supply of care workers will decrease between 2010 and 2050. The decrease would be relatively low in the Netherlands (3 percent), but much higher in the other countries (around 20 percent). Thus according to these simple projections, a formal care gap would become apparent and increase over time in addition to the informal care gap.

Table 8 Changes in demand and supply of care workers 2010 -2050 (in %)

	Demand at constant ratio of care workers to care users	Supply at constant fraction of workforce
Germany	94.4	-19.3
The Netherlands	145.8	- 3.4
Poland*	129.5	-19.9

Source: Geerts and Willemé (2012b)
* residential care only

[5] The relation between the use of care and the characteristics is assumed to be constant.

3. Theoretical and empirical issues of LTC sustainability

Chapter 2 addressed several challenges that will come about in LTC in the coming decades. The percentage of LTC expenditure is projected to more than double in the years to come, the supply of informal carers will diminish due to ageing populations, and the LTC's productivity relative to the wider economy is still low. This chapter aims to give an economic overview from a theoretical standpoint – supported by empirical observations – on the main institutional ways to cope with these future challenges. The chapter begins by discussing the finance of LTC and inquiring into the possibilities to stimulate a market for private LTC insurance. It then focuses on the important role of informal care and sketches ways to support the work of informal carers and properly deal with spillovers on the workforce market. It then concludes with a discussion on the productivity growth in LTC and the benefits arising from the use of technology or process innovations to achieve productivity gains.

3.1 Public and private funding as complements?

Future funding of LTC poses challenging issues for the financial sustainability of these services. LTC expenditures represent a significant financial risk for the elderly. Moreover, LTC is extremely expensive. In the United States a 65-year-old woman has a 44 percent chance of entering a nursing home during her lifetime and, upon entering, faces an average stay of two years. The average rate for a semi-private room in a nursing home was over $50,000 per year in 2002 (Brown and Finkelstein, 2008). In the Netherlands total costs over lifetime for residential care amount on average to €31,300 for all men and to €79,800 for all women. For home care average costs over lifetime are approximately €12,800 for men and €32,600 for women (CPB, 2013). Wong et al. (2008) conclude for the Netherlands that 70 to 80 percent of LTC costs occur in the last five years of life. Most of the population does not make any use of LTC services during lifetime. This is especially true for men: 70 percent of them will end up in home care and not more than 20 percent will make use of residential care.

Hall and Jones (2007) show that the growth of health care spending is a rational response to changing economic conditions – notably the growth of income per person. Spending on health to extend life allows individuals to purchase additional periods of utility. The available empirical evidence on the relationship between rising prices and incomes and the demand for LTC is sparse. Most available studies show that the demand for formal elderly care (nursing homes and home care) is elastic to price adjustments, but not to income adjustments. Martins and de la Maisonneuve (2006) test for alternative values for the income elasticity of LTC. Their hypothesis is that the income elasticity is probably close to zero – implying that income growth tends to drive down LTC expenditures as a share of GDP – because LTC can be characterized as a necessity good.

US studies find price elasticities of –3.85 for for-profit nursing homes in New York State. However, price elasticities around –2 are more common. Income elasticity is below 1. This shows that LTC cannot be classified as a luxury good – more so for nursing homes than for home care (Chiswick, 1976; Norton, 2001; Mukamel and Spector, 2002).The Netherlands' LTC shows that cash benefits are used more intensively by higher than low income beneficiaries. High income use is skewed towards home care, cash-benefits, and other private services (SCP, 2011; Ramakers et al., 2008).

Such results might form an illustration of the fact that formal care, informal care, and social services are partly substitutes. The comparative low-income elasticity of nursing homes induces additional demand if high cost institutional care is substituted for low-cost community services – raising incomes add to such demand. The high elasticity of demand also implies that a broadening of the benefit basket will substantially increase its demand.

Long-term solutions for LTC funding

A recurrent question for many countries is how to fund LTC in the long-run. Key aspect of this challenge is the balance between public and private funding, in relation with the availability of formal and informal care. Most countries have typically relied on public funding and informal care. The ageing of the population and the increasing financial distress of national budgets are spurring countries to look for alternatives to fund LTC and there is a growing interest in the potential role of private funding in the form of private insurance.

According to economic theory, individuals should be interested to purchase insurance for LTC care. After all, this is about protecting oneself against future financial risks. From economic theory we know that insurance has two important advantages, both in efficiency terms and in moral perspective (Barr, 2011)[6].

However, while private funding has attracted considerable interest in the past years, the private LTC insurance market has not yet gained a large role due to several market failures. Recent figures show that – except for the United States (5 percent), France (5 percent), and some other high income countries –, private insurance accounts for less than 2 percent of total LTC spending (Colombo et al., 2011). With public funding coming under pressure, there is an interest in better understanding how private insurance mechanisms could complement public coverage.

Some countries have introduced means-testing for public funding of LTC. A means-test is used to determine the amount of subsidies each patient is eligible for. Patients from lower income households will be granted higher subsidies. The means-testing system in England has evolved incrementally from earlier systems of welfare for the poor by developing specific services to meet the long-term care needs of older persons. Only individuals with income and assets below the means-tested level receive publicly funded social care and the system also directs services towards those who live alone and do not receive informal care (Comas-Herrera 2010). Singapore also uses means-testing for LTC. Household Means-Testing takes into consideration the gross income of the patient, his/her spouse and all family members living in the same household and the total number of family members living in the same household. Government subsidies provided are based on a six-tier subsidy framework depending on the type of LTC service required (www.moh.gov.sg).

Means-testing in England

English citizens are assessed for their LTC needs by local authorities' social service departments. Those positively assessed and eligible are subject to a means-test. In the current system people with assets over £23,250 are not eligible for local authority support and have to pay all the costs themselves. Those with assets below the level are financially supported although they still have to pay most of their income to compensate for their care. The means-testing policy implies that elderly citizens with moderate means face the risk of extremely high LTC costs.

In 2011, the Dilnot commission proposed to increase the wealth threshold for residential care and to maximize an individual's care costs. Based on these recommendations the English government announced to set the upper threshold for means-testing in residential care to £100,000. Moreover, they announced to place a cap of £61,000 on the total amount of costs for eligible care and support needs. The increased cap increases affordability but fails to protect a large share of elderly against significant costs. According to the plan, the new system will come into effect in April 2017.

[6] Insurance is economically efficient if a risk-averse individual does not need to spare a large amount of money to pay his future health costs. Insurance is morally interesting because it stimulates solidarity among individuals.

Models for public funding

Barr (2011) shows that there are essentially five ways to fund LTC. Three methods refer to public funding and include: taxpayer finance, *ex post* social insurance, and *ex ante* social insurance. Taxpayer finance is usually in place in countries with a National Health System (NHS) such as England and Italy. This implies no specific contribution from citizens to fund LTC services. Governments decide on the allocation of funds across several sectors. Barr (2011) describes, however, the difficulty to keep this system in place when governments face increasing fiscal demands. *Ex post* social insurance consists of people paying the premium as a lump sum either at age 65 or out of one's estate. This form of insurance sounds quite attractive because an individual does not face any premium during his working life or in retirement and thus does not deteriorate his living standards. Moreover, the uncertainty about the probability of needing LTC decreases with age. There are, however, important drawbacks in its implementation such as whether membership should be voluntary, whether a person can decide later to insure or not[7], and whether a person should be allowed to pay later[8]. This is why no country has implemented such a system. *Ex ante* social insurance is in place in several countries, such as the Netherlands, Japan, Germany, Luxembourg, and South Korea, and implies that workers pay a higher social insurance contribution during working life to fund LTC. This system properly faces uncertainty, i.e. it adjusts rapidly to changing realities, and it is politically well understood. Germany, for example, has a system of this sort, which covers the entire population. It is mostly financed by contributions that are income- but not risk-related. In Germany, individuals pay 1,95 percent of gross earnings up to a monthly income ceiling that is set each year. In 2009, for example, this equaled Euro 3,675 (Rothgang, 2011)[9].

The potential role of private insurance

Two other ways to fund LTC rely on private insurance. First, one could think of self-finance to pay for LTC out of personal savings or from a LTC savings account. This method is currently used in Singapore where savings accumulated in a Medisave account can be used to pay for Eldershield premiums[10]. Actuarial private insurance can cover LTC expenditures as well. Private LTC insurance is usually developed around a country's public insurance arrangement either as a complement or as a substitute where no public insurance is available (Colombo et al., 2011). Relying on private markets to face demand of LTC services has attracted widespread interest from countries suffering from financial distress and the increasing issue of an ageing population. Yet the market of private LTC health is rather small except maybe for the United States and France whose private insurance is, however, below 10 percent of total LTC spending. Recent figures in the US show that only 10 percent of the elderly have a private LTC insurance plan, and because coverage under these plans is often limited, only 4 percent of LTC expenditures are paid by private insurance, while fully one-third of expenditures are paid out-of-pocket (Brown and Finkelstein, 2011). In France, public and private insurance complement each other. Private LTC insurance steadily grew in the early 2000s and in 2009 it covered approximately 3 million people, which is 5 percent of the total French population but 28 percent of the French population aged over 65 (Courbage and Plisson, 2012; OECD Stats, 2013). There are several economic arguments why the private LTC insurance market is so small. These arguments can be categorized in demand- and supply-side factors.

[7] In this case adverse selection arises. Only those individuals needing LTC would take out insurance.

[8] Although this is viable from an economic point of view, it would be politically unsustainable.

[9] Individuals without children pay an additional 0,25 percent as a contribution to LTC.

[10] Medisave was introduced in 1984 and is a national medical savings scheme that helps individuals put aside part of their income into their Medisave Accounts to meet their future personal or immediate family's health care costs. ElderShield is an affordable severe disability insurance scheme which provides basic financial protection to those who need long-term care, especially during old age. It provides a monthly cash payout to help pay the out-of-pocket expenses for the care of a severely-disabled person. See www.moh.gov.sg for a further description of the system.

On the demand-side, limited consumer rationality or individual's myopia may play a role. Myopia comes about when planning for the financial risks associated with LTC. Research shows that individuals have difficulties in understanding low-probability high-loss events. People underestimate their life expectancy and health costs they are going to incur (Kunreuther, 1978). Moreover, the existence of public LTC insurance, the availability of public support, and informal care can distort the individual's willingness to take out private insurance. Asymmetric information, in the form of adverse selection and moral hazard, pushes insurers to look for financial protection by imposing restriction on accessibility to the insurance market. In the United States insurers use underwriting rules to determine if an individual qualifies to purchase (long-term) health insurance. This typically involves limiting insurance coverage to individuals with no pre-existing health conditions associated with dependency. Another limiting factor to take out private LTC insurance is that individuals and families face competing financial obligations. Households with low income cannot afford a private coverage of LTC. In the United States only 3 percent of older adults with incomes below $20,000 had coverage in 2002, compared with 14 percent of older adults with incomes above $50,000 (Johnson and Uccello, 2005). Brown and Finkelstein (2007) empirically show for the United States that LTC policy premiums are substantially above the expected benefits, which reduces the value for money for subscribers.

Private insurance in France

The French private long term care insurance market offers a variety of products that may be individual or collective. Four main types of contracts are available: 1) a contingency cover, 2) an option in a life insurance policy, 3) a life insurance and dependency cover, or 4) additional health cover. At present, about three million French people hold a policy; two million are being covered by insurance companies and the remaining one million by mutual insurance or pension institutions. Although the private insurance market in France only covers a small proportion of the potential market, it is proportionally among the largest in this field worldwide.

In 2001 the growth rate in number of insurance contracts touched 22%, mainly because bank insurers then started marketing or cross-selling their products. This growth rate was declined to 4% in 2009 due to a government announcement in 2006 to reform LTC insurance reform. This reform has yet to come and the uncertainty surrounding the reform created reluctance among the population as well as insurers to establish new contracts.

On the supply-side, market functions may be impaired by the insurer's limited ability to control the covered LTC risk because of future uncertainty and limited competition. This, in turn, can lead to premium volatility. To guarantee the insurer's financial viability, premiums are subject to higher prices if the risk pool of insured increases. Moreover, competition in LTC is imperfect (Norton, 2000). Many nursing homes face long waiting lists indicating that demand exceeds supply, which would not happen in a perfectly competitive market. Dynamic problems with long-term contracting, i.e. the intertemporal decisions to allocate resources across different activities within a time period, also explains the limited size of private LTC insurance.

Incentives to stimulate uptake of private LTC insurance

There are several incentives that could help increase the uptake of private insurance for LTC. For example, tax incentives reduce the purchase price of a private LTC insurance. Spain, Austria, and the United States offer tax deductions (or tax credits) to stimulate demand for private LTC insurance. In the US premiums paid for private LTC insurance can be deducted from the tax return when exceeding a given share of an individual's income. However, evidence on the impact of tax advantages on insurance take up is not compelling, and reveals a high cost for governments relative to the additional number of

people taking up insurance. Another instrument governments could use is to regulate the private LTC insurance. This implies, for example, that an insurer cannot raise its premiums following a change in the insured's health status. Although this kind of regulation is allowed in the United States, it is restricted in the European Union. EU law does not allow regulating private insurance contract and imposing access-related standards, except when private coverage is the main form of insurance and is meant to replace social insurance.

Group insurance encourages early subscription into a private LTC insurance. This option resembles the group health insurance coverage that several countries offer (e.g. the Netherlands and the United States). Group insurance for LTC offers several advantages, among which the mitigation of adverse selection. Risks are spread over a large group, which allows better accessibility, i.e. fewer exclusions, and great insurer's negotiation power vis-à-vis providers. Almost 45 percent of LTC insurance contracts in France were purchased under a group insurance plan in 2009. Accessibility of information, in the form of websites or television ads, can help individuals to understand and not underestimate the future risks and costs related to LTC.

Another interesting incentive is to use public-private partnership. Singapore offers a program designed by the government but this program is priced, sold, and managed by private insurers (www.moh.gov.sg). The Eldershield program offers automatic enrolment with the possibility to opt-out. Once an individual drops out of the program (s)he can join it again but at a higher premium and underwriting.

Some countries opt to increase the liquidity of individuals by combining LTC insurance with other financial products (Mayhew et al., 2010). In the United States, Canada, Australia, and France LTC insurance is offered as part of a life insurance policy, which provides cash advances in the event that the policy holder requires LTC for an extended period of time, paid out of the death benefit or the accumulated savings build into the policy (Colombo et al., 2011). Reverse mortgage products are on the rise, too. A reverse mortgage allows an individual to convert part of the equity in one's home into cash without having to sell the house or pay additional monthly bills. Housing wealth is used *de facto* as self-insurance for LTC. Such schemes are only somewhat developed in the UK (rolled-up interest loans) and the United States (Home Equity Conversion Mortgage). France offers a slightly different program, *vente en viager*, which consists in the *sale* of the elderly's home, while keeping the right to live in it (or get the rent) until death. This is an exchange between two individuals of an asset for a life annuity. It is directly linked to the longevity risk (Laferrère, 2012). Reverse mortgage products are highly sensitive to the house price evolution; they work well when house prices increase but can have dramatic consequences when they fall (Khandani and Merton, 2013).

3.2 Informal care and spillover effects

Informal carers face a significant reduction of their participation to the labor force and in the hours of work (Colombo et al., 2011). Female participation to the work force is particularly limited because women usually provide informal care. The percentage of the population reporting to be an informal carer varies greatly across countries. Southern European countries – such as Spain and Italy – typically rely the most on help provided by informal carers. There is not only a greater percentage of informal carers in the population of these countries (16,2 percent in Italy and 15,3 percent in Spain), but the amount of weekly hours devoted to the elderly is also among the highest (more than 20 hours of work per week)[11]. The negative spillovers on employment are quite significant: lower employment rates but also less full-time employment. Indeed, informal carers – if

[11] In Northern Europe the percentage of informal carers is lower than Italy and Spain. In Sweden and in Denmark 8 percent and 9.3 percent respectively. These are the percentages of the population that report to be informal carer in providing help with activities of daily living (ADL).

they work – tend to have a part-time job. This, in turn, has consequences on the career path of informal carers. Job choices become restricted and informal carers might choose for less better paid job (Colombo et al., 2011). Career interruptions become frequent when one has to look after someone, which leads to a deterioration of human capital or simply less opportunities to a better work career. Colombo et al. (2011) signal another alarming negative spillover, which is the informal carers' deterioration of mental health. Psychological distress, isolation, and lack of support are drivers in worsening mental health of informal carers, particularly when intensive and co-residential care is provided.

Generally, three main approaches to informal care can be identified (Triantafillou et al., 2010). First, in several countries such as Italy, Spain, Slovak Republic, and France the states benefits are not sufficient and the family has the primary responsibility for elderly care. Second, responsibility for the organization and provision of elderly care rests with the state, counties or municipalities. This arrangement is typically provided in Scandinavian countries and the Netherlands where (financial) participation in care is 'not' expected from family members. There are some initiatives set up to provide support to informal care. In Sweden, for example, the creation of the National Center for the Support of Informal Care Providers is to supply information to informal carers and to increase the public awareness of informal care (Fukushima et al., 2010). Third, several countries give the responsibility for care to the care recipient, i.e. the person in need of LTC, through the statutory LTC insurance (e.g. Germany and the Netherlands).

An ideal LTC policy stimulates coordination and complementarity between formal and informal care. One strand of the literature looks at the trade-off between formal and informal care. They can be considered substitutes or complement depending on the type of care and the needs. A reduction of formal care does not imply an equal increase in informal care. Bolin et al. (2008) find informal care to be a substitute for formal care for domestic help, while it is a complement to nursing and personal care (Bonsang, 2009). The policy of many countries is aimed at shifting formal institutional care towards a combination of formal and informal care for people living at home. Belgium has implemented a series of arrangements over the past decade stimulating older persons to live at home independently as long as possible, while guaranteeing access to affordable formal care services. This resulted in a shift towards living at home rather than in nursing homes (Willemé 2010).

Stimulating home care in Belgium

Over the past decade policy in Belgium was aimed at delaying or avoiding the move of care-dependent elderly people to residential care. Policy measures were implemented to shift residential long term care from low-care dependents to high care-dependents. The policy arrangements resulted in a reduction of the number of beds in homes for the elderly with an increase in the number of beds in nursing homes, implying that residential care facilities are being reserved for severely dependent residents. The arrangements also show a shift towards living at home rather than in nursing homes, with a 30% increase in home care and only a limited increase in nursing care of 11%. In addition, the supply of semi-residential services such as day-care centers and short-stay centers has increased.

Despite the successful measures to reduce residential care and to stimulate home care, the number of users of residential care is projected to increase with 32% from about 125,500 in 2010 to about 166,000 in 2025 with further growth in demand in following years. The main driver for the future demand for residential care is the expected demographic ageing of the Belgian population. As a result the costs for LTC will be doubled by 2025.

There are several measures put in place to support the work of informal carers and to acknowledge their important contribution to overall LTC. These measures tackle the main spillovers of informal care: how to increase (female) labor market participation, how to guarantee income protection (i.e. avoid poverty line), and how to improve mental health of carers. Table 9 reports the support measures for informal care.

Table 9: Support measures for family carers

Cash services	In-kind services	Additional measures
Care allowance to carer	Respite care	Employment support
Attendance allowance to care recipient	Home based professional formal services	Leave from work
	Home support devices and home adaptations	Flexible work schedule
	Advice, counseling, information, training	

Cash services

Care allowances are specific and direct financial measures to help informal carers. The rationale for providing care allowances to carers is to compensate for loss of employment and income due to the time devoted to care giving. At the same time, it signals and acknowledges the carers' important social role. There is great variation across countries in terms of financial compensation and eligibility criteria. Some countries provide remuneration to family carers who are formally employed, others use means-tested allowances (Colombo et al., 2011). For example, care allowances come with a quasi-employment contract with municipalities in Scandinavian countries and the remuneration corresponds to an amount close to market levels (Johansson et al., 2011).

From an economic point of view it is quite complicated to set the amount of care allowance. For carers active in the labor market a 'market level' of such payments could be counterproductive for employment levels (Triantafillou et al., 2010). Means-testing and eligibility conditions may thus result in disincentives to work. Particularly those carers with low education experiencing difficulties in entering the labor market could be discouraged to look for a job outside the house. Care allowances thus appear to be instruments that grant some form of income assistance, while maintaining caring as a low-profile and low-paid job (Colombo et al., 2011). For retired beneficiaries the allowance could be set at a lower level than their market cost. In terms of administrative tasks, the supervision of several requirements – such as who is an eligible carer, the needed care effort, and the relationship between the carer and the care recipient – is hard to monitor.

Cash benefits in Italy

Cash benefits or companion payments (Indennità di Accompagnamento) are the core of the public Italian LTC system. Eligible individuals must be 100 percent disabled, not self-sufficient, and must not reside in an institution. The companion payments are detached from in-kind services and users may spend €487 monthly (all users receive the same amount) on whatever they want. Many recipients use the companion payment for the remuneration of migrant care workers. Vouchers are used as well to allow people in need of care to buy health care services either from an accredited provider (some regions in Italy) or directly. Personal budgets also fall into this category. Care recipients can use the cash in order to pay an informal carer.

The cash benefit scheme showed an increase in users by 75% in the last decade, while the number of home care users has risen by 23% and the number of residential care users remained stable. Right now, public expenditure on cash benefits (0.56% GDP) equals the sum of both expenditure on in-kind home services (0.25% GDP) and residential care (0.31% GDP).

Attendance allowances are cash benefits to the care recipient. There are several types of attendance allowances: 1) cash payments, 2) vouchers, 3) routed wages, and 4) tax advantages. Cash payments are transferred to those entitled individuals who then choose how to use that money to compensate for their LTC needs. Cash payments (*indennità di accompagnamento*) in Italy, for example, are given to all disabled individuals irrespective of their age or financial situation. In the Netherlands people can apply for a personal budget whose popularity has increased consistently in the past years.

Routed wages are used in some countries for family carers as they supplement or replace in-kind services. The English carer's allowance is based on a social security model of payments for care and is regarded by the Department for Work and Pensions as a compensation for loss of earnings, not as a wage for caring (Riedel and Kraus, 2011). A last form of indirect financial support measure is tax exemptions or tax advantages to favor direct hiring and payment of a family care worker. Most countries have no specific tax incentives for carers except for tax exemptions for carer's allowances in a variety of countries (Czech Republic and Ireland). Canada and the United States have tax credit programs (Colombo et al., 2011).

Personal budget in the Netherlands
In 1995, a personal budget was introduced in the Netherlands. Patients choosing for the personal budget receive a budget that is some 25 percent lower than the costs of in-kind care. The number of budget holders increased by an average of 28 percent per year in the period 2005-2008. Over the same period, the number of clients for care in-kind increased at a slower pace, i.e. by an average of 1.3 percent per year. Users have valued the personal budgets as an effective means to purchase and organize care that better meets preferences than regular care. However, the personal budgets have not shown to be effective as a cost-containment measure. Spending has become unsustainable as the number of budget holders has increased 10-fold, and spending has increased by 23% annually (up to 2.2 billion euro's in 2010).

To counteract the problem of an exploding demand for personal budgets in an open-ended system, stricter needs assessment protocols were implemented. In 2012 eligibility was restricted to those who would otherwise need institutional care (i.e. 10% of those who were eligible before). Only clients who can demonstrate that in kind services are inappropriate to their needs are eligible for a personal budget.

Attendance allowances have several advantages for policymakers. The eligibility requirements are more clear-cut than care allowances. Such cash benefits are given to individuals that have undergone an assessment check. A second advantage is the flexibility granted to care recipient in organizing the type of care they want. The allowances appeal to a group of people who would have not applied for care (in-kind) if they had not had the option of having their own budget (Sociaal en Cultureel Planbureau, 2011). Among the disadvantages of attendance allowance there is the risk to hamper the growth of professional private providers because most recipients rely on family members. Cash benefits may also limit access to the labor market for informal carers who then feel like being caught in a low-paid job.

The two cases of Italy and the Netherlands show important differences with potential impact for further policy. The companion payments in Italy are aimed at providing extra financial support in a system with a low level of public spending and a high level of informal care. In the Netherlands, the personal budget was to some extent implemented to increase client responsiveness and to increase the use and supply of informal care in a system with high public spending.

In-kind services

Respite care is a very important form of support for carers. Colombo et al. (2011) define respite care as different types of interventions providing temporary ease to carers from the burden of care. Often, the rationale of such breaks is to increase or restore the carer's ability to bear this emotional and physical load. Usual forms of respite care include short-term stays, i.e. day-care services and in-home respite, and longer stays such as institutional respite. EUROFAMCARE (2006) stresses that respite care will only be used if carers are convinced that provider services are suited to the care recipient and are well-managed by licensed professionals. It should be stressed that the definition of respite care is very broad and it differs from country to country but also within one nation. In the United States respite care is offered in all 50 states. However, the definitions among programs and state vary so much, and quality and completeness of reported data are often lacking, that it makes rigorous comparisons among states impossible (Houser and Ujvari, 2012).

Other in-kind services include home based professional formal services that bring professional services into the home of the old person. This is quite common in Scandinavian countries and is seen as one of the best way to support informal carers. Other frequent in-kind measures include home support devices and home adaptations that are at least partially reimbursed. Specific in-kind support measures include advice and counseling to relieve carers' stress, training and education usually offered by NGOs and private organizations to help carers in their daily tasks, and information and coordination services that mostly help alleviate the administrative burden of carers. In France the Local Centers of Information and Coordination provide information to help on all topics related to ageing and elderly need. Help is provided individually and social workers regularly meet with caregivers (Colombo et al., 2011).

In-kind services that directly support care recipients are considered an indispensable way to support informal caregivers because such services are given by trained professionals that help improve the quality of living of both the frail elderly and the carer (Garcés et al., 2010). In-kind services contribute to remain active on the labor market as informal carers have more time available, and by so doing it reduces the risk of poverty.

Additional measures

Additional measures aim at increasing labor market participation of carers. Among such measures flexible working hours or a leave of absence from work are ways to increase informal carers' working hours. Such arrangements have a positive effect on informal carers if there is a strong involvement of and facilitation from the employers and the state, and also if carers receive a sufficient financial compensation without losing social rights. In this context it is interesting to note that such sorts of leave aimed at providing care to frail elderly are much less common than parental leave to care for children. A rationale why parental leave is safeguarded is that – contrary to informal care for frail elderly – it is quite straightforward to plan the duration and the intensity of care to the newborns. A wider definition of care leave may thus be undesirable because it could stimulate moral hazard behavior from carers (Colombo et al., 2011).

In some cases informal carers use their annual paid leave or sick leave to look after an old family member since they receive full salary during holidays and most countries have generous financial arrangements when being sick. Stimulating part-time job could be an interesting way to complement formal to informal care. However, some countries such the Netherlands have interestingly one of the highest percentage of part-time workers (89 percent), yet a minor use of informal care for elderly.

3.3 Productivity

Health care has a low productivity growth relative to the wider economy. This applies particularly to LTC because services are very labor intensive, so achieving significant productivity improvements will be complicated. LTC is sensitive to the Baumol effect, with wages rising in line with the general economy despite LTC not achieving significant productivity gains. This results in an increase in costs for a given level of output. The combination of population ageing, lower productivity than the rest of the economy, and the greater labor intensity of LTC makes one question how to handle long-term financial sustainability of LTC. One possibility for the health care sector – and LTC in particular – would be to benefit from a greater use of technology or process innovations to achieve productivity gains. In this context it is important to stress, however, that technology use or process innovations might not go hand in hand with lower costs, i.e. better efficiency. Other elements such as quality of LTC and accessibility of services play an important role, which has not gained yet full attention in the available empirical evidence.
Evaluations of community-based LTC services have been conducted to understand whether such services can substitute for more expensive LTC hospitals and residential care, i.e. nursing homes. The conclusions of these somewhat dated studies point out that community-based LTC services result in overall increased health care expenditure. It is important to stress, however, that LTC improved recipients' quality of life deriving from community-based services is observed as well (Hughes et al., 1987). Moreover, the boundaries between LTC and other services such as social care, housing, and social security (pensions) are often blurred because elderly are generally entitled to multiple public services. This might create incentives to shifts costs to neighboring policy areas.

Evidence across OECD countries shows there is a great potential for the use of (information) technology in LTC. Most studies remain, however, pilot programs. Colombo et al. (2011) report that a further assessment of these studies is needed to understand the main findings and possibly enlarge their scope of application. According to Torp et al. (2008) technological help has been often perceived in LTC as a complement to labor workforce, rather than a substitute. To facilitate the diffusion of technology, infrastructural readiness and investment costs should be addressed (Haberkern et al., 2011) as well as resistance to change by LTC workers (Virmalund and Olve, 2005). A recent study (Henderson et al., 2013) sheds, however, a different light on the use of technology in health care. Henderson et al. investigate the cost effectiveness of telehealth[12] for patients with long-term health conditions. This article does not focus on LTC but on individuals with long-term conditions such as heart failure, COPD, and diabetes. LTC, however, relates to a long-term condition and many recipients of LTC services do have multiple chronic conditions; results from this study are very likely comparable. In a randomized control trial over more than 3,000 individuals Henderson et al. find that QALY gain by people using telehealth in addition to standard support and treatment was similar to those receiving usual care, and that total costs for the telehealth group were higher than for the usual care group.

To date, there is not much evidence on productivity improvements in LTC. The majority of instruments developed to increase productivity in LTC focused on the reorganization of work processes within institutions, the use of ICT to help workers streamline and reduce workload, and to substitute nurses for nursing assistants where possible (Colombo et al., 2011). Dumaij (2011) offers a very interesting overview of productivity developments between 1972 and 2010 in the Dutch nursing homes, residential homes, and home care, particularly focusing on the effects of policy changes on the productivity of LTC. In this study the production of LTC is expressed in nursing days, care days, and hours for extramural care. Between 1972 and 2010, the number of nursing days increased from almost 11 million to over 22 million (2 percent annual average growth), the number of care days decreased from over 44 million to almost 30 million (annual average growth of 1 percent) and the number of hours for extramural care increased from 21 to 48 million

[12] Telehealth encompasses both telemonitoring and telephone support (Henderson et al., 2013).

(annual average growth of 2.1 percent)[13]. Dumaij shows that total costs increase over the same period by an annual average growth of 5.3 percent. Most of the growth was attributable to staff costs, i.e. labor costs. Material and capital costs increased as well but at a minor pace than labor costs. The empirical analysis shows that the change of funding system in the LTC sector – from fixed fee per bed/patient to performance-oriented funding – did little to increase overall productivity. Interestingly, Dumaij finds a productivity decline due to improvements in quality.

An effective tool to improve productivity in LTC is not yet available. It is difficult to substitute labor for capital. Most of the innovations developed in the past years to stimulate productivity were mainly targeting nursing and home care, and included home care technology, tools for mobility, social monitoring, the development of many new types of small-scale residential care homes, collaborations between volunteers and informal care, self-steering teams and smart planning and work processes (Dumaij, 2011). According to Rossi Mori et al. (2012) the phenomenon of technology-assisted LTC is still in its infancy, mostly because the industry involvement is still largely underdeveloped, due to the inadequacy of the demand side, which is highly fragmented. Technologies have often been developed to help the patient. However, it would increase the productivity of the sector if LTC technologies are integrated into the care processes and in the daily activities of operators. Colombo et al. (2011) refer to the introduction of pay-for-performance initiatives in LTC to improve productivity. There are a few examples of P4P in the US Medicaid program. Another way to stimulate productivity is to increase competition in LTC. Sweden, Denmark, and Finland have vouchers that enable LTC users to freely choose among accredited competing providers. The introduction of social LTC insurance in Japan in 2000 led to the market entry of several competing LTC providers, with positive outcomes for user choice and increased incentives for cost-management (Colombo et al., 2011). Competitive markets have the potential to strengthen efficiency improvements in care delivery, although accurate evaluations on productivity impact remains sparse. One drawback of increased competition is, however, a negative effect on coordination of care across different providers.

[13] Note that informal LTC has not been taken into account in this study (Dumaij, 2011).

4. Conclusions

Demographic shifts will induce major economic, social, and cultural changes globally. It also forms the single most important threat to sustainable LTC. Ageing exponentially increases the demand for elderly care, even though future elderly will likely be healthier than current elder generations. Reduction in the size of the working population reduces available resources in countries that finance elderly care through pay-as-you-go schemes. Finally, the demographic shifts will have a negative effect on the potential for informal care, which forms the cornerstone of elderly care. The potential pool of informal carers may shrink as more women are working and social policies no longer support early retirement. Such challenges bear a universal character and thus are relevant for policy makers in all (high-income) countries.

The demographic shifts due to ageing leads to a 'political equation' that seems difficult to solve. We need more resources, but the fiscal space for public funding is scarce. Informal care is declining, while there are substantial market failures for private funding.

Policy induced varieties

Policy is an important factor in the specific characteristics of the LTC system. Depending on the country at stake, LTC can be targeted to public funding, to private funding, or towards informal sources. Expenditure levels vary between a negligible percentage of GDP towards 4 percent in the Netherlands and some Scandinavian countries. These are among the very few countries that fully fund comprehensive entitlement for elderly care at middle class service levels. Informal care, especially regarding personal care, is of somewhat less importance in these countries. The high levels of expenditure in these countries fit the theoretical assumption that a broad and deep benefit basket with few cost-sharing generates additional demand due to the high price elasticity of – most notably - community services and home care. In such countries fiscal sustainability is naturally high on the agenda.

Other 'cheaper' LTC systems depend more intensely on informal care. This might be complemented with a comprehensive system of LTC providers, but with high levels of means-testing such as in the UK. Or policymakers try to compensate elderly with a broad system of limited cash benefits to induce for client-specific solutions such as in Italy or Germany. The trade-off between either comprehensive services for the most needy with lower incomes, or a more limited service level which includes the middle-class as well seems to be one of the major questions when these systems come under increasing fiscal pressures.

Conclusion

If we want LTC to be sustainable in the long-run, *important steps have to be taken*. First, informal care is essential in elderly care. If the informal care reservoir cannot be sustained, formal elderly care systems will come under great pressure. Second, increasing the productivity of elderly care is a major challenge. Innovations to increase efficiency and patient-centeredness of LTC services should be stimulated – especially if they conjunct with lower costs. Third, developed countries should look into the possibilities to complement public and private funding of LTC and address the market failures of private LTC insurance. Fourth, spillover effects of informal care into the broader labor force and with formal LTC workers; and spillovers of LTC into neighboring policy areas such as social care, housing, and social security (pensions) should be taken into consideration and properly addressed.

Supporting informal care

Supporting informal care seems to be a no-regret policy objective. Although there are many possibilities to stimulate informal care, such as cash allowances, respite care, support services, and leave from work, the cost-effectiveness is not always clear. It is

important to find ways to stimulate informal care without 'overpaying' as in the possibility of an unlimited salary within a personal budget. This is very much about finding affordable ways to build 'affectionate' communities and to support families to help each other.

Increasing productivity

A strong uptake in productivity growth is normally the most political attractive 'solution'. Declining unit costs prohibit difficult political decision to cut the level of services. While increasing productivity with the aid of technical facilities may politically be attractive, the actual implementation of such strategies is difficult and may sometimes in fact increase costs. However, well-designed cash benefits might turn out to be a disruptive innovation that can increase productivity. Increasing the productivity of elderly care is a major challenge. Elderly care is a labor-intensive service; its workers have lower or average educational degrees; employee turnover is high. The challenges to increase productivity are substantial. Key opportunities - community care, assisted living technologies, support of informal workers, mobilizing volunteerism in nursing homes – can all be stimulated with cash benefits. When prefunding is needed, such as with ICT investments, central funding stays necessary.

Private funding and market failures

An increase in self-funding can be a substantial source for future LTC spending. However, this options is not *per se* feasible and solutions may differ per country. Countries with high public funding, such as Sweden and the Netherlands, have the highest potential for expansion of private funding and a shift towards informal care. Currently, most LTC systems already rely on private self-funding. Means testing, typically based on a persons' income and available assets, is used to cover for a substantial share of the necessary resources. However, this is often not an attractive deal for the better-off: they share large parts of the financial burden for comparatively moderate service levels. This might push the well-to-do towards private LTC. However, private insurance and savings policies are subject to market failures, for example adverse selection problems do prohibit substantial pick-up of these policies[14]. Government intervention, such as tax credits, regulation and group insurance, information provision etc., can be needed to create a private insurance market for long-term care.

Spillover effects

Policy choices are also relevant to handle spillover effects. Most elderly do live at home. They use community long-term care services, often with support from family members and other informal care. In such cases, the boundaries of LTC and other services like social care, housing, social security (pensions), and acute health care are often blurred. Elderly generally are entitled to multiple public services. This might open-up windows to shift cost to neighboring policy areas. It makes LTC systems vulnerable to an everlasting amount of policy reforms to increase the efficiencies of scope between the different silos. The huge varieties between countries illustrate, that common ground on the exact shape and span of the long-term care delivery system still does not seem to exist.

[14] Guaranteed renewable critical illness policies are a common private solution. Indeed, most private policies provide for cash payments on certain eligibility criteria.

Appendix I: Case studies

Case study 1: Belgium, stimulating home care

Belgium has a complex system for LTC where responsibilities are shared between federal, regional, and local authorities. The Belgian LTC system can be characterized as a mixed system, with extensive, publicly financed formal care services that are complemented with significant informal care provided mainly in the family. The Belgian elderly care infrastructure comprises home care and community services, short-term and long term residential care and hospital care. Long-term residential care includes service-flats, homes for the elderly and nursing homes: 55 percent of the Belgian LTC users received services at home compared to an average of 70 percent in OECD countries (2007). Residential care and home nursing is mainly financed with social security contributions paid by workers, employers and retirees, and to a lesser extent by taxes, while home care organized at the regional level is to a large extent financed by taxes, and to a lesser extent by out-of-pocket expenditures and specific contribution. Total LTC expenditure in 2006 was approximately 1.8 percent of GDP.

Similar to many other countries, policy in Belgium is aimed at delaying or avoiding the move of care-dependent elderly people to residential care. Due to historical growth almost 25,000 current residents in homes for elderly are not or low-care dependent; this means that they are in principle fit enough to live at home. A series of arrangements have been implemented over the past decade. This includes stimulating older persons to live at home independently as long as possible, while guaranteeing access to affordable formal care services. Arrangements are aimed at shifting residential LTC from low-care dependents to high care-dependents and include the establishment of alternative types of care as well as new care functions in order to support home (nursing) care. It was decided to convert 28,000 beds in homes for the elderly into nursing home beds and to establish day-care and short-stay facilities. Day-care centers typically offer services during office hours to allow informal carers to go to their work, and short-stay centers offer residence for temporary crises. The dependency category of the patient is based on a needs assessment. If limitations in Activities of Daily Living (ADL) become too severe and adequate support at home is unavailable or insufficient, the dependent person is entitled to suitable and affordable residential care facilities.

Over the past decade the policy arrangements resulted in a reduction of the number of beds in homes for the elderly with an increase in the number of beds in nursing homes, implying that residential care facilities are being reserved for severely dependent residents. The arrangements also show a shift towards living at home rather than in nursing homes, with a 30 percent increase in home care and only a limited increase in nursing care of 11 percent. In addition, the supply of semi-residential services such as day-care centers and short-stay centers has increased. Despite the successful measures to reduce residential care and to stimulate home care, the number of users of residential care is projected to increase by 32 percent from about 125,500 in 2010 to about 166,000 in 2025 with further growth in demand in following years. The main driver for the future demand for residential care is the expected demographic ageing of the Belgian population. As a result the costs for LTC will double by 2025.

Case study 2: The Netherlands, personal budgets

In 1995 the PGB (personal budget) was experimentally introduced in the Netherlands. The PGB enables individuals to buy and organize their own care. By 2001, all those persons assessed for LTC could choose a the personal budget, in-kind services, or a combination of the two. From the introduction onwards, the budget scheme for PGBs was extended both in scope and expenditure. The scheme is known for its regulation, generosity, and inclusiveness and the availability of the high benefits has stimulated demand.

Several assumptions supported the introduction of PGBs. First, they empower consumers as they can choose to arrange care to their own preferences. This would encourage providers to better meet consumer preferences and thereby stimulate competition in long term care. Next, as budget holders are free to hire their care from family members or anyone else, the PGBs were assumed to increase the use and supply of informal care. Finally, consumers would be able to negotiate lower prices with their carers thereby decreasing total spending on LTC. Benefits out of a PGB were set at 75 percent of the tariffs paid for in-kind services.

Users have valued the PGBs as an effective means to purchase and organize care that better meets preferences than formal care. Next, PGBs have effectively encouraged the provision of informal care (inducing a substitution of informal care for professional care): 57 percent of the (especially elderly) budget holders would have applied for care in-kind if the PGB did not exist. However, the PGBs have not been effective as a cost-containment measure. Although a minority (20 percent in 2010) of eligible individuals chose PGBs, spending has become unsustainable as the number of budget holders increased tenfold, and spending increased yearly by 23 percent (up to 2.2 billion Euro in 2010).

Several factors explain why PGBs have not contained LTC expenses. First and most important, the introduction of PGBs has induced a substitution of unpaid for paid informal care because people can use the budget to pay family members. Moreover, evidence suggests that PGBs have stimulated greater demand for LTC services (43 percent of elderly personal budget holders would not have applied for care in-kind if PGBs did not exist). Finally, although PGBs are formally accommodated as subsidies, they are *de facto* an entitlement.

To counteract the problem of an exploding demand for personal budgets in an open-ended system, stricter needs assessment protocols were implemented (including an assessment of a person's social network) to restrict eligibility. This did not lead, however, to the intended effects. In the summer of 2010, the minister of health stopped new PGB's applications for the rest of the year. In 2012, eligibility criteria for new applicants were further restricted to those who would otherwise need institutional care. This arrangement was mitigated in 2012 by widening the array of services individuals needed for personal nursing and care. Only individuals who can demonstrate that in-kind services are inappropriate to their needs, are eligible for a PGB.

Other issues related to the increase of costs are that PGBs were used by home care agencies to bypass budget constraints. PGBs-related fraud was reported and new policies demand budget holders to open a separate (bank) account from which payments must be made. New budget holders may no longer use brokering agencies.

A similar policy trend in the Netherlands may be observed in the case of guidance. In 2003, in the Netherlands the definition of entitlements was changed into seven broad functional care categories. Two of these included supportive guidance and activating guidance. In practice, this redefinition resulted in a widening of services, increased costs and 'inappropriate' use of care by people with lighter disabilities. In 2008, supportive guidance and activating guidance were bundled and restricted to patients with moderate or severe disabilities. Under the current coalition agreement, this entitlement will be transferred out of the social insurance scheme to municipalities with limited funds in order to control expenditure.

Case study 3: England, stiff means-testing

England's LTC system is characterized as a means-tested safety net scheme that only supports those with very severe needs who are not able to meet the costs of their care. In 2010-2011, spending on adult social care in England equaled £14.6 billion (1.16 percent of GDP). However, only half of that is spent on elderly care. The Dilnot

Commission estimated that demand for LTC has outstripped supply by 9 percent between 2005-2006 and 2009-2010, clearly demonstrating that the system is underfunded. The LTC system has been among the heaviest debated social policy issues in the last fifteen years.

To get access English citizens are assessed for their needs by the local authorities' social service departments. These authorities determine the eligibility criteria, arrangements for assessments, and budgets. As a result, there is great variety between local authorities, different people with similar needs receive different levels of support. Some even argue that there are 152 different adult social care systems in England (one for each local authority). In 2002, a national framework for eligibility criteria was published with the aim to ensure that people with similar needs would be able to achieve similar *outcomes* (rather than services). However, variations between councils still exist. The Dilnot Commission concludes that the current approach to eligibility and assessment does not seem objective. On the contrary, it lacks transparency, consistency, and clarity.

In the past years the eligibility criteria have tightened considerably. Services are heavily concentrated on the oldest elderly or those living alone and who do not own their own homes. Concerns exist that people with moderate needs do not receive sufficient care. In addition, opportunities for prevention are missed leading to worse outcomes and higher costs. Next, eligibility is not portable, meaning that when someone moves to a new local health authority he loses his care until reassessed. Finally, eligibility for publicly funded care and support is dependent on the availability of informal care (as opposed to 'carer blind' eligibility). As a result, services in England are mainly restricted to those who do not receive informal care (those living alone).

Those positively assessed and eligible are subject to a means test. Residential and nursing home care are charged nationally, taking into account a resident's income and assets. In the current system for residential and nursing home care, those with assets over £23,250 are not eligible for local authority support and have to pay all the costs out-of-pocket. Those with assets below the level set are financially supported by the government. However, they still have to pay most of their income to compensate for their care. Although national guidelines are available, local authorities have discretionary power in whether and how to charge home care.

The implications of these strict means-testing policies are straightforward: elderly citizens with moderate means face the risk of extremely high LTC costs. The Dilnot Commission estimated that around one in ten people at the age of 65 will have to pay over £100.000 in their remaining lifetime, whereas 50 percent has to pay up to £20.000 and a quarter has to spend very little on care. At present there is for individuals no way to protect against the financial risks of care. Consequently, people will lose all their income and assets in paying for their care. Especially elderly entering residential care need to sell their home to cover the costs, a practice that is widely regarded as unfair. In 2011, the Dilnot Commission proposed a new model of shared responsibility, aiming especially at residential care. First, they recommend to increase the wealth threshold for residential care from £23,250 to £100,000. Second, they recommend to cap an individual's care costs at £35,000. The commission expects that by limiting an individual's liabilities, fear and uncertainty would stimulate the creation of an attractive market for the development of private insurance products. The English government announced recently that it will set the upper threshold for means-testing in residential care up to £100,000. Moreover, they announced to place a cap of £61,000 on the total amount of costs for eligible care and support needs (individuals will remain responsible for a contribution towards general living costs and for the costs of paying for additional services). The increased cap certainly improves affordability but fails to protect a large share of elderly against significant costs. According to the plan, the new system will come into effect in April 2017.

Case study 4: France, private long-term care insurance

From the 1980s onwards, the French LTC system has evolved into what is now called the 'French compromise', compromising elements of different kinds of care systems. The main objective of French LTC policy is to complement informal care. In 2002, the personalized autonomy benefit (APA) was created. The APA is available for people aged 60 or more who are no longer able to care for themselves. The APA is given irrespective of the applicant's financial situation or place of residence. The monthly allowances depend on the level of dependency and ranges from €529 to €1,235, to be spent on a specific package. This care package is determined by a team of professionals according to the recipient's needs. The APA is funded through local taxes complemented by the state. Only those with a low income are free of a copayment on the APA (copayment may represent up to 80 percent of the total costs). Although APA forms the core of French LTC policy, there is no single policy that covers the LTC system, rather it is fragmented across public health insurance –which covers the LTC expenses due to health care – domiciliary care, and residential social care, state support through tax deductions for families who employ a carer, informal care, and private LTC insurance.

The growing needs and financial constraints challenge the way LTC is funded. At present, the French have found a solution in combining public and private insurance. The institutional design in funding LTC in France is based on the idea of two *complementary* systems. Starting to develop in the 1980s, the French private LTC insurance market now offers a variety of products that may be individual or collective (and optional or compulsory in the case of collective insurance policies). Four main types of contracts are available: 1) a contingency cover, 2) an option in a life insurance policy, 3) a life insurance and dependency cover, or 4) additional health cover. In the case of dependency, dependents receive a monthly cash benefit, which may be (depending on the contract) proportional to the degree of dependency.

At present, about three million French people hold a policy; two million are covered by insurance companies and the remaining one million by mutual insurance or pension institutions. As there are about 14 million people aged over 60, the private insurance market in France covers a small proportion of the potential market. In 2009, private insurers paid €127,7 million in benefits (up to €200 million if annuities paid by mutual insurance companies are included). A relatively small amount, as in 2010 the total public spending on LTC in France almost equaled €22 billion (1,1 percent GDP).

Nevertheless, the French private LTC insurance is one of the largest in this field worldwide. Several factors explain the coverage of private LTC insurance coverage. Until the late 1990s, the market for private LTC insurance was relatively small. Mainly because bank insurers then started marketing or cross-selling their products, private LTC insurance products increased. In 2001, the growth rate in number of insurance contracts touched 22 percent. This growth rate declined to 4 percent in 2009. This decline was mainly due to a government announcing a LTC insurance reform in 2006. This reform has, however, yet to come. First, the uncertainty surrounding the reform created lots of hesitancy in the population as well as the insurers. Especially insurers need to know more about the future institutional framework before they are willing to propose new insurance products. Second, at present no tax incentives support the development of private LTC insurance. Third, the choice of the products offered partly explains the rapid growth of private LTC insurance in France. As discussed above, French insurers offer cash benefits. Fourth, discussions about how to cover the risks of LTC needs are widely covered in the press, raising public awareness among the population of the existence of LTC needs. Fifth, income has a non-linear bell-shape effect on the decision to buy insurance for LTC. Especially middle class people benefit from private insurance, as poorer people would be supported by social assistance (public provision crowding out private insurance) and very wealthy might be able to cover for the costs themselves. Sixth, the amount of inheritance is strongly related to the demand for insurance. Moreover, those married and/or with children are more likely to purchase private LTC insurance. In addition, the probability of

receiving informal care when needed is related to the probability of purchasing private LTC insurance. Seventh, people who have been confronted with disability, dependency, and chronic or serious diseases buy private LTC insurance more often.

The system relies on mixed funding. Average monthly costs for dependency are €2,000 (up to €3,000 for higher dependency levels); APA contributes about €500 (up to €800 for higher dependency levels), and the mean pension is about €1,200. Private insurance contributes on average €300 monthly. In the case of higher dependency elderly individuals have to use their savings, reduce their assets, sell their homes or very often go into debt to meet the costs of their care.

Case study 5: Italy, informal care and migrant workers

In Italy the share of people 75 years and older is relatively large. Italy has one of the oldest populations in the world. Italy is facing a rapidly aging population with many elderly in need for care. Italian LTC has long been characterized as 'implicit familialism': families have a strong role in the organization, provision and financing of personal care and the State intervenes only in limited, urgent cases. Among Italians the assumption is held that 'families are always there' and provide all kinds of resources (and care). Roit (2008) perfectly illustrates the domestic nature of Italian LTC: of those highly independent elderly receiving the *Indennit di Accompagnamento* (cash benefit), 40% received only informal care provided by a family caregiver (90 hours per week); 30% received a mix of family care and private provision (mostly migrant workers, together 119 hours per week) and 13,4% received a mix of informal care, private services, and public services (121 hours per week). Moreover, only 27,3% use public LTC services and 47,9% utilize private paid care.

The public sector devotes a limited amount of resources to care, paid mostly on cash benefits combined with relatively low spending on in-kind services. Although the last two decades public expenditure as well as the provision of in-kind services have grown (as expected) to relieve informal carers, this growth was mainly observed for cash benefits. The cash benefit scheme showed an increase in users by 75% in the last decade, while the number of home care users has risen by 23%, and the number of residential care users remained stable. Right now, public expenditure on cash benefits (0.56% GDP) equals the sum of both expenditure on in-kind home services (0.25% GDP) and residential care (0.31% GDP).

Several factors, however, restrict the capacity and sustainability of the Italian LTC system. Firstly, the supply of informal care has declined because of an increased women labour participation. Secondly, the provision of in-kind services is scarce, unequally distributed across Italian regions, and long waiting lists for residential care exist. Third, LTC needs have significant and increasing economic impacts due to out-of-pocket expenses. LTC needs were identified as the second cause of impoverishment after unemployment.

Migrant low-cost care work largely filled the gap between expanding demand for care, modest LTC service provision, and reduced capacity of families for informal care. Migrant care workers complement family members. Most of the personal care, domestic help and health and psychological assistance are still provided by the family. The family also monitors financial aspects and coordinate the care. At present, families spend 0.59% of GDP on employing migrant care workers; in 9% of the households with people aged 65 and over, migrant care workers are present (75% of them on a live-in basis). Nowadays, 72% of people employed in LTC are foreign born. The majority of migrant workers work in the grey market, although legalization has become rather common.
As mentioned above, cash benefits or companion payments are the core of the public Italian LTC system. The companion payments are detached from in-kind services and users may spend €487 monthly (all users receive the same amount) on whatever they want. Many recipients use the companion payment for the remuneration of migrant care

workers. This, to some extent, has stimulated the rise in migrant care work in the last decade.

The rise in the use of companion payment is remarkable; none of the scheme's features were changed due to policy inertia in the case of long term care. The first reason for the increased uptake of the companion payment is the aging of the population. Secondly, elderly (and their relatives) in Italy are nowadays more aware of their rights and better informed, leading to an increased demand for companion payment. Third, unemployment policies in Italy are weak and underfunded. This led some elderly to inappropriately use the companion payment to financially support an unemployed son or daughter. Fourth, a national assessment tool with clear criteria to determine eligibility is lacking, giving professionals in charge of the assessment process the opportunity to approve more applications. Fifth, until 2009 the companion was financed at the national level with no budget ceilings but needs were assessed regionally by local health authorities that have an incentive to accept applications. Sixth, Italians view elderly care as a family matter and cash benefits better fit within this view than in-kind services. Finally, the IA is paid at a single rate of 487 euro's, regardless of one's needs, which may not be enough for those with the highest needs. There exist cleavages on the demand side of care markets, between those able to hire migrant care workers and those not. As a result, some elderly Italians may not receive the care they need.

Italian LTC has gone through a process of an intense social reorganization in the last fifteen years, yet, without significant changes in the LTC service provision system. The only public service in pace with the trend of aging is the company payment and the emergence of a migrant care market.

Appendix II: main characteristics of the five countries[15]

		Netherlands	Belgium	France	England[1]	Italy[1]
Public expenditure on LTC as % of GDP (2010)	Health LTC as % of GDP	2.5%	1.9%	1.3%		
	Social LTC as % of GDP	1.3%	-	0.5%		
	Total	3.8%	1.9%	1.8%	1.97%	1.91%
Financing	Eligibility to coverage	Universal coverage within a single system.	Universal coverage within a single system (health related and personal care). Social care (domestic care and other support) is a regional responsibility.	Mixed system.	Mixed –means-tested social care system with universal benefits for disability.	Mixed system.
	Coverage programs	Public long term care insurance model – social insurance (AWBZ).	Via the health system, a federal programme, Flemish and regional programmes.	Income-related benefits (Said, APA).	Means-tested, safety net (adult social care) and universal benefits (disability living	Parallel universal scheme (institutional care (RSA) as part of the health system and

[15] Sources, OECD Health Data different years; Colombo et al., 2011; ENEPRI Research Report No. 117, based on SHARE wave II and different country reports.

					allowance (DLA) and attendance allowance (AL)).	care allowances (IA)).
	Financing sources for public LTC	Contributions and additional tax contributions.	Social security contributions/payroll taxes, general direct taxation, out-of-pocket payments, mandatory yearly contributions (Flemish social care programme).	Local and central taxes, social contributions.	Central and local taxation.	General and local taxation.
	Most important level of decision making	Mostly central.	Both central and decentral.	Mostly decentral.	Both central and decentral.	Mostly central.
	Most important level of capacity planning	Both central and decentral.	Both central and decentral.	Both central and decentral.	Mostly decentral.	Mostly decentral.
	Target population	All ages.	All ages; federal program for 65+, low-income.	All ages; APA for 60+, income-tested.	Adult social care for 18+ DLA for 65- AA for 65+.	All ages.
	Eligibility	High.	Low.	High.	Not available.	Not available.

	Breadth and depth of services	High.	High.	High.	Not available.	Not available.
	Type of private cost sharing	Income- and asset related..	Flat-rate cost sharing.	Cost-sharing as residual; complementary to public contributions.	Means-tested.	Cost-sharing as residual; complementary to public contributions.
	Approach to cover board and lodging in nursing homes	Income (and asset) - related cost sharing.	Treated separately from other LTC costs, under social assistance.	Treated separately from other LTC costs, under social assistance.	Treated as other LTC costs, as part of safety-net LTC programmes.	Treated separately from other LTC costs, under social assistance.
	Total current spending on nursing and residential care facilities divided by the numbers of beds in nursing and residential care facilities in 2010	118,842.30 US$.	45,950.17 US$.	29,592.02 US$.	Not available.	Not available.
Informal care support	Allowance to carer	No.	In Flanders: *mantelzorgpremie.* Eligibility criteria and payment conditions are variable.	No.	Carer's allowance to those spending at least 35 hours per week caring.	No.

	Allowance to recipient	Personal budget, no age limit or income-test to claim.	Integration allowance; income- and need tested.	APA, for 60+ depending on disability and income.	Attendance allowance, for those who need care for more than six months.	Attendance allowance, need tested.
	Tax support	No.	No.	Planned tax reductions for hiring formal labour.	No.	No.
	Paid leave	Leave for care up to ten days, employers can refuse on serious business grounds. Paid 70% of the earning.	Palliative care leave up to two months and medical assistance leave up to twelve months. Time credit one to five years.	Family solidarity leave for three months. For first degree relatives or co-residential member terminally ill.	No.	Unknown.
	Unpaid leave	50% of the number of hours worked, for 12 weeks in one or several periods.	Emergency leave: ten days in private sector and 45 days in public sector.	Family support leave for three months.	Emergency leave for caring of a family member. The length should be reasonable, i.e. two days.	Unknown.
	Policies to stimulate carers physical and mental well-being	Training/education, respite care and counselling (such as the POM-method:	Training/education, respite care and counselling.	Training/education, respite care and counselling.	Training/education, respite care and counselling.	Unknown.

		Preventive counseling and support).				
	Weighted % of elderly using informal care: practical help, from outside household	28.8%.	30.8%.	22.5%.	Not included in survey.	21.8%.
	Weighted % of elderly using informal care: personal care	3.2%.	7.0%.	7.3%.	Not included in survey.	14.6%.
Private funding	Private long-term care insurance availability and type	No.	Complementary mutual health insurance (reimbursement policies).	Indemnity policies, 15% of 40+ held a private insurance policy.	Life annuities are offered. Less than 0.05% of 40+ hold a private insurance policy.	Indemnity policies.
	Policies to increase the level of private insurance	No.	No.	Group insurance policies are offered. LTC insurance policies are offered as part of life insurance policies.	No.	No.

Productivity	Policies encouraging home care	PGBs encourage home care by helping to organize home care and promoting choice. Costs for living and caring are accounted for separately (lodging costs have to be paid by clients themselves).	Diversification, specification and innovation of home care services.	Tax deductions are offered.	The report Use of Resources in Adult Social Care provided examples of savings via home or community-based care. Cash benefits are provided stimulating home care. Local authorities benchmark their performance.	Care allowances stimulate living at home.
	Wage levels LTC workers	Infirmarian: EUR 1,729 to EUR 2,558 (2008), depending on experience.	Nurse assistant: 21.997-34.562 euro. Registered nurse: 22.798-37.596 euro.	1.852-2.442 euro per month at 31 years old.	Median hourly wage around GBP 6.56 (7.62 euro).	Unknown.
	Policies to minimize spillover effects	Insurers bare the risk of acute care services.	Financial incentives, based on the AP-DRG system. Care co-ordination by SIT and SISD/GDT, pilot projects on case management	Care co-ordination through individual, caregiver or services. Houses for Autonomy and Integration of Alzheimer patients have been	The policy intermediate care promotes faster recovery. The policy re-ablement helps people to learn skills for daily living. Services are co-	Unknown.

			and crisis services. Governance structures for care co-ordination are used.	developed. Care co-ordination responsibilities are allocated to providers. Governance structures for care co-ordination are used.	ordinated at a national, regional and local level. Care co-ordination responsibilities are allocated care managers.	
Policy innovations	Possibility of choosing between in-kind or cash	Yes, personal budget equal 75% of tariffs of care in kind.	No.	Yes, cash and care in kind are separate.	No, cash and care in kind benefits are complementary.	Yes, cash and care in kind are separate.

[1] OECD Data not available; European commission (2012b)

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