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**Ludovico Carrino and
Cristina Elisa Orso**

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Eligibility and inclusiveness of Long-Term Care Institutional frameworks in Europe: a cross-country comparison

Ludovico Carrino

University of Venice at Ca' Foscari

Cristina Elisa Orso

University of Venice at Ca' Foscari

Abstract: Although economic literature has recently started to concentrate on the design, the scope and the regulations of main public programmes of Long-Term-Care in Europe, no analysis have, so far, compared different systems in terms of their degree of inclusiveness with respect to vulnerable elderly's health status. Focusing on several European countries, this paper investigate how LTC regulations assess vulnerability, as well as how they define a minimum level of objective-dependency that would entitle individuals to receive public benefits (in-kind or in-cash) for home-based care. Our contribution is threefold. We provide detailed information on assessment and eligibility frameworks for eleven LTC programmes in Europe. We show that substantial heterogeneities exist both at the extensive margin (the health-outcomes that are included in the vulnerability-assessment) and at the intensive margin (the minimum vulnerability threshold that defines benefit eligibility) of the assessment strategies. Building on this information, we compare LTC programmes in terms of their degree of inclusiveness, i.e., we investigate the extent to which each programme is able to cover a standard population of elderly individuals facing functional and cognitive limitations. The comparison is performed following both a directly- and an indirectly- adjusted strategy using SHARE data.

Keywords : Long-term care, eligibility, access to home-care, vulnerability, direct adjustment, indirect adjustment, inclusiveness, Europe.

JEL Codes: H53, I18, I11.

Address for correspondence:

Ludovico Carrino
Department of Economics
Ca' Foscari University of Venice
Cannaregio 873, Fondamenta S.Giobbe
30121 Venezia - Italy
Phone: (+39) 041 2349140
Fax: (+39) 041 2349176
e-mail: ludovico@unive.it

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1. INTRODUCTION

Long-Term-Care (LTC) policies aim at covering the higher vulnerability risk that specifically affects the elderly population, when poor health conditions may become prevalent. Indeed, LTC is defined as a range of services required by persons with a reduced degree of functional capacity, physical or cognitive, who are *dependent* on others' help with basic activities of daily living for an extended period of time, and are unable to maintain an *acceptable* level of well-being.¹ Although a discussion on the notion of well-being per-se is beyond the scope of our analysis, this paper investigates *what* constitutes dependency and acceptability in main European LTC regulations, *who* defines them, and what are the economic consequences of such features.

Utilisation of formal LTC requires some degree of interaction between the applicant and the institution providing the service (in-kind rather than in-cash). A commonly adopted approach describes this interaction under three perspectives: the *availability* of the service, its *accessibility* and its *utilization* (i.e. realized accessibility) by the applicant (see [Levesque et al. \(2013\)](#) for a detailed review of this approach and its variants). *Availability* pertains to the existence of any supply of LTC in the nation / region / community where the applicant lives. With respect to the public framework, this points to the existence of official legislations that regulate one or more programmes. *Accessibility* refers to the circumstances determining whether an individual can or cannot benefit from a programme, given her health- and socio-economic characteristics. *Utilization* (or *realized accessibility*) refers to the extent to which an individual can benefit from a programme, given that entitlement has been granted. In this paper, we will deal with the first two aforementioned features, namely, availability and accessibility of LTC programmes in Europe.

Indeed, most main public LTC systems in Europe regulate access in two sequential and compulsory steps: first, an assessment-of-need is performed in order to build a “vulnerability profile” of the elder applicant; second, a decision on her eligibility status is taken by comparing her vulnerability profile with a set of eligibility rules defined by the legislation. Thus, regulations discriminate, at the extensive margin, between eligible and non-eligible individuals (i.e., having *access* to the programme, or not) while at the intensive margin they determine the extent to which a recipient can benefit from the programme (i.e., the degree of eligibility, which determines the *utilization* of the service).

Determining when vulnerability arises is, ultimately, a medical and a philosophical issue, often related to the concept of dignity ([Brock, 1989](#); [Gallagher et al., 2008](#); [Nordenfelt, 2004](#); [Nussbaum & Sen, 1993](#)). As an example, the OECD acknowledges that “protecting the right to a life in dignity of frail older people is becoming a major policy challenge” ([OECD \(2013a\)](#)). What we are referring to is not a universal human dignity, i.e., a specifically human value (*Menschenwürde*), which cannot be taken from the human being as long as he or she is alive. Rather, the focus is placed on the, so-called, “dignity of identity”, related to the integrity of the subject's body and mind ([Nordenfelt, 2004](#)), which starts to deteriorate as long as the vulnerability process progresses. Indeed, although frailty conditions, and vulnerability

¹ This personal care component is frequently provided in combination with help with basic medical services such as nursing care (help with wound dressing, pain management, medication, health monitoring), as well as prevention, rehabilitation or services of palliative care. Long-term care services can also be combined with lower-level care related to domestic help or less demanding tasks. LTC can be provided at the recipient's own dwelling (*home-based care* / *domiciliary care*) rather than in nursing-homes or residential care-facilities (*residential- / institutional care*). In this paper, we will concentrate on the LTC programmes that offer in-kind or in-cash benefits for home-based care, the so-called *formal-care* provided by professional nurses or social workers (as opposed to the *informal-care* provided by the dependent's family and friends) ([OECD, 2013a](#)).

in general, are undesirable conditions, they are not directly observable. This points to the need of developing methods to measure and operationalize them, with the ultimate goal of preventing or delaying their occurrence. The medical literature has produced a rich and extensive debate on the nature of vulnerability (see, e.g. [Markle-Reid and Browne \(2003\)](#) who also address the discord between uni- and multi-dimensional approaches) and proposed a number of definitions and instruments to measure it (e.g., [De Vries et al. \(2011\)](#)), so that no gold-standard emerged so far.

Given that public institutions implementing LTC services need to draw a line in the vulnerability continuum, (identifying *when* individual-specific conditions are severe enough to be granted a benefit), the absence of a standardized definition of vulnerability is likely to reflect in substantial differences in need-assessment and eligibility rules between programmes, thus constituting a relevant policy and economic issue. Indeed, recent literature often stressed the importance of accounting for institutional characteristics in empirical analyses of health-care utilization, and several studies reviewed the overall structures of LTC systems in Europe ([Verbeek-Oudijk et al. \(2014\)](#), [OECD \(2013a\)](#), [Ranci and Pavolini \(2012\)](#), [Riedel and Kraus \(2011\)](#), [Genet et al. \(2011\)](#) and [Da Roit and Le Bihan \(2010\)](#)). In general, high heterogeneity between regulations is reported, and yet no substantial focus has been devoted so far to the *definition* of the population in “need-of-care”, i.e., the target of the main domiciliary LTC programmes in Europe.² Therefore, scarce information is available to compare regulations in terms of inclusiveness and potential coverage. Nonetheless, assessment-of-need and eligibility rules represent a compulsory gateway for elderly adults in order to receive home-care benefits, thereby constituting a source of heterogeneity that should not be neglected in economic analyses.

We intend to contribute to the existing literature by offering a comprehensive view on the role and the characteristics of vulnerability-assessments and eligibility criteria, highlighting existing variations between and within countries. Moreover, our analysis adopts a significant economic perspective, as we report information on how benefits (in-kind or in-cash) are allocated to eligible individuals. Although it is plausible to expect that less vulnerable individuals receive lower allowances or less services, this gradient can sensibly vary between programmes, with important consequences on the degree of protection offered.³

Furthermore, we provide some insights on how differences in regulations can affect the target population of a programme, thereby determining heterogeneities in theoretical coverage rates and in access to care ([Colombo & Mercier, 2012](#); [Eleftheriades & Wittenberg, 2013](#)). In particular, we implement the eligibility rules on the individuals in the 1st and 2nd waves of SHARE (Survey of Health Ageing and REtirement), which contain a set of self-reported information that allows us to build, for each respondent, a simplified socio-medical profile comparable with the LTC regulations.⁴ The use of micro-data allows us to account for the fact that limitations may have different morbidity rates in different areas. We carefully match the information at the institutional level with those of the SHARE respondents, and create an individual-level dichotomous variable named *eligibility*, which takes value 1 if the respondent’s medical

² Partial exceptions are [Bakx et al. \(2014\)](#), [Jiménez-Martín and Prieto \(2012\)](#), [Colombo and Mercier \(2012\)](#), [Eleftheriades and Wittenberg \(2013\)](#).

³ As an example, the Czech programme *Příspěvek na péči* allows a benefit of € 29 for the minimum eligibility level (the basic pension in Czech Republic was €83 in 2013), while high vulnerability patients get around €440 (more than the average pension, €400). The Belgian allowance *Aide à la Personne Âgée* ranges from a minimum of € 81 to €550 (well below the average pension).

⁴ Among these information there are: limitations in ADL and iADL, mobility/cognitive/behavioural limitations, the presence of specific chronic conditions, as well as demographic and socio-economic variables).

conditions fulfil the minimum requirements of a certain LTC programme (i.e., she is *eligible* to it) and 0 otherwise⁵. By applying each regulation on a same standard population (the SHARE population), we obtain comparable “directly-adjusted” eligibility rates, i.e., the share of the standard-population that would be covered by each programme. In order to gain further insights, we will compare LTC programmes pair-wise through a counterfactual analysis (indirect-adjustment), by “simulating” the adoption of a region’s regulation on another region’s population.⁶

We believe our analysis can contribute in several ways to the ongoing debate on the design and sustainability of Long-Term Care programmes in Europe, from both a policy and an economic perspective. We hope to provide researchers with information about how vulnerability indices (which are often implemented in the economic literature to summarize individuals health-conditions) are defined in actual regulations, as well as with measures of their relative severity. Moreover, we provide insights on the regulative contexts in order to enrich the tools available for empirical economic analyses of health access and utilization, which so far have been limited to the use of country/regional dummy variables to capture heterogeneity at the institutional level.⁷ From a policy point of view, our analysis depicts a comprehensive picture of the differences in the regulative approaches to vulnerability-risk in Europe, which is so far an uncovered topic in the literature. We provide tools to evaluate whether these differences are substantial or minor, and we offer a comparison and a counterfactual analysis within the European framework.

To conclude this introductory Section, it is useful to recall that the role of public formal home-based assistance is highly relevant in the current policy and economic debate related to the LTC field. It is believed that this source of protection should play a crucial role in promoting the practice of healthy (and active) ageing ([Rechel et al., 2013](#); [van Leeuwen et al., 2014](#)). Indeed, a proactive formal-assistance could prevent the age-related loss of autonomy, thus reducing LTC demand and increasing its supply (e.g., by healthier youngest-old caregivers⁸), and boost an efficient, cost-effective care provision in home-based care ([European Commission, d. o. E., Social Protection Committee, 2014](#)). Besides population dynamics, fluctuating birth rates and reduced fertility, the ageing process is a consequence of the compression of mortality (longer life expectancy) in the last four decades, which in turn is the result of reduced incidence of fatal cardiovascular diseases driven by improved lifestyles, prevention and treatment processes. In the words of [Rechel et al. \(2013\)](#), “population ageing can be described as both an outcome of, and a challenge for, European health systems”. The extent to which the ageing process poses pressures on the public Welfare States depends on the future “paths” (or profiles) of ageing adopted in the simulation exercises ([Costa-Font et al., 2008](#); [de la Maisonnette & Martins, 2013](#); [EUROSTAT, 2012](#); [OECD, 2013b](#)). What matter, indeed, are the perspectives in terms of healthy ageing rather than of “ageing” itself: the theory of “compression of morbidity”, introduced by James Fries in 1980, states that increased longevity would have postponed the age of chronic illnesses’ first appearance more than the age at death, therefore shortening the lifetime in disability [Fries et al. \(2011\)](#). Other theories postulate the “expansion of morbidity”, in which the proportion of elderly adults good health would shorten, or a “dynamic equilibrium” in which it would remain more or less constant.⁹ Compression of morbidity should be enhanced by an effective and proactive formal care. Nevertheless, there is evidence of increasing incidence rates of disorders common in older people (cancer,

⁵ A similar proceeding has been performed by [Jiménez-Martín and Prieto \(2010\)](#) for Spain.

⁶ Both direct- and indirect- adjustments are frequently applied in epidemiology and demography, e.g., in order to compare mortality rates across countries ([Lilienfeld and Stolley \(1994\)](#), [Curtin et al. \(1995\)](#)).

⁷ E.g., [Bolin et al. \(2008\)](#), [Bonsang \(2009\)](#), [Kalwij et al. \(2014\)](#). See [Bakx et al. \(2014\)](#) and [Eleftheriades and Wittenberg \(2013\)](#).

⁸ See, e.g., [Lakdawalla and Philipson \(2002\)](#).

⁹ [Rechel et al. \(2013\)](#).

fractures, strokes, dementia, diabetes, and functional limitations), while Eurostat data from 2013 show that, especially for Eastern European countries, longevity in good health has indeed risen less than life expectancy at birth. In general, medical studies report mixed evidence for compression of morbidity theory and its alternatives ([Grimmins and Beltrán-Sánchez \(2011\)](#), ([European Commission, d. o. E., Social Protection Committee, 2014](#); [Rechel et al. \(2013\)](#)).

The remainder of this paper is structured as follows: Section 2 briefly reviews the medical perspectives on the concept of vulnerability in old-age, and introduces the review of LTC regulations in Europe. Section 3 performs an overall comparison of eleven main LTC programmes for home-based care (either in-kind or in-cash) in seven European countries. Section 4 provides the actual review of LTC regulations.

2. THE CONCEPT OF VULNERABILITY: MEDICAL VS POLICY PERSPECTIVE

Being vulnerability an inherent characteristic of the ageing process, public health-care systems, and geriatricians in particular, are trying to cope with a growing population of elderly people which need frequent and multiple assistances and treatments that could, in turn, overlap with each other. The multi-dimensional nature of vulnerability ([De Vries et al., 2011](#); [Markle-Reid & Browne, 2003](#); [Pel-Littel et al., 2009](#)) requires a medical- and policy-approach not primarily disease-oriented (i.e., focusing on specific diseases or health-conditions). What is needed is a perspective that takes into account the inter-play between single diseases and limitations, while accounting for genetic, environmental, psychological, social, and other factors in order to design a better tailored care-plan (the so-called “end of the disease era” described by [Tinetti and Fried \(2004\)](#)).

With respect to the ageing population, two major challenges emerge. The first one, which is mostly on the side of geriatric physicians, is to operationalize vulnerability into a clinical framework, disentangling it into different degrees of functional (and cognitive) impairments in order to provide patients with an accurate clinical status and prescribe them proper treatments. The second challenge, which relies on the policy-side, is to offer the vulnerable Elderly an effective and efficient formal assistance (particularly, home-based assistance) that could enhance healthy ageing, meet their need-of-care, delay the vulnerability process and prevent the incurrence of new disabilities or diseases ([Colombo & Mercier, 2012](#); [van Leeuwen et al., 2014](#)). Assistance should be designed taking into account the patients’ vulnerability level, as well as their specific economic, social and family situations conditions.

The medical literature has well documented the complex nature of vulnerability, which is often referred to as the result of conditions of *frailty*, *disability/dependency* and *comorbidity*. It is useful to briefly report here some definitions for these three terms since they all represent, to a great extent, the physiological changes that generate demand for LTC. According to [Fried et al. \(2004\)](#), *comorbidity* is “the concurrent presence of two or more medically diagnosed diseases in the same individual, with the diagnosis of each contributing disease based on established and widely recognized criteria”. *Disability* is defined as “difficulty or dependency in carrying out activities essential to independent living, including essential roles, tasks needed for self-care and living independently in a home, and desired activities important to one’s quality of life”. The state of *frailty* is the toughest one to describe: it is “a clinical syndrome characterized by

multiple characteristics including weight loss, and/or fatigue, weakness, low activity, slow motor performance, balance and gait abnormalities”, together with a potential cognitive deficit.¹⁰

A pair of one-dimensional tools for functional assessment gained extensive diffusion among researchers in the last forty years: the list of Activities of Daily Living (ADL) developed by [Katz et al. \(1970\)](#) and the list of Instrumental Activities of Daily Living (iADL) developed by [Lawton and Brody \(1969\)](#). Both of these tools are used in medical fields as warning measures to highlight potential (or already established) conditions of dependency. Moreover, as it will be discussed in Sections 3 and 4, they constitute the core measures of LTC-need in most legislations in Europe. Further details on ADL and iADL can be found in Appendix 6.1. Indeed, although symptoms of frailty are many and various, the most prevalent are loss of autonomy in ADL and iADL, together with the occurrence of limitations in mobility, deterioration in nutritional status, cognition and endurance. Further determinants are weight loss, lowered serum cholesterol levels, and increasing sensitivity to change (see, e.g., [Pel-Littel et al. \(2009\)](#) for a detailed analysis). It is generally agreed that frailty is a state of high vulnerability for adverse health outcomes, including disability, dependency, falls and mortality.

Medical literature often highlights the difficulty of diagnosing vulnerability and summarizing its nature into a single, encompassing, measure (e.g., for eligibility purposes). First of all, *frailty*, *disability* and *comorbidity* are distinct but overlapping concepts. Frailty and comorbidity are jointly predictors of disability which, in turn, can exacerbate frailty and comorbidity. The latter, itself, contributes to increase frailty ([Fried et al., 2004](#)). Moreover, “the physiological changes that underlie frailty and disabilities do not always achieve disease status, so that some people, usually very elderly, are frail without having life-threatening illness” ([Rockwood & Mitnitski, 2007](#)). As for the demographic determinants, frailty is not a necessary nor a sufficient condition for ageing or death. Furthermore, it shows similarities, but is not identical nor inevitable to the ageing process, which should not be considered a disease per se: the association between vulnerability and ageing is strong, and yet not all elderly adults are vulnerable ([De Vries et al., 2011](#); [Pel-Littel et al., 2009](#)). Finally, frailty is considered a pre-disability state and therefore, unlike disability, it is reversible (there is “potential for intervention”, in the words of [Conroy \(2009\)](#)).

The complex interactions between many risk-factors imply also that not every combination of deficits and not every comorbidity is equal in terms of the generated vulnerability ([Fried et al. \(2004\)](#), [Fulop et al. \(2010\)](#), [Sourial et al. \(2010\)](#), [Pilotto and Ferrucci \(2011\)](#), [Rodríguez-Mañas et al. \(2013\)](#)). As argued in [De Vries et al. \(2011\)](#), “disability is influenced by other than biological or physiological factors, for example personal characteristics including psychological state, emotional state and coping style. There is also an interaction with the physical and social environment, which can stimulate or hinder participation in activities. Therefore, in the last few years, frailty is acknowledged to be not only a biological or physiological state, but also a multi-dimensional concept”.

Although there is no “gold-standard” in the medical literature, current research is actively focused on producing reliable tools that could help identifying (and predicting) vulnerability. Useful reviews of existing measuring-tools are [Clegg et al. \(2013\)](#), [Pel-Littel et al. \(2009\)](#) and [De Vries et al. \(2011\)](#) while a review on screening tools for frailty in primary health care is [Pialoux et al. \(2012\)](#). Among others, the *frailty-index* in [Mitnitski et al. \(2001\)](#) and [Rockwood and Mitnitski \(2007\)](#) links the condition of frailty to the accumulation of deficits, while [Pilotto et al. \(2013\)](#) develop and validate a multi-

¹⁰ See also [Fried et al. \(2001\)](#).

dimensional index of vulnerability and mortality based on a multidimensional assessment schedule (SVaMA) adopted in several Italian regions.

World Health Organization has also stressed the need for standardized tools to predict service needs and levels of care and, ultimately, to set up efficient and effective health-planning. “The presence of a disease or a disorder [is not] an accurate predictor of receipt of disability benefits, work performance, return to work potential, or likelihood of social integration. This means that if we use a medical classification of diagnoses alone we will not have the information we need for health-planning and management purposes. What we lack is data about levels of functioning and disability”.¹¹ In response to this need, WHO started to develop an instrument – the International Classification of Functioning (ICF) – that should provide States with a “consistent and internationally comparable” tool to collect data on vulnerability. ICF follows a bio-psychosocial perspective, in that it sees vulnerability as “a complex phenomena that is both a problem at the level of a person's body, and a complex and primarily social phenomena. Disability is always an interaction between features of the person and features of the overall context in which the person lives, but some aspects of disability are almost entirely internal to the person, while another aspect is almost entirely external. In other words, both medical and social responses are appropriate to the problems associated with disability; we cannot wholly reject either kind of intervention”.

2.1 A PRELIMINARY CLASSIFICATION

The absence of a unique, standardized, definition of vulnerability has important consequences in the policy-regulative fields that design programmes of long-term-care assistance at national, regional or community level. Besides being different in financing models, degree of universalism and centralization, LTC systems differ in how they define and assess vulnerability conditions, and therefore in the definition of a minimum level of need that allows someone to be eligible to a programme of care (see, e.g., [Eleftheriades and Wittenberg \(2013\)](#)). Heterogeneities in the assessment-of-need processes and the eligibility conditions are, indeed, the ultimate manifestation of distinct “views” of the vulnerability process, and it is on this sort of heterogeneity that we have put the focus of this and of the following Sections, by looking at how these issues are regulated and formalized in European’s main LTC programmes.

As a preliminary step, we propose a simple classification of the main LTC programmes in Europe, based on two criteria related to the properties of the vulnerability-assessment processes and to the existence of an eligibility threshold.

The first criteria relates to how analytic the vulnerability assessment-tool is. Some LTC programmes adopt a “detailed” evaluation of vulnerability (*analytic evaluation*), which includes a high number of medical conditions and/or limitations. Conversely, other assessments rely on a much smaller set of dimensions that, in turn, might or might not be implicit compounds of more specific limitations (*synthetic evaluation*).

The second criteria splits LTC programmes according to whether they account or not for a specific threshold of vulnerability that allows an individual to receive some care benefits, therefore making him/her *eligible* to LTC services. Furthermore, we differentiate between those regulations whose eligibility rules are mainly (or solely) based on functional and/or cognitive limitations (“carer-blind” assessments), and those who consider a broader set of dimensions, e.g., the family or the neighbourhood environment, the patient’ social-network, the availability of informal

¹¹ [WHO \(2002\)](#)

care (“carer-sighted” assessments). In particular, we operate a selection according to the presence (or absence) of a well-defined minimum eligibility level (*objective threshold of vulnerability*) based on functional/mental status: a quantitative or qualitative measure of vulnerability, explicitly defined in the legislation, that can be computed (almost) directly from the assessment-of-need scale. Alternative frameworks (*subjective/broader threshold*), that either do not fix a specific minimum eligibility level, thus relying (almost entirely) on subjective evaluations by the evaluator team, or include in the analysis bio-psychosocial (non-medical) factors, will be excluded from this review.

By combining the aforementioned criteria, it is possible to categorise LTC regulations on a bi-dimensional matrix in which the columns represent the alternative between analytic and synthetic evaluations while the rows discriminate between programmes with or without an objective definition of eligibility. Table 2-1 reports the result of our review for 15 main LTC programmes in 10 European countries (Austria, Belgium, Czech Republic, Denmark, France, Germany, Italy, Netherlands, Spain, Sweden). There are countries (Belgium, France) in which more than one nationwide programme is in place and others (Belgium, Italy) in which substantial region-specific programmes are implemented.¹² The table reports the name of the programmes and an additional information on the benefit’s nature (in-cash, in-kind, or both).

Table 2-1, Preliminary classification of LTC programmes

	Analytic evaluation			Synthetic evaluation		
Eligibility threshold and carer-blind	Austria	<i>Pflegegeld</i>	C	Belgium	<i>APA</i> <i>INAMI/RIZIV</i>	C K
	Belgium (Flanders)	<i>Vlaamse zorgverzekering</i>	C	France	<i>Allocation Personnalisée d'Autonomie</i> <i>Action Sociale</i>	C/K C/K
	Czech Rep.	<i>Príspevek na péči</i>	C	Italy (FVG)	<i>Contributo Aiuto Familiare</i>	C
	Germany	<i>Pflegeversicherung</i>	C/K	Italy (Toscana)	<i>Progetto di Assistenza Continua</i>	C/K
	Spain	<i>Promoción de la Autonomía Personal</i>	C/K			
No threshold or carer-sighted	Sweden	<i>Social services for the Elderly</i>				
	Italy – ER	<i>Assegno di Cura / Assistenza domiciliare</i>	C/K			
	Italy – VE	<i>Impegnativa di Cura Domiciliare</i>	C			
	Netherlands	<i>AWBZ</i>	C/K			

C= in cash K=in-kind

Five programmes appear in the top-left box, corresponding to those regulations that adopt an analytical carer-blind assessment-of-vulnerability and introduce a specific minimum threshold of medical-conditions that gives access to the benefit. Among these are the Austrian federal *Pflegegeld* cash-benefit, the Belgian *Vlaamse zorgverzekering* cash-benefit implemented only in the Flemish (and Bruxelles) region, the Czech cash-benefit *Príspevek na péči*, the federal German

¹² The Italian framework is highly fragmented, with a national cash-benefit allowed to highly severe vulnerability conditions (*Indennità di accompagnamento*, not included here and discussed later), and independent regional programmes. See, e.g., [Tedioli and Gabriele \(2010\)](#), [Ranci and Pavolini \(2012\)](#) and [Gori \(2013\)](#).

programme *Pflegeversicherung* which in principle could be both in-cash and in-kind, the Spanish *Promoción de la Autonomía Personal*.

Four programmes, included in the bottom-left box, are characterized by “carer-sighted” need evaluations. The Italian home-care programme Domiciliary Help Agreement (*Impegnativa di Cura Domiciliare*, ICD), implemented by the Veneto region¹³, adopts a highly detailed multi-dimensional assessment scale (the SVaMA, *Scheda di Valutazione Multidimensionale dell’Anziano*, Multidimensional evaluation of the elderly). It encompasses both functional and mental limitations, together with other domains as the housing/neighbourhood environment, the availability of informal care and the economic conditions of the patient.¹⁴ The assessment is conducted by a multidisciplinary team, who then develops a personalised project of care and determine the patient’s entitlement status. There are no fixed guidelines describing the eligibility rules. Another Italian region, Emilia-Romagna, implements several programmes of home-care for vulnerable elderly, e.g., a cash-benefit (*Assegno di cura per anziani*) and an in-kind home-care service (*Assistenza domiciliare per anziani*), regulated by the Regional Fund for vulnerable individuals (*Fondo regionale per la non autosufficienza*)¹⁵. The assessment-of-need focuses on an individual’s social-environment (through the “*Scheda Sociale*”, Social Assessment Scale) as well as her functional and cognitive status (through the *BINA* scale, *Breve Indice di Non Autosufficienza*, Short index of vulnerability). The social-environment assessment mainly covers the socioeconomic characteristics of the patient’s family network, while the BINA scale assesses the patient’s functional and cognitive limitations, as well as the availability of an informal-network of caregivers and the quality of the housing and the neighbourhood.¹⁶ The eligibility condition is subjectively determined by the medical assessment team. In Sweden, the home-care services are managed at the municipality level, who are legally obliged to meet the social service, nursing and housing needs of the elderly. “The need is determined through a process of need assessment, which is carried out by a municipal care manager. Access to services is not means-tested and there are no national regulations. The municipality decides the service level, eligibility criteria and range of services provided” (*Socialstyrelsen, 2009*).¹⁷ Finally, the Netherlands’ AWBZ (*Algemene Wet Bijzondere Ziektekosten*, Exceptional Medical Expenses Act) is a Social Insurance aimed at assisting long-term hospitalised persons, elderly people, disabled persons and mentally disabled persons with chronic illness.¹⁸ The assessment of need is performed by the Care Needs Assessment Centre (*Centrum Indicatiestelling Zorg*, CIZ), who impartially, objectively and thoroughly determines the individual’s need-of-care. Functional and cognitive limitations are evaluated, as well as environmental factors and characteristics of the patient’s family, including the availability of informal care. The legislation sets no unique eligibility rules or minimum dependency thresholds.

Six programmes are listed in the top-right box, corresponding to those systems that allow for a synthetic vulnerability assessment together with a clear eligibility threshold, which defines a minimum vulnerability level. Among these are

¹³ Recently reorganized with the regional decree (*decreto*) 149/2013 - *Istituzione dell’Impegnativa di Cura Domiciliare*

¹⁴ “The SVaMA is the officially recommended assessment schedule used by the health personnel of the National Health Care System [...] introduced by the Veneto Regional Health System since 2000 to establish accessibility to some health care resources. Reliability, accuracy, and calibration of the SVaMA have been previously tested and validated. At present, the SVaMA is the officially recommended multidimensional assessment instrument used in most regions in Italy (ie, Veneto, Trentino, Puglia, Molise, Sicilia, Campania, Basilicata, and Valle D’Aosta) [...]”, *Pilotto et al. (2013)*. The SVaMA is available on-line at: <http://www.ulss12.ve.it/docs/file/modulistica/SVaMA.pdf>

¹⁵ Regional Law LR n. 27/2004; see also *AGENAS (2014)* and the Regional Bulletin n.61/2007 (*Bollettino Ufficiale Regione Emilia-Romagna*).

¹⁶ Both assessment-scales are available at: http://informa.comune.bologna.it/iperbole/media/files/delibera_ausl_1132006_3.pdf

¹⁷ On the Sweden LTC framework see also *Szebehely and Trydegård (2012)*, *Fukushima et al. (2010)* and *Colombo et al. (2011)*.

¹⁸ See (*Bakx et al. (2014)*; *Colombo et al. (2011)*; *MISSOC (2014)*; *Mot and Aouragh (2010)*)

the federal Belgian programmes APA (Aide à la Personne âgée) and the Home-Nursing Services reimbursed by the National Institute for Sickness and Disability Insurance (Institut National d'Assurance Maladie-Invalidité/Rijksinstituut voor Zieke – en Invaliditeitsverzekering - INAMI/RIZIV), the French in-kind care services covered in the APA (allocation personnalisée d'autonomie) and in the Action Sociale des caisses de retraite.

This classification is just a first step into the analysis of the heterogeneity that characterizes the supply of LTC in Europe. Our aim is to get to a higher detailed stage of the analysis, showing how the definitions of vulnerability differ from one programme to another. We would like to offer some comparability between different frameworks, not just in terms of their organizational features but also in terms of how their differences affect systems' inclusiveness (or, the potential demand of formal care). We, therefore, concentrate on eleven programmes (in Austria, Belgium, Czech Republic, France, Germany, Spain and two Italian regions, Friuli – Venezia Giulia and Toscana), which are characterised by clear-cut objective definition of an eligibility threshold. In all of these countries the assessment-of-vulnerability is *carer-blind*, i.e., need-tested through validation of ADL- iADL- and cognitive limitations, while no role is played by other factors like informal-care availability, quality of family or neighbourhood environment, social-network of the patient.¹⁹ Systems with subjective assessment-of-need are less suitable for a comprehensive comparison, since they define the components of vulnerability (therefore detailing also the assessment-of-need process) but set no minimum vulnerability requirement and no rule to characterize eligibility.

3. COMPARING LTC PROGRAMMES' RATIONALES AND INCLUSIVENESS

Health outcomes like functional or cognitive impairments usually serve as explanatory variables in studies aimed at identifying causal relationships and determinants of processes related to individuals' health-care utilization or labour market participation, as well as at estimating trends in health expenditure at various levels, e.g., national and regional ([Colombo et al. \(2011\)](#), [de Meijer et al. \(2011\)](#), [Costa-Font et al. \(2008\)](#), [Pickard et al. \(2007\)](#)). Objective measures of dependency, e.g., limitations in ADL and iADL, are adopted as covariates in many empirical analysis²⁰, often in the form of *counting* or *dummy* variables to capture the number of deficits reported by individuals, or using individual dummies for each limitation.²¹ Other studies follow a different strategy and adopt the presence of any objective functional-limitations as a proxy for vulnerable conditions.²² In general, the aforementioned works all find that “disability indicators have an important predictive power in the formal care equations of both PDH [paid domestic

¹⁹ Monetary resources are sometimes taken into account for redistributive purposes (determining the monetary amount of the benefits), but they do not have discriminatory power to define eligibility. See [Eleftheriades and Wittenberg \(2013\)](#) for a discussion on the implications that adopting “carer-blind” rather than “carer-sighted” eligibility rules might have for the equity and efficiency of the care system, for incentives to provide unpaid care and for costs.

²⁰ A recent exception is [Bolin et al. \(2008\)](#), where the authors use SHARE data and include several self-reported health conditions (both objective and subjective) as covariates in their empirical analysis, leaving out both ADL and iADL.

²¹ E.g., [Balía and Brau \(2013\)](#), although the authors ultimately drop the iADL dummies because of collinearity issues with another disability indicators. Among other variables, [Bonsang \(2009\)](#) includes iADL and ADL limitations to build a synthetic dependency-index at the individual level. See also [Jiménez-Martín and Prieto \(2012\)](#), [de Meijer et al. \(2011\)](#).

²² [Brugiavini et al. \(2010\)](#) investigate the determinants of formal-care utilization by splitting their sample population according to the presence of at-least-one limitation in ADL.

help] and NC [nursing home-care] models. In particular, the probability and quantity of care increase with severity in ADL indicators” (in the words of [Balía and Brau \(2013\)](#)).

Besides individuals characteristics, researchers often stress the importance of accounting for the characteristics of the institutions which implement care-programmes for the elderly, especially when performing international analysis. [Riedel and Kraus \(2011\)](#), [Kraus *et al.* \(2010\)](#) and [Genet *et al.* \(2011\)](#) provide a review of public and private European LTC frameworks, [Da Roit and Le Bihan \(2010\)](#) focus on some cash-benefits for care while [Ranci and Pavolini \(2012\)](#) concentrate on the reforms processes undergone in the last decades. Recent reviews are [Verbeek-Oudijk *et al.* \(2014\)](#) and [OECD \(2013a\)](#). [Jiménez-Martín and Prieto \(2010\)](#), [Eleftheriades and Wittenberg \(2013\)](#) and [Bakx *et al.* \(2014\)](#) are, to the best of our knowledge, the only recent works that specifically address institutional differences in assessment-of-need and eligibility rules. The former study focuses on formal-care utilization in Spain, taking into account eligibility rules in a micro-data analysis. The second offers a review on Australia, France, Germany, The Netherlands, New Zealand and United Kingdom, while the latter addresses the regulative differences between the German and the Dutch LTC systems, showing that they have important consequences on formal home-care utilization by older adults. Apart from these works, institutional heterogeneity is commonly accounted for by the inclusion of country (or regional) dummies in the empirical models’ specification ([Brugiavini *et al.* \(2010\)](#) where the authors offer also a brief taxonomy of LTC systems, [Bolin *et al.* \(2008\)](#), [Bonsang \(2009\)](#), [Balía and Brau \(2013\)](#), [Kalwij *et al.* \(2014\)](#), [Jiménez-Martín and Prieto \(2012\)](#) where dummies for place-of-residence are included in the analysis of the relationship between formal- and informal-care in Spain).

The synthetic analysis in Section 2 hinted at some distinctive features of the LTC programmes, which do not always coincide with some of the implicit assumptions made in empirical health-economic analysis (a comprehensive review is included in Section 4). In particular, even though both medical and economic literature often assume that vulnerability is signalled by several health-outcomes indicators, the aforementioned regulations mainly focus on functional limitations as ADL and iADL, plus mental/cognitive impairment. Moreover, when ADL and iADL (or other functional deficits) are included in an empirical model in terms of the number of limitations experienced by a patient (e.g., “number of ADL lost” ,”number of iADL”), it is implicitly assumed that each loss of ADL or iADL carries the same weight in determining the latent vulnerability condition. Although theories on accumulation of diseases²³ tend to provide ground for it, these issues are less straightforward in LTC regulations. As it will be pointed out, not every limitation is always included as relevant outcome in the vulnerability assessment; moreover, weights associated to each deficit are often likely to differ, and some limitations are sometimes characterized as necessary or sufficient for eligibility, e.g., there are sorts of *veto* or *favor* criteria ([Marichal, 2004](#)).

In other words, although the medical literature provides some guidelines to economists in terms of which are the major health-outcomes that could signal a latent condition of vulnerability and therefore affect individual behaviour in terms of health-care utilization, there is not a unique definition for “objective dependency” in LTC regulations. Thus, individuals with equal medical-profiles and with a similar latent vulnerability condition, could be labelled as “objectively dependent” by one LTC programme but not by others, and therefore could be facing quite different choices in terms of care-utilization, depending on the country (or region) they live in.

²³ [Rockwood and Mitnitski \(2007\)](#), [Sourial *et al.* \(2010\)](#).

In this section, we intend to offer a broad picture of these systems, with an extended perspective that could foster comparability and emphasize differences as well as similarities.²⁴

As already mentioned, the analysis in this and the following section cannot be exhaustive for at least two main reasons. First, we focus on the sub-set of LTC programmes that feature an explicitly defined eligibility threshold based on carer-blind limitations. All of these regulations define an algorithm or a set of weights that allow to “compute” and “interpret” the result of the assessment-of-need in terms of the eligibility status. Although a considerable degree of subjectivity remains on the medical team (nurse, doctor, social workers) who conducts the assessment and on the medical/institutional committee (if provided by the law) who interprets it and comes to the final decision, having a regulation-set guideline provides us with a rather objective insight on how vulnerability is defined in a specific system. Conversely, other programmes either have a very broad approach on the vulnerability-assessment process (e.g., an assessment that covers also an individual’s social and familiar environment) or do not specify minimum-requirements for eligibility. When a programme defines the need of long-term care for each individual separately, its inherent flexibility prevents us from effectively identifying (for comparison purposes) a minimum-vulnerability level, simply because there is not a unique one.

Secondly, we are aware that almost every LTC institutional framework is vertically organized among government-levels, with a number of small care-programmes implemented at provincial and community levels, which have separate regulations and a subsidiary nature with respect to the main national or regional programmes. Since providing a comprehensive review of all these programmes falls out of the scope of this paper, our perspective focuses on national / regional programmes, in line with the recent literature.

3.1 DIMENSIONS AND MAIN OUTCOMES OF VULNERABILITY

The aim of this paragraph is to highlight differences as well as similarities between the LTC programmes with respect to how vulnerability is defined, i.e., which are the limitations (health outcomes) adopted as signals of a potential vulnerable condition (extensive margin). Among those outcomes, we investigate whether, in each LTC programme, there are un-equal weighting schemes, i.e., whether there are limitations which are relatively “more important” than others in determining a patient’s need-of-care (intensive margin).

Even when legal definitions of “dependency” or “need-of-care” are provided in the LTC regulations, they are usually generic and do not provide details on the specific outcomes (limitations) that are supposed to signal the presence of a certain loss of autonomy in an elderly individual²⁵. Conversely, the assessment-of-need scales are the ultimate realization of a legislation’s take on the complex concept of vulnerability (see the introductions to Sections 2 and 3).

As far as the assessment stage is concerned, all the programmes reviewed in this paper adopt some sub-set of the ADL and the iADL limitations, plus other specific tasks including cognitive/mental deficits. Many programmes, such as the

²⁴ Section 4 offers a review of the main features characterizing several LTC programmes in Europe, with a specific focus on the definition and the assessment of vulnerability conditions, as well as on the eligibility rules that give entitlement to care-services or benefits.

²⁵ We refer explicitly to the “elderly” population because the focus of this research is on LTC. As mentioned in the previous section, though, some programmes do not require a specific age in order to be eligible to care-services.

Austrian, the Flemish, the Czech, the German and the Spanish, include both the ADL and the iADL. Others, such as the Belgian home-care programme (INAMI), both of the French programmes, and the two Italian regional schemes considered, exclude iADL from the assessment set²⁶. Finally, the Belgian cash-benefit APA include an incomplete list of both taxonomies, even grouping them together in compound items²⁷. Besides ADL and iADL, all programmes include cognitive and mental abilities in their assessment-of-need²⁸ and some of them, as the German, the Belgian INAMI, the French and the one in Italy's Friuli-Venezia Giulia, include significant mental limitations and cognitive impairment as sufficient conditions for eligibility. Two regulations, the Austrian and the German, consider also some specific limitations related to post-surgery conditions or to advanced self-medication procedures (sections 4.1 and 4.6). Besides functional and mental limitations, age plays a role in various LTC regulations who are specifically designed for elderly population and therefore set minimum age-requirements for eligibility (60 years old for the French APA, 65 for the French Aide Sociale, the Belgian APA, Friuli – Venezia Giulia's CAF and Toscana's PAC).²⁹

When performing an assessment-of-need, the medical team has to evaluate each item, in order to acknowledge the extent to which a patient can autonomously perform that specific task. As it will be highlighted in Section 4, strong heterogeneities exist in the evaluation-strategies adopted by each programme. There are those, as the Austrian and the German, in which each limitation is characterized with a time-measure (hours per month / minutes per day) representing the estimated amount of care needed to provide assistance for the specific task³⁰. The eligibility threshold will therefore depend on the patient's overall time-requirements. In the Spanish system, each task carries a score between 1 and 100, and such scores are differentiated for individuals with cognitive limitations. The sum of the scores corresponding to the tasks in which the patient is limited constitutes the overall vulnerability score³¹, whose value will determine the eligibility status (the total score must be higher than 25). The reformed Czech programme Příspěvek na péči and the CAF programme in the Italian Friuli-Venezia-Giulia region include several items whose evaluation is made on a binary scale (1 = patient is not autonomous / 0 = patient is autonomous); the minimum eligibility threshold is a fixed number of limitations (3 for the Czech system, 2 for the Italian one).³² In the French AGGIR scale each item is evaluated on a three-level scales (full/medium/no dependence) and the eligibility-status depends on the total number of limitations, even though not all the items carry the same weight. The three Belgian and the Toscana (Italy) programmes follow a common strategy for evaluating activities of daily living: each item included in the assessment can be evaluated on a multiple-value scale (from 0 to 3, rather than from 1 to 4) according to the severity of the loss-

²⁶ As noted in the previous section, the French AGGIR scale include iADL tasks as “informative” variables that do not contribute at the definition of a patient's vulnerability condition.

²⁷ For example, the scale-item “nutrition” encompasses both the food-ingestion (an ADL) and the meal-preparation tasks (an iADL), see Table 4-6 and Table 6-1.

²⁸ France adopts the same assessment tool (AGGIR scale) for both the LTC programmes considered here. The presence of cognitive impairment determines eligibility to the APA program.

²⁹ As mentioned in Section 2.1, different approaches to the vulnerability assessment might include other dimensions as elements of interest. As an example, the role of informal care, namely the possibility to receive assistance from family members or relatives, is included in the vulnerability evaluation in the Netherlands ([Bakx et al. \(2014\)](#), [de Meijer et al. \(2011\)](#)), in Sweden ([Szebehely and Trydegård \(2012\)](#)) and in the Italian programmes who adopt the SVaMA scale ([Pilotto et al. \(2013\)](#)). More generally, these programmes assess more explicitly a patient's social network and living-environment, rather than primarily focusing on functional and cognitive deficits, and are usually labelled as *carer-sighted* approaches (see note 19).

³⁰ In both programmes the regulations provide nationwide fixed guidelines to ensure comparability in the evaluation across the country.

³¹ If the loss of autonomy is partial, the item-specific score is multiplied by a 0.9 factor.

³² The original Czech scale had 34 items with a minimum threshold of 12 limitations.

of-autonomy in each particular task. The sum of these scores produces an overall vulnerability index, and the eligibility status depends on whether this index is above or below a fixed threshold, even though in the Belgian in-kind programme (INAMI/RIZIV) weights are not equal among items, similarly to what happens in the AGGIR scale. It is worth recalling that in both the Belgian's INAMI, the German *Pflegeversicherung*, the French APA and the Friuli-Venezia Giulia's CAF, eligibility can be determined by significant cognitive impairment and/or behavioural issues, even when functional limitations are mild.

After having briefly summarized which are the dimension that are included or excluded from the assessments-of-need in our 11 LTC programmes, we now turn our attention on what happens inside each scale. Are there some items that have relatively more “importance” than others in the determination of a vulnerability level? Are there some limitations that are necessary and/or sufficient in order for an individual to reach the minimum eligibility threshold? The answers to these two questions appear, again, highly heterogeneous throughout different LTC systems. Among those programmes that consider both ADL and iADL, the Austrian and the German explicitly indicate that at least one limitation has to occur in each of the two groups of items in order for eligibility to be determined. A partial exception concerns cognitive and mental limitations in Germany, since they are sufficient conditions for eligibility.³³ Moreover, both programmes assign un-equal weights to the health outcomes included in the assessments-of-need: in the Austrian *Pflegegeld* losses of autonomy in washing, dressing and using the toilet are given a higher value (in terms of time requirements) than other ADLs, while cooking and doing household-tasks are the most important limitations among the instrumental activities. In Germany the highest weights are given to dependency in washing and eating, as well as to being incontinent. Out of the three Belgian programmes, the APA is the one that gives all its items the same weight. The Flemish Insurance is characterized by higher weights allocated to household- and cognitive- related dimensions.³⁴ Finally, the assessment-scale for the Belgian in-kind home-care assistance consider both washing and dressing as necessary and sufficient for determining a loss-of-autonomy condition. The AGGIR scale adopted in France labels an individual as in need-of-care if she suffers from mental and cognitive limitations, regardless of the presence of physical limitations. As for the set of ADL items (plus “moving inside the house”), the eligibility conditions (categorization GIR 4) is triggered by the presence of any two limitations.³⁵ The *Aide Sociale* programme, although based on the AGGIR evaluation, has a more generic definition since it aims at helping those with no problems in dressing or moving, but who need help with washing themselves, or with cooking or with daily tasks as shopping for groceries and small housework.³⁶

³³ This rule was introduced with the 2012 reform (Law on Realignment of Care / *Pflege-Neuansichtungs-Gesetz*), see Table 4-19.

³⁴ Although each single item has equal weight in the BEL-scale, the household-management and the cognitive/mental tasks are more numerous and detailed, thus resulting in a higher weight allocated to these two dimensions of vulnerability.

³⁵ Except for “moving inside the house”, which is not a sufficient limitation for eligibility when the only other loss-of autonomy concerns the “transferring” task. When the “moving” limitation is selected, one among “using the toilet”, “dressing”, “eating” or “washing” will be sufficient for eligibility.

³⁶ See the website of the French Administration: <http://vosdroits.service-public.fr/particuliers/F245.xhtml>.

Table 3-1, summary of LTC regulations

Country	Program (scale)	#items	ADL	iADL	Others	Eligibility threshold	main ADL	main non-ADL
AT	<i>Pflegegeld</i>	21	✓	✓	M, C	60h/month ⁺	washing, dressing, WC	cooking, housework
	<i>APA</i>	7	p	p	C	7 points	-	-
BE	<i>INAMI/RIZIV (BESADL)</i>	6	✓		C	washing & dressing / cognition	washing / dressing	cognition
	<i>Vlaamse zorgverzekering (BEL profielschaal)</i>	25	✓	✓	C	35 points	-	housework, cognition
CZ	<i>Príspevek na péči</i>	10 (34)	✓	✓	C	3 (12) deficits	-	-
DE	<i>Pflegeversicherung</i>	15	✓	✓	M, C	90m/day ⁺ cognition	washing, eating, continence	cognition
ES	<i>Promoción de la Autonomía Personal</i>	9	✓	✓	C	25 points	eating, WC	-
	<i>APA (AGGIR)</i>	8	✓*	**	C	2 ADL / cognition	-	cognition
FR	<i>Action Sociale (AGGIR)</i>	8	✓*	**	C	washing / cooking / housework	washing	cooking, housework
IT (FVG)	<i>CAF (KATZ)</i>	6	✓		C	2 ADL, cognition	-	cognition
IT (TO)	<i>PAC (MDS-HC)</i>	7	✓*		C	2 ADL & cognition	-	cognition

C = cognitive limitations; M = advanced medication procedures; p = partial coverage

* Incontinence not included; ** iADL do not enter the algorithm for GIR classification; ⁺ Austria: at least one ADL and one iADL limitations must occur. Germany: out of the 90m of need, at least 45m must come from ADL limitations.

For Czech Republic, numbers in brackets refer to old legislation.

The Spanish Insurance system gives, among ADLs, a higher importance to loss-of-autonomy in eating and in using the toilet. Equal weighting is kept among ADL tasks in the Czech scale, while among the iADLs the household management-tasks are split in two items, therefore assigning them a potential higher weight.³⁷ In the two Italian regional programmes ADLs are given equal weights, except for the “transferring task” which is split in two items in the Toscana scale, therefore giving it a potential higher weight. Table 3-1 summarizes and clarifies the aforementioned comparisons.

In order to provide a better understanding of the heterogeneity at the extensive margin (which limitations are included/excluded from the vulnerability assessment) as well as at the intensive margin (which limitations have higher

³⁷ The Czech assessment-of-need (Table 4-10) accumulates some ADL or iADL in the a same scale-item. Some unequal weighting, with respect to the ADL and iADL, could therefore arise between those tasks that are compounded together in a single item with those who are not, since each item in the Czech scale has the same weight regardless of it being a compound or not.

importance within each scale) of vulnerability evaluations, we need to implement the eligibility rules on a proper set of micro-data. This task, performed in paragraph 3.3, requires us to consider a comprehensive vector of functional and cognitive limitations, which we can obtain from the SHARE dataset, and which will constitute the common ground of medical-conditions over which the comparison exercise will be performed. This vector, whose elements exhaust the vulnerability outcomes covered by the assessment scales previously described, is primarily based on the ADL and iADL taxonomies by [Katz et al. \(1970\)](#) and [Lawton and Brody \(1969\)](#) described in Appendix 6.1. As mentioned in Section 2 and detailed in Section 4, these lists of limitations provide a good representation of the dimensions included in the various assessments-of-need of the eleven LTC programmes hereby considered.³⁸

Table 3-2 summarize the elements of this vector, grouped in an ADL and a non-ADL subsets. Among the ADL set, we split the ambulation item in the “moving” and the “transferring” tasks (the latter being originally present in the ADL list), since they are often assessed separately in actual LTC regulations. Albeit the original ADL + iADL taxonomies, two additional categories are included, which are: “behavioural / cognitive impairment” and “hygiene for post-surgery conditions or advanced medications”. The former concerns patient’s depression, mental stability and coherence, (coherence and mental impairment are included – to various extents – in a conspicuous number of regulations); the latter refers to those patients who have difficulties in performing advanced medications (“advanced” with respect to taking pills or following medical prescriptions) like enemas or maintenance of tubes/bags resulting from surgical operations. Furthermore, additional mobility limitations are included, as crouching and walking down stairs.

Table 3-2 shows, for each limitation (or group of limitations), the availability of a comparable individual information in the SHARE micro-dataset which will be described in paragraph 3.2. As shown, SHARE lacks information on just one group of tasks, namely the limitation in self-performing advanced medications like enemas or tube/bags maintenance.

³⁸ Besides, use of ADL and iADL as symptoms of vulnerability is justified in the medical literature. In the words of [Pel-Littel et al. \(2009\)](#), “the symptoms of frailty are many and various, but the most prevalent symptoms are deterioration of *Activities of Daily Living* (ADL) and *Instrumental ADL* (iADL), mobility, nutritional status, cognition and endurance”.

Table 3-2, summary of health-limitations included in assessment-of-need scales

ADL	Non ADL
Bathing & hygiene ✓	Communication ✓
Dressing ✓	Shopping for groceries/medicines ✓
Using the toilet ✓	Cooking ✓
Transferring ✓	Housekeeping ✓
Continence ✓	Doing laundry ✓
Feeding ✓	Moving outdoor ✓
<u>Moving indoor</u> ✓	Responsibility for own medications ✓
<u>Hygiene for post-surgery conditions or advanced</u>	Behavioral/Cognitive impairment ✓
<u>medications</u> ✕	Other mobility limitations ✓

✓ = information available in SHARE; ✕ = information missing from SHARE

The underlined tasks do not belong to the Katz's ADL list, but are treated as basic activities of daily livings in the regulations that include them.

3.2 DATA

In this section we will make use of micro-data from the second wave (2006) of SHARE³⁹ (Survey on Health, Ageing and Retirement in Europe), a European multidisciplinary survey on individuals aged 50 or older and on their spouses. Data were collected in 2004 and 2006, respectively, through a computer assisted personal interviewing (CAPI) programme; they cover a wide variety of disciplines, such as demography, economics, epidemiology, psychology and sociology. The design of SHARE is based on the Health and Retirement Study (HRS) and the English Longitudinal Study of Ageing (ELSA). We refer to [Börsch-Supan et al. \(2005\)](#) and [Börsch-Supan and Jürges \(2005\)](#) for a detailed review of the survey, its methodological details and the sample procedures.

SHARE provides detailed information about respondent's morbidity and disability status, based on self-reports of objective limitations and health conditions.⁴⁰ In particular, it contains a set of questions that allow us to build, for each individual, a simplified medical-profile (Table 3-2) comparable with the LTC regulations of the countries in our sample (see the next paragraph). Respondents are asked to report their dependency status in performing fourteen activities of daily livings⁴¹, which conform to the ADL and iADL taxonomies by [Katz et al. \(1970\)](#) and [Lawton and Brody \(1969\)](#).

³⁹ This paper uses data from SHARE wave 1 and 2 release 2.6.0, as of November 29 2013 (DOI: 10.6103/SHARE.w1.260 and 10.6103/SHARE.w2.260). The SHARE data collection has been primarily funded by the European Commission through the 5th Framework Programme (project QLK6-CT-2001-00360 in the thematic programme Quality of Life), through the 6th Framework Programme (projects SHARE-I3, RII-CT-2006-062193, COMPARE, CIT5- CT-2005-028857, and SHARELIFE, CIT4-CT-2006-028812) and through the 7th Framework Programme (SHARE-PREP, N° 211909, SHARE-LEAP, N° 227822 and SHARE M4, N° 261982). Additional funding from the U.S. National Institute on Aging (U01 AG09740-13S2, P01 AG005842, P01 AG08291, P30 AG12815, R21 AG025169, Y1-AG-4553-01, IAG BSR06-11 and OGHA 04-064) and the German Ministry of Education and Research as well as from various national sources is gratefully acknowledged (see www.share-project.org for a full list of funding institutions).

⁴⁰ All the questions are worded in order to be comparable across countries.

⁴¹ These are: (i) dressing, including putting on shoes and socks; (ii) walking across a room; (iii) bathing or showering; (iv) eating, such as cutting up one's food; (v) getting in and out of bed; (vi) using the toilet, including getting up and down; (vii) using a map to determine how to get around in a strange place; (viii) preparing a hot meal; (ix) shopping or buying groceries; (x) making telephone calls; (xi) taking medicines, following medical prescriptions; (xii) doing work around the house or garden; and (xiii)

Furthermore, the survey includes ten specific questions on *mobility limitations*⁴². All the aforementioned tasks are assessed on a dichotomous scale: a limitation can either occur or fail to occur, but no intensity is measured.

Depression and loss of orientation are covered by two different set of variables. First, the questionnaire assesses a set of 12 mood- and behaviour-related conditions (pessimism, depressed mood, suicidal thoughts, guilt, trouble sleeping, loss of interest, irritability, fatigue, inability to concentrate, lack of appetite, incapacity of enjoyment, tearfulness), that are then summarized in the EURO-D scale⁴³, whose values range from 0 to 12 depending on the number of occurring symptoms. A EURO-D value of 4 (or higher) has been demonstrated to be associated with a clinically significant level of depression.⁴⁴ Secondly, four questions on mental orientation and coherence ask respondents to report the current date, month, year and day of week; the number of correct answers is summarized in a generated variable (*orientation*) whose values range from 0 to 4 (the higher the better oriented). We choose to label as impaired (*orientation impairment*) respondents who gave zero or one correct answers.⁴⁵

The survey also includes information on *chronic conditions* and *symptoms* that the individual may suffer from,⁴⁶ her subjective well-being and life satisfaction as well as on other forms of health-care utilization (e.g., visiting the GPs or the dentist) and health-related behaviors (e.g., smoking, drinking, doing physical activities). Labour-market variables and economic variables are collected, e.g., details on current and past occupations, job opportunities in retirement age, sources and composition of income and wealth, as well as consumption and saving choices. Further socio-economic characteristics include education (both the ISCED classification⁴⁷ and the number of years of completed education), involvement in social activities, as well as information on respondents' children.

Our sample consists of the eleven countries, namely Austria, Belgium (Flanders, Wallonia and Bruxelles), Czech Republic, Germany, Italy (FVG and Toscana only), France and Spain (whose LTC programmes were commented in paragraph 3.1), plus Denmark, The Netherlands, Sweden and Switzerland. Moreover, since our analysis focuses on the

managing money, such as paying bills and keeping track of expenses. An additional question covers the dependency over incontinence, or the involuntary loss of urine. Details on ADL and iADL are included in Appendix 6.1.

⁴² The tasks covered are: (i) walking 100 meters; (ii) sitting for about two hours; (iii) getting up from a chair after sitting for long periods; (iv) climbing several flights of stairs without resting; (v) climbing one flight of stairs without resting; (vi) stooping, kneeling, or crouching; (vii) reaching or extending your arms above shoulder level; (viii) pulling or pushing large objects like a living room chair; (ix) lifting or carrying weights over 10 pounds/5 kilos, like a heavy bag of groceries 10; (x) picking up a small coin from a table.

⁴³ [Prince et al. \(1999\)](#).

⁴⁴ [Colombo et al. \(2011\)](#). Primary reference: [Dewey and Prince \(2005\)](#).

⁴⁵ [Verbeek-Oudijk et al. \(2014\)](#) perform and validate a Mokken analyses for cognitive impairment on SHARE data, resulting in a scale ranging from less to more impaired. They show that not being able to remember the name of the current month or year are the most severe signals of impairment.

⁴⁶ The chronic conditions should have previously been diagnosed to the respondent by a doctor. They include: (i) heart attack including myocardial infarction or coronary thrombosis or any other heart problem including congestive heart failure; (ii) high blood pressure or hypertension; (iii) high blood cholesterol; (iv) stroke or cerebral vascular disease; (v) diabetes or high blood sugar; (vi) chronic lung disease such as chronic bronchitis or emphysema; (vii) asthma; (viii) arthritis, including osteoarthritis, or rheumatism; (ix) osteoporosis; (x) cancer or malignant tumor, including leukaemia or lymphoma, but excluding minor skin cancers; (xi) stomach or duodenal ulcer, peptic ulcer; (xii) Parkinson disease; (xiii) cataracts; (xiv) hip fracture or femoral fracture. Other reported symptoms (if they were present for the 6 months before the interview) include: (i) pain in the back, knees, hips or any other joint; (ii) heart trouble or angina, chest pain during exercise; (iii) breathlessness, difficulty breathing; (iv) persistent cough; (v) swollen legs; (vi) sleeping problems; (vii) falling down; (viii) fear of falling down; (ix) dizziness, faints or blackouts; (x) stomach or intestine problems, including constipation, air, diarrhea.

⁴⁷ For details on the 1997 International Standard Classification of Education, see [OECD \(1999\)](#).

elderly population, we restrict our data to those individuals aged 60 or more. Furthermore, we excluded observations with missing information across all ADL, iADL and mental/cognitive items. The resulting population is made of 17,442 individuals. The average age is 70.8 years old, with the 25-th percentile at 64 years old, the median age at 69 and the 75-th percentile at 76. Females account for 53.7% of the overall population, while retired individuals and homemakers are, respectively, 75.6% and 12.5%. As far as the health-conditions are concerned, statistics show that limitations in iADL are more frequent than ADLs. On average, 20.6% of population have lost at least one iADL while 18.8% have at least one ADL limitation. A reason for this is that iADL require a more complex neuropsychological organization and a higher involvement of cultural and environmental influences, and therefore are more likely to be the first to “fall” in the context of the vulnerability process ([LaPlante, 2010](#)). We also report the share of individuals with at least two ADL lost, as well as those with at least two iADL lost; additionally, we include the jointly occurrence of these two kinds of disabilities, i.e., when any of them are present (1+ ADL or iADL loss) as well as when they are both present (1+ADL and 1+ iADL losses). Among the ADL and iADL taxonomies there are some deficits that appear more frequently in the population: limitation in dressing and in washing are the most frequent ADL, while difficulties in doing housework, cooking and moving outdoor are the most frequent iADL. This is, again, due to the different intrinsic complexity of the single tasks and on the hierarchical nature of the ADL and iADL.⁴⁸ Regarding mental limitations, average scores for the EURO-D and the “orientation” scale are reported. The following table summarizes some descriptive statistics of our sample.

⁴⁸ See footnote 136.

Table 3-3, Descriptive statistics on SHARE population, wave 2

	Standard population	AT	BE		CZ	F	DE	IT*	ES	DK	NL	CH	SE
			FL*	WAL									
N	17,442	884	1,204	643	1,648	1,767	1,677	225	1,490	1,500	1,520	882	1,897
Age (mean)	70.8	70.6	70.8	71.3	69.7	71.4	69.9	69.8	71.8	70.8	70	70.7	70.9
Age (p25)	64	65	65	64	63	65	64	64	65	64	63	64	64
Age (p50)	69	69	70	70	68	70	69	68	71	69	68	69	69
Age (p75)	76	76	77	76	75	77	75	75	77	77	75	76	77
Females	53.7%	58.4%	52.3%	56.6%	57.2%	57.5%	51.2%	52.7%	53.2%	54.1%	51.9%	54.1%	51.3%
Retired	75.6%	82.0%	72.0%	75.3%	94.6%	84.6%	79.9%	78.6%	54.9%	80.7%	60.9%	65.7%	78.3%
Homemaker	12.5%	13.6%	19.8%	15.6%	0.0%	9.1%	9.2%	13.6%	32.1%	1%	23.8%	12.6%	0.7%
<i>Health conditions:</i>													
1+ ADL	18.8%	16.4%	17.6%	27.4%	16.3%	18.6%	15.6%	20.4%	22.8%	15.3%	14.2%	12.8%	19.4%
1+ iADL	20.6%	22.6%	19.2%	30.9%	22.3%	23.6%	15.9%	19.5%	26.9%	17%	18%	12.5%	15.4%
2+ ADL	7.9%	7.2%	7.1%	11.2%	6.6%	7.8%	7.5%	8.1%	12.4%	5.5%	5.4%	4%	5.7%
2+ iADL	10.7%	12.0%	9.4%	16.8%	11.6%	12.3%	9.2%	12.2%	15.4%	8.8%	7.7%	4.6%	7%
1+ ADL or iADL	27.4%	28.1%	26.2%	38.8%	28.7%	30.2%	21.8%	27.2%	33.4%	22.7%	23.8%	19.3%	26.3%
1+ ADL and iADL	11.3%	10.9%	10.5%	19.5%	9.9%	11.9%	9.7%	12.7%	16.3%	9.6%	8.3%	5.9%	8.5%
1 st most freq. ADL	D 9%	D 9.3%	W 9.6%	W 15%	D 6.7%	D 11%	D 9%	D 10%	D 13%	I 7.2%	I 6.4%	I 5.1%	I 12.3%
2 nd most freq. ADL	W/I 7.9%	W 6.9%	D 8%	D 14%	W 6%	W 8%	W 7%	W 9%	W 12%	D 6.8%	D 5.8%	D 5.3%	D 7.1%
1 st most freq. iADL	HW 14%	HW 16.7%	HW 14%	HW 24.7%	HW 16%	HW 17%	HW 12%	HW 13.6%	HW 19%	HW 11.7%	HW 11.8%	HW 6.9%	HW 11%
2 nd most freq. iADL	MO 9.2%	MO 10%	MO 8.7%	C 13.6%	MO 11.3%	C 10.7%	C 8%	C 12%	MO 17%	C 7.7%	MO 6.2%	MO 5.1%	C 5.4%
EURO-D score		2.1 (2.1)	2.1 (2)	3 (2.4)	2.26 (2.2)	2.75 (2.3)	2 (2)	2.88 (2.5)	2.98 (2.7)	1.7 (1.8)	1.8 (1.9)	1.7 (1.8)	1.8 (1.8)
Orientation score (0-5, the highest the better)		3.84 (0.5)	3.7 (0.7)	3.64 (0.7)	3.67 (0.7)	3.64 (0.89)	3.78 (0.68)	3.79 (0.67)	3.34 (1.18)	3.74 (0.67)	3.73 (0.71)	3.86 (0.5)	3.8 (0.64)

Data: SHARE wave 2, individuals aged 60+.

C = limitation in cooking; D = limitation in dressing; I = urinary incontinence; HW = limitation in doing housework; MO = limitation in moving outdoor

3.3 LTC INCLUSIVENESS: CROSS-COUNTRY & CROSS-PROGRAM COMPARISONS

Many recent studies highlight the numerous and substantial heterogeneities existing among the LTC systems in Europe, but few of them focus on the assessment and eligibility frameworks. [Colombo and Mercier \(2012\)](#), as well as [Eleftheriades and Wittenberg \(2013\)](#), argue that different LTC-coverage schemes are the outcome of heterogeneous policy objectives, philosophies and institutional frameworks. In particular, [Colombo and Mercier \(2012\)](#) highlight the importance of the choice (by the LTC institution) of the target-population of LTC services. Their argument is not only

referred to the opportunity of proportionally reducing the granted allowances according to the recipient's income, thus giving relatively higher priority to individuals with lower resources, but also to the choice of which limitations should be prioritized by a LTC system, in order to give appropriate assistance to those who are more "vulnerable". Elaborating on the trade-off between cost-sustainability and adequacy of the provided benefits, they observe that "on cost-control grounds, support for domestic care and help with so-called instrumental activities of daily living (iADL) [...] should not be included in a basic package [...]. In practice, however, distinguishing between personal and domestic help can provide incentives for higher assessment-of-need and can be difficult to make, especially where services are jointly provided". Discussing on the choice of including iADL in the eligibility conditions, they refer to the hierarchy structure between ADL and iADL⁴⁹ and comment: "coverage of support for some iADL activities, as in Sweden, Denmark, Germany and Luxembourg, is reported to have helped prevent dependent persons with relatively high care needs from moving to even more expensive care settings. Maintaining flexibility to adjust benefit coverage to changing care needs is desirable on both adequacy and quality grounds".

We are now interested in gaining some insights on the degree of inclusiveness that these programmes-of-care exhibit with respect to a comprehensive set of medical conditions. In other words, we would like to investigate the consequences of applying different sets of rules on the same medical profile (a combination of health-outcomes), in terms of the eligibility status.

3.3.1 Formalization of inclusiveness rates

As highlighted in the previous paragraphs, the degree of vulnerability and the minimum eligibility threshold for public LTC services in Austria, Belgium, Czech Republic, France, Friuli-Venezia-Giulia, Germany, Spain and Toscana are determined by evaluating the patients' medical-profile, which are mainly based on a list of ADL, iADL and cognitive limitations (summarized in Table 3-2).⁵⁰

Let us state two preliminary definitions:

DEFINITION 1: Let $\mathbf{c}$ be the vector of the aforementioned health-conditions, such that $\mathbf{c} = \{c_1, \dots, c_k, \dots, c_H\}$ where $|\mathbf{c}| = H$ is the total number of health-conditions for which we have information.

DEFINITION 2: A generic vulnerability medical-profile i would be a vector $\pi_i = \{\alpha_{i_1}, \dots, \alpha_{i_k}, \dots, \alpha_{i_H}\}$, where each element is such that:

$$\alpha_{i_k} = \begin{cases} 1 & \text{if limitation } c_k \text{ occurs} \\ 0 & \text{if limitation } c_k \text{ is absent} \end{cases}$$

As an example, $\pi_i = \{1, 1, 0, 0, 0, \dots, 0, 0, 0, 1\}$ is a vulnerability profile in which only three limitations are validated (namely the first, second and last) while the others are not present. Generalizing, we define:

⁴⁹ See footnote 136 and Table 3-3.

⁵⁰ Age is, sometimes, an additional socio-demographic criterion, while household (or individual) income is often taken into account for redistributive purposes: it determines the monetary amount of the benefits, yet it does not have discriminatory power to define eligibility and non-eligibility.

DEFINITION 3: Let us define $\Pi = \{\pi_1, \dots, \pi_i, \dots, \pi_p\}$ as the set of all the medical-profiles that can be built from the H elements of $\mathbf{c}$.

Given that each profile π has H elements, the set Π will contain $P=2^H$ profiles, which correspond to all the possible combinations of the deficits related to ADL, iADL, cognitive and mental functioning, which are summarized in Table 3-2.

In the SHARE micro-data, respondents provide self-reported information about the occurrence of each of the H health-conditions included in the $\mathbf{c}$ vector. For a generic individual i living in country J , it would therefore be possible to build a medical-profile $\pi_{i,J}$.

Each country J defines its specific assessment-of-need and eligibility criteria for LTC benefits. As mentioned in the previous section, multiple programmes can be implemented in the same country. Let us suppose that a country J implements R programmes of care. We, then, make the following assumption:

ASSUMPTION 1: the health-conditions included in vector $\mathbf{c}$ exhaust all the possible vulnerability outcomes that can be assessed by a LTC programme's regulation.

Assumption 1 guarantees that, once the limitations in $\mathbf{c}$ have been assessed, there are no other dimensions which need to be evaluated by a medical-team in order to provide a vulnerability assessment. This is a simplifying assumption since authorities operates with a potential degree of flexibility and there could be local subjectivity and variation in the need-assessment process; yet, we believe that choosing $\mathbf{c}$ as a *core-set* of outcomes is legitimate, given that, in principle, the regulations are explicated in the laws and are fixed nationwide (or region-wide).

DEFINITION 4: $\tilde{J}_r (\subset \Pi)$ is a sub-set a subset of objectively vulnerable (eligible) medical-profiles, determined by the eligibility rules for a generic program “ r ” in country J , among all the possible medical-profiles (set Π).

Alternatively stated: if an individual i living in country J would have her profile $\pi_{i,J}$ assessed by a medical-team following the regulations of LTC program r , this would determine whether $\pi_{i,J}$ belongs to the eligible-set $\tilde{J}_r$. That being the case, she would be entitled to receive the benefits from the r -th programme of care.

We are interested in the extensive margin of eligibility at the *national-framework* level, i.e., whether an individual is eligible to any LTC programme in her country. A simplified notation can therefore be adopted through

DEFINITION 5: let $\tilde{J}$ be the set of those medical-profiles which are eligible according to at least one of the LTC programmes implemented in country J .⁵¹

As long as $\tilde{J}$ is a set of medical-profiles, it is also a subset of Π , therefore $\tilde{J} \subset \Pi \neq \emptyset$.

We can now define the eligibility function f :

⁵¹ We do not investigate the intensive margin of eligibility, i.e., *how much* an individual scores in the eligibility scale and the amount of benefits that she is entitled to receive. Moreover, we do not distinguish between individuals who are eligible to multiple national programs of care and those that are eligible to just one.

DEFINITION 6: define $f_{\tilde{J}} : \Pi \rightarrow \{0,1\}$,

$$\text{where } f_{\tilde{J}}(\pi_{i,J}) = \begin{cases} 1 & \text{if } \pi_{i,J} \in \tilde{J} \\ 0 & \text{if } \pi_{i,J} \notin \tilde{J} \end{cases} \text{ is the characteristic function of set } \tilde{J}.$$

The function $f_{\tilde{J}}$ determines the eligibility status of an individual i (living in country J), according to the rules of all country J LTC programmes (i.e., whether her medical profile belongs to $\tilde{J}$).⁵²

By defining with N_J the population in J and summing up for each individual we obtain

$$(3.1) \quad E_{J,\tilde{J}} = \sum_{i=1}^{N_J} f_{\tilde{J}}(\pi_{i,J})$$

Where $E_{J,\tilde{J}}$ is the number of eligible individuals living in country J , according to their own country regulations. Specifically, these individuals are eligible to *at least one* of the programmes implemented in country J .

The inclusiveness-rate $\omega_{J,\tilde{J}}$, which represents the share of eligible citizens of J over J 's total population, is defined as

$$(3.2) \quad \omega_{J,\tilde{J}} = \frac{E_{J,\tilde{J}}}{N_J}$$

This is an inclusiveness-rate at the *national-framework* level,⁵³ given that the numerator represents the number of individuals covered by *at least one* national LTC programme. If the focus were to be kept at the *programme level*, multiple inclusiveness-rates could be calculated, one for each of the R program implemented in country J . We would therefore have:

$$(3.3) \quad \omega_{J,\tilde{J}_1} = \frac{E_{J,\tilde{J}_1}}{N_J}, \dots, \omega_{J,\tilde{J}_r} = \frac{E_{J,\tilde{J}_r}}{N_J}, \dots, \omega_{J,\tilde{J}_R} = \frac{E_{J,\tilde{J}_R}}{N_J}$$

Each $\omega_{J,\tilde{J}_r}$ represents the share of individuals living in J who are eligible to the specific r -th LTC programme, related to J 's total population.

From the analysis performed in the previous paragraphs, and from the review in Section 4, the characteristic function f is a typical example of non-linear combinations of health-indicators included both in the assessment-of-need and in our dataset.⁵⁴ As an example, the Austrian national LTC programme (Pflegegeld) assesses individuals' on fourteen dimensions (items), between ADL, iADL and cognitive limitations (paragraph 4.1). For each item, the legislation defines a nationwide amount of care-time (in hours per month), which is plausibly needed by any individual who is limited in that item. When the assessment is complete, the sum of all the amounts of care-time corresponding to the

⁵² We are implicitly assuming that the laws and the guidelines are carefully followed by the medical evaluators and by the medical-board who takes the final decision on eligibility. This is, admittedly, a simplifying assumption and yet, we believe, a necessary step to take in order to perform a comparative analysis.

⁵³ See footnote 51.

⁵⁴ Details on the correspondence between SHARE and the LTC legislations are reported in Section 4.

respondent's limitations is taken. The regulation defines as eligible all the medical profiles that present a need-of-care of at least 50 hours per month (raised to 60h since 2011), and has at least one limitation in ADL and one in iADL. In order to build the eligibility status for Austrian citizens, we compute the overall need-of-care of each respondent in Austria, then apply the aforementioned eligibility rule: the minimum need-of-care should be 50h per month, and at least one ADL and one iADL limitations should be reported.

3.3.2 Direct adjustment

By exploiting the information in the second wave of SHARE, we implement each country's LTC regulation on our selected sample (Section 3.2), thus being able to build an individual-specific dichotomous variable "eligibility status" for each individual: the variable will take value 1 when the individual is "eligible" according to his own country rules. Details on the adopted methodology for the implementation of LTC regulations on SHARE data are reported in Section 4.

Using (3.2), we compute the inclusiveness-rates for each country in our sample (our population is aged of 60 or older, see Table 3-3). What we obtain is the share of individuals covered by *at least one* national LTC programme, in percentage of the country population. These estimates are reported in the following table.⁵⁵

Table 3-4, crude inclusiveness rates

	Austria	Belgium		Czech Rep.	France	Germany	Spain
		Flanders*	Wallonia				
Inclusiveness rate (3.2)							
$\left(\omega_{J,J} = \frac{E_{J,J}}{N_J} \right)$	11.5%	8.2%	11.02%	8.3%	15.2%	8.2%	12.8%

Data: SHARE wave 2. See section 3.2.

The eligibility rates vary significantly among countries, from values higher than 12% in France and Spain, to values around 8% in Germany, Flanders and Czech Republic.

By looking at the definition of the inclusiveness rate (3.2), it appears clear that comparing these coefficients could lead to misleading conclusions. Each share $\omega_{J,\bar{J}}$ is, indeed, a "crude rate" driven by two main factors: the eligibility rules adopted in J and the characteristics of the population N_J . Both of these elements are, by definition, country specific. As a result, when comparing rates for different J we are not able to disentangle a "regulation-effect" from a "population-effect": the former corresponds to differences in the LTC regulations, while the latter is due to health-related and demographic characteristics of each country's population. We are not comparing homogeneous coefficients: a country could report a higher share of eligible individuals either because its LTC system is on average more inclusive, or because its population has worse health-conditions (e.g., there is higher incidence of ADL or iADL limitations), or both. Statistics on within-country age and gender distribution (Table 3-2) do not seem to highlight

⁵⁵ The inclusiveness-rates computed for each LTC program (at the *program-level*) instead that for each country (the *national-framework level*) can be found in the Appendix.

significant demographic variations between countries; by contrast, as Figure 3-1 shows, relevant heterogeneities exist on the incidence of vulnerability outcomes.

Figure 3-1, incidence of ADL and iADL among SHARE countries

The graph on the left provides insights on the occurrence of ADL and iADL limitations in the set of countries considered in this paper. The first two bars from the left represent the share of population reporting limitations in *at least one* ADL (first bar) or iADL (second bar). Notable differences emerge from the chart: Spain and Wallonia have a considerably higher ratio of ADL-limitations incidence, with France and Flanders also showing higher percentages than Austria, Germany and the Czech Republic. Although the share of iADL-dependent is generally higher than the ADL-dependent, this gradient is rather small in Germany and Flanders, whereas it is much larger in Austria, France and Czechia. Furthermore, having relatively higher iADL occurrences do not necessarily imply the same for ADLs: the Czech Republic and Austria have lower ADL ratios than Flanders, and very similar ones to Germany, yet they report much higher incidence for iADL.

As discussed in paragraph 3.1, many LTC regulations set their eligibility thresholds in order to “exclude” from the care-benefits those individuals who are “lightly” vulnerable. Although this is not common to all the reviewed frameworks, the accumulation of limitations is often crucial to trigger eligibility. The third and the fourth bars in the left graph of Figure 3-1 show the shares of population who suffer from, respectively, two ADL or two iADL. It is worth noting that, contrary to the impression given by the first bar, the 2+ ADL-dependent population is more homogeneous between countries, with the exception of Spain and Wallonia: countries like the Czech Republic and Flanders, who had higher incidence of *at-least-one-ADL* occurrences, lie now in-line or below the German percentage. This goes to show how the intensity of vulnerability might differ from the simple realization of *one* outcome of dependency. As far as the iADL are concerned, the overall picture remains quite heterogeneous even when considering only the individuals who suffer from at least two of them.

Another feature that is sometimes required for eligibility by LTC regulations (e.g., in Austria and Germany) is the concurrent existence of limitations in both ADL and iADL. The graph on the right-hand side of Figure 3-1 illustrates how heterogeneity remains evident when considering individuals suffering from at least one ADL *or* one iADL (blue bars). Looking at individuals with at least one ADL *and* one iADL (red bars), differences are, in general, less pronounced. With respect to Germany, countries like the Czech Republic, France and Flanders show higher “light vulnerability” rates ($1 + \text{ADL or } 1 + \text{iADL}$), yet much closer rates for harder conditions ($1 + \text{ADL and } 1 + \text{iADL}$).

As it usually happens when studying health-events, geographical comparisons require that the influences of different population characteristics be controlled for, with some method of adjustment. This strategy is frequently applied in epidemiology and demography, e.g., in order to compare mortality rates across countries: since these rates are strongly age-dependent, “comparisons of crude age-specific rates over time and between populations may be very misleading if the underlying age composition differs in the populations being compared. Hence, a single age-independent index, representing a set of age-specific rates, may be more appropriate. This is achieved by a process of age standardization or age adjustment”⁵⁶.

As an example, let us suppose that we need to compare mortality rates for two countries A and B. Instead of simply comparing the two “crude” rates, the direct method of standardization would require to apply age-specific death rates from the two populations (which are supposed to have different age structures) to a “standard” population (e.g. the U.S. population). The age-specific death rates from A and B would then be multiplied by the number of individuals in the same age group for the standard population, to produce an expected number of death (in the standard population) for each age group. These number should be summed up and divided by the total standard population to produce a summary age-adjusted mortality rate that would represent A and B if each had the same age structure as the standard population.⁵⁷ The directly-adjusted rates are intended as relative measures of mortality to be used for comparability purposes. They do not convey actual magnitude information about the issue at stake, nor an actual absolute measure of it, also given the – almost inevitable – arbitrary nature of the standard population chosen.

Following the same rationale, we aim at building an index of inclusiveness that would allow for comparability between different eligibility rules for LTC services. Let us set some new definitions:

DEFINITION 7: Y is a set of countries such that $Y = \{1, \dots, J, \dots, S\}$

DEFINITION 8: N_j is the population of country J and $N = \sum_{j=1}^S N_j$ is the “standard” population.

In particular, we include in Y all the countries for which we gathered institutional information in section 2, plus the other European countries included in the second wave of SHARE. The resulting standard population is therefore constituted by 17,442 individuals aged 60+ from Austria, Belgium, the Czech Republic, Denmark, France, Germany, Italy, The Netherlands, Spain, Sweden and Switzerland. Descriptive statistics for this population are reported in Table 3-3.

⁵⁶ [Ahmad et al.](#)

⁵⁷ [Lilienfeld and Stolley \(1994\)](#), [Curtin et al. \(1995\)](#), [Boyle and Parkin](#)

In order to obtain the directly-adjusted eligibility rates, we first implement each country eligibility rules on the standard population (see Section 4 for methodological details), thus obtaining the directly-adjusted eligible population, defined as:

$$(3.4) \quad E_{\bar{J}} = \sum_{j=1}^S \sum_{i=1}^{N_j} f_{\bar{J}}(\pi_{i,j})$$

Note the close relationship between (3.4) and (3.1)⁵⁸: the latter computes the number of individuals living in J and eligible according to country J's rules, while the former "extends" the same rules to all of the other countries population – like they were, indeed, all part of a "standard" population.

By dividing (3.4) by the total number of individual N we get **the directly-adjusted inclusiveness rate** $\omega_{\bar{J}}$ for the LTC regulations implemented by country J:

$$(3.5) \quad \omega_{\bar{J}} = \frac{E_{\bar{J}}}{N}$$

Since (3.5) computes the eligibility rates on the same standard population, it allows for comparisons between LTC regulations.

By repeating this procedure for each LTC regulation reviewed in section 4 (details in Appendix and summarized in Table 3-2), we obtain directly-adjusted (therefore: comparable) inclusiveness rates for 11 LTC programmes and 7 countries, which are summarized in Figure 3-2. Since for Belgium and France we collected information for more than one LTC programme, we report a *national-framework* inclusiveness rate, which represent the share of the standard population who is eligible to *at least one* programme of care, together with the *program-specific* rates, which represent the share of the standard population who is eligible to the specific programme of care. For all of the other countries, who implement a single national programme of care, the two approaches coincide. Moreover, since Flanders and Wallonia differ in terms of the LTC programmes offered, we report estimates separately. Numeric results are reported in Table 3-5.

⁵⁸ $E_{J,\bar{J}} = \sum_{i=1}^{N_j} f_{\bar{J}}(\pi_{i,j})$

Figure 3-2, directly-adjusted inclusiveness rates

The directly-adjusted coefficients of inclusiveness are considerably different from the “crude” rates reported in Table 3-4. When interpreting these coefficients and results it is worthwhile recalling that our analysis does not aim to compare countries’ Welfare States, nor their Long-Term Care frameworks as a whole, but rather focuses on the differences in the definition of the target population for home-care. Moreover, as already underlined, we are aware of the fact that, although they are in principle fixed nationwide, need-assessments can, in practice, be characterized by local subjectivity and variation and that minor supplementary programmes could be implemented at community levels.

At a first glance, France’s LTC is the one that has the highest percentage of coverage (above 13%) with respect to our standard population. By looking at the programme-specific inclusiveness-rates, the *Aide Sociale* (10.9%) has an inclusiveness degree higher than APA (8.6%). This is not surprising, given that the former aims at delivering assistance to “mild” conditions of vulnerability (mostly individuals with difficulties in shopping for groceries, in cooking or in washing activities), while APA targets more severe degrees of dependency and requires – roughly – the loss of two ADL or the presence of mental/cognitive disorders. Considered as a whole, the French system tackles vulnerability conditions with a double-target design, and our estimates show that it can succeed in covering a relatively high (and heterogeneous) share of population, although the contributions supplied through the *Aide Sociale* are smaller than those related to APA (we do not deal with redistributive effects of the LTC programmes at this stage of our research). At country level, APA and *Aide Sociale* are not complementary, since the regulation does not allow individuals who are already benefiting from APA to get assistance through the *Aide Sociale*, and this is why the overall country inclusiveness rate (13.2%) is lower than the sum of its two programmes’ rates.⁵⁹

⁵⁹ We hereby assume that vulnerable individuals eligible to APA do not choose to benefit from *Aide Sociale* instead.

Belgium citizens have access to different kinds of programmes, depending on the region they live in. Two programmes of care are implemented nationwide: the home-assistance in-kind provided by the National Institute for Sickness and Disability Insurance (Institut National d'Assurance Maladie-Invalidité/Rijksinstituut voor Zieke – en Invaliditeitsverzekering - INAMI/RIZIV), and the APA (allocation pour l'Aide aux Personnes Âgées). The former has a degree of inclusiveness of 7%. Such a rate is rather high compared to all the other programmes, when one considers that the INAMI is the only one (except for the French Aide Sociale) which targets specific limitations. Indeed, although basing its need-assessment on all of the ADLs and cognitive deficits, limitations in washing and dressing are necessary to trigger eligibility. Since these are exactly the ADL with the highest frequency of occurrence in our sample (Table 3-3), the INAMI programme reaches the 7% of individuals. Conversely, the APA programme has a more extensive assessment-of-need scale, yet its eligibility rules set a higher minimum vulnerability level and its adjusted inclusiveness rate is estimated at a lower percentage (5.2%). The overall inclusiveness rate for the public LTC system in Wallonia (8%) represents the share of individuals who are eligible to *at least one* of the aforementioned programmes of care. In the Flemish region (as well as in Bruxelles), citizens are offered a supplementary allowance (the assessment of need is performed through the so-called BEL scale), which targets individuals with a substantial vulnerability status defined by the accumulation of ADL, iADL and mental/cognitive limitations. This supplementary programme has a coverage degree of 4.1%; it is worth noticing that the 0.5% of the sample⁶⁰ is eligible to the specific Flemish programme but not to the INAMI or the APA. As a consequence, the adjusted coverage rate of the Flemish system is higher (8.5%) than the Walloon one (8%).⁶¹

LTC regulations in **Austria and Germany** result having different degrees of inclusiveness (10.3% vs 9%). As highlighted in sections 3.1 and 4, the two systems share several similarities in their assessments-of-need, while differences emerge in their eligibility rules. The Austrian regulation requires individuals to be limited in at least one ADL and one iADL, and to report a need-of-care corresponding to at least 50 hours per month. The German LTC Insurance sets a minimum eligibility threshold by setting two time-requirements: an individual should need at least 45 minutes per day (22.5 hours per month) for help with ADL, and an overall amount of 90 minutes per day (45 hours per month) when summing ADL and iADL. Although the overall requirements seem close, the German system puts more emphasis on ADL since it requires a specific minimum requirement of 45 minutes per day, not included in the Austrian regulation. The German regulation, with the latest reforms (see paragraph 4.7) grants eligibility to cognitively impaired individuals, while the Austrian regulation accounts for such impairments by adding 25 hours of need-of-care to the overall sum. Such different policies narrows down the distance in rates between the two national programmes.

The **Italian** LTC regional programmes included in this paper (for Friuli Venezia Giulia's CAF and Toscana's PAC) both base their vulnerability assessment on a (non identical) list of ADL as well as on cognitive and behavioural limitations (the latter, only for Toscana). Differences exist in their single-task evaluation (binary 0/1 in Friuli Venezia Giulia; on a scale from 1 to 4 in Toscana). Moreover, while the FVG programme grants eligibility to cognitively impaired individuals, the Toscana programme has a three-part evaluation that, broadly, requires the presence of functional, cognitive and behavioural limitations. Furthermore, Toscana gives slightly more weight to mobility

⁶⁰ The difference between the inclusiveness rates for Flanders and Wallonia.

⁶¹ From a resources-oriented perspective, receiving an additional allowance from the Flemish government can affect individuals behaviours and budget constraints. Our interest, though, is mainly coverage-oriented. We look at whether individuals are covered rather than uncovered, regardless of the intensity of the coverage itself.

limitations while excluding incontinence (which is, instead, part of the assessment-scale in FVG). Their directly-adjusted inclusiveness ratios are very different (9.2% vs 3.5%). It is worth noting that the classic *à la Katz* evaluation scale implemented in FVG shares some similarities with the French AGGIR scale adopted in the corresponding APA programme. As it was previously stated, they both require –roughly- the loss of two ADL or more to become eligible, and they both account for cognitive limitations. It is therefore not surprising that their respective inclusiveness rates are similar.

The **Czech** LTC regulation does not differ much from the Italian's FVG, since they both evaluate eligibility depending on the accumulation of limitations. The major feature of the Czech programme, which determines its relatively higher coverage-rate, is that iADL are included in the assessment while this is not the case for Friuli-Venezia Giulia.

Among the regulations that implement an analytic assessment-of-need for LTC services, the **Spanish** one has the lowest inclusiveness rate. In order to interpret this result, it is useful to compare descriptive information on eligibility rules (Table 3-1, Table 3-2) and on the standard population adopted in this analysis (Table 3-3). Although the Spanish assessment-of-need includes both ADLs and iADL, the weighting scheme adopted gives higher priority to limitations in nutrition, using the toilet (among ADLs) and preparing meals (among iADL): these do not occur in the population as frequently as those related to washing, dressing and doing housework, which are, instead, assigned a relatively lower weight.

Finally, the last bar on the right-hand side of the graph shows the percentage of individuals in our sample who are eligible to all the aforementioned national programmes, namely the Walloon, the Flemish, the German, the Austrian, the Spanish, the French and the Friuli-Venezia Giulia (excluding the low-inclusive Toscana's PAC). This share, 5.5%, hints at the high heterogeneity in the definition of vulnerability discussed in the previous Section. Even if many programmes have similar directly-adjusted inclusiveness rates, they are not necessarily covering the same individuals.

Table 3-5, directly-adjusted inclusiveness rates

	Directly-adjusted inclusiveness rate $\left(\omega_j = \frac{E_j}{N} \right)$	95% confidence interval
AUSTRIA	10.3%	[10.8% - 9.9%]
BE (FLANDERS)	8.5%	[8.9% - 8.1%]
BE (WALLONIA)	8 %	[8.4% - 7.6%]
<i>Belgium – INAMI</i>	7%	[7.4% - 6.6%]
<i>Belgium – APA</i>	5.1%	[5.5% - 4.8%]
<i>Belgium - BEL</i>	4.1%	[4.4% - 3.8%]
CZECH REPUBLIC	9.5 %	[9.9% - 9%]
FRANCE	13.2%	[13.7% - 12.7%]
<i>France – Aide Sociale</i>	10.9%	[10.4% - 11.4%]
<i>France – APA</i>	8.6%	[9% - 8.1%]
GERMANY	9%	[9.4% - 8.6%]
IT (FVG)	9.2%	[9.6% - 8.7%]
IT (TOSCANA)	3.6%	[3.8% - 3.3%]
SPAIN	6.9%	[7.3% - 6.6%]
eligible to ALL (except Toscana's PAC)	5.5%	[5.1% - 5.8%]

Data: 17,442 individuals aged 60+ from SHARE wave 2 (Austria, Belgium, Czech Republic, Denmark, France, Germany, Italy, Netherlands, Spain, Sweden, Switzerland)

3.3.3 Indirect adjustment

Alongside the direct-adjustment analysis performed in the previous paragraph, an alternative standardization strategy can be implemented, which is referred to as “indirect-adjustment”.⁶² This method is frequently adopted in order to compare two countries event-occurrences, and it is conveniently described by [Boyle and Parkin \(1991\)](#) as a comparison between an *observed* and an *expected* number of cases.

Let us suppose that our goal is to compare the r -th LTC programme available in country J with the r -th programme available in country Z. Let us also recall that our focus is on a programme's coverage-rate, i.e., the share of individuals who are labelled as “eligible” to LTC services according to a specific regulation.

Taking country J as the benchmark population, the indirect-adjustment method would compare the share of J-population eligible under the r -th programme in J (J_r) (i.e., the *observed* eligible population) with the share of J-population that would be eligible under the regulation of the r -th programme from country Z (Z_r). Formally, we define:

⁶² [Lilienfeld and Stolley \(1994\)](#), [Boyle and Parkin \(1991\)](#)

$$(3.6) \quad E_{J,\tilde{J}_r} = \sum_{i=1}^{N_J} f_{\tilde{J}_r}(\pi_{i,J})$$

where $E_{J,\tilde{J}_r}$ is the *observed* number of eligible individuals living in country J, according to their own country r -th programme's regulation.⁶³

Furthermore, we define:

$$(3.7) \quad E_{J,\tilde{Z}_r} = \sum_{i=1}^{N_J} f_{\tilde{Z}_r}(\pi_{i,J})$$

Where $E_{J,\tilde{Z}_r}$ is the *expected* number of eligible individuals living in country J, according to LTC regulations of the r -th programme from country Z.⁶⁴

The **indirectly-adjusted inclusiveness-ratio** $\chi_{\tilde{J}_r,\tilde{Z}_r|J}$, is defined as the ratio between the *expected* eligible population in country J under the regulations of programme Z_r (3.7) and the *observed* eligible population in country J under the regulations of programme J_r (3.6):

$$(3.8) \quad \chi_{\tilde{J}_r,\tilde{Z}_r|J} = \frac{E_{J,\tilde{Z}_r}}{E_{J,\tilde{J}_r}}$$

The resulting coefficient $\chi_{\tilde{J}_r,\tilde{Z}_r|J}$ should be interpreted differently according to its value being greater or smaller than unity. Whenever $\chi_{\tilde{J}_r,\tilde{Z}_r|J} > 1$, the eligibility rules of Z_r are more inclusive than those of J_r , when both are applied to the same population in J. The opposite is true when $\chi_{\tilde{J}_r,\tilde{Z}_r|J} < 1$, while when the ratio equals unity the two regulations have the same coverage-rate with respect to the population in J.

Table 3-6 reports the indirectly-adjusted inclusiveness rates for each pair of LTC programmes reviewed in Section 2, using the same dataset as in Section 3.3.2, as well as the same methodology for simulating LTC regulations.

⁶³ The adjective “*observed*” just indicates that the regulation J_r was actually designed for the population in J. In other words, it is not a counter-factual implementation.

⁶⁴ The “*expected*” eligible population is the result of a counter-factual implementation of legislation Z_r , which was originally designed for country Z, on the population in J.

Table 3-6, Indirectly-adjusted inclusiveness ratios, comparisons at the programme-levels

Population J	Observed programme $\tilde{J}_r$	Treatment $\tilde{Z}_r$										
		Austrian <i>Pflegegeld</i>	Belgium			Czech <i>Príspevek na péči</i>	France		German <i>LTCI</i>	Italy	Spanish <i>Ley of Dependencia</i>	
			<i>INAMI</i>	<i>APA</i>	<i>BEL</i>		<i>APA</i>	<i>Aide Sociale</i>		<i>FVG</i>	<i>TO</i>	
AT	Austrian <i>Pflegegeld</i>	1.00	0.64	0.49	0.32	0.92	0.77	1.10	0.80	0.79	0.29	0.76
BE	Belgian <i>INAMI</i>	1.75	1.00	0.73	0.59	1.52	1.27	1.94	1.50	1.37	0.47	1.02
BE	Belgian <i>APA</i>	2.41	1.38	1.00	0.82	2.09	1.74	2.67	2.07	1.88	0.64	1.41
BE (Fl)	Belgian <i>BEL- scale</i>	3.13	2.05	1.47	1.00	2.71	2.37	3.52	2.92	2.68	0.66	1.87
CZ	Czech <i>Príspevek na péči</i>	1.03	0.54	0.46	0.36	1.00	0.84	1.13	0.85	0.86	0.32	0.65
FR	French <i>APA</i>	1.19	0.84	0.58	0.49	1.08	1.00	1.24	1.04	1.06	0.44	0.76
FR	French <i>Aide Sociale</i>	0.96	0.68	0.47	0.39	0.87	0.80	1.00	0.83	0.86	0.36	0.61
DE	German <i>LTCI</i>	1.16	0.76	0.62	0.39	1.02	0.96	1.22	1.00	1.04	0.50	0.89
ES	Spanish <i>Ley of Dependencia</i>	1.33	1.24	0.82	0.72	1.30	1.36	1.23	1.30	1.42	0.61	1.00

Data: 17,442 individuals aged 60+, from SHARE wave 2 (Austria, Belgium, Czech Republic, Denmark, France, Germany, Italy, Netherlands, Spain, Sweden, Switzerland). See Table 3-3 for country-specific descriptive statistics.

The first two columns describe the benchmark populations and regulations over which the indirect-adjustment analysis will be performed, e.g., the Austrian *Pflegegeld* applied on the Austrian population, the Spanish *Ley of Dependencia* applied to the Spanish population, etc.

The subsequent columns list the LTC regulations that are simulated on the benchmark populations indicated in each row. Each cell of the table reports an indirectly-adjusted inclusiveness ratio between the column-programme and the row-programme as in (3.8), that is, the ratio between (i) the eligible population in row-country J when adopting the column-regulation $\tilde{Z}_r$; and (ii) the eligible population in country J when adopting the “original” row-regulation $\tilde{J}_r$. A coefficient greater than 1 means that the column-regulation exhibits a higher coverage-rate than the corresponding native one in the row-country (i.e., the eligible population in the row-country would be higher when applying the column-regulation, than when applying the original row-regulation).

As an example, the ratio corresponding to the comparison between the Austrian Pflegegeld and the Czech Príspevek na péči, when both are applied to the Austrian population, is 0.92. This indicates that the Czech LTC regulation is less inclusive than the Austrian one, with respect to the same (Austrian) population: in particular, the number of

Austrian citizens who would be eligible under the Czech regulation amounts to 92% of the number of Austrian citizens who are eligible under their own country's regulations.

Table 3-6 may be read row-wise as well as column-wise. A row-wise analysis allows to keep fixed a country population (e.g., Austrian population for the first-row) and to compare each LTC regulation reviewed in this paper with the native regulation for Austria (the Austrian *Pflegegeld*). A coefficient higher than 1 signals that the column regulation which is being counter-factually implemented on the Austrian population is able to cover a wider quota of individuals with respect to the native Austrian *Pflegegeld*. A column-wise review allows to keep fixed the “treatment” regulation and to verify which are the consequences of implementing it on various populations, comparing its inclusiveness with the native-regulation corresponding to each row-country.

The coefficients in Table 3-6 confirm the results of Section 3.3.2, and we refer to that paragraph for more exhaustive comments. Indeed, it is easy to see that the column corresponding to the French Aide Sociale contains only coefficients higher than unity, which highlights the programme’s relative higher inclusiveness compared to every other regulation in this analysis. Also it is confirmed that the Austrian and the Czech cash-benefits have higher coverage power, while the Toscana’s and the Flander’s BEL regional-specific programmes are characterized by lower inclusiveness ratios.

Since some countries implement more than one nationwide LTC programme, it is again interesting to compare LTC frameworks (i.e., set of programmes) rather than the single programmes per-se. This implies that, instead of having two programmes for France and three programmes for Belgium we will now include one *framework* for France and *two* regional-frameworks for Belgium. An individual eligible under the French framework is *either* covered by APA *or* by Aide Sociale. An individual eligible under the Flemish LTC framework is covered by *at least one* among the INAMI/RIZIV, the APA or the Flemish additional allowance; a Belgian citizen from Wallonia is eligible if she is covered by *at least one* among the INAMI/RIZIV or the APA programme. Results of the *national-frameworks* comparisons are reported in Table 3-7, and confirm what was shown in the direct-adjustment analysis. The French framework is always the more inclusive one, no matter what the comparison is: we already know that this result is driven by the Aide Sociale programme which covers lighter forms of dependency. Beside France, the Austrian and the Czech frameworks are those who show the highest inclusiveness ratios in the table (column “Austria” and “Czech-republic”).

Table 3-7, indirectly-adjusted inclusiveness ratios, comparisons at the national-framework levels.

Population J	Observed framework $\tilde{J}$	Treatment $\tilde{Z}_j$								
		AUSTRIA	BELGIUM		CZECH REP.	FRANCE	GERMANY	ITALY		SPAIN
			FL	WAL				FVG	TO	
AT	Austria	1.00	0.76	0.72	0.92	1.24	0.80	0.79	0.29	0.76
BE-FL	Belgium (Fl)*	1.24	1.00	0.96	1.07	1.64	1.16	1.06	0.26	0.74
BE-Wal	Belgium (Wal)*	1.59	1.12	1.00	1.38	2.01	1.23	1.11	0.53	0.91
CZ	Czech Republic	1.03	0.81	0.73	1.00	1.40	0.85	0.86	0.32	0.65
FT	France*	0.77	0.67	0.63	0.70	1.00	0.67	0.69	0.29	0.49
DE	Germany	1.16	0.87	0.84	1.02	1.41	1.00	1.04	0.50	0.89
ES	Spain	1.33	1.38	1.33	1.30	1.60	1.30	1.42	0.61	1.00

* An individual eligible under the French framework is either covered by APA or by Aide Sociale. An individual eligible under the Flemish LTC framework is covered by at least one among the INAMI/RIZIV, the APA or the Flemish additional allowance; a Belgian citizen from Wallonia is eligible if she is covered by at least one among the INAMI/RIZIV or the APA programme.

Simulation performed on individuals aged 60+, from SHARE wave 2. See Table 3-3 for country-specific descriptive statistics.

4. ELIGIBILITY REGULATIONS IN EUROPE AND THE SHARE DATA

This last Section offers details on eleven major programmes of home-based care for the Elderly in Europe. The countries covered are Austria, Belgium, Czech Republic, France, Germany, Spain and Italian regions such as Friuli – Venezia Giulia and Toscana (see paragraph 2.1 for a preliminary classification and Section 3 for an overall comparison).

Within each country-paragraph, we also match the assessment-of-need scales and the eligibility rules with the information from the SHARE survey (wave 1 and wave 2), whose data are described in Section 3.2. Nearly all of the tasks included in the LTC regulations have a close correspondent in SHARE, yet some adjustments had to be made, as it will be highlighted hereafter. The aim of this correspondence-exercise is not to replace or mimic the work and the expertise of the trained professionals who actually conduct the assessments in the field. Our goal is to implement legal benchmarks into our micro-data in a prudent and robust fashion, in order to identify a sub-population of “eligible individuals” out of the total sample. A similar exercise is conducted by [Jiménez-Martín and Prieto \(2010\)](#), who match the Spanish rules for LTC with national data from the Informal Support Survey, containing information about Spanish older people with disabilities (aged 60+) who receive informal care.

Three major issues must be acknowledged when comparing actual legislations with micro-data information. *First*, as already mentioned, the correspondence between *each* assessment-of-need and the SHARE survey is not perfect: some information are not available in the data, and some medical definitions and terms may slightly differ. *Secondly*, most of the evaluation of functional or cognitive limitations in SHARE are dichotomous, i.e., a limitation can either occur or fail to occur, but no intensity is measured. Although this is consistent with Katz’s ADL and Lawton-Brody’s iADL original design, some comparability issues arise with the LTC regulations adopting a multi-level evaluation in their need-assessment (e.g., requiring information about the *degree* of the loss-of-autonomy). Nevertheless, it should be

highlighted that, regarding ADL iADL and mobility limitations, SHARE respondents are asked not to report difficulties that are expected to last less than three months. *Lastly*, the information collected in SHARE are self-reported, even though the interviewer is able to signal unreliable answers. Respondent' subjectivity is, therefore, a potential issue that affect also the information on the health-status, e.g., the occurrence of ADL or iADL limitations.⁶⁵

4.1 AUSTRIAN *PFLEGE*GELD

Austrian regulations over long-term-care programmes do not provide a direct medical definition of *vulnerability*. Yet, the profile of a person in need corresponds to “an individual who needs frequent help from others in tasks that primarily affect their personal lives, and who would be seriously exposed in everyday life without that support”.⁶⁶

Eligibility for the Austrian's major cash-benefit programme (*Pflegegeld*) is based on individual requirements of care and its assessment-of-need follows a uniform federal set of guidelines defined by the Regulations on the Classification of the need-of-care (*Einstufungsverordnung*⁶⁷) related to the Federal Long-term-care Act (*Bundes-pflegegeld-gesetzes*⁶⁸). Austrian citizens can be granted the allowance upon a legal entitlement, a LTC insurance, regardless of their income or age and of what caused their limitations in the first place. They have also a high degree of freedom in the usage of the benefit, which is tax-free, for financing their long-term-care services, although the allowance can be converted into an in-kind benefit in case of improper use of the money.⁶⁹

The assessment-of-need covers a wide number of potential functioning limitations (ADL and iADL), together with a specific formalization of a potential need-of-care for post-surgery conditions or complex auto-medication. What is peculiar to this vulnerability assessment is that each limitation is converted in a specific amount of time, measured in hours per month. Each benchmark is, indeed, the minimum amount of care that - the law assumes - should be needed by a patient suffering from that deficit. The following table lists the dimensions of vulnerability together with their respective minimum amount-of-care:

Table 4-1, Austrian *Pflegegeld* assessment-of-need and the SHARE data

Core / Auxiliary	Limitation	Fixed need-of- care (hours/month)	SHARE tasks (binary: yes / no)
c	Daily body care	25	Bathing or showering
c	Preparation of meals	30	Preparing a hot meal
c	Taking meals	30	Eating (+cutting up your food)
c	Defecation	30	Using the toilet (+ getting up or down)
c	Dressing and undressing	20	Dressing (+ putting on shoes and socks)
c	Cleaning for incontinence sufferers	20	Incontinence or involuntary loss of urine
c	Colostomy care	7.5	-
c	Care cannula tube care	5	-
c	Catheter care	5	-
c	Enemas	15	-
c	Taking medication	3	Taking medications

⁶⁵ Similar concerns are expressed by [Bonsang \(2009\)](#) and [Balía and Brau \(2013\)](#). Reliability of self-reported health-conditions is investigated in [Bound \(1991\)](#), [Baker et al. \(2004\)](#), [Dwyer and Mitchell \(1999\)](#), [LaPlante \(2010\)](#). A cross-survey comparison between HRS, SHARE and ELSA is performed in [Chan et al. \(2012\)](#).

⁶⁶ BGBl. (Bundesgesetzblatt) Nr. 110/1993, BGBl. II Nr. 37/1999

⁶⁷ BGBl. (Bundesgesetzblatt) II Nr. 37/1999

⁶⁸ BGBl. (Bundesgesetzblatt) Nr. 110/1993

⁶⁹ [MISSOC \(2014\)](#)

c	<i>Mobility aid in the narrow sense</i>	15	Walking across a room <i>or</i> Getting in or out of bed
a	<i>Motivational talks</i>	10	EURO-D scale
a	<i>Emptying and cleaning the toilet chair</i>	10	-
a	<i>Procuring of food and medicines</i>	10	Shopping for groceries
a	<i>Cleaning the home and personal effects</i>	10	Doing work around the house
a	<i>Care of underwear and towels</i>	10	Doing work around the house
a	<i>Heating the living space (+procuring of fuel)</i>	10	Doing work around the house
a	<i>Mobility aid in a broader sense</i>	10	Using a map to figure out how to get around in a strange place
	<i>Cognitive impairment*</i>	25*	Orientation in time (day, week, month, year): cannot answer three or more

Gesamte Rechtsvorschrift für Einstufungsverordnung zum Bundespflegegeldgesetz, BGBl. II Nr. 37/1999, BGBl. II Nr. 453/2011

*Since January 1st, 2009 ⁷⁰

Few points are worth stressing, with respect to the *Pflegegeld* assessment-of-need.

- A first inspection of the table suggests that vulnerability is depicted in quite a number of tasks, which are mainly divided in two groups: *core* and *auxiliary* activities (*Betreuungs-Maßnahmen* and *Hilfs-Verrichtungen*).
- The first category coincides partially with the Katz's Activities of Daily Living, which are all individually assessed in the screening. The tasks related to *going to the toilet* and *eating* have a benchmark time of care of 30 hours per month each (1 hour per day), as it is for the *meals preparation* activity (which belongs to the iADL list by Lawton). *Daily body care* is supposed to take 25 hours per month (two times a day, 25 minutes each) while *dressing and undressing's* time is estimated in 20 hours per month (two times a day, 20 minutes each). If an individual suffers from incontinence, additional time is allotted (20 hours a month, four times a day with 10 minutes each) for performing hygiene tasks. As for the *mobility* task, the Austrian Regulation includes the assessment of the need for *in-house mobility* help, encompassing both the *Transferring* task from the Katz's ADL (moving in and out of bed or chair unassisted) and the broader activity of moving inside one's own house or apartment. *Taking medications* (one of Lawton's iADL) is included as a core activity and requires 3 hours per month (6 minutes per day). It refers to the ability to properly prepare and self-administer medications, injections and inhalations, including the task of remembering the intake schedule. The last four tasks included in the screening are much more specific than the ones listed before, and relates to specific medications or procedures, and to a population who had undergone specific medical surgery. These tasks involve activities such as self-administered enemas (15 hours per month, 30 minutes per day), care and maintenance of a tracheal cannula, a gastric tube (5 hours per month, 10 minutes per day), a catheter (5 hours per month, 10 minutes per day) or an artificial anus (7.5 hours per month, 15 minutes per day).
- Alongside the core activities the screening comprises seven *auxiliary* tasks, which mainly refer to the Lawton's Instrumental ADLs such as house-works (*cleaning the household, doing laundry and heating the living space*), *shopping for groceries or medicines* and *moving outside the house*. An additional dimension is comprised to account for the potential difficulties of those who use a toilet chair, and assigns 10 hours-of-care per month for those unable to empty and clean their chair. A last task, *motivational talks*, which targets those with mental or spiritual (sic) limitations who need help in planning their daily activities in order to live an active and independent living, can account for 10 hours per month.
- Since January 1st, 2009, people with mental illnesses, dementia or severe behavioural disorders are allocated a fixed supplementary amount of care-time in terms of 25 hours per month.⁷¹
- As a last note, the assessment-of-need described above builds a *weighted* measure of vulnerability, since each dimension that concurs in defining the dependency-status is weighted throughout the amount of hours-of-need requested for that specific limitation. This results, as an example, in a difficulty related to nutrition (*taking meals*, 30 hours per month) having a double weight with respect to *mobility limitations* (15 hours per month) in defining vulnerability. In this perspective, from the list of activities shown above it is easy to see how the *core-activities* are generally weighted more than the *auxiliary* ones, highlighting

⁷⁰ [BMASK \(2013a\)](#)

⁷¹ [BMASK \(2013a\)](#)

the conviction, by the geriatricians and policy makers who generated this assessment method, that ADLs play a much higher role than iADLs in making an individual vulnerable.

The care allowance is provided to individuals who present a decline in functional status that require at least 60 hours of need-of-care per month and is expected to last for at least 6 months due to a physical, mental or emotional disability or sensory impairment in *at least one* core activity and *at least one* auxiliary activity.⁷²

The cash-benefit is paid monthly, for twelve months a year, and its amount depends on the patient's level of need. Nevertheless, the allowance is paid directly to the person in need, without any obligation to pay for care or to use care services (OECD Health Statistics 2014). Although the minimum amount of need is 60 hours per month (out of a maximum of 275.5), which allows for a monthly benefit of €154,20, vulnerable elderlies are offered higher benefits as long as their demand-of-care grows, up to a maximum of € 1.655,80. Indeed, seven levels of eligibility are defined by law, as summarized in the following table.

Table 4-2, *Austrian Pflegegeld eligibility rules*

Level	Need-of-care per month for at least one core and one auxiliary task	Allowance € per month (2013)
I	at least 60h (50h before 01/2011)	€ 154,20
II	at least 85 h (75h before 01/2011)	€ 284,30
III	at least 120 h	€ 442,90
IV	at least 160 h	€ 664,30
V	at least 180 h of care needed per month, if an unusual need for LTC is required.	€ 902,30
VI	at least 180 h of care needed per month, if (1) care measures are required, which cannot be coordinated in terms of time and these are provided on a regular basis during day and night or (2) the continuous presence of a care giver is required during day and night, because it is probable that there is a danger for the care recipient of for other persons.	€ 1.242,00
VII	at least 180 h of care needed per month, if (1) it is not possible for the four extremities to move intentionally or (2) a similar situation occurs.	€ 1.655,80

Updated from [Riedel and Kraus \(2010\)](#) and [BMASK \(2013b\)](#).

In order to be granted the cash benefit, an application must be submitted to the competent social insurance institution, i.e., the one that pays the pension or annuity to the patient (*Pensionsversicherungs-Anstalt, die Versicherungsanstalt öffentlich Bediensteter, die Sozialversicherungsanstalt der Bauern*). Those who get no pension should submit the application to the Pension Insurance Institute. After the application is filed, an appointment is scheduled for an in-house assessment-of-need⁷³, which is usually performed by a doctor and a nurse-specialist together with the elderly patient and a trusted third person, who might cooperate in giving information about the type of care needed. When needed, other professionals from different fields (Social Service, Psychology, Psychotherapy) can be involved in the evaluation. Basing on the medical examination a decision is taken, by the insurance institution, about the degree of vulnerability of the applicant and therefore his eligibility level. In case of positive decision, the allowance is paid retroactively starting from the month in which the application has been submitted. If the patient does not agree with the decision, either

⁷² [BMASK \(2013a\)](#)

⁷³ See also the Formular 703-25 "Determination of care requirement in addition to the medical opinion" in "Gutachterfibel-Bundespflegegeld (2009), Pensionsversicherungsanstalt (Pension Insurance Fund), available on-line. See also the Formular 703-25 "Determination of care requirement in addition to the medical opinion" in the Pension Insurance Fund report [Pensionsversicherungsanstalt \(2009\)](#) available on-line (in German).

because he has been excluded from the care allowance or because he believes he belongs to a higher dependency level, he can appeal against it to the Labour and Social Court.

4.2 THE BELGIAN HOME NURSING-CARE (INAMI/RIZIV)

Home nursing care in Belgium is, to various extents, reimbursed by the National Institute for Sickness and Disability Insurance (*Institut National d'Assurance Maladie-Invalidité/Rijksinstituut voor Zieke en Invaliditeitsverzekering* - INAMI/RIZIV), who is responsible for the general organization and financial management of the federal compulsory public health insurance.^{74 75} As described in [Sermeus et al. \(2010\)](#), “its most important tasks are to prepare and implement legislation and regulation, to prepare the budget, to monitor the evolution of health care spending, to control whether legislation and regulation are correctly implemented by health care providers and sickness funds and to organise the consultation between the different actors involved in the compulsory health insurance”.

Benefits in-kind, i.e., formal home nursing-care, are provided irrespectively of patients' age or income but accordingly to their vulnerability conditions. The degree of reimbursement and the method of payment (fee-for-service or lump-sum payment) depend indeed on the applicant's degree of dependency. As a tool for the assessment-of-need, NIHDI adopted an ADL scale⁷⁶, slightly adapted from [Katz et al. \(1970\)](#), which includes six items on functioning and two on mental coherence and orientation. Patient's dependency or need-of-care for each item is scored on a four-step scale for each item (from 1 to 4), where 0 corresponds to full-autonomy and 4 corresponds to impossibility to perform the specific task. Dependency-status on a single item arises when the need-of-care is either severe (3) or full (4).

Table 4-3, Belgian assessment-of-need for home nursing-care

Criteria	Score 1	Score 2	Score 3	Score 4
<i>Washing</i>	Able to wash him/herself without help	Needs assistance in washing above or below the waist	Needs assistance in washing above and below waist	Must be fully supported in washing
<i>Dressing</i>	Able to dress and undress without help	Needs assistance to dress above or below the waist (excluding laces)	Needs assistance to dress above and below the waist	Must be fully supported in dressing above and below the waist
<i>Moving and transferring</i>	Autonomous in moving and transferring without help or appliances	Autonomous in moving and transferring, using appliances	Need help for at least one move or transfer	Bedridden or in wheelchair, fully dependent to move and transfer
<i>Using the toilet</i>	Able to use the toilet, including (un)dressing and cleaning, without help	Needs help for one among: going to the toilet, dressing, cleaning	Needs help for two among : going to the toilet, dressing, cleaning	Needs help in going to the toilet, dressing and cleaning
<i>Continence</i>	Able to retain urine and stool	Accidentally incontinent for urine or stool*	Incontinent for urine or stool	Incontinent for urine and stool
<i>Eating</i>	Able to eat and drink independently	Needs help before eating or drinking	Needs some assistance while eating or drinking	Totally dependent for eating or drinking

⁷⁴ (Compulsory Health Insurance Law, *Loi relative à l'assurance obligatoire soins de santé et indemnités*, 14 July 1994, M.B/B.S. 27/08/1994)

⁷⁵ A comprehensive review on the Institutions that regulate LTC in Belgium is [Willemé \(2010\)](#)

⁷⁶ This evaluation scale is labelled as BESADL (Belgian Evaluation scale for ADL) in [Sermeus et al. \(2010\)](#)

<i>Orientation in time</i>	No limitations	Seldom problems	Frequent problems	Completely disoriented
<i>Orientation in space</i>	No limitations	Seldom problems	Frequent problems	Completely disoriented

* (including patients with urinary catheter or artificial anus)

When implementing these rules on SHARE data, we chose to prudently assign the score of 3 whenever a respondent reports to suffer from a limitation in the specific task⁷⁷, as the following table illustrates:

Table 4-4, Belgian nursing home-care programme and SHARE

<i>Criteria</i>	<i>Value assigned in SHARE</i>	<i>SHARE tasks (binary: yes / no)</i>
Washing	3 out of 4	Bathing or showering
Dressing	3 out of 4	Dressing (+ putting on shoes and socks)
Moving and transferring	3 out of 4	Walking across a room <i>or</i> Getting in or out of bed
Using the toilet	3 out of 4	Using the toilet (+ getting up or down)
Continence	3 out of 4	Incontinence or involuntary loss of urine
Eating	3 out of 4	Eating (+cutting up your food)
Orientation in time	3 out of 4	Orientation in time (day, week, month, year): cannot answer three or more
Orientation in space	3 out of 4	Orientation in time (day, week, month, year): cannot answer three or more

Three main categories of dependency are established by the NIHDI. The minimum level of vulnerability (category A) in order to be eligible corresponds to limitations in washing *and/or* dressing *or* to being disoriented in time and space (but physically independent) as summarized in the following table:⁷⁸

Table 4-5, Belgian eligibility rules for home nursing-care

<i>Category</i>	<i>Physical dependence</i>		<i>Mental dependence</i>
O	No dependence	AND	No dependence
A	Dependent in washing and dressing	OR	Disoriented in time and space (but physically independent)
B	Dependent in washing and dressing, AND dependent for moving and/or going to the toilet	OR	Disoriented in time and space, AND dependent in washing and/or dressing
C	Dependent in washing and dressing, AND dependent for moving and going to the toilet AND dependent for incontinence and/or eating	AND	No dependence
Cdement	As in category C	AND	Disoriented in time and space

As detailed in [Sermeus et al. \(2010\)](#), low dependent patients (category A) are reimbursed through fee-for-service related payments. With exception of hygienic nursing care, a doctor's prescription is required for reimbursement of all nursing interventions in the fee-for-service payment system. Patients with Category B or C/Cdement are reimbursed through per diem lump sums, a type of fee-for-service payment system based on the number of days of care. A doctor's prescription is not required for reimbursement of nursing care delivery under the lump sum system, except for technical

⁷⁷ SHARE respondents are asked not to report difficulties that are expected to last less than three months.

⁷⁸ [Sermeus et al. \(2010\)](#), [Van den Bosch et al. \(2011\)](#)

interventions under fee-for-service such as injections, wound care, bladder care, gastro-intestinal care, specific technical nursing interventions). Additional per diem lump sums apply to palliative care and diabetic patient.

4.3 THE BELGIAN APA

The **Belgian** main LTC cash benefit, the Assistance to Elderly People (APA: *Aide à la Personne âgée*), allows eligible dependent individuals to benefit from an allowance whose amount is primarily based on a vulnerability-evaluation⁷⁹. Besides the applicant's health-status, eligibility is based on a series of socio-demographic criteria including age, marital status and family composition. Moreover, the programme is means-tested since household income is taken into account in determining the monetary amount of the benefit. Since July 1st 2014, as a result of the sixth State Reform in 2011, the competences related to the APA are transferred from the federal level to the regional level. The Federal Public Service of Belgian Social Security, however, still holds responsibilities for submitted applications until the end of 2015.⁸⁰

The assessment process is performed through a scale (APA scale) which depicts vulnerability as determined by six items that are briefly described in the following table:

Table 4-6, *Belgian's APA assessment-of-need*

<i>Limitations</i>	<i>Value</i>	<i>SHARE tasks</i>	<i>Value assigned in SHARE</i>
Moving and transferring around the house	0-3	Walking across a room <i>or</i> Getting in or out of bed	2 out of 3
Preparing meals and ingesting food	0-3	Preparing a hot meal <i>or</i> Eating (+cutting up your food)	2 out of 3
Performing body-care and being able to dress	0-3	Bathing/showering <i>or</i> Dressing (+ putting on shoes and socks)	2 out of 3
Taking care of own house and performing house-tasks	0-3	Doing work around the house <i>or</i> Managing money, such as paying bills and keeping track of expenses	2 out of 3
Communication: being able to have contacts with others	0-3	Making telephone calls	2 out of 3
Need of supervision. Being able to assess and avoid dangerous situations	0-3	Orientation in time (day, week, month, year): cannot answer three or more	2 out of 3

Minimum age required for eligibility: 65 year old

Each item is evaluated on a scale from 0 (no difficulties in performing the selected item) to 3 (impossibility in performing the selected item without help from others), and the overall profile of vulnerability is constructed by summing each item's scores. When matching the APA scale to the SHARE data, we prudently chose to assign the score of 2 whenever a respondent reports to suffer from a limitation included in the assessment⁸¹.

⁷⁹ The Allocation pour l'aide aux personnes âgées (Tegemoetkoming voor hulp aan bejaarden) is regulated by the Royal Decree of 5 March 1990, M.B./B.S. 05/04/90

⁸⁰ See the webpage of the FPS Social Security (*Service public fédéral Sécurité sociale*), "L'allocation pour l'aide aux personnes âgées", available on-line at <http://handicap.fgov.be/fr/allocations/allocation-pour-laide-aux-personnes-agees>.

⁸¹ SHARE respondents are asked not to report difficulties that are expected to last less than three months.

The highest possible level of dependency in the APA scale is represented by a score of 18. The minimum level of vulnerability corresponds to a score of 7: all the applicants who get an overall index of less than 7 are not eligible to the monetary allowance. Additional socio-economic criteria must be fulfilled in order to be granted the benefit. As for the demographic characteristics, an individual must be at least 65 years old and being of Belgian nationality or a foreign resident to apply for the programme. Furthermore, the allowance is differentiated in 5 categories which depend on the patient's health-status: scores 7 and 8 give entitlement to category allowance 1, scores 9 and 11 to category allowance 2, scores 12 and 14 to category 3, scores 15 - 16 to category 4, while a score higher than 16 corresponds to category allowance 5. The cash-benefits in Euro vary from € 981.68 per year (category 1) to € 6,589.77 per year (category 5), and are inflation-indexed.

After determining a patient's vulnerability category, a means-test is performed on her household's income in order to determine the actual monetary amount that will be granted by the APA programme. The income-test takes into account the household composition and the marital status of the applicant. No allowance-reduction is applied to those who live alone or with other family members and have zero income or anyway an annual income lower than € 12,672.36. Similarly, for those who live with a partner who is not part of the family, no reductions will be applied up to an overall yearly income ceiling (of the applicant and his/her partner) of € 15,835.19. The following table provides the maximum amounts (no reductions) corresponding to each category:⁸²

Table 4-7, Belgian APA eligibility rules

Category	Maximum allocation amount in € (2013) (inflation-indexed)	
	Per year	Per month
Category 1 (7 - 8 points)	981,68	81,81
Category 2 (9 - 11 points)	3.747,30	312,28
Category 3 (12 - 14 points)	4.556,11	379,68
Category 4 (15 - 16 points)	5.364,69	447,06
Category 5 (17 - 18 points)	6.589,77	549,15
<i>Age requirement: 65 or older</i>		

The means-test takes into account the income of the applicant and her/his partner. The law specifies which sources of income are included in (or excluded from) the test. As an example, the means-test includes pensions, real estates, savings and financial assets.

The assessment process follows several steps. A preliminary application must be submitted in the city-hall, in order to start the bureaucratic procedures. A series of forms must then be filled in by the applicant and his/her family doctor, with personal data and a brief self-evaluation of applicant's own dependency status. After returning these files to the Federal Social Services Department, an appointment with a doctor will be scheduled (the appointed can be arranged at the patient's home, would he be unable to move outside) and the official evaluation of the vulnerability condition will take place. The assessment will formalize the extent to which patient's limitations affect his/her ability to conduct the usual daily activities of an independent life, and whether these limitations are permanent or are subjected to evolve (worsening or improving) in the future. Should the latter be true, a new assessment in the forthcoming months will be scheduled in order to keep track of the patient's conditions and, if needed, to make the necessary modifications to

⁸² See the webpage of the FPS Social Security at <http://handicap.fgov.be/fr/allocations/allocation-pour-laide-aux-personnes-agees>

his/her eligible status with respect to the APA benefit. Basing on the medical evaluation, a final decision about the applicant's eligibility will be taken by the Service Department. Should the patient not agree with the outcome of the assessment, she/he can appeal to the Labour Court (*Arbeidsrechtbank / Tribunal du travail*) no more than three months after the decision has been notified.

The APA scale presents several peculiarities that are worth stressing:

- It is a relatively short scale (6 items), and yet it encompasses much more than 6 functional limitations, since there are items which aggregate pairs of activities and even mixtures of ADLs and iADLs. The “moving” item comprises both the “moving around the house” and the “transferring” tasks, while there is a single domain “bathing and dressing” which considers together the ability of performing body-care and of dressing/undressing. The “nutrition” item evaluates both the patient's ability to prepare a meal (which is an iADL) and the ability to ingest and cutting up the food (which is an ADL).⁸³ Other iADL-related tasks are included in the assessment: ability to perform house-tasks and ability to entertain contacts with others.⁸⁴ The last component of the APA scale is quite wide and generically-defined, since it involves the “ability to recognize and avoid dangers”. The latter is an ability that involves both cognitive and mental limitations (being able to recognize the presence or the potential occurrence of a danger) together with physical limitations (ability to recognize a danger, i.e., ability to see or hear the preliminary stages of a dangerous situation, or ability to avoid a danger, i.e., ability to move away from a location or ability to perform proper self-medications). Other ADL limitations, as incontinence or ability to use the toilet, are not explicitly considered, although the latter could be partially spotted in the “moving” and in the “bathing and dressing” items. Numerous other iADLs are not included in the APA evaluation of vulnerability, like shopping for groceries, performing self-medications, moving outside own house, handle finances.
- Each item is perfectly substitutable to the others in contributing to the vulnerability index, and each one has the same weight (i.e., no item-specific weights are specified, the overall score is just the sum of each item's score). It is much more difficult to derive the weights of the single ADL/iADL tasks considered in the APA scale, since they are often mixed together in a unique item.
- Finally, as already mentioned, the evaluation of the limitation-degree for a single item is multivariate, and spans from a minimum score of 0 (no limitation is present) to 3 (impossibility to perform the activities described in the item), and therefore allows the evaluator with higher precision with respect to those assessment-tools which just ask for a bivariate evaluation (0/1).

4.4 THE BELGIAN FLEMISH *ZORGVERZEKERING*

The Belgian **Flemish** region provides its vulnerable elderly with a care-allowance that is part of a separate LTC insurance scheme (*Zorgverzekering / Care Insurance*)⁸⁵ with respect to the nationwide APA and the home-care programme, discussed in Sections 4.3 and 4.2. Vulnerability is assessed on a detailed evaluation scale (BEL scale BEL-profielschaal) that assigns a dependency-score to each patient. Eligibility is limited to Flemish and Brussels-Capital citizens, it is not age- or income-related but it requires that the minimum BEL-scale score be higher than a fixed threshold (35 points). The cash benefit has a fixed amount of €130, irrespective of the patient's need-of-care.

The BEL-scale (*BEL-foto*) identifies 27 vulnerability outcomes to be assessed, split in four domains (dimensions), namely *household-related activities*, *physical activities*, *social-related activities* and *mental-health issues*. Each of the 27 tasks has to

⁸³ Further reference on the validity of APA scale can be found in [Sermeus et al. \(2010\)](#), p.35.

⁸⁴ The latter is only partially related to the iADL taxonomy by [Lawton and Brody \(1969\)](#), which included communication in the form of “being able to use the telephone” (see Appendix 6.1).

⁸⁵ Decree of 30 March 1999, B.S. (Belgisch Staatsblad) 28/05/1999

be evaluated on a four-step scale (from 0 to 3), where 0 corresponds to full-autonomy and 3 corresponds to impossibility to perform the specific task. The sum of each task' score provides the patient's dependency index. The highest achievable overall value is 81 (i.e., a patient that has full need-of-care in each of the 27 tasks).

Table 4-8 summarizes the 4 dimensions of the BEL-scale and their related tasks. When matching the scale to the SHARE data, since most of the health-conditions in the survey are reported on a binary scale (yes/no)⁸⁶, we prudently chose to assign a score of 2 in the BEL-scale to each activity that a respondent reports to be limited in, instead of assigning the full score of 3. Moreover, we followed a prudent approach in defining the Mental Health conditions related to purposeless/disruptive behaviors, lack of initiative and depressed/anxious mood. In principle, a direct correspondence could be established between the items in the BEL-scale and the questions in SHARE ("In the last month, have you been sad or depressed", "Have you been irritable recently?", etc.). Nevertheless, given the potential inherent subjective interpretation of the questions by the respondents, we felt more comfortable with adopting the EURO-D measure and threshold proposed by [Dewey and Prince \(2005\)](#) (having at least 4 disturbances among a set of 12⁸⁷) as a more objective signal of latent psychological issues.

Table 4-8, Belgian Flanders LTC assessment-of-need and the SHARE data

<i>Limitation</i>	<i>Value</i>	<i>SHARE tasks (binary: yes / no)</i>	<i>Value assigned in SHARE</i>
<i>Household ADL</i>			
House-holding	0-3	Doing work around the house	2 out of 3
Laundry	0-3	Doing work around the house	2 out of 3
Ironing	0-3	Doing work around the house	2 out of 3
Shopping	0-3	Shopping for groceries	2 out of 3
Meal preparation	0-3	Preparing a hot meal	2 out of 3
Housework planning	0-3	Doing work around the house	2 out of 3
<i>Physical ADL</i>			
Bathing and showering	0-3	Bathing or showering	2 out of 3
Dressing	0-3	Dressing (+ putting on shoes and socks)	2 out of 3
Functional mobility	0-3	Getting in or out of bed	2 out of 3
Using the toilet	0-3	Using the toilet (+ getting up or down)	2 out of 3
Incontinence	0-3	Incontinence or involuntary loss of urine	2 out of 3
Feeding	0-3	Eating (+cutting up your food)	2 out of 3
<i>Social ADL</i>			
Social loss	0-3	EURO-D scale = 4 or higher	2 out of 3
Commitment to therapy and medical rules	0-3	Taking medications	2 out of 3
Safety inside/outside the house	0-3	Doing work around the house or garden	2 out of 3
Administration	0-3	Managing money, such as paying bills and keeping track of expenses	2 out of 3
Financial operations	0-3	Managing money, such as paying bills and keeping track of expenses	2 out of 3
<i>Mental Health</i>			

⁸⁶ SHARE respondents are asked not to report difficulties that are expected to last less than three months.

⁸⁷ The 12 disturbances are pessimism, depressed mood, suicidal thoughts, guilt, trouble sleeping, loss of interest, irritability, fatigue, inability to concentrate, lack of appetite, incapacity of enjoyment, tearfulness.

Orientation in time	0-3	Orientation in time (day, week, month, year): cannot answer three or more	2 out of 3
Orientation in space	0-3	Orientation in time (day, week, month, year): cannot answer three or more	2 out of 3
Orientation in persons	0-3	-	
Purposeless behavior	0-3	EURO-D scale = 4 or higher	2 out of 3
Disruptive behavior	0-3	EURO-D scale = 4 or higher	2 out of 3
Lack of initiative	0-3	EURO-D scale = 4 or higher	2 out of 3
Depressed mood	0-3	EURO-D scale = 4 or higher	2 out of 3
Anxious mood	0-3	EURO-D scale = 4 or higher	2 out of 3

Evaluation for each item: 0 - no need-of-care; 1 - small need-of-care; 2 - medium need-of-care; 3 - full need-of-care

Source: Second Annex to the Ministerial Decree of 6 January 2006 regulating the determination of the severity and duration of the reduced autonomy on the basis of the BEL-profielschaal under the Flemish care insurance.

In order to be eligible, a patient should score at least 35 on the BEL-scale. Eligibility gives access to a monthly cash-benefit of €130, irrespective of age, income or need-of-care of the applicant.

Table 4-9, Belgian Flanders LTC eligibility rules

Dependency level	Details	Monthly allowance
unique	BEL-score of 35 or higher	€ 130

The programme's regulation presents clear similarities with respect to the other two main dependency-assessment tools in Belgium (the BESADL and the APA scale):

- Evaluation for each task is multi-levelled (from 0 to 3), so that a more precise measure of dependency can be selected for a specific task with respect to those assessments where the evaluation is dichotomous (dependence vs independence).
- The regulation defines a specific threshold with respect to the evaluation scale, in order to discriminate between those individuals which are on a condition of "objective dependence" (above the threshold) and those who are not (below the threshold)

At the same time, the BEL-scale presents some particular features:

- It provides a more detailed characterization of vulnerability than the APA and the BESADL models. ADLs and iADLs are included following the original taxonomy by [Katz et al. \(1970\)](#) and [Lawton and Brody \(1969\)](#), while the APA scale does not include all of them - frequently mixing ADLs and iADLs - and the BESADL scale does not cover iADL limitations at all.
- It deeply covers two dimensions of vulnerability, Social ADL and Mental Health, which are almost absent from the APA and the BESADL scale. Including issues on social and mental aspects of frailty seems to put BEL-scale more in line with the WHO bio-psychosocial perspective ([WHO, 2002](#)), and with many geriatric assessments like the "Multi-dimensional geriatric assessment"

4.5 CZECH REPUBLIC *PŘÍSPĚVEK NA PÉČI*

Formal programmes of long-term care in the **Czech Republic** offer both in-kind and in-cash benefits. There is no unique institutional body that regulates care services for the elderly: the health-care sector (the Ministry of Health) mainly covers nursing care at home, while Social Services (the Ministry of Labour and Social Affairs – MoLSA, Ministerstvo práce a sociálních věcí - MPSV) cover other forms of home-care and offer dependent individuals a cash

allowance⁸⁸. As a consequence, legal regulations, eligibility criteria and quality assessment are defined separately by each institution⁸⁹. The Ministry of Labour and Social Affairs refers to long-term care as to a “wide range of supportive health and social services provided to people who are no more self-sufficient – either because of their age, disability or for any other serious reason – and thus require constant assistance by another person in coping with their everyday life and daily needs”⁹⁰.

Although entitlement for Health-care and Social services in-kind is based, respectively, on health-care insurance coverage and citizenship, a unique formal definition of “vulnerability” does not exist and the degrees of eligibility depend on individual assessments-of-need performed either by doctors (for Health-care services) or by social workers (for Social Services). Conversely, the main Czech care-allowance for dependent people (*Príspevek na péči*), firstly introduced with the 2006 Social Services Act,⁹¹ is uniquely regulated throughout the country both for the assessment-of-need process and for the eligibility criteria.

The care allowance is granted to vulnerable individuals older than one year of age who are dependent on others for basic tasks of personal care and self-sufficiency, irrespective of their income and age, so that they can “elect the most effective manner of having their needs provided for” (MoLSA 2009). The monetary amount depends on the degree of dependence, and has nature of a care-allowance rather than a full reimbursement of the care costs. Vulnerability is defined as an adverse state of health, expected to last for at least one year since first appearance, characterized by limitations in basic life activities like moving, exercise cognitive functioning, communicating, eating, dressing, caring for own’s hygiene, using the toilet, performing self-medications, being involved in activities, performing household tasks. The original 2006 legislation aimed at monitoring vulnerability through a list of 36 activities split in two main groups, personal care and self-sufficiency, as reported in the Appendix 6.2.

A comprehensive reform of dependency categorization took place in 2011 when the act of Parliament 366/2011 simplified the evaluation scale and narrowed it down to a list of 10 major areas of basic life necessities (each area is mostly a regrouping of the original 36 tasks)⁹². Each activity is evaluated on a binary basis (dependent vs independent).

Table 4-10, Czech *Príspevek na péči* assessment-of-need

<i>Limitation</i>	<i>Fixed binary value (0/1)</i>	<i>SHARE tasks (binary: yes / no)</i>
Mobility: walking and transferring	1	Walking across a room <i>or</i> Getting in or out of bed
Orientation, ability to hear, see, and use mental functions	1	Orientation in time (day, week, month, year): cannot answer three or more
Communicating and understanding	1	Making telephone calls
Cutting up food, eating, drinking, following diet	1	Eating (+cutting up your food)
Dressing/undressing, putting on shoes	1	Dressing (+ putting on shoes and socks)
Washing the body, combing hair, oral hygiene	1	Bathing or showering
Using toilet, defecating, urinating and cleaning	1	Using the toilet (+ getting up or down)
Self-medications: following prescribed treatments	1	Taking medications

⁸⁸ A review of the programmes regulated by MPSV can be found on-line at <https://portal.mpsv.cz/soc> as well as in [MPSV \(2009\)](#).

⁸⁹ See the European Commission report ([European Commission, 2013a](#)), and [Sowa \(2010\)](#).

⁹⁰ [MPSV \(2005\)](#)

⁹¹ Social Services Act No. 108/2006; Decree No. 505/2005, Implementing certain provisions of the Social Services Act

⁹² Act No. 366/2011 (§9) amending the Social Services Act 108/2006. A brief review of the reform can be found on-line at a dedicated MPSV website <http://socialnireforma.mpsv.cz/cs/23>.

Engaging in daily routines, age-related activities	1	Preparing a hot meal
Taking care of household, groceries, finances	1	Doing work around the house <i>or</i> Shopping for groceries <i>or</i> Managing money

Four levels of dependency are distinguished⁹³, according to the number of limitations, as the following table summarizes:

Table 4-11, Czech Příspěvek na péči eligibility rules

Dependency level	Details (old criteria in parenthesis)	Monthly allowance ⁹⁴
Light	Dependent in 3 activities (12)	€ 29 – Kč 800 ⁹⁵
Medium	Dependent in 5 activities (18)	€ 146 – Kč 4000
Heavy	Dependent in 7 activities (24)	€ 292 – Kč 8000
Very Heavy	Dependent in 9 activities (30)	€ 438 – Kč 12000

In order to offer a benchmark to appreciate the magnitude of the benefits, we gather from [OECD \(2013c\)](#) that the value of the basic pension in the Czech Republic was CZK 2,270 in 2012, while the average pension (single paid out) was CZK 10,929 in June 2013 ([Holub & Háva, 2013](#)).

Applications for the care allowance must be submitted to the regional branches of the MPSV but can be filed on-line through the ministerial portal. The assessment-of-need follows two steps: a social worker will firstly schedule a meeting to assess the degree of vulnerability of the patient in his natural environment, while a Ministerial doctor will perform a second evaluation. The final decision on the applicant's eligibility will be taken by the MPSV regional branch, and can be appealed by the patient. The cash benefit, which is tax-free, can be only spent on care-activities, regardless of who the provider of care is (Social Services worker, professional caregiver, informal caregiver). Ministerial authorities are in charge for monitoring the proper usage of the cash benefit, and can suspend the allowance in case of misuse.

A few observations on the Czech assessment method:

- The 2006 version of the assessment-of-need scale (Section 6.2) was perhaps the most detailed (36 tasks) among those adopted in the major LTC programmes in Europe with the potential exception of the SVaMA (adopted in Italy, see [Pilotto et al. \(2013\)](#)) which nevertheless is built for clinical usage and has no clear threshold to determine dependency.
- The 2012 version of the scale is much simpler, as it consists of 10 basic activities which somehow summarize the 36 of the previous legislation. The Katz et al. ADLs are all included in the list, except for the continence item, as well as most of Lawton's iADLs.
- Dependence in each activity is assessed on a binary yes/no scale, without intermediate steps. Moreover, each activity has equal weight in the computation of the final degree of vulnerability, and no complementarity occurs: what matters here is the overall number of limitations, while the single components do not play any role. In other words, there are no pre-existing profiles of vulnerability and every combination of deficits that reaches the minimum overall count of 3 gives access to the care-allowance.

⁹³ For children below 18 years of age dependency is defined as follows: light dependency (limitations in 3 activities), medium dependency (limitations in 5 activities); heavy dependency (limitations in 6-7 activities); very-heavy dependency (limitations in 9 activities)

⁹⁴ On-line source on ministerial website, <https://portal.mpsv.cz/soc/ssl/prispevek>. Currency exchange rate at June 2014.

⁹⁵ The allowance for the first dependency level (light) was reduced from Kč 2000 to Kč 800 since 2010. See also [Colombo et al. \(2011\)](#).

4.6 FRENCH APA AND AIDE SOCIALE

There is no single regulation for long-term care policies in **France**. Conversely, a multitude of legislations, actors and sources of financing characterize specific programmes which target various kinds of dependency and vulnerability⁹⁶. A “supplement for assistance of a third party (*majoration pour aide d'une tierce personne*)” and a “supplementary benefit for recourse to a third party” (*prestation complémentaire pour recours à tierce personne*) are offered, respectively, to non-elderly individuals who already get an invalidity or a work-injury pension and additionally need help in performing basic activities of daily life. The “disability compensation allowance” (*prestation de compensation du handicap*) is instead designed for disabled persons who are younger than 60 years old and who suffer from a degree of disability which meets certain pre-defined criteria.

As long as the elderly population is concerned, there are three main public sources of long-term care services: the sickness insurance scheme which covers some expenditures for health care, the retirement insurance scheme which finances forms of domestic assistance (*Aide sociale aux personnes âgées : aide ménagère à domicile*) and the Personalised Allowance of Autonomy (APA, *Allocation Personnalisée d'Autonomie*). The latter constitutes the main national programme for tackling dependency among the 60+ population. These LTC programmes target different profiles of vulnerable individuals, yet adopting a unique evaluation-scale to assess their dependency condition: the AGGIR scale, which we now turn to describe.

The **AGGIR** scale (Autonomie Gérontologique – Groupes Iso-Ressources) is a national standardized assessment-of-need tool that helps to determine an individual’s vulnerability status. The scale, introduced in 1997 and modified in 2001, 2004 and 2008⁹⁷, evaluates limitations in ADL and iADL and generates an index-measure from 1 to 6 that represents a patient’s vulnerability classification. Each category, or Group Iso-Ressources (GIR), gathers individuals with similar loss of autonomy and equivalent need-of-care. GIR 1 represents the hardship case (0 percent of autonomy), while GIR 6 corresponds to the non-vulnerable level (93% of autonomy, or higher)⁹⁸. The AGGIR assessment is a compound of two groups of variables:

- Ten “discriminatory” variables, eight of which are actually concurring at determining the final vulnerability score: six variables related to physical limitations and difficulties in ADL, two variables on psychical deficits (coherence and orientation) and two variables related to iADL (outdoor movement, distant communication), which do not concur in determining the AGGIR score.

⁹⁶ See [Courbage and Roudaut \(2010\)](#) and [European Commission \(2013b\)](#)

⁹⁷ Decree n°97-427 du 28 avril 1997, Law n° 97-60 (January 24th 1997), Décret no 2001-1084 du 20 novembre 2001, Décret no 2008-821 du 21 août 2008

⁹⁸ Further details can be found in the User Guide to the AGGIR scale 2008 by the CNAMTS (*Caisse nationale de l'assurance maladie des travailleurs salariés* - The French National Health Insurance Fund for Salaried Worker) at www.cnsa.fr/IMG/pdf/Guide_AGGIR_2008-2.pdf; in the documentation on the website of the Ministry of Health and Social Affairs (*Ministère des Affaires sociales et de la Santé*) at http://www.social-sante.gouv.fr/IMG/pdf/fiche_1_grille_aggir_et_gir.pdf, as well as in [Dupourqué et al. \(2012\)](#).

- Seven “illustrative” variables, mainly related to iADL tasks, allow for a measure of contextual factors and are used to evaluate how much assistance a person needs to lead a normal social life, while not entering the algorithm of the AGGIR score.⁹⁹

Each variable (item) in the French AGGIR scale is evaluated on a three-step scale (A, B, C or 1, 2, 3), depending on the degree of limitation experienced by the patient in the specific task.¹⁰⁰ Since in SHARE we do not have information on the intensity of the reported limitations, we chose to prudently assign the label B (the intermediate level) whenever a respondent reports a limitation in a specific task.¹⁰¹

Table 4-12, France's AGGIR assessment-of-need¹⁰²

<i>Discriminatory variables</i>	<i>description</i>	<i>assigned value</i>	<i>SHARE tasks</i>
coherence	converse or behave in a logical and sensible manner	2 out of 3	Orientation in time (day, week, month, year): cannot answer three or more
orientation	locates oneself in time and space		
toileting	upper and lower body hygiene	2 out of 3	Bathing or showering
dressing	upper, middle and lower body dressing	2 out of 3	Dressing (+ putting on shoes and socks)
alimentation	serving and eating	2 out of 3	Eating (+cutting up your food)
elimination	using the toilet for urine/faecal eliminations	2 out of 3	Using the toilet (+ getting up or down)
transfers	lying down, sitting down, getting up	2 out of 3	Getting in or out of bed
indoor movement	with or without technical assistance	2 out of 3	Walking across a room
outdoor movement	same as above, but outdoors	2 out of 3	Walking across a room <i>or</i> Using a map to figure out how to get around in a strange place
distant communication	using the phone and tele-alarm	2 out of 3	Making telephone calls

The illustrative variables (each to be evaluated on the A,B,C scale), are: managing money, preparing meals, performing housekeeping tasks, using transportation modes while outdoor, shopping, follow medical prescriptions, doing leisure activities.

Through a rather complex algorithm¹⁰³, AGGIR splits the population into 6 iso-groups¹⁰⁴ depending on how they perform in the first 8 discriminatory tasks¹⁰⁵. Belonging to one group rather than another will determine which LTC benefit an individual can claim for (if any). The following table briefly describes the six vulnerability categories.

⁹⁹ The AGGIR scale could, in principle, be included among the “analytic” assessment methods, since it comprises seventeen daily tasks above and beyond the ADL and the IADL taxonomies. As it has just been highlighted, though, only 8 of these tasks (the two items on mental deficits and the six ADL) actually contribute to determine an individual’s vulnerability status.

¹⁰⁰ A: The individual performs the task spontaneously, habitually, completely and correctly alone. B: The individual can perform the task alone, yet not spontaneously, and/or correctly and/or habitually and/or completely. C: The individual cannot perform, requires assistance or must have someone else’s help to do the activity.

¹⁰¹ SHARE respondents are asked not to report difficulties that are expected to last less than three months.

¹⁰² Adapted from Dupourqué *et al.* (2012).

¹⁰³ Details are available in Dupourqué *et al.* (2012). A free AGGIR simulator is available at <http://www.ibou.fr/aggir/>

¹⁰⁴ Syndicat National de Gériologie Clinique (1994).

¹⁰⁵ As mentioned before, only the first eight tasks determine an individual’s eligibility status to LTC, while the remaining help to determine the amount and type of care that best suits each individual condition.

Table 4-13, France AGGIR vulnerability categorization

GIR group	Description
GIR 1	Bedridden or confined to an armchair, with seriously impaired mental functions
GIR 2	Those confined to bed, needing assistance for most ADL (typically toileting, dressing, elimination, alimentation), with mental functions not entirely compromised.
GIR 3	Those with severe mental deficits but with no serious limitations in mobility and personal care functions. Those with no serious mental and mobility limitations, who need help several times a day for ADL (typically for hygiene and elimination tasks) while not requiring constant monitoring.
GIR 4	Those who have transferring limitation, but once up can move around indoors. They sometimes need help with washing and dressing, and most of them can eat without assistance. Alternatively, those with no mobility or transferring limitations, but who need help to perform other ADL, including eating.
GIR 5	Those who can move around inside their home without assistance, and can eat and dress themselves alone. They require occasional help with washing, preparing meals and doing housework.
GIR 6	Those who have not lost their autonomy for daily living activities.

- From the previous table it appears clear how mental and physical limitations play almost independent roles in defining a vulnerability condition. Regardless to other functional deficits in ADL, those who have mental limitations are assigned to, at least, GIR 2. Conversely, those with difficulties in - roughly - at least two ADL are categorized in GIR 4 regardless of their mental health. This holds whenever the limitations are reported with at least a B intensity-score. It should be highlighted that being limited in “moving inside the house” is not a sufficient limitation for GIR 4 if the only other loss-of autonomy concerns the “transferring” task. When the “moving” limitation is selected, there should be at least one further difficulty among “using the toilet”, “dressing”, “eating” or “washing” in order to determine GIR 4. Finally, as stated before, iADLs do not play any role in defining the GIR score.

The outcome of the AGGIR evaluation defines eligibility the APA programme in France, but it is also included in the eligibility rules for the Social Assistance to seniors (see below).

The **APA**¹⁰⁶ (*Allocation Personnalisée d'Autonomie*, Personalised Allowance of Autonomy) has been introduced in 2001, in place of the previous LTC program “*Prestation Spécifique Dépendance*” (PSD). It is managed at the *département* level¹⁰⁷ and provides vulnerable elderly residing in France with an in-kind benefit whose intent is to finance a personalized assistance-scheme, both for institutional- and for home-care. The benefit’s amount varies according to the recipient’s health status and disposable income level, although means-test do not play any role in defining eligibility.

The total number of beneficiaries from APA was 1,191,897 in 2012, 702195 of which were domiciliary recipients. The total expenditure was 5.2 millions in the same year, 60% of which was allocated to non-institutionalized elderly.¹⁰⁸ Regulations are slightly different between the APA for home-care elderly and for nursing-care residents. Given that this dissertation focuses on the home-based LTC, we will discuss the rules intended to this kind of care. The APA “à domicile” represents the implementation of a plan of long-term assistance, personalized on individual needs. Three conditions are necessary in order for the allowance to be granted: an individual must be French resident, at least 60 years old and with a vulnerability level of at least GIR4. The following table summarizes these three criteria.

¹⁰⁶ Articles L. 232-3 / 232-7, R. 232-7 / 232-14 of Code de l'action sociale et des familles (CFAS).

¹⁰⁷ The *département* is a level of government which lies between the region and the arrondissement.

¹⁰⁸ Data from the Ministry of Health, <http://www.drees.sante.gouv.fr/>, last updated on 26 October 2014.

Table 4-14, French APA eligibility rules

APA eligibility criteria	description
Residency	Being resident in France
Age	At least 60 years old
Vulnerability	At least GIR4

The vulnerability status is assessed through the AGGIR scale. In order to be eligible for the APA, an individual must belong to a group between GIR 1 and GIR 4. The assessment is performed by medical professionals, paramedicals or social workers, usually at the patient's place, after a proper demand has been submitted to the local Social Community Centre. If the assessed vulnerability iso-group is at least GIR 4, the evaluators develop a personalized care scheme which comprises all the tasks that should be performed in order to help the patient to live a comfortable life in his/her own home. Such tasks include nursing home-care, meals-on-wheels, social assistance, housework, technical assistance with aids. The APA is designed to (partially) finance this care-plan, with no time limitations. The maximum monthly APA contributions are summarized in the following table, by GIR group:

Table 4-15, French Apa benefits' amount

GIR group	Maximum APA allowance (monthly amount in euro) ¹⁰⁹	individual contribution-share to care-scheme
GIR 1	1.312,67	
GIR 2	1.125,14	0% up to €739,06 monthly income
GIR 3	843,86	from 0% to 90% up to € 2.945,23 monthly income
GIR 4	562,57	90% if above € 2.945,23
GIR 5	non-eligible	-
GIR 6	non-eligible	-

The actual monetary amount, and therefore the extent to which APA will contribute to the care-plan, depends not only on the GIR classification but also on the applicant's income (together with the partner's income if they are a couple)¹¹⁰. If an applicant's monthly income lies below € 739,06, all the care-plan is financed by the APA. For higher incomes, the individual's contribution to the care-plan increases linearly from 0% up to a ceiling of 90% of the total cost, which is paid by those who have a monthly income equal or higher than € 2.945,23. Having ascertained the patient's costs share, the APA benefit is determined as the difference between the total care-plan amount and the patient contribution.

The allowance is usually paid directly to the professional care-givers, or to the care-receiver who must then provide proofs of expenditures. APA can be suspended if this documentation is not provided, or if random audits and controls verify the presence of misuse of the allowance.

While APA is designed to target vulnerability profiles with numerous limitations in ADL, the **Social Assistance to seniors** (*Aide sociale aux personnes âgées*) is an in-kind benefit aimed at providing home-help (*Aide ménagère à domicile*) to elderly who report lower degrees of dependency and are therefore not necessarily eligible for the APA allowance¹¹¹. The programme is intended to support elderly people with cooking, washing and bathing, shopping for groceries and

¹⁰⁹ Monetary amounts at 01/04/2014. Governmental source: <http://vosdroits.service-public.fr/particuliers/F1802.xhtml>

¹¹⁰ Official details on income screening can be found at <http://vosdroits.service-public.fr/particuliers/F1802.xhtml>

¹¹¹ Code de l'Action Sociale et des familles (CFAS), L 113-1 / 113-3, L. 231-1 / 231-6, R. 231 / 231-6, L. 313-1. CNAV Circular n° 2007-16 02/02/2007, CNAV Circular n° 2013-52 21/11/2013. Other references are available on-line at <http://sante.lefigaro.fr/social/personnes-agees/aide-menagere-personnes-agees/references-legales>

for the small and common tasks of daily living. It also provides moral assistance to individuals living alone, involving them in meaningful and supportive talks.

In order to be eligible to the Social Assistance to seniors, three conditions must be met by the applicant, as the next table highlights: a minimum age-requirement of 65 years old; the presence of limitations in activities related to personal hygiene, meals preparation, shopping for groceries and some domestic housework (GIR 5 or GIR 6 classification); not being beneficiary of the Personalized Autonomy Allowance (APA) program. The programme is not means-tested but, as for APA, the amount of service-costs covered by the Action Sociale will depend on applicants' resources. In order to simulate eligibility for Aide Sociale, we exploit the following SHARE information: "Bathing or showering", "Preparing a hot meal" and "shopping for groceries". In order to perform a prudent implementation of the regulation, we exclude the SHARE task "doing work around the house or garden", as it seems too generic with respect to the Aide Sociale rationale.

Table 4-16, French Aide Sociale eligibility rules

<i>Aide sociale eligibility criteria</i>	<i>description</i>	<i>SHARE information</i>
<i>Age</i>	At least 65 years old	Age
<i>Vulnerability</i>	Needing assistance with personal hygiene / meals preparation / shopping for groceries	Bathing or Showering / Preparing a hot meal / Shopping for groceries
<i>Non-cumulation</i>	Not receiving APA allowance	-

- As detailed in the previous paragraphs, the GIR5 is the only degree of vulnerability (except for GIR 6, who covers low dependency levels) which does not give eligibility to the APA programme. It mainly includes individuals with limitations in doing housework and iADLs, or those with difficulties in washing or bathing. This eligibility rule stresses the complementary nature of the *Aide Sociale* programme, which is able to offer a minimum coverage to those elderly who still face difficulties in everyday activities, but to a lower extent with respect to the APA recipients. Limitations in instrumental activities of daily livings (iADL) like those included in GIR5 or GIR6 are known to be the first signals of an ongoing process of vulnerability. While they cannot trigger eligibility to the APA on their own, they are the main target of the *Aide Sociale* programme.

Depending on applicants' resources, the home-care services will be financed by the *Département* (through Social Assistance) or by the applicants' retirement insurance (a major example is the *Caisse Nationale d'Assurance Vieillesse* - CNAV). As for the year 2014, the *Département's* intervention is limited to those cases in which applicant's monthly income is lower than €791.99 (€ 1,229.61 if he/she lives with a partner). For those earning more than € 791.99 per month, the retirement insurances will finance a share of the total expenditure needed for the home-care services, depending on the applicant's income level. To make few examples, those living alone with an income lower than € 1.140 will not contribute more than 36% of overall costs, while they will pay 73% when earning more than € 1.423. Those living in couple will contribute just 10% when they have an income lower than € 1.451, while their contribution will be maximum (73%) after they exceed the earning threshold of € 2,134¹¹².

¹¹² Monetary thresholds and contributions are valid throughout all the 2014. Further details on contributions and on means-test are available on the French civil service website, at <http://vosdroits.service-public.fr/particuliers/F245.xhtml>

4.7 GERMAN *PFLEGEVERSICHERUNG*

The **German** long-term care framework is shaped by the 1994 Long-term care Act which became effective in 1995 (the Law on social protection for the Long-term-care risk, *Gesetz zur sozialen Absicherung des Risikos der Pflegebedürftigkeit*), introducing a mandatory Long-term care Insurance¹¹³ (*Pflegeversicherung*) for German citizens as an additional pillar of the national Welfare State¹¹⁴. The long-term care Insurance specifically targets vulnerable individuals who suffer from physical or mental limitations that prevent them from performing basic and regular tasks of daily living¹¹⁵. It provides them with benefits in cash and/or in kind, in order to ease the costs of home-care assistance. From a financial point of view, the LTC Insurance is not a full insurance, since it still requires the individuals to contribute to the care-expenditure, depending on their level of vulnerability. In addition, other services such as nursing courses for caregivers or nursing aids are provided. It is also worth noting that home-care, alongside with policies of prevention and rehabilitation, is stressed in the law (SGB XI, §3, §5) as a crucial component of the Long-term care in Germany: its major goal is to keep the vulnerable individual in his/her own home environment, delaying institutionalization and in-patient care¹¹⁶.

There are four main forms of LTC benefits available to an eligible insured individual: cash-benefits for home-care (*Pflegegeld*), benefits in kind for home-care (*Pflegesachleistung*), day and night home-care (*Tagespflege und Nachtpflege*) and institutional care in nursing-homes (*Vollstationäre Pflege*).¹¹⁷ Among home-care services, individuals can choose between an exclusive cash benefit, an exclusive domestic-care programme in kind or a proportionate combination of the two (*Kombinationsleistung*)¹¹⁸. Cash benefits are paid directly from the insurance-fund to the dependent person who can use them at his/her discretion to compensate a self-procured caregiver; the benefits are not treated as income and thus are tax-free. Benefits in kind (community care) consist in personal-care and domestic-help service provided by professional carers, usually a licensed home care service which can be both for-profit or non-profit. Professional help is considerably more expensive than private aid, therefore the budget of in-kind benefits is considerably higher than for the cash-programmes (Table 4-19). It is important to notice that the LTCI funds will contribute to the expenditures up to a maximum amount (SGB XI §§36-45; see also Table 4-19). Should the total care-cost exceed this amount, the remaining part will be paid by the patient. Should they not be able to, the social welfare office can intervene. Conversely, when the in-kind allowance is not fully utilized, the applicant can claim for a partial in-cash benefit for the remaining share, thus realizing the *Kombinationsleistung* scheme. As [Rothgang \(2010\)](#) clarifies, “if only x per cent of claims for in-kind benefits are realized, 100 – x per cent of the cash benefits claims are still available” and can be paid as care allowance.

¹¹³ The Long-term care Insurance is regulated in the 11th Book of the Social Code (*Buch des Sozialgesetzbuches - SGB*), available at http://www.gesetze-im-internet.de/sgb_11/index.html. Major recent modifications took place in 2008 (Long-term Care Further Development Act / *Pflege-Weiterentwicklungsgesetz*), 2012 (Law on Realignment of Care / *Pflege-Neuausrichtungsgesetz*) and 2014 (Amendment to the 11th Book of Social Code / *Änderung des Elften Buches Sozialgesetzbuch, 5. SGB XI-ÄndG, Änderungsgesetz*)

¹¹⁴ Those German citizens under the Social Health Insurance (*Gesetzliche Krankenversicherung*) automatically have the Long-term care Insurance. Those with a private Health Insurance will have to apply to a private LTC insurance-fund.

¹¹⁵ The Statutory Health Insurance Funds Association, the central representation of the statutory health and nursing care insurance funds in Germany, estimates that in 2013 over 2 million people were dependent on care or support because of their inability to independently cope with daily living tasks due to a physical or mental illness or disability.

¹¹⁶ Long-term care insured are entitled to in-patient care services when home-care or day-care is not feasible or not suitable to the individual case. The care fund will contribute to the in-patient-assistance expenditure, accordingly to the level of vulnerability of the applicant. See the SGB XI, § 42, 43.

¹¹⁷ SGB XI, §§36-43

¹¹⁸ SGB XI, §38

For all of the aforementioned benefits, eligibility depends on the level of vulnerability of the insured person (need of assistance, *Hilfebedürftigkeit*), while other characteristics like economic resources, age or availability of informal caregivers are not taken into account. Vulnerability is assessed by the medical service of the health insurance companies. The assessment focuses on those limitations which are likely to last in the long-term, i.e., for a minimum of six months, because of a physical or mental illness or disability.

The medical evaluation covers 4 main areas of daily activities: personal care, nutrition, moving – which constitute *basic care activities* and mainly refer to ADL tasks - and household activities, which resemble iADL tasks. The §14 of SGB XI lists the main areas of activities that should be evaluated to assess patient's vulnerability, with their respective tasks. For each task the nurses and/or the physicians have to evaluate the amount of care that would take to a non-professional caregiver to provide assistance, in terms of minutes per task. To ensure the same standards for all patients, nationwide guidelines have been specified for most (but not all) tasks. The time measures, reported in the following table, refer to a single task-occurrence and serve as a guideline to the operator in order to calculate the daily demand of care.

Table 4-17, German Pflegeversicherung assessment-of-need

Basic care	Limitations	Need-of-care (minutes per task)	Assumed daily need in SHARE	SHARE tasks (binary: yes / no)
✓	Washing body (upper- lower- body, hands)	20-25	40'	Bathing or showering
✓	Dental care	5	10'	Bathing or showering
✓	Combing	1-3	-	Bathing or showering
✓	Shaving	5-10	-	Bathing or showering
✓	Taking a shower	15-20	6'	Bathing or showering
✓	Bathing	20-25		
✓	Defecation and urination	8	32'	Using the toilet (+ getting up or down)
	<i>If also dependent for: mobility inside the house, add</i>	2	8'	
✓	Maintenance of urinary drainage bag / ostomy bag	2-4 each	-	-
✓	Incontinence	11	44'	Incontinence or involuntary loss of urine
✓	Bite sized food preparation	2-3	51'	Eating (+cutting up your food)
✓	Food in-take	15-20		
✓	Moving in and out of bed / changing positions	1-3 each	4'	Getting in or out of bed
✓	Dressing-undressing (upper- lower body)	Unspecified	12'	Dressing (+ putting on shoes and socks)
✓	Moving inside house	Unspecified	(30')	Walking across a room
✓	Standing (transferring)	Unspecified	-	Getting in or out of bed
✓	Climbing stairs	Unspecified	-	Climbing one flight of stairs without resting
✓	Leaving and returning to house	Unspecified	(20')	Walking across a room
✗	Shopping	Unspecified	(20')	Shopping for groceries
✗	Cooking	Unspecified	(60')	Preparing a hot meal
✗	Cleaning dwelling	Unspecified	(60')	Doing work around the house
✗	Washing dishes,	Unspecified		
✗	Washing and ironing clothes,	Unspecified		
✗	Managing the heating	Unspecified		

Guidelines in brackets are taken from the Austrian legislation (Table 4-1).

- Similarly to the Austrian system, the German vulnerability-assessment is particularly detailed with respect to tasks of personal care: even small activities like combing, shaving or dental care are assigned a specific guideline-amount of time, and specific attention is paid to those individuals who have to deal with urinary drainage or ostomy bags. Furthermore, tasks regarding

nutrition are split in a preparatory phase (preparing bite-sized food) and an eating phase; the movement-related activities are also analytically separated, even though only few of them have specific time-requirement guidelines while the remaining must be evaluated on an individual basis. Household activities are characterized by a number of tasks, though time-requirements are not specified a-priori. It is worth noting that two of the Lawton's iADLs (managing money and communication-using the telephone) are excluded from the list. An important difference with the Austrian framework relies on the role of the time-requirements guidelines, which are defined *per-task* rather than *per-day*. This allows for a greater flexibility in designing a personalized programme of care: for instance, even though the time-requirements for bathing are fixed at 20-25 minutes, not every person uses to take a bath every day. The daily amount of time for bathing could therefore be just a fraction of the bathing occurrences during a week: if an individual takes a bath twice a week, he/she will require 40 minutes of care every seven days, which results in a daily requirement of circa six minutes. As a further example, this flexibility (and lower degree of standardization between individuals) will apply as well to the number of daily occurrences of defecation/urination and nutrition.

- Some critiques have been cast on the peculiarity of this assessment tool that mainly focus on physical limitation and does not take sufficiently into account the specific needs of people with mental deficits. [Rothgang \(2010\)](#) highlights that such a “tight definition of dependency has meant that people with dementia are entitled to LTCI benefits only insofar as they need help with the activities of daily living, as the assessment does not evaluate or take into account their general need for supervision”. This shortfall has been partially addressed with the 2012 reform, when a stronger attention has been devoted to those individuals who are limited in their activities of daily living because of mental illnesses and cognitive limitations. These individuals, considered at risk of being a danger to themselves or to others, are included in the taxonomy of vulnerability under the label PEA (*Personen mit eingeschränkter Alltagskompetenz*, People impaired in activities of daily living).¹¹⁹

The German regulation does not fix time-guidelines for the iADL limitations (which mostly correspond to the so-called “non basic activities” in the scale): indeed, in Table 4-17, some limitations have an “unspecified” time-requirement in the “need-of-care” column. The term “unspecified” refers to the fact that the care-amount should be evaluated on an individual basis by the assessment-team. In order to match also these tasks with the SHARE data, we exploit the strong similarities existing between the German and the Austrian assessments-of-need. As mentioned, they are both highly detailed and they both assign to each task a measure of need-of-care expressed in units of time. Indeed, the time guidelines are not significantly different between Germany and Austria, although the former programme adopts a measure in minutes/day while the measurement unit of the latter is in hours/month. We therefore choose to assign the limitations having “unspecified” requirements with the corresponding time-guidelines coming from the Austrian *Pflegegeld* regulation (moving inside the house, leaving and returning to house, shopping, cooking, doing housework). As an example, the “cooking” task has a time-requirement of 30 hours/month (1 hour per day) in Austria, which translates in 60 minutes per day in Germany.¹²⁰

As a result of the evaluation process, each patient is categorized one among three levels of need (Pflegestufen I, II, III; see the next table), defined by the original legislation, which differ with respect to the number of limitations, the estimated amount of care-time requested, the balance between limitations in ADL and iADL.¹²¹

¹¹⁹ See details in [MDS \(2013\)](#), pag.73 - section E “Feststellung von Personen mit erheblich eingeschränkter Alltagskompetenz”, as well as in SGB XI (§ 45a).

¹²⁰ As for the basic tasks, we assume the following: washing and dental care are performed twice a day; bathing is aggregated with showering (assumed a time requirement of 20 minutes) and occurs once a week; defecation and urination (and their connected tasks) occur 4 times a day; three meals are consumed per day (taking 17 minutes each); getting in/out of bed occurs 4 times a day, taking one minute each.

¹²¹ Following an ongoing debate, there are proposal of re-designing the levels of care on a five-steps scale from 2016/2017. A higher number of levels would allow for a more efficient classification of patients, specifically taking into account those individuals with dementia. <http://www.pflege-deutschland.de/pflegeversicherung/pflegegrade.html>

Table 4-18, German Pflegeversicherung eligibility rules

	assistance for basic care (personal care, feeding, mobility)	assistance for household activities	Minimum requirements of care-needs per day
Level 1	At least once a day for at least 2 tasks from one or more areas	Several times a week	overall: 90' (45' for basic care)
Level 2	At least thrice a day for at least 2 tasks from one or more areas	Several times a week	overall: 180' (120' for basic care)
Level 3	Help needed around the clock	Several times a week	overall: 300' (240' for basic care)
hardship level	Those in level 3 who need assistance for at least 420 minutes a day with at least 120 minutes during the night, or who need simultaneous help from multiple caregivers		
Cognitive impairment	Following the 2012 reform, individuals affected by cognitive impairment are given access to an additional allowance, irrespective of their functional disability status (even if they are classified as Level 0 (<i>Pflegestufe 0</i>)).		

The minimum requirements of daily care-needs in order to be eligible (*Pflegestufe I*) are an overall need for 90' of help, with at least 45' attributable to basic care tasks. The 2012 reform introduced new rules to account for the relatively under-dimensionality of mental illness in the original assessment evaluation scheme.¹²² The 2012 reform introduced new rules to account for the relatively under-dimensionality of mental illness in the original assessment evaluation scheme.¹²³ For the same vulnerability level, being affected by cognitive/mental limitations (PEA) gives access to an additional allowance; moreover, those patients who do not qualify for level 1 benefits (patients with “level 0” / “Pflegestufe 0”) can still receive an allowance if they suffer from mental disturbances. The following table provides details on how the vulnerability levels relate to amount of LTC benefit an insured individual can claim for. The monetary amounts reflect the latest reform (June 2014).¹²⁴ For those who do not suffer from mental illnesses, level 1 is the minimum vulnerability level that entitles to LTC services.

Table 4-19, German Pflegeversicherung benefits' amount

LEVEL	Home care		Day & Night	Nursing Home Care ¹²⁵
	€ in-cash §37	€ in-kind §36	€ in-kind §41	€ in-kind §43
<i>Level 0 (PEA)</i>	120 from 1/2012 123 from 1/2015	225 from 1/2012 231 from 1/2015		
<i>Level 1</i>	235 from 1/2012 244 from 1/2015	450 from 1/2012 468 from 1/2015	450 from 1/2012 468 from 1/2015	1023 1064 from 1/2015
<i>Level 1 (PEA)</i>	305 from 1/2012 316 from 1/2015	665 from 1/2012 689 from 1/2015		
<i>Level 2</i>	440 from 1/2012 458 from 1/2015	1100 from 1/2012 1444 from 1/2015	1100 from 1/2012 1144 from 1/2015	1279 1330 from 1/2015
<i>Level 2 (PEA)</i>	525 from 1/2012 545 from 1/2015	1250 from 1/2012 1298 from 1/2015		
<i>Level 3</i>	700 from 1/2012 728 from 1/2015	1550 from 1/2012 1612 from 1/2015	1550 from 1/2012 1612 from 1/2015	1550 from 1/2012 1612 from 1/2015

PEA (*Personen mit eingeschränkter Alltagskompetenz*, Individuals impaired in activities of daily living) are individuals with limited or compromised cognitive ability.

¹²² Paaßen (2012)

¹²³ Paaßen (2012)

¹²⁴ Kabinettsentwurf des 5. SGB XI ÄndG. On-line resources at: <http://www.pflege-deutschland.de/pflegeversicherung/gesetz/> and <http://www.pflegestufe.info/>

¹²⁵ For the hardship level (higher than level-3), the monthly benefits amounted at € 1918 in 2012 and will increase to € 1995 starting from January 2015.

4.8 THE ITALIAN REGIONAL LTC PROGRAMMES (FRIULI – VENEZIA GIULIA AND TOSCANA)¹²⁶

Friuli – Venezia Giulia established a Long-term Care Fund (*Fondo per l'autonomia possibile e per l'assistenza a lungo termine*), through a regional law in 2006 (L.R. 6/2006), with the aim of helping elderly adults who, due to a substantial loss of autonomy, are not able to independently care about themselves and to live an independent and decent life. The main programme for domiciliary-assistance to the elderly is the CAF cash-benefit (*Contributo per l'aiuto familiare*, Family help contribution) which aims at (partially) financing the home-care services received by the elderly from private nurses or social assistants, with an employment contract of at least 20 hours of assistance per month. An additional, yet alternative, cash-benefit is the APA (*Assegno per l'Autonomia Possibile*, Autonomy Allowance): a monetary contribution, lower than the CAF, for those vulnerable elderly who receive help from informal-caregivers (mainly family members). Both programmes are means-tested and have age-requirements for eligibility. The Fund also finances the *Sostegno alla vita indipendente* (Allowance for an Independent Life), and the *Sostegno per persone con problemi di salute mentale* (Allowance for cognitive impaired individuals), who provide benefits to non-elderly individuals suffering from specific mental illnesses or (temporary) severe disabilities. The Fund's resources are allocated to the Municipalities Social Services Offices (*Servizi Sociali del Comune*).¹²⁷

The assessment-of-need for the programmes financed by the Long-Term Care Fund is performed by the Multi-professional Assessment District Unit (*Unità di Valutazione Multiprofessionale*, UVM), which is part of the National Health System (NHS) and is composed by at least one municipality Social Assistant and one trained medical professional from the NHS. Functional vulnerability is evaluated on a list of activities (Table 4-20) corresponding to the ADL taxonomy from [Katz et al. \(1970\)](#).¹²⁸ The following table also explicates the matching with the SHARE survey, which is highly precise.

Table 4-20, *Assessment-of-need for Friuli – Venezia Giulia's CAF and APA*

<i>Limitations</i>	<i>evaluation</i>	<i>Description</i>	<i>SHARE tasks (yes/no)</i>
Washing	yes/no	Needs help with bathing more than one part of the body, getting in or out of the tub or shower.	Bathing or showering
Dressing	yes/no	Needs help with dressing self or needs to be completely dressed	Dressing (including putting on shoes)
Use of WC	yes/no	Needs help transferring to the toilet, cleaning self or uses bedpan or commode	Going to the toilet
Transferring	yes/no	Needs help in moving from bed to chair or requires a complete transfer	Getting in or out of bed
Continence	yes/no	Is partially or totally incontinent of bowel or bladder	Being urinary incontinent
Nutrition	yes/no	Needs partial or total help with feeding or requires parenteral feeding	Eating
Cognitive impairment	yes/no	Is affected by dementia or has substantial sensory deficits	Orientation in time (day, week, month, year): cannot answer three or more

¹²⁶ The eligibility criteria in Italy for regional and local LTC benefits in-kind or in-cash are not harmonized. For a review of the highly heterogeneous Italian LTC framework, see [Gori \(2013\)](#), [Da Roit and Le Bihan \(2010\)](#), [Ranci and Pavolini \(2012\)](#), [Rebba \(2010\)](#), [Tediosi and Gabriele \(2010\)](#), [Visca et al. \(2012\)](#).

¹²⁷ [CR-FVG \(2013\)](#), [AGENAS \(2014\)](#)

¹²⁸ An ongoing reform-project aims at replacing the Katz-ADL scale with a new assessment-method, the ValGraf scale, in the forthcoming years.

Eligibility conditions for CAF and APA encompass both demographic, economic and health conditions: individuals should be aged 65 or more, should have a yearly household income lower than € 35000, and should suffer from at least 2 limitations in the ADL scale. Moreover, individuals with severe cognitive impairment (defined as having a score of 3 on the Clinical Dementia Rating scale, see [Morris, JC \(1993\)](#) for details) or substantial sensory deficits are also eligible to the benefit.

Table 4-21, *Friuli-Venezia Giulia's CAF and APA eligibility rules*

<i>individual characteristics</i>	<i>eligibility requirements</i>
Age	at least 65 years old
Economic resources	Yearly household income lower than € 35000
Health	Loss of autonomy in at least 2 ADL <i>or</i> cognitive impaired conditions

The monetary amount of the allowance depends on the degree of vulnerability assessed by the UVM as well as on the household income. As far as the functional vulnerability is concerned, the legislation set two intensity levels: having two limitations in ADL, *versus* having three or more limitations. Furthermore, the CAF allowance depends on the amount of hours-of-care indicated in the employment contract (at least 20 hours per month). As for the household economic resources, the allowance is maximum when the yearly income is lower than € 7500; it reaches its minimum value for an income level of € 35000.

Table 4-22, *Friuli Venezia Giulia's CAF and APA allowances*

	<i>ADL-loss</i>	<i>Yearly income</i>	<i>Allowance per year</i>
Maximum allowance CAF	3+ ADL (39+ hours of care per month)	€ 0 - 7000	€ 10920
Minimum allowance CAF	2 ADL (20-25 hours of care per month)	€ 35000	€ 262
Maximum allowance APA	3+ ADL	€ 0 - 7000	€ 6548
Minimum allowance APA	2 ADL	€ 25000-35000	€ 1550

Toscana's main regional Long-term Care programme PAC (*Progetto per l'assistenza continua alla persona non autosufficiente*, Long-term care for non autonomous individuals) was introduced in 2010 with the regional law D.G.R. n.370 (March 22, 2010). The PAC is financed by the *Fondo per la non autosufficienza* (regional law L.R. n.66, December 18, 2008) and encompasses both benefits in-cash and in-kind for adults older than 64, with the aim of keeping vulnerable elderly in their home-environment, allowing them to live a decent life and ultimately delaying institutionalization. The programme is means-tested, since the household income is taken into account when defining the amount-of-care to be supplied/reimbursed or the cash-benefit to be allocated ([AGENAS \(2014\)](#), [Profili et al. \(2009\)](#))

Several home-care services are included in the PAC, ranging from nursing-care by public medical professionals (*Interventi domiciliari sociali e sanitari*), to cash-benefits aimed at sharing the costs of hiring a private professional caregiver (*buoni servizio o titoli per l'acquisto di servizio*), to cash-benefits or respite-care services for informal caregivers (*interventi di sostegno alle funzioni assistenziali della famiglia / Sostegno alla persona e alla famiglia e la qualificazione del lavoro dell'assistente familiare*). The PAC is managed at the district level (*distretti sanitari*). Each district set up a Multi-disciplinary Evaluation Unit (*Unità di Valutazione Multidisciplinare*, UVM), composed of a doctor, a nurse and a social assistant, who is responsible for the assessment-of-need of the elderly applicants and for the definition of a Personalized Plan of Assistance (*Progetto Assistenziale Personalizzato*, PAP), which regulates the care-services to be supplied. In order to facilitate the access to the

PAC, an information service has been put in place, the *Punti Insieme* offices, who should help the elders or their families in following the proper steps to file an application to the programme.

Vulnerability is assessed by the UVM through a multi-dimensional approach that gather individuals in 5 iso-groups, representing five homogeneous levels of need-of-care. This is, to some extent, similar to the rationale of the French AGGIR scale (Section 4.6), whose categorizations, the Groups Iso-Resources (GIR), identify individuals with similar loss of autonomy and equivalent need-of-care. The Toscana's PAC assesses individuals' limitations in three main dimensions: Basic Activities of Daily Living (BADL), Cognitive Impairment, Mood and Behavior. The BADL is a Katz-adapted list of activities-of-daily-living included in the Minimum Data Set for Home Care (MDS-HC) assessment method ([Morris, JN et al., 1997](#)). It has seven items, unlike Katz's six, since the "movement" task is split into a "transferring" activity (as in the Katz ADL scale), a "moving when in bed" and a "moving around house" activity. Each activity is evaluated on a five-step scale, from 0 (independence) to 4 (full assistance required) according to the need of care required by the applicant in the last seven days, as illustrated in Table 4-23.¹²⁹ When matching the BADL assessment to SHARE respondents, we assign a score of three (over four) for each reported limitations.

Table 4-23, *Assessment-of-need for BADL, Toscana's PAC*

<i>Limitations</i>	<i>description</i>	<i>Original Evaluation</i>	<i>SHARE tasks (yes/no)</i>	<i>assigned value</i>
Washing	Needs help with bathing more than one part of the body, getting in or out of the tub or shower.	From 0 to 4	Bathing or showering	3 out of 4
Dressing	Needs help with dressing self or needs to be completely dressed	From 0 to 4	Dressing	3 out of 4
Use of WC	Needs help transferring to the toilet, cleaning self or uses bedpan or commode	From 0 to 4	Using the toilet	3 out of 4
Moving	Needs help in moving around the house, even when using mobility aids	From 0 to 4	Walking across a room	3 out of 4
Transferring	Needs help in moving from bed to chair or requires a complete transfer	From 0 to 4	Transferring: getting in or out of bed	3 out of 4
Moving in bed	Needs help in changing position when in bed	From 0 to 4	Transferring: getting in or out of bed	3 out of 4
Nutrition	Needs partial or total help with feeding or requires parenteral feeding	From 0 to 4	Eating	3 out of 4

Evaluation: 0 - independence; 1 - supervision only; 2 - light dependency; 3 - heavy dependency; 4 - full dependency

Three degrees of dependency in BADL are then identified, according to the number and the intensity of the BADL limitations experienced by the individual.

Table 4-24, *Definition of dependency in BADL, Toscana's PAC*

<i>Dependency in BADL</i>	<i>description</i>	<i>BADL scale</i>
Light	Full dependency in 2 BADL <i>or</i> light/heavy dependency in 3 BADL	At least 8
Moderate	Full dependency in 3 BADL <i>or</i> light/heavy dependency in 4+ BADL	At least 15
Heavy	Full dependency in 2+ BADL <i>or</i> light/heavy dependency in 3+ BADL	At least 22

¹²⁹ Adapted from [Profili et al. \(2009\)](#). *Supervision* refers to a need of supervision for three or more times a week; *light dependency* refers to a need of light physical-help for three or more times; *heavy dependency* refers to a need of heavy physical-help for three or more times; *full dependency* refers to constant need for help.

Cognitive impairment is measured through the application of Eric Pfeiffer’s Short Portable Mental Status Questionnaire ([Pfeiffer, 1975](#)), which classifies patients as “non impaired or lightly impaired”, “moderately impaired” and “severely impaired”, according to a short- and long-term memory test, an orientation test and a verbal fluency test ([Profili et al., 2009](#)). As already mentioned throughout this Section, in SHARE we classify an individual as cognitive impaired when she is not able to provide three or more correct answers to questions regarding the current day, week, month and year.

Mood- and Behavior-assessment follow the guidelines from MDS-HC. Mood assessment consists in a list of questions about whether the patient exhibits: (i) a feeling of sadness depression or death-wishes; (ii) persistent anger with self or others; (iii) expressions of what appears to be unrealistic fears; (iv) repetitive health complaints (obsessive concerns); (v) repetitive anxious complaints; (vi) sad, pained, worried facial expressions; (vii) recurrent crying, tearfulness; (viii) withdrawal from activities of interest; (ix) reduced social interaction; Instances when client exhibited behavioral symptoms. Behavior-assessment deals with the occurrence of: (i) wandering; (ii) verbally abusive behavioral symptoms; (iii) physically abusive behavioral symptoms; (iv) other behavioral symptoms; (v) resisting care/taking medications/injections/ADL assistance/eating/changes in position. Depending on the number of mood and behavioral disturbances, an individual is categorized as “lightly disturbed”, “moderately disturbed”, “severely disturbed”. As for the matching with SHARE, we label as “having behavioral issues” those respondents with an EURO-D value of 4 (or higher), which has been demonstrated to be associated with a clinically significant level of depression¹³⁰ (see paragraph 3.2 for detailed information on these information in SHARE).

Five iso-groups of vulnerability are built by combining the BADL status, the cognitive status and the mood/behavioral status. Group 5 corresponds to those who have a bad BADL status, are severely cognitive impaired and severely disturbed, while group 1 gather those who have –roughly– a light deficit in one of the three dimensions. The following table explains in details how the iso-groups are defined (see [Profili et al. \(2009\)](#) and [Visca et al. \(2012\)](#)):

Table 4-25, ISO-vulnerability groups, Toscana’s PAC

ISO-GROUP	BADL limitations								
	<i>light</i>			<i>moderate</i>			<i>severe</i>		
	mood/behav. impairment			mood/behav. impairment			mood/behav. impairment		
	<i>light</i>	<i>moderate</i>	<i>severe</i>	<i>light</i>	<i>moderate</i>	<i>severe</i>	<i>light</i>	<i>moderate</i>	<i>severe</i>
cognitive impairment									
<i>light</i>	1	2	3	2	3	4	4	4	5
<i>moderate</i>	2	2	3	3	3	4	4	4	5
<i>severe</i>	3	3	4	3	4	5	4	5	5

Eligibility for PAC depends on age, income and on the ISO-vulnerability group assessed by the UVM, as shown in Table 4-26.

¹³⁰ [Colombo et al. \(2011\)](#). Primary reference: [Dewey and Prince \(2005\)](#).

Table 4-26, Toscana's PAC eligibility rules

<i>individual characteristics</i>	<i>eligibility requirements</i>
Age	at least 65 years old
Economic resources	Yearly household income lower than € 25000
Health	ISO-GROUP 3 or higher*

The minimum age is 65 years old. The minimum ISO-category is 3, even though the UVM can, in principle, decide to allow some benefit for individuals in groups 1 and 2.¹³¹ The amount of the in-kind or the in-cash allowance is means-tested: individuals with yearly household income above € 25000 will not receive any benefit.¹³² Moreover, they depend on the ISO-vulnerability categorization, as shown in Table 4-27.

Table 4-27, Monetary allowances, Toscana's PAC

<i>ISO-GROUP</i>	<i>Minimum – maximum allowance</i>
3	[€80 – €120]
4	[€170 – €310]
5	[€260 – €450]

In our matching with SHARE, a respondent is classified in ISO category 3 when she has at least: (i) light BADL dependency and behavioural limitations; (ii) light BADL dependency and cognitive limitations; and (iii) moderate BADL dependency.

4.9 SPANISH LEY DE DEPENDENCIA

Formal long-term care programmes in **Spain** include in-kind services and cash benefits. To analyse the Spanish system, we have to refer to two separate periods: before 2006, year of the introduction of the *Ley de Dependencia*, and after 2006, subsequently to the implementation of the reform¹³³.

The Spanish system, prior to the Law 36/2006 (*Ley de Dependencia*), was highly decentralized and characterized as a “system of regional LTC services”. The access to publicly funded long-term assistance was based on region-specific assessments of need and resources. The social security system provided assistance in the form of benefits for those with a high degree of dependency, cash-allowances within the non-contributory disability pension and family benefits for those with disabled children. The supply of social services has been inadequate to the needs of dependent population, and characterized by a high level of heterogeneity among regions. Due to the scarcity of publicly funded LTC services, there has been a large expansion of privately provided programmes since the 1980s ([OECD, 2011](#)).

To harmonize this complex legislative setting, in 2006, the Spanish government enacted a new *Ley de Dependencia* (Dependency Law - Act 39/2006, of 14th December, on the Promotion of Personal Autonomy and Care for Dependent persons) whose aim was to “*configure a network for public use that integrated on a coordinated basis, both public and private centres and services*” ([Jiménez-Martín & Prieto, 2010](#)). The law defined “dependency” as *the permanent state in which persons require the care of others to perform basic activities of daily living, for reasons derived from age, illness or disability and related to*

¹³¹ Regional law D.G.R. n.370, Attachment A.

¹³² See, e.g., the regulation of the Casentino district, at <http://www.uc.casentino.toscana.it/regolamenti/disposizioni-attuarie-anno-2013.pdf>.

¹³³ The reform will be gradually implemented from January 2007 to 2015, year in which the system will be completely operational (even though, due to the economic crisis, funds devoted to long-term care suffered a dramatic cut in July 2012, producing delays in the implementation process) (Jimenez et al., 2014).

the lack or loss of physical, mental, intellectual or sensorial autonomy and introduced a standardized procedure of assessment at the national level. The evaluation process is conducted by the autonomous administration operating in the applicant's residence and it is valid throughout the whole country, to guarantee equality at the national level. Degrees and levels of dependency are established by using an assessment scale (Table 4-28) approved by the Territorial Council of the System for Autonomy and Care for Dependency.

Table 4-28, *Assessment of need in the Spanish Ley de Dependencia*

<i>Activities – tasks</i>	<i>Weight</i>	<i>SHARE tasks</i>
Eating and drinking	16.8 (10)	Eating (+cutting up your food)
Recognize e/o reach the food served	0.25	
Cutting up food	0.2	
Using cutlery	0.3	
Putting a glass to mouth	0.25	
Control of physical needs	14.8 (7)	Using the toilet (+ getting up or down)
Go to the appropriate place	0.2	
Dressing and undressing	0.15	
Adopting the right posture	0.3	
Cleaning oneself	0.35	
Washing	8.8 (8)	Bathing or showering
Turning on and turning off taps	0.15	
Washing hands	0.2	
Using shower or bath tub	0.15	
Washing lower part of the body	0.25	
Washing upper part of the body	0.25	
Other personal tasks	2.9 (2)	Bathing or showering
Combing hair	0.3	
Cutting nails	0.15	
Washing hair	0.25	
Brushing teeth	0.3	
Dressing	11.9 (11.6)	Dressing (+ putting on shoes and socks)
Recognize e/o reach clothes and shoes	0.15	
Putting on shoes	0.1	
Doing up buttons	0.15	
Dressing upper part of the body	0.3	
Dressing lower part of the body	0.3	
Maintaining health	2.9 (11)	
Request therapeutic assistance	0.15	Taking medications
Applying therapeutic measures	0.1	Taking medications
Avoiding indoor risks	0.25	Walking across a room
Avoiding outdoor risks	0.25	Walking across a room
Distress call	0.25	Making telephone calls
Maintaining health 2	9.4 (2)	-
Changing position from lying to sitting on the bed	0.1	Getting in or out of bed
Sitting	0.15	Sitting for about two hours
Getting up from a chair	0.1	Getting up from a chair after sitting for long periods
Standing up	0.15	Getting in or out of bed
Sitting down on a chair	0.1	Getting in or out of bed
Changing posture from a sitting position	0.1	Getting in or out of bed
Changing posture from bed	0.1	Getting in or out of bed
Changing centre of gravity of body in the bed	0.2	Getting in or out of bed
Moving inside home	12.3 (12.1)	-
Movements related dressing	0.25	Dressing (+ putting on shoes and socks)
Movements related eating	0.15	Eating (+cutting up your food)
Movements related washing	0.1	Bathing or showering

Movements not related to self-care	0.25	Walking across a room
Access to all settings of the rooms	0.1	Walking across a room
Access to all rooms	0.15	Walking across a room
Moving outside home	12.2 (12.9)	-
Going out	0.25	Walking across a room
Walking around the house/buiding	0.25	Walking across a room
Walking short distances in known places	0.2	Walking across a room
Walking short distances in unknown places	0.15	Walking across a room <i>or</i> Using a map to figure out how to get around in a strange place
Walking long distances in known places	0.1	Walking across a room
Walking long distances in unknown places	0.05	Walking across a room <i>or</i> Using a map to figure out how to get around in a strange place
Housekeeping	8 (8)	
Cooking	0.45	Preparing a hot meal
Shopping (for food)	0.25	Shopping for groceries
Cleaning the house	0.2	Doing work around the house or garden
Washing clothes	0.1	Doing work around the house or garden
<u>Only for patients with a mental illness or cognitive impairment:</u>		
Making decisions	(15.4)	Orientation in time (day, week, month, year): cannot answer three or more

Source: Real Decreto 174/2011, Ministerio de Sanidad, Política Social e Igualdad "BOE", num.42, 18/02/2011

Similarly to the Czech Republic, the Spanish ranking scale consists of 10 distinct activities and, in turn, each activity includes a set of specific tasks. An additional activity (**making decisions**) is included only for individuals who suffer from mental disorders or cognitive impairment. Moreover, for this specific group of vulnerable persons the ranking scale assigns different weights to each activity (they are reported in parenthesis).

The Spanish legislation allows for different degrees of *loss-of-autonomy* for each of the aforementioned tasks. The need-of-support can be *special*, *full* or *partial*, to which is assigned a coefficient of 1, 0.95 or 0.9 respectively. These support coefficients must be multiplied to the coefficient of the task in which the limitations is experienced. E.g., if an individual has *full* limitations in cooking, she will be assigned a score of 0.45×0.95 within the dimension *Housekeeping*.

Support coefficient	0.9	0.9	0.95	1
	<i>Supervision</i>	<i>Partial Physical Assistance</i>	<i>Maximum Physical Assistance</i>	<i>Special Assistance</i>
	If the dependent only needs a third person to prepare the necessary elements to perform the activity	When a third person has to participate actively	If the third person has to substitute the dependent individual in the execution of the activity	The dependent individual suffers behavioural disorders that hinder the provision of the task by the third person

The final score is the sum of the weights of the tasks for which the individual has difficulty, multiplied by the degree of supervision required and the weight assigned to that activity:

Score = $\sum$ (Weight of the task performed with difficulty * Degree of supervision required in the specific task * Weight of the corresponding activity)

To summarize, the Spanish assessment-scale involves 10 *Activities* (plus one for mentally impaired individuals). Each activity comprises several *tasks*. Each Activity carries a weight (bold in Table 4-28, e.g., 16.8 for Eating and drinking).

Each task has a coefficient (bounded between 0 and 1), representing the share of the Activity's weight carried by that task (e.g., Cutting up food has the 20% of the Eating and drinking weight). When an individual is mentally impaired, a further eleventh Activity is considered, while the remaining ten are assigned a new weight (in parenthesis). E.g., for a mentally impaired individual the weight of the Activity Eating and drinking is 10.

Since some of the tasks included in the Spanish assessment do not have a perfect match in the SHARE dataset, we opted for the most coherent and prudent choice. As an example, with regards to the task of moving *outdoor* (which is an iADL), for which we lack a specific information in SHARE, we looked at the respondents' ability to move *indoor* (which is an ADL). We want to avoid the risk of labeling someone as non-autonomous in a task when he is in-fact able to do it. In this case, moving *indoor* clearly represents a prudent choice, since it is arguable that an individual who cannot move inside her house will not be able to walk *outdoor*, while the vice-versa is not necessarily true. Moreover, since in SHARE we do not have information about the intensity of occurring limitations, we prudently chose to always assign a need-of-support of 0.9. To sum up, in our matching with SHARE, the Spanish vulnerability score is constituted by the sum of the coefficient assigned to each task (in which the respondents reports a loss-of-autonomy), each being multiplied by the support-coefficient 0.9 and furthermore by the weight assigned to the corresponding Activity. E.g., an individual who reports only a limitation in cooking will have a total score of $0.45 \times 0.9 \times 8$.

The ranking scale identifies three degrees of dependency: (i) *moderate dependency* when the person needs help to perform various basic daily living activities at least once a day; (ii) *severe dependency* when the person needs help in order to perform various basic daily living activities two or three times a day; and (iii) *high dependency* when the person needs help to perform various basic daily living activities several times a day and due to the total loss of physical, mental, intellectual or sensorial autonomy, he needs permanent support of another person.

Within each of the three degrees, the ranking scale distinguishes two levels of dependency on the basis of the person's autonomy and on the intensity of care that is required. The first level corresponds to those individuals who can perform the activity without the direct support of a third person, whereas the second level refers to those situations in which the dependent individual needs some type of specific support. Table 4-29 shows the ranking scale used for the determination of the degree of dependency ([Fernanda Gutierrez et al., 2010](#); [Jiménez-Martín & Prieto, 2010](#)).

Table 4-29, *Degrees and Levels of Dependency (score) in the Spanish system*

Degree	Level	Score
High dependence	Level 2	90-100
High dependence	Level 1	75-89
Severe dependence	Level 2	65-74
Severe dependence	Level 1	50-64
Moderate dependence	Level 2	40-49
Moderate dependence	Level 1	25-39
Not dependent		0-24

Source: Gutierrez et al., 2010.

After the assessment-of-need procedure, the dependent persons are entitled to receive formal care by means of services and benefits that are matched to their degree and level of dependency (Individual Care Programme) ([Fernanda Gutierrez et al., 2010](#)). The assessment of needs, the prescription of assistance and the management of the care-allowances are carried out directly by the public administrations, and might not be object of delegation. Different types of in-kind services are offered by the Spanish system (see [Fernanda Gutierrez et al., 2010](#) for a complete description).

Regarding the “Home help service”, which includes housework and other services related to home needs (cleaning, washing, cooking, etc.), personal care and related services in performing daily activities, the *Ley de Dependencia* has been introduced a specific regulation in terms of home-care hours received by month, according to the level and the grade of dependency of vulnerable individuals (see Table 4-30).

Table 4-30, Home-care hours, Spanish Ley of Dependencia

	Home Care (Hours/month)
Intensive Home Care	
High dependence. Level 2	70-90 hours/month
High dependence. Level 1	77-70 hours/month
Severe dependence. Level 2	40-55 hours/month
Severe dependence. Level 1	30-40 hours/month
Moderate dependence. Level 2	21-30 hours/month
Moderate dependence. Level 1	12-20 hours/month
Non-intensive Home Care	
High dependence. Level 2	Up to 45 hours/month
High dependence. Level 1	Up to 35 hours/month
Severe dependence. Level 2	Up to 28 hours/month
Severe dependence. Level 1	Up to 20 hours/month

Source: Gutierrez et al., 2010.

Concerning the cash benefits, three types of allowances are available:

- Allowance for the care recipient to hire services. This benefit is meant for the care recipient to hire services through private centers (with accreditation), when public services are not available.
- Allowance for the care recipient receiving informal care. To receive the benefit, the informal carer needs to be a relative of the dependent person, except in the case service are unavailable in the area (in this situation, the informal carer must be a neighbor residing in the same municipalities, or nearby).
- Allowance for personal assistance. This benefit is meant for individuals having a high degree of disability (Degree III) to hire personal help in order to provide them with access to work and education and help in daily activities.

All cash allowances are means-tested and depend on cost, or on hours of care for the allowance towards informal carers (OECD (2011); Fernanda Gutierrez et al. (2010)).

Levels of dependence	Allowance for the care recipient to hire services	Allowance for the care recipient receiving informal care	Allowance for personal assistance
High - Level 2	833.96	520.69	833.96
High - Level 1	625.47	416.08	625.47
Severe - Level 2	426.18	337.25	Not available
Severe - Level 1	401.20	300.90	Not available
Moderate - Level 2	300	180	Not available
Moderate - Level 1	Not implemented yet	Not implemented yet	Not implemented yet

Source: Fernanda Gutierrez et al. (2010)

Some final observations on the Spanish assessment method are reported hereafter:

- The Spanish system puts a lot of emphasis on the intensity of support needed and the tasks for which care is required. The vulnerability assessment is highly detailed with respect to all activities included in the scale, and a special attention is paid to those individuals who have limitations in eating/drinking tasks or in performing daily living tasks such as dressing and undressing and cleaning oneself.
- In contrast with the Czech Republic method, dependency in each activity is evaluated by using a weighted scale, in which different weights have been assigned to each specific task. Interestingly, the Spanish ranking scale assigns different activity coefficients (and an additional activity: **making decisions**) to those individuals who have a difficulty in performing tasks due to some cognitive or intellectual challenges. Its focus on mental aspects of frailty is in line with the WHO bio-psychological perspective ([WHO, 2002](#)).

5. CONCLUSIONS

This paper focused on assessment of vulnerability and eligibility frameworks of eleven main public national or regional Long-Term Care programmes in Austria, Belgium, Czech Republic, France, Germany, Italy and Spain. These topics, not specifically covered in the recent literature, represent a compulsory gateway for elderly adults in order to be able to receive benefits in-kind or in-cash for home-based care. As highlighted in Section 2, there is not a unique, standardized, definition of vulnerability in the medical literature. This reflects in substantial differences in the regulative context between countries (and even within countries, when multiple nation-wide programmes are implemented) on the very issue of defining the target population in need-of-LTC. Although most programmes cover functional (mostly ADL and iADL) and cognitive limitations¹³⁴, it appears that there is almost no regulation that includes them altogether in the assessment-process. For instance, “light” potential outcomes of frailty (mostly iADL) are often negligible in the evaluation, while cognitive impairments are always explicitly included as a relevant dimension (yet, to different extents). Moreover, the health-outcomes are often unequally weighted within an assessment-scale: some limitations are given more importance than others in determining eligibility, and there are legislations that characterize some deficit as necessary and/or sufficient for eligibility (the Belgian’s INAMI home-care, the French APA, the German LTCI), thus constituting *veto* or *favor* criteria, respectively ([Marichal, 2004](#)). As a consequence, an individual with a given medical-profile may well result to be eligible for LTC services under one legislation while being ineligible under others. This confirms the concerns that institutional LTC frameworks may constitute a source of heterogeneity that should not be neglected in economic analyses focused on the demand of health-care: besides individual characteristics, e.g., health- and socio economic status, differences in legislations may have a relevant impact on elders’ decision in terms of formal-care utilization. In paragraph 3.3.2 we compared the LTC eligibility rules on a common sample of individuals using micro-data from the second wave of SHARE. Being able to implement different regulations on a standard population allows comparing different legislations while keeping the sample’s health-conditions constant. IADL have higher incidence than ADL in Europe (they are often considered as early signals of the vulnerability process), therefore programmes who account for iADL in their eligibility conditions exhibit higher inclusiveness rates with respect to those who only evaluate ADL. At the same time, there are frameworks who consider only ADL limitations, but give high weight to those difficulties who are more frequent among European elderly (e.g., difficulties in washing and in dressing for the Belgian’s INAMI home-care, see Table 3-3), and therefore reach coverage rates which are similar to

¹³⁴ Although medical literature describes it as determined by a larger set of symptoms, nearly all studies on frailty report deteriorations in ADL and iADL, that are therefore considered to be effective measures of the need-of-assistance ([Pel-Littel et al. \(2009\)](#)).

other systems. Conversely, there are programmes with a wide assessment-of-need but with strict eligibility rules (the Flemish Care Insurance and the Toscana’s PAC) that cover lower shares of the population. Furthermore, when multiple nation-wide programmes are implemented in the same country, with the aim of targeting different stages of vulnerability (France and, to a lower extent, Belgium), the national LTC framework – as a whole – exhibits higher inclusiveness rates even if the single programmes are not particularly inclusive per se. Indeed, there might exist complementarities between various branches of a nation-wide LTC framework when, e.g., one programme provides generous benefits to a relatively low share of elderly adults who suffer from severe limitations, while another offers lower benefits to those who are in the early stages of vulnerability, in order to delay the frailty process, as it happens in France.

6. APPENDICES

6.1 ADL AND iADL¹³⁵

The ADL taxonomy assesses how an individual performs, without assistance, in six main functioning domains: bathing, dressing, toileting, transferring, continence, and feeding. The iADL scale comprises eight tasks: ability to use the telephone, shopping, food preparation, housekeeping, doing laundry, mode of transportation, responsibility for own medications and ability to handle finances. The activities included in the iADL list require, to be performed, a more complex of neuropsychological organization than ADL, and therefore measure less severe levels of vulnerability.¹³⁶ Brief definitions for ADL and iADL tasks are reported in the following table:

Table 6-1, ADL and iADL

<i>ADL: Activities of Daily Living</i>	<i>iADL: instrumental Activities of Daily Living</i>
Washing: dependency means “needing help with bathing in more than one part of the body”, “getting in or out of the tub or shower”, or “requiring total bathing”.	Ability to use the telephone: dependency means “not using the telephone at all on own initiative”. Lighter levels are: “dialing only a few well-know numbers” and “answering but not dialing”.
Dressing: dependency means “needing help with self-dressing” or “needing to be completely dressed”.	Shopping: Dependency means “shopping independently only for small purchases”, “needing to be accompanied on any shopping trip” or “being completely unable to shop”.
Use of WC: dependency means “needing help in transferring to the toilet, self-cleaning or using bedpan or commode”.	Food preparation: dependency means “preparing adequate meals only if supplied with ingredients”, “heating and serving prepared meals”, “preparing meals but being unable to maintain adequate diet” or “needing to have meals prepared and served”.
Transferring: dependency means “needing help in moving from bed to chair” or “requiring a complete physical transfer”.	Housekeeping: dependency means “not participating in any housekeeping tasks”. Lighter levels include “performing only light daily tasks while being unable to maintain acceptable level of cleanliness” and “needing help with all home maintenance tasks”.

¹³⁵ Further details of ADL and iADL can be found in seminal works by [Katz et al. \(1970\)](#) and [Lawton and Brody \(1969\)](#) as well as in [Shelkey and Wallace \(1998\)](#) (for ADL) and [Graf \(2009\)](#) (for iADL).

¹³⁶ On the hierarchical structure of ADL and iADL see [Wiener et al. \(1990\)](#), [Kempen et al. \(1995\)](#), [Thomas et al. \(1998\)](#), [LaPlante \(2010\)](#). As [LaPlante \(2010\)](#) highlights, the paediatric development model implicit in the ADL scale implies that “as a child matures, the simplest activity, eating, is mastered first, then continence, transferring, toileting, dressing, and bathing, in order of increasing complexity. As a person ages, or experiences certain chronic illnesses, performance is lost in the reverse order, from bathing to eating”.

Continence: dependency means “being partially or totally incontinent of bowel or bladder”

Nutrition: dependency means “needing partial or total help with feeding” or “requiring parenteral feeding”.

Doing laundry: dependency means “being unable to do laundry”. Lighter levels include “laundering only small items and rinsing stocks and stockings”.

Mode of transportation: dependency means “travelling only with taxi or automobile, with assistance of another” or “not travelling at all”. Lighter levels include: “travelling independently with taxi-only” and “travelling on public transportation when accompanied by another”.

Responsibility for own medications: dependency means “being incapable of dispensing own medication, except maybe for those already prepared in advanced and in separate dosages”.

Ability to handle finances: dependency means “being incapable of handling money”. Lighter levels include “being able to manage day-to-day purchases while needing help with banking, major purchases etc”.

In the original paper by [Katz et al. \(1970\)](#), the ADL tasks were to be evaluated on a zero-one scale, i.e., a person could either be having a deficit or not, and no intermediate degrees of dependency could be selected. Yet, many assessment tools for long-term-care programmes in Europe now include an evaluation of ADL using a multivariate scale with several degrees of dependency for each task (e.g. complete dependency, partial dependency, light dependency).

The Lawton iADL taxonomy is binary as well ([Lawton & Brody, 1969](#)), with patients being classifiable as “dependent” or “not dependent” with respect to each task, without intermediate values. The original scale includes a specific definition for “dependency” together with a list of *lighter* levels of dependency, which are anyway included into the “not dependent” category. As an example, consider the housekeeping dimension: there is one specific definition for “dependency”, which is “not participating in any housekeeping task”, alongside a list of lighter degrees of limitation (e.g. “performing only light daily tasks” or “needing help with all home tasks”) which are anyway included in the “non-dependency” category.

6.2 CZECH REPUBLIC OLD ASSESSMENT SCALE

Table 6-2, the old assessment-of-need for the Czech *Příspěvek na péči*

<i>Self-Care tasks</i>	<i>Self-Sufficiency tasks</i>
Food preparation	Verbal, written and non-verbal communication
Food serving and portioning	Orientation with respect to people and time, also outside one's own natural environment
Nutrition; compliance with drinking regime	Disposing of money and other valuables
Body washing	Arranging for personal matters
Bathing or showering	Time planning, life planning
Care for mouth, hair and nails, shaving	Inclusion in social activities
Exercising physiological need including hygiene	Ensuring food and common articles (shopping)
Transferring in/out of bed, changing positions	Cooking, heating up simple meals
Sitting, ability to remain in the sitting position	Dish washing
Standing, ability to remain standing	Common household cleaning
Moving articles of everyday use	Caring for linen/underwear
Walking on a flat surface	Washing up small linens
Walking on stairs, up and down	Caring for bed
Selecting clothes, recognizing proper overlays	Operating common household appliances
(Un)dressing, putting on/taking off shoes	Manipulating with taps and switches
Orientation in the natural environment	Manipulating with locks, windows and doors
Exercising simple self-medical treatments	Cleaning the household, disposing of refuse

7. BIBLIOGRAPHY

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