Alcamentos

Departamento de Estadística, Estructura y O.E.I.

0806

LONG TERM CARE IN SPAIN: EXTENT, COSTS AND CHALLENGES

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December, 2008

Abstract

The passing of Act 39/2006, of 14th December, on the Promotion of Personal Autonomy and Care for Dependent Persons (known as the Dependent Care Law) has created the fourth pillar of Welfare State in Spain. In order to achieve its efficient implementation, we need to know who and how many individuals should be attended and how much money is needed for the attention. However, the answers to these two questions given until now suggest that a lot of work is still to be done in order to reach the objectives proposed by the Law.

Keywords: Long term care insurance, Dependence, Costs, Public funds.

JEL classification: G22, J11, H68, H72

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1. Introduction

The passing of the Law that establishes the reception of public aid for dependent people opened a new field for application of social policies in Spain. The Law 39/2006, of 14th December, on the Promotion of Personal Autonomy and Care for Dependent Persons, known as the Dependent Care Law -DCL from now on- pretends to create a system of social protection similar to the countries with most advanced systems and most experience in the field. This, in a similar environment, is the case of Germany or France for example. Therefore, it seems reasonable that to achieve the highest possible degree of efficacy in the process of the Law's implementation, two basic questions need to be answered. The first question refers to the knowledge of the number of people that need to be attended, while the second one leads us to determine how costly it would be to provide satisfactory assistance to these people. These work attempts to answer both questions. To do that, at first place a brief description of applicable norms that regulate the assistance of dependent persons in Spain is made. Once the legal framework is outlined we proceed to the estimation of current and future amount of people eligible to receive the aid for each contingency to, subsequently, estimate the assistance costs for these people and its macroeconomic effect. The exposition of principal conclusions is presented in the last part of the paper. It is important to keep in mind two aspects which are the key for the analysis. First, it is necessary to distinguish between dependent persons and those that, being dependent, have the right to receive public aid. Second, the costs estimated here refer solely to the provided assistance. That is, we do not take into account the funds required for equipment and infrastructure necessary to fulfil this assistance.

2. Spanish Dependence Law

According to the article 2 of the DCL, dependence is the permanent state of a person that for reasons associated to age, illness or disability and in connection with the lack or loss of physical, mental, intellectual or sensorial autonomy requires the care of another person or people or significant help to perform basic activities of daily living or, in case of people with mental disabilities or illness, other support for personal autonomy. Related to dependence is the concept of Instrumental Activities of Daily Living (IADL from now on), which refers to the most elementary tasks of a person, those that allow it to thrive with autonomy and independence. These are, for example: personal care, basic domestic duties, essential mobility, recognition of people and objects, orientation, comprehension and execution orders or simple tasks.

The DCL created the so called Autonomy and Dependence Attention System (ADAS from now on) that is managed by the Territorial Council of ADAS. The system represents the fourth pillar of the Welfare State. Since 2007, all the Spanish citizens that request it are evaluated to determine their degree and level of dependence and the aid they are eligible for.

The situation of dependence shall be classified in the following degrees:

• Degree I. Moderate dependence: when the person needs help in order to perform various basic activities of daily living, at least once a day or when the person needs intermittent or limited support for its personal autonomy.

- Degree II. Severe dependence: when the person needs help in order to perform various basic activities of daily living two or three times a day, but it does not want the permanent support of a carer or when it needs extensive support for its personal autonomy.
- Degree III. Major dependence: when the person needs help in order to perform various basic activities of daily living several times a day or, due to the total loss of physical, mental, intellectual or sensorial autonomy it needs the indispensable and continuous support of another person or when it needs generalised support for its personal autonomy.

Each of the degrees of dependence established in the previous paragraph shall be classified in two levels, depending on the person's autonomy and on the intensity of care that is required. The intervals for determining the degrees and levels shall be established in the scale that is referred to in the article 27 -Dependence Evaluation Scale (DES from now on)-. The scale is common for the whole Spanish territory and will be used to measure the ability of a person to perform the IADL itself, as well as, the necessity of aid and supervision to perform the IADL by the people with intellectual disability or mental illness.

The provision of the service will be on charge of Regional Governments (RG from now on) through their social service network in the public as well as semi-private centres.

The financing will come from three sources:

- 1. Central Government (CG from now on) which finances a guaranteed minimum
- 2. RG, that provide contributions of an amount no smaller than that of CG
- 3. Beneficiaries, depending on their income and wealth, based on a mechanism of co-payment common for all Spain, determined by the Territorial Council of ADAS.

The contributions' forecast for the period when DCL will be implemented is included in the Economic Report of the Law and is provided in the Table 1.

[Insert Table 1]

The right to dependence aid will take effect progressively beginning from 1st of January 2007, according to the following schedule:

- 2007: people graded as Degree III -Major Dependence-, levels 2 and 1.
- 2008-2009: people graded as Degree II -Severe Dependence-, level 2.
- 2009-2010: people graded as Degree II -Severe Dependence-, level 1.
- 2011-2012: people graded as Degree I -Moderate Dependence-, level 2.
- 2013-2014: people graded as Degree I -Moderate Dependence-, level 1.

Finally, as we mentioned before, the measurement of the level of dependence will be made applying the scale approved in Royal Decree 504/2007, from 20 April 2007 (RD from now on). The scale is applicable to every disability situation for all ages from 3 years up. In general lines, for every task that a person cannot accomplish a degree is assigned taking into account presence or absence of mental disability. The determination of the degree and level of dependence of a person being evaluated is established based on the final degree, result of the application of the scale, according to the table 2.

[Insert Table 2]

The fourth Additional regulation of the mentioned RD, establishes that after one year of application this scale will be revised by the Territorial Council of the ADAS. Nevertheless, until now, the actualisation did not take place.

3. Determination of the number of dependent persons with right to receive aid

As we pointed out in the introduction, to answer the first question of interest we need to differentiate dependent persons and dependent persons with the right to receive aid. To do that, besides considering the legal requirements, we use information on the Spanish disabled population summarised in the Disabilities, Impairments and Health State Survey (EDDES according to its Spanish acronym) collected by the INE (National Statistics Institute) using 1999 data. In spite of the time lag, it is the only source that treats disability on national level with necessary depth. This macro survey was elaborated by INE in collaboration with IMSERSO and ONCE Foundation. The sample was more than 220.000 people living in private households, in contrast to residencies. The application of mentioned survey implies that the definition of disability used adapts to the set of 36 activities or functions particularly captured in the questionnaire as disabilities for people older than 5 years. The methodology employed in the development of the survey followed the recommendations of the World Health Organisation and, in particular, the International Classification of Impairments, Disabilities and Handicaps, ICIDH from 1980 (WHO, 1997), current in 1999, the year when survey was collected. The EDDES identifies 36 possible disabilities grouped in 10 blocks -see Appendix I-. At the same time, for every disability the severity is recorded for each individual, distinguishing moderate, severe and total degree. Clearly, a fourth degree exists, the one associated to the absence of a disability. One of the inconveniences related to this survey is that it captures the disability as self-perceived by the person. However, this is the only available source of information on the national level, and the most recent one that allows the analysis in depth.

Taking into account the 36 EDDES disabilities, the following are considered to cover the IADL (the numbers identify the disabilities as in Appendix I):

- 12 to 15 to Learn, apply knowledge and perform task
- 16 to 18 to Move
- 22 to 24 to Move outside of the household (move around except in own home)
- 25 to 28 to Take Care of oneself (daily life activities)
- 29 to 33 to Perform housekeeping tasks (care of necessities and domestic activities)

On top of this, we have to add the necessity of the help of a third person. This condition is taken into account including the weekly hours of assistance necessary. According to EDDES six situations are differentiated: less than 7 hours, between 7 and 14 hours, between 15 and 30 hours, between 31 and 40 hours, between 41 and 60 hours and, finally, more than 60 hours.

Once we have specified the cohort considered in the study, we proceed to evaluate and measure the severity of the situation of dependence of the individuals applying the DES. The final degree is the sum of the grades assigned to each task that a person cannot perform -as specified in the Appendix A of the RD- weighted by the coefficient of the degree of assistance for each task and the importance of the corresponding activity -as specified in Appendix C of the RD-. In the case of people with intellectual disability or mental illness, as well as in cases where perceptive-cognitive capacity is affected, a specific table of task

weights will be applied -as specified in Appendix B of RD- selecting as the final degree the one that turns out to be more beneficial for the person being evaluated. In particular, the determination of the degree on the scale has two phases:

- 1. Assignment of a degree to each disability or task that cannot be performed. If the person does not suffer mental disorders, the weighting of these disabilities is the one that appears in the Appendix A. If the person suffers mental disorders both tables, from Appendix A and B, are applied. The final grading of the scale is the higher of the two.
- 2. Assignment of the coefficient of the degree of assistance. According to the difficulty for performing tasks indicated in Appendices A and B, the grading is multiplied by these coefficients and the final degree for the people without mental disorders is obtained. The degree in case of mental disorders will be the higher of the two, applying both, Appendix A and B.

The final result of the process is that, in the reference year, out of the total of 3.478.643 disabled persons in Spain, 1.398.767 people were in state of dependence. At the same time, the application of the scale to this group of people suggests that 776.475 of them would have the right to receive aid, that is, almost 45% would be left out of the public aid system. Therefore, in short, we can say that, in 1999, the year of collection of the EDDES, out of every 100 disabled persons, 40 were dependent and only 22 had the right to receive aid.

It is interesting to ask about values of these figures in the following years. This paper tries to estimate forecasts till 2015 because it is expected that the aid system will be fully implemented in that year. To do that, it is necessary to project the numbers of the dependent persons susceptible of being attended. There are several approaches to do this. One consists in obtaining the figure based on the expected lifetime, as suggested in Monteverde (2004) and

Guillén (2006). However, both papers consider exclusively people of at least 65 and use the data from the Survey of Health in Catalonia corresponding to years 1994 and 2001. Therefore, the proposed scheme starts with the projections of the population proposed by the INE for the period 2002-2060 -from now on P1 and P2 respectively-1 to modify the elevation factors estimated in EDDES. We assume that the elevation factor associated to each micro-data evolves in time in the same way as the weight (in relation to the total population) of the age interval to which the data belongs. That is, being:

- $Pop_{TOT}^t = total population in year t$
- $Pop_i^t = population in i-th age interval in moment t$
- $Pop_{TOT}^{1999} = total population in starting year, that is 1999$
- $Pop_i^{1999} = population in i-th age interval in the starting point, that is$

The weight of the i—th interval within the total population in each year can be written as:

$$k_i^t = \frac{Pop_i^t}{Pop_{TOT}^t}$$

and for the starting year as: $k_i^{1999} = \frac{Pop_i^{1999}}{Pop_{TOT}^{1999}}$

Therefore, the evolution that this weight experiments in time is the ratio of both expressions, that is:

scenario 1, from then on they fall until they reach slightly more than 100.000 persons per year.

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¹ In P1 it is assumed that the net entries of foreigners to Spain evolve up to 2010 according to the most recent trend and, from then on, they remain practically constant and slightly above 250.000 persons per year. In case of P2, it is assumed that the entries in medium term would be smaller than in the previous scenario, therefore, even though the entries between 2002 and 2006 are identical to those in

$$K_{i}^{t} = \frac{k_{i}^{t}}{k_{i}^{1999}} = \frac{\frac{Pop_{i}^{t}}{Pop_{TOT}^{t}}}{\frac{Pop_{i}^{1999}}{Pop_{TOT}^{1999}}} \quad \forall t = 2000, ..., 2015$$

And the elevation factor associated to the j-th individual in year t will be:

$$ef_j^t = ef_j^{1999} \cdot K_i^t \quad \forall t = 2000,...,2015$$

In this manner we obtain the figures up to year 2015, the year in which ADAS will be completely implemented, being in both scenarios slightly above one million of people.

These figures are inferior by almost 40% to those of the White Book of the Dependence (IMSERSO, 2005) -from now on WBD- published by Ministry of Labour and Social Affairs. Nevertheless, there are several reasons that explain these divergences, in particular, we can summarise them in three points:

- 1. In WBD a person is considered disabled if it is unable to perform basic activities of daily living in severe or total degree, as reflected in EDDES. However, these estimations are calculated using the DES scale. That is, the forecasts of WBD not only do not take into account the obligatory need of aid of a third person, what makes the figure overestimated, but also and what is worse, the projections have not been calculated based on the requirements imposed by the current legislation -the Law itself together with the scale- but as a selection of people based on their disabilities and associated severities.
- 2. People in residencies are included into the WBD forecasts, whereas in those based in P1 and P2 are not considered, based on the nature of the EDDES -population not institutionalised-. The WBD estimated that in 1999 there were 959.890 dependent persons out of which 100.000 lived in residencies, that is, slightly more than 10,4%. Even if we assume

that this proportion remains constant, the figures in WBD would be overestimated by almost 30% related to those proposed in this paper.

3. Even more important is that in the projections of DCL it is implicit that all dependent persons will receive aid. That is, if the scale would be applied, all would pass the threshold of 25 points, something that cannot be assured. Furthermore, if we take into account that according to the estimation realised 44,5% would be left without aid, it turns out, combined with the previous data, that the figure stated in DCL would have to be cut by something more than one half -it would be 55,5% of 89,6%- whence the results would be those that are reflected in table 3.

[Insert Table 3]

Therefore, the forecasts of the DCL are not overestimated but they are 30% smaller than those obtained hereby.

The estimation of the number of dependent persons with right to receive public aid in 2009 reaches 875.513, based on P1, and 876.408, based on P2. The classification according to degrees, levels and gender is summarised in table 4.

[Insert Table 4]

According to the estimations made in this paper, the forecasted number of beneficiary population in year 2015, when the Law will be completely implemented, are slightly below one million people, as summarised in table 5.

4. The cost of assistance to the dependence

Once we have determined the number of potential beneficiaries of the public aid, next step is to know what will be the amount of funds related to this attention. To do that, we pretend to evaluate the individual cost taking into account current legal design implemented in Spain. Few works have tackled the estimation of the dependence cost in our country. Amongst them, the most remarkable are Rodríguez and Montserrat (2002) and Monteverde (2004). The first one evaluates the individual mean cost based on the historical data of clinics differentiating health assistance, social services and pharmaceutical costs. At the same time, it distinguishes between moderate, serious and severe dependences, obtaining a figure for mean cost as well as figures by degree -from now on R1 and R2 respectively-. On the other hand, Monteverde (2004) calculates the individual mean cost based on the data from IMSERSO corresponding to the costs of each service provided to dependent persons. It distinguishes three types of care: home assistance service, the cost of a residency and daily centre with home assistance.

- 1) Alternative 1 -from now on A1-: is the cheapest one, it assumes that people with total disability are attended in a residency, those with serious disability attend a daily centre and receive one hour of home assistance daily and those with moderate disability attend a daily centre 3 hours daily.
- 2) Alternative 2 -from now on A2-: assumes that the people with total disability are attended in a residency, those with serious disability attend a daily centre and receive one

hour of home assistance daily and those with moderate disability receive 3 hours of home assistance daily.

3) Alternative 3 -from now on A3-: is the most expensive one, supposes that the only assistance provided is at home independently from the degree of disability. To avoid confusion it implies that all the care, of whatever type, is offered at home of the patient.

Given that the level of the aid received will depend on the grading obtained after the application of the DES scale to each individual, it seams reasonable to think that the individual cost has a direct relationship with the grading obtained on DES. Therefore, the first step consists in estimation of the cost for each scale point assigned -from now on CSP- that is defined as:

$$CSP = \frac{TC^*}{S^*} \in / \text{point}$$

where TC* is the average total cost obtained following each of the scheme applied and S* is the average scale obtained by eligible people. The individual cost in a particular year is the CSP corresponding to the year times the number of points assigned to a person. Finally, the total cost for a year will be the product of the estimated individual cost times the forecast number of people with the right to receive public aid. Analytically expressed:

$$C^{(t)} = \sum_{j=1}^{n} c_{j}^{(t)} = \sum_{j=1}^{n} ef_{j}^{(t)} CSP_{g}^{(t_{0})} \cdot S_{j} \cdot (1+r)^{t-t_{0}}$$

where:

- $c_j^{(t)}$ is the cost in year t of the group represented by subject j
- $ef_i^{(t)}$ is the elevation factor of j in year t

- $CSP_g^{(t_0)}$ is the cost of each point of the scale in base year (t_0) for the gender to which the individual belongs male or female. t_0 is year 2007
- S_j is the scale degree of the j-th individual
- r^t is the annual rate of variation of prices in year t.

CSP has been estimated for the following years. The individual costs were obtained using the above mentioned schemes; therefore, given that we are working with projections of the population, we end up with 10 possible scenarios of costs: five main models with two projections each. We will identify these scenarios with a code of four characters, the first two referring to the cost model and the last two referring to the population projection used.

As both studies are based on past data -Rodríguez on figures from 1998 and Monteverde on those from 1999 and 2003- we need to know the future evolution of the CSP. To do that it is necessary to estimate the future path of the prices associated to the dependence. For that reason we elaborate a price index of the services related to this assistance. As there is no exact correspondence of these costs and sections of Spanish Consumer Price Index, the following correspondence has been established:

- the social costs are summarised in "Services for self-care"
- the sanitary costs are reflected as the arithmetic average of the "Extra-hospital medical services, nurses and other" and "Hospital care and similar"
- the pharmaceutical costs and technical aid is summarised in section "Medicament and other pharmaceutical products"

The weight of each expense is taken as its proportion in the total expense in 1999, the year for which the information about the costs and population is available. According to this way, it can be obtained the complete sequence up to 2007. For years 2008-2015 we assume that the growth of prices will be the mean growth experienced in the past 6 years. As an example of these calculations, Table 6 summarises the CSP for year 2009.

[Insert Table 6]

Using this information, the figures for the total cost for years 2009 and 2015 are those summarised in Table 7.

[Insert Table 7]

As it can be seen, the figures are all quite similar except A3. This is consistent with the extreme nature of this scenario.

To have an idea about the weight of the cost of the assistance provided, we calculated the proportion of Spanish GDP needed to cover these expenses. To do it, we need to estimate the evolution of this variable from now to 2015. To do that, and taking into account current situation, the following scenarios are proposed:

- Optimistic scenario (OS): the drop in activity will follow in 2009, the recovery will be realised in three following years and the grow paths similar or superior to 3% will be achieved by 2012.
- Neutral scenario (NS): the drop of the activity will occupy all 2009 and the first half
 of 2010, while the recovery process will be achieved in the following three years

characterised by drops or zero rates of growth. The takeoff will be achieved in 2015.

 Pessimistic scenario (PS): the drop of the activity will take place until 2011 while the process of recovery will be achieved in the next 4 years characterised by low growth rates.

The assumed paths for each of the three scenarios are summarised in Table 8.

[Insert Table 8]

Assuming, for the sake of simplicity, an inter-annual rate of inflation of 3%, constant during the whole period, we obtain the results summarised in table 9 where we can appreciate the growing weight of the costs. If we omit the results associated to A3, the percentages fluctuate between 1,0% and 1,3% in 2009 and 1,4% and 1,9% in 2015.

[Insert Table 9]

Finally, it is interesting to compare the results obtained in this paper with the expected funds contribution by Public Administration, Central and Regional Governments. Trying to provide an adequate comparison between the public funds and the cost estimations, we proceeded to calculate the amounts proposed according to the application of the programmed schedule for the implementation of ADAS as stated in the DCL (Table 1 of this paper). For the sake of simplicity, we obtained the average cost for each year resulting from all the scenarios except A3. Once the quantities were obtained, we calculated the contribution of the Public Administration compared to the estimated cost. To do that, it is supposed that the CG and RG

will contribute with the same amount of funds, as established in DCL. These calculations are summarised in the Table 10.

[Insert Table 10]

As we can see, in no year the contribution reaches 30% of the estimated cost. Furthermore, the maximum contribution is not reached in 2015 but in 2012, and since then the contributions experience fluctuations. This implies that, to assist correctly the analysed population, the beneficiary would have to contribute roughly 75% of the cost what shows that the contributions planned are clearly insufficient to cover these expenses. This suggests that the financial aspects related to the DCL should be restated.

Another aspect that can be deduced based on the figures on which the DCL relies is that the average cost per dependent person for year 2015 is extremely low. It is enough to divide the total contribution of the Public Administration (4.426 millions of euros) by the predicted number of dependent persons for that year (1.373.248 people) to obtain that the mean costs is just 3.222,9 €. Even if we divided the total amount by the refined figure from Table 3, the mean cost would be below 6.500 euros. The estimations obtained in this paper suggest that the number of dependent persons predicted for 2015 is slightly less than a million what would result in the average cost per individual somewhere between 17.782 € under the scenario R2P1 and 21.346 € under the scenario A2P2, without taking into account scenarios A3P1 or A3P2, in case of which we would talk about figures above 40.000 €.

5. Conclusions

The principal results of this paper can be summarised in the following:

- The figure of the dependent persons with the right to receive public aid for 2009 is around 876.000 people, whereas for 2015 it is slightly smaller than one million. These figures are apparently lesser than those published in WBD. However, it is necessary to take into account that the mentioned source does not consider that, to be dependent, an assistance of a third person is required and assumes that all dependent persons will have the right to receive aid, no matter what DES they reach. Including these two conditions we conclude that the figures from WBD are 30% lesser than those presented in this paper.
- 2) If we talk about the cost, the full attention to these people in 2009 is estimated to be somewhere between 11.440 millions and 14.277 millions of euros depending on the assumptions considered. This figure grows to the band of 16.117 and 21.148 millions of euros for year 2015. These quantities are far from the designated contributions in the report of DCL. Assuming that the RG contributions will be at least as the same amount as CG, public funds would not reach 30% of the estimated cost necessary to assist these people correctly and, consequently, the beneficiary would have to contribute the remaining 70%.

In conclusion, the contribution of the funds for the assistance is clearly insufficient. In fact, no separate mechanism has been created to achieve the funds necessary to face the costs as it has been done in Germany or France, for example. Moreover, the problem has been transferred to the RG because the Law establishes that they are responsible for contributing the additional resources. This situation brings a destabilising factor into the financial equilibria of those agents. Besides, it is necessary to develop a co-payment scheme

because this requirement is imposed by the Law. However, until now there is no rules to implement it.

In conclusion, we are talking about a new field for social policies with enormous challenges that have not yet received a satisfactory answer by Public Administrations.

References

- Albarrán, I. and P. Alonso (2006) Clasificación de las personas dependientes a partir de la Encuesta de Discapacidades, Deficiencias y Estado de Salud de 1999, *Revista Española de Salud Pública*, **80**, 341-352.
- Casado D. and López G. (2001). *Vejez, dependencia y cuidados de larga duración en España*, Fundación La Caixa.
- Consejo de Europa (1998). *Recomendación nº (98)9 del Comité de Ministros a los Estados miembros relativa a la dependencia.*
- Guillén M. (Dir.), Albarrán I., Alcañiz M., Ayuso M., Blay D. and Monteverde M. (2006).

 Longevidad y dependencia en España. Consecuencias sociales y económicas,

 Fundación BBVA.
- Herce, J.A., Labeaga, J.M., Sosvilla, S. and Ortega, C. (2006). El Sistema Nacional de Dependencia. Evaluaciones de sus efectos sobre el empleo. Colección Estudios. Serie Dependencia, nº 12004. IMSERSO
- IMSERSO (2005). Libro Blanco sobre la Dependencia. Atención a las personas en situación de dependencia en España, Ministerio de Trabajo y Asuntos Sociales.
- INE (2002). Base definitiva de la Encuesta sobre Discapacidades, Deficiencias y Estado de Salud, 1999, INE.
- INE (2002). Metodología de la Encuesta sobre Discapacidades, Deficiencias y Estado de Salud, 1999, INE.
- INE (2007). Proyecciones de población: resultados nacionales (período 2002-2060). In **Internet** http://www.ine.es/inebase/cgi/um?M=%2Ft20%2Fp251&O=inebase&N=&L=

- Katz, S., AB. Ford, AW.Moskowitz, BA. Jackson and MW. Jaffe (1963) Studies of Illness in the Aged. The Index of ADL: A Standardized Measure of Biological and Psychosocial Function, JAMA, 185, 914-919.
- Lawton, M.P. and E.M. Brody (1969) Assessment of Older People: Self-maintaining and Instrumental Activities of Daily Living, *Gerontologist*, **9**, 179-186.
- Ley 39/2006, de 14 de diciembre, de Promoción de la Autonomía Personal y Atención a las Personas en situación de dependencia, BOE número 299 de 15 de diciembre 2006.
- López G. (Dir.), Comas A., Monteverde M., Casado D., Caso JR. and Ibern P. (2005). *Envejecimiento y dependencia. Situación actual y retos de futuro*, Caixa Cataluña.
- Monteverde L.M. (2004). *Discapacidades de las personas mayores en España: prevalencias, duraciones e impacto sobre los costes de cuidados de larga duración*, Universidad de Barcelona, Tesis Doctoral.
- OMS (1980). Clasificación Internacional de Deficiencias, Discapacidades y Minusvalías de 1980, (CIDDM-1), INSERSO.
- Puga M.D. and Abellán A. (2004). *El proceso de discapacidad. Un análisis de la Encuesta de Discapacidades, Deficiencias, y Estado de Salud,* Fundación Pfeizer.
- Real Decreto 504/2007, de 20 de abril, por el que se aprueba el baremo de valoración de la situación de dependencia establecido por la Ley 39/2006, de 14 de diciembre, de promoción de la autonomía personal y atención a las personas en situación de dependencia, BOE número 96 de 21 de abril de 2007.
- Rodríguez G. and Montserrat J. (2002). *Modelos de atención sociosanitaria. Una aproximación a los costes de la dependencia*, Ministerio de Trabajo y Asuntos Sociales, Secretaría General de Asuntos Sociales, IMSERSO.
- WHO (1997). International Classification of Impairments, Disabilities and Handicaps (ICIDH), IMSERSO.

Table 1: CG contributions schedule (amounts in current Euro)

Year	CSA contribution	
2007	400.000.000	
2008	678.685.396	
2009	979.364.617	
2010	1.160.330.812	
2011	1.545.425.613	
2013	1.673.884.768	
2013	1.876.030.564	
2014	2.111.571.644	
2015	2.212.904.397	
Total	12.638.197.811	

Source: Ministry of Labour and Social Affairs (MTAS)

Table 2: Final grading scale.

	Level	Points
Degree		
No aid		0-24
I	1	25-39
	2	40-49
	1	50-64
	2	65-74
III	1	75-89
	2	90-100

Source: RD 504/2007

Table 3: Refined forecasts of the dependent population with the right to receive public aid: 2005-2015

	2005	2010	2015
According to P1	822.679	889.664	958.730
According to P2	814.903	875.978	940.869
WBD (gross)	1.125.478	1.246.429	1.373.248
WBD (refined)	559.090	619.332	682.347

Source: own elaboration and WBD

Table 4: Estimated number of dependent persons by degree, level and sex in 2009

	Men		Wome	en
Degree and Level	based on P1 ba	ised on P2	based on P1 ba	sed on P2
Degree I	98.010	98.355	203.283	203.769
Level 1	43.962	44.121	79.703	79.697
Level 2	141.972	142.476	282.987	283.466
Degree II	56.268	56.450	90.542	90.455
Level 1	29.722	29.827	41.309	41.164
Level 2	85.990	86.277	131.851	131.619
Degree III	36.726	36.848	69.048	68.843
Level 1	44.252	44.397	82.687	82.482
Level 2	80.979	81.246	151.735	151.324
Total	308.940	309.999	566.573	566.409

Table 5: Estimated number of dependent persons by degree, level and sex in 2015

	Men	<u> </u>	Wor	men
Degree and Level	based on P1 b	ased on P2	based on P1	based on P2
Degree I	105.865	107.256	216.832	219.113
Level 1	47.503	48.127	88.041	88.540
Level 2	153.369	155.383	304.873	307.654
Degree II	60.910	61.695	100.138	100.506
Level 1	32.511	32.958	46.674	46.589
Level 2	93.422	94.653	146.812	147.095
Degree III	39.703	40.211	78.954	78.966
Level 1	48.765	49.424	92.833	92.900
Level 2	88.468	89.635	171.787	171.867
Total	335.258	339.671	623.472	626.615

Table 6: Estimated CSP by model, degree and gender for 2009

		Degree I	Degree II	Degree III
R1	Man	234,32	234,32	234,32
	Woman	233,50	233,50	233,50
R2	Man	199,02	228,60	260,91
	Woman	200,81	229,74	259,64
A 1	Man	251,64	213,59	261,36
	Woman	249,56	219,58	276,01
A2	Man	391,22	213,59	253,61
	Woman	385,81	217,52	273,45
A 3	Man	373,66	579,14	707,55
	Woman	377,03	582,03	704,10

Table 7: Total estimated cost (years 2009 and 2015)

	R1P1	R1P2	R2P1	R2P2	A1P1	A1P2	A2P1	A2P2	A3P1	A3P2
2009	11.460	11.465	11.436	11.440	12.300	12.305	14.268	14.277	28.067	28.071
2015	16.178	16.287	16.177	16.283	18.624	18.745	21.002	21.148	39.132	39.376

Note: figures in millions of euros Source: own elaboration

Table 8: Predicted evolution of the GDP by scenario.

	2009	2010	2011	2012	2013	2014	2015
OS	-0,5%	1,0%	1,5%	2,0%	2,5%	3,0%	3,5%
NS	-1,0%	0,0%	1,0%	2,0%	2,5%	3,0%	3,0%
PS	-1,5%	-0,8%	0,0%	1,0%	1,5%	2,0%	2,5%

Table 9: Predicted costs as weight of the nominal GDP.

	R1P1	R1P2	R2P1	R2P2	A1P1	A1P2	A2P1	A2P2	A3P1	A3P2
2009 OS	1,0%	1,0%	1,0%	1,0%	1,1%	1,1%	1,3%	1,3%	2,5%	2,5%
2009 NS	1,0%	1,0%	1,0%	1,0%	1,1%	1,1%	1,3%	1,3%	2,5%	2,5%
2009 PS	1,0%	1,0%	1,0%	1,0%	1,1%	1,1%	1,3%	1,3%	2,5%	2,5%
2015 OS	1,4%	1,4%	1,4%	1,4%	1,7%	1,7%	1,9%	1,9%	3,5%	3,5%
2015 NS	1,4%	1,5%	1,4%	1,5%	1,7%	1,7%	1,9%	1,9%	3,5%	3,5%
2015 PS	1,5%	1,5%	1,5%	1,5%	1,7%	1,7%	1,9%	1,9%	3,5%	3,5%

Table 10: Weight of the public contribution on the cost (figures in millions of euros and %)

	2007	2008	2009	2010	2011	2012	2013	2014	2015
Total average cost	4.635	6.011	8.327	8.903	11.176	11.924	15.946	16.972	18.056
Contribution CG	400	679	979	1.160	1.545	1.674	1.876	2.112	2.213
Contribution PA.	800	1.357	1.959	2.321	3.091	3.348	3.752	4.223	4.426
Weight of PA.	17,3%	22,6%	23,5%	26,1%	27,7%	28,1%	23,5%	24,9%	24,5%

NOTE: it is supposed that RG contribute the same amount as CG
PA = Public Administration
Source: own elaboration

APPENDIX 1: Table of disabilities according to the Classification of Impairments, Disabilities, and Handicaps (ICIDH) from 1980

Туре	Disability	Туре	Disability
Seeing		Manipulating and	19 Moving-transporting no heavy
	1: Blindness in both eyes	moving objects	objects
	2: Disability for seeing in the far distance	with arms and	20: Using tools
	Disability for seeing in the near	hands	21: Manipulating small objects
	distance and/or in detail	Moving around	22: Moving around without using
	4: Another disabilities on seeing	(except in own	transport
Hearing		home)	23: Moving around using public
	5: Deaf persons		transport
	6: Disability for hearing strong sounds		24: Driving own car
	7: Disability for hearing low sounds (like	Daily life activities	25: Washing oneself and care of
	two persons speaking)		body parts
Communication	8: Communication on speech		26: Activities related to excretion
activities	9: Communication on alternative		27: Dressing
	languages		28: Eating and drinking
	10: Communication on non-verbal	Care of	
	messages other than formal sign language	necessities and	
	11: Communication on conventional	domestic activities	29: Procuring and taking care of
	written/reading		daily necessities (including shopping
Learning, applying	12: Recognising persons, objects, and		and supervision of supplies and
knowledge, and	relationships in space and time		services)
performing task	13: Remembering recently/past acquired		30: Taking care of meals
	information and/or events		31: Laundry and caring for clothes
	14: Comprehending and carring out simple		and footwear
	tasks		32: Taking care of dwelling
	15: Comprehending and carring out		33: Taking care of well-being of
	complex tasks		household members
Movement activities	16: Mainting and changing body position	Interpersonal	34: Mainting family relationships
	(on lying down position)	behaviors	35: Making new friends and
	17: Getting up, sitting down, and		maintaining relationships with friends
	maintaining a standing or seated position		36: Interacting with persons in formal
	18: Moving around your own home		settings

Source: Classification of Impairments, Disabilities, and Handicaps (1997).

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