Challenge #5

GET OUR WELFARE STATE READY FOR A LONGER-LIVING SOCIETY

EXECUTIVE SUMMARY

— Over the last four decades, Spain has successfully achieved one of the major aspirations of any country: to increase the life expectancy of its citizens to unprecedented levels in history. At the start of the 20th century, the Spanish population had a life expectancy at birth of just 35 years. Today, it is over 83 and is the third highest in the world, surpassed only by Switzerland and Japan.

— This dramatic increase in longevity has been accompanied by a marked increase in healthy life expectancy. Not only do we live longer, but we also do so in better health and with a greater degree of autonomy than before. This is due to improvements in diet and hygiene, healthier lifestyle habits, and the development of a extensive and modern welfare state that has allowed biomedical progress to be transferred to most of society.

— Over the next three decades, the life expectancy of the Spanish population will continue to increase (potentially by more than 3 years), which will lead to strong degree of ageing within our demographic pyramid. In 2050, one in three Spaniards will be 65 or older, and for every person in this age group there will be only 1.7 people between the ages of 16 and 64 (today, there are 3.4). Potential possible improvements in the birth rate and an increase in immigration will not be able to completely reverse this scenario.

— An ageing population will bring significant social and economic opportunities for the country, but also a significant challenges to the sustainability of our welfare state. By the middle of the century, public spending on pensions could increase by up to 5 GDP points; healthcare spending could rise by more than 1 GDP point; and the number of people over 65 benefiting from care benefits could double.

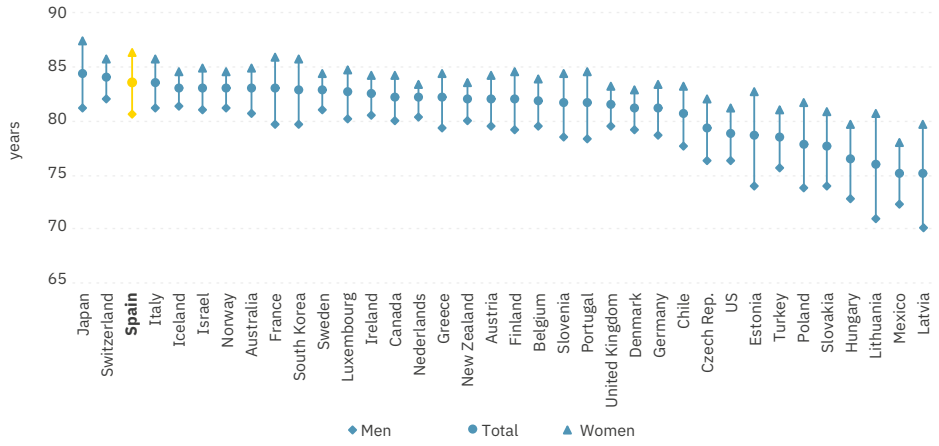
— To weather this change, our country will need to improve the efficiency of its public services and, above all, ensure that older people play an increasingly active role in economic and social life. This will mean overcoming outdated stereotypes about age, adapting many jobs to the expectations and abilities of older workers, and making it easier to reconcile pensions and employment. If we are able to match the activity rates of our over-55s to those of countries like Sweden or Denmark, Spain will add 1.6 million people to the active population between now and 2050 - something that will help enormously to mitigate the negative impacts of the fall in the labour force, whilst improving the welfare of millions of households.

— At the same time, we will have to ensure that public pensions provide enough and are sustainable, whilst ensuring solidarity across generations; strengthening and reforming our National Health System; and improving our public long-term care network. This may lead to increased spending, but it will also bring new jobs and firms that could end up being an important part of our future economy and a key part of the sustainability of the system.

THE PAST: ACHIEVEMENTS

Over the last four decades, Spain has successfully achieved one of the great aspirations of any country: to increase the life expectancy of its citizens to unprecedented levels in history. At the start of the 20th century, the Spanish population had a life expectancy at birth of just 35 years.[1] Today, it is over 83. **Spain is the country with the highest life expectancy in the EU and the third highest in the world, behind only Switzerland and Japan** [Fig. 1].

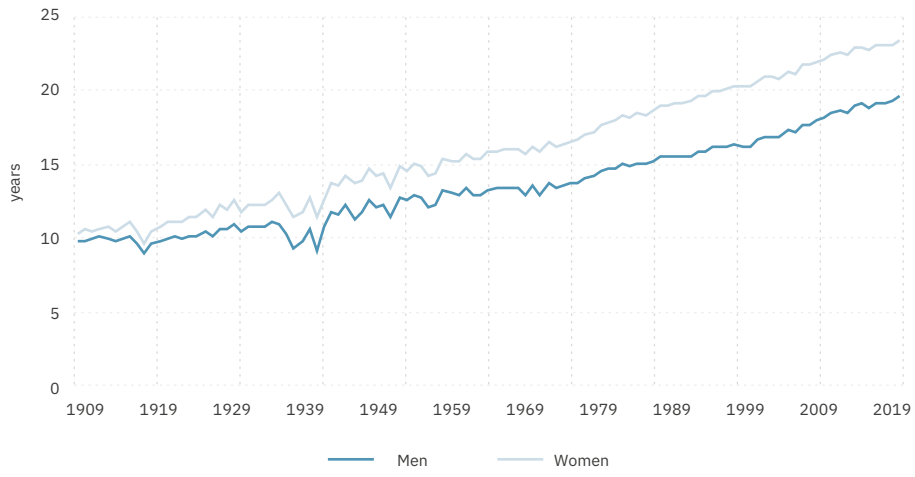
Fig. 1. Life expectancy at birth, 2018



Source: Author's own based on OECD data.[2]

This spectacular increase in life expectancy is the result of several factors:[3] improved hygiene and nutrition, the adoption of healthier lifestyles, advances in education [see chapters 2 and 3] and, **the development of a extensive and modern welfare state** which has enabled, among other things, the progress of biomedical knowledge to be transferred to the bulk of society.[4] As result of these factors, Spain has been able to reduce mortality rates - first, among the infant population and then among the older population; and to increase life expectancy at the age of 65 from 10 years in 1920 to more than 21 years in 2019 [Fig. 2]. It is important to note, however, that this improvement in survival has not been the same for all population groups.[5]

Fig. 2. Life expectancy at the age of 65 in Spain

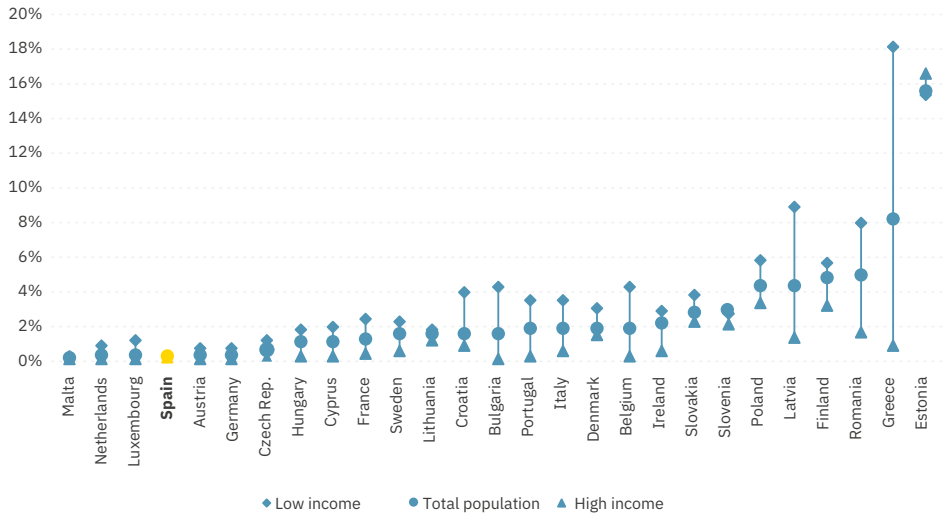


Source: Authors own, based on INE and *Human Mortality Database data.*[6]

The democratic Spain that was created in 1977 inherited a fragile and obsolete health system[7] that was less well developed than that of its northern European neighbours. From the 1980s onwards, however, central and regional governments implemented a series of far-reaching reforms aimed at bringing into reality the right to universal, high-quality public health care, which had been enshrined in the *Spanish Constitution* shortly beforehand.[8] With the *General Health Act* of 1986,[9] which led to the National Health System and the progressive transfer of health competences to the autonomous communities, primary care was promoted, an extensive network of health centres was built, distributed across the country, and health professional training was drastically expanded.[10] Our public health system has not only improved in terms of coverage - to the point where it is now universal - but also in terms of quality. In the last four decades, public spending on health increased by 1.7 percentage points of GDP;[11] the number of doctors per inhabitant doubled;[12] the catalogue of benefits expanded enormously; and healthcare cover was extended to people without sufficient financial resources[13] as well as to administratively unregulated groups.[14] As a result of these efforts, **Spain has successfully created one of the most advanced healthcare systems in the world, in terms both of the quality and accessibility of its services and its efficiency**.[15]

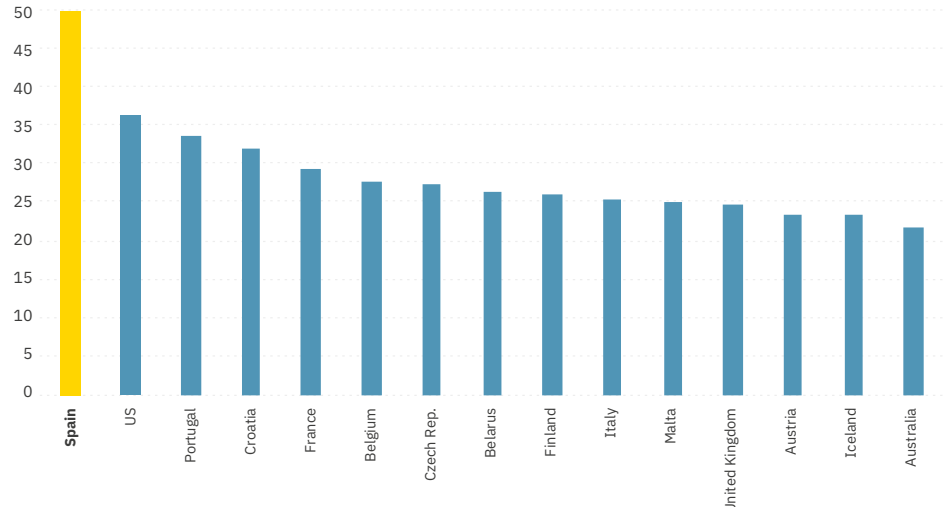
Mortality rates associated with preventable and treatable causes are lower in Spain than in most EU countries. Among other things, this indicates the effectiveness of our health system in treating different pathologies (for example, ischemic heart disease, cerebrovascular diseases and certain cancers).[16] Our country has a modern hospital network, first-class healthcare professionals and highly respected biomedical research centres of excellence. According to the EU-SILC survey, unmet medical care needs (relating to cost, distance or waiting times) are very low in Spain, having been reported by only 0.2% of the population in 2019.[17] In addition, there is almost no difference between people in the highest and lowest income quintiles [Fig. 3], which reflects **the fairness within the National Health System**. We have also been **world leaders in terms of organ donation** for the past 28 years,[18] both in regard to the number of donors [Fig. 4] as well as the effectiveness of the system, which is considered a model by the World Health Organisation.[19] In 2019, Spain accounted for 20% of organ donations in the EU and 6% of those registered in the world, despite the fact that the country barely represents 9.1% of the European population and 0.6% of the world's population.[20]

Fig. 3. Percentage of population reporting unmet medical needs by income level, 2019



Source: Authors' own, based on Eurostat data.[21]

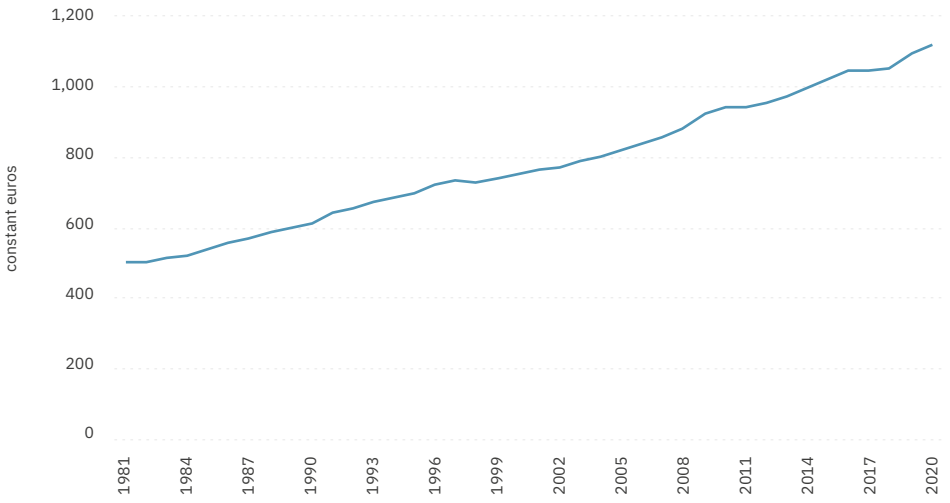
Fig. 4. **Organ donors per million population, 2019**



Source: Authors' own based on GODT data.[22]

The development of the National Health System was accompanied by two other key transformations. The first of these has been **the universal application of the public pension system**, thanks to the creation of non-contributory pensions.[23] Furthermore, this has been in a context in which the average amount of contributory retirement pensions[24] doubled in real terms [Fig. 5].

Fig. 5. **Average amount of the contributory retirement pension in Spain**



Source: Authors' own, based on AMECO and MITES data.[25]

The other key transformation has been **the development of the social services system and, within this, care for dependent persons along with encouraging their autonomy** - something now known as the "fourth pillar" of the welfare state. What for decades was considered to be the sole responsibility of families and those who need care themselves, has been progressively taken over by the State, through a series of reforms resulting from the agreement between political forces and social stakeholders that has culminated in the creation of the Autonomy and Dependent Care System. While there is still a long way to go, Spain already has an extensive network of assisted living facilities and day centres, home help and telecare services, support programmes for informal carers, and health services specialising in gerontology and geriatrics, benefitting more than a million people.[26]

The creation of this vast network of social services and benefits has transformed the life of our country and its people. **It is not just that we live longer, but that we do so in better health and with a greater degree of autonomy in later life**, thanks to better control over the most serious effects of many diseases. In fact, the majority of the Spanish population up to the age of 74 considers their state of health to be "good or very good" [Fig. 6]. Thus, life expectancy in “good health”[27] at the age of 65 [28] has increased from 9.7 years in 2004 to 11.4 years in 2018, and is now the fifth highest in the EU (although there are significant inequalities between groups).[29]

Fig. 6. **Distribution of perceived health status by gender and age group in Spain, 2017**

Source: Source: Author´s own based on INE data.[30]

THE PRESENT: THE CHALLENGES AHEAD

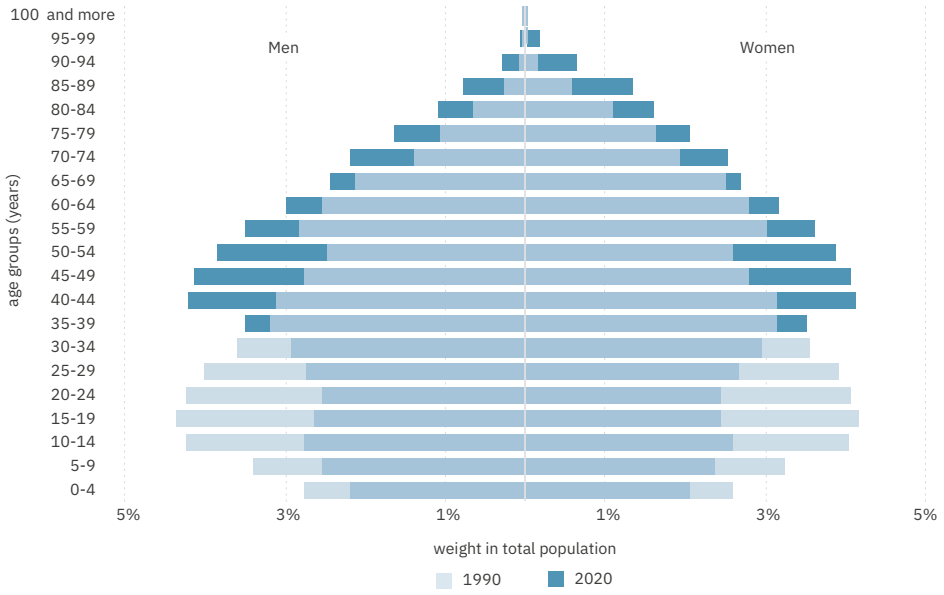
It is clear that the increasing life expectancy and good health in older ages that we have seen in recent decades is a success story. In fact, it should be considered **one of the great achievements of the Spanish welfare state**. However, as we will see below, it is undeniable that this historical transformation has brought with it **new challenges** that could severely strain the very welfare state that made it possible.

This is due, in part, to the fact that the increase in longevity has been accompanied by **two other processes that are equally important for our demographics: the reduction in the fertility rate and the increase in immigration.**

Along with Italy, Spain is today ranked number 2 in the OECD in terms of the lowest number of children per woman of childbearing age.[31] In 1975, the fertility rate in Spain was 2.8 children per woman. By 2019, it had fallen to 1.2.[32] Spain has gone from a model of "many children and short lives" to one of "few children and long lives".[33] In addition, there has been a significant increase in the average age at childbearing and in the percentage of women without children, which could be as high as 25% among women born in 1975.[34] The causes behind this low fertility rate include economic restrictions (lack of employment, job insecurity, problems of access to housing), difficulties in balancing family and professional life, and the desire not to be a mother.[35]

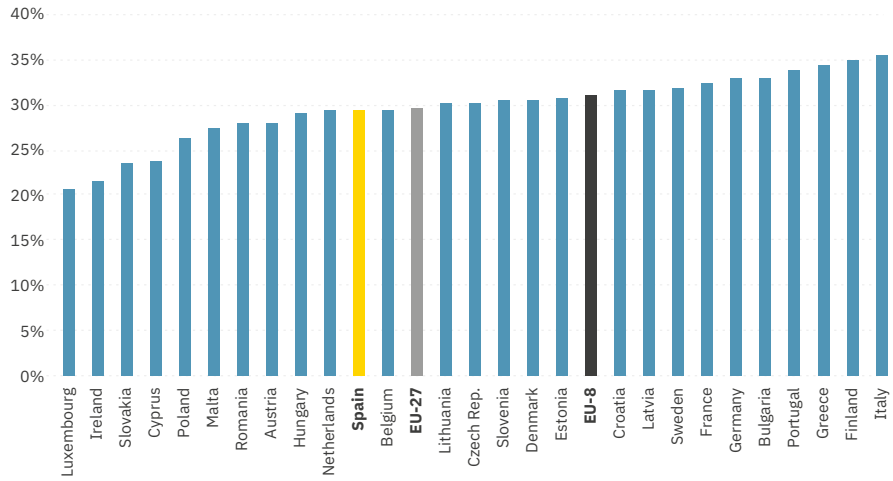
With regard to **immigration**, the arrival of foreign people has been continuous (apart from the period of financial crisis from 2009 to 2014),[36] has far exceeded the flow of people leaving our country.[37] This favourable migratory balance has allowed Spain to maintain a positive population growth and by the end of 2019 had a population of over 47 million.[38] However, **it has not been enough to cushion the progressive demographic ageing** [Fig. 7]. At the end of the 20th century, people aged 65 and over accounted for 13% of the Spanish population. Today they account for almost 20%. As a result, our dependency ratio (defined as the ratio of the proportion of the 65+ population compared to the working-age population[39]) has risen from 20% to 30% [Fig. 8], which means that **we have gone from having 4.9 people of working age for every person of retirement age, to having only 3.4**.

Fig. 7. **Population distribution in Spain**



Source: Source: Author´s own based on INE data.[40]

Fig. 8. **Dependency ratio, 2019**



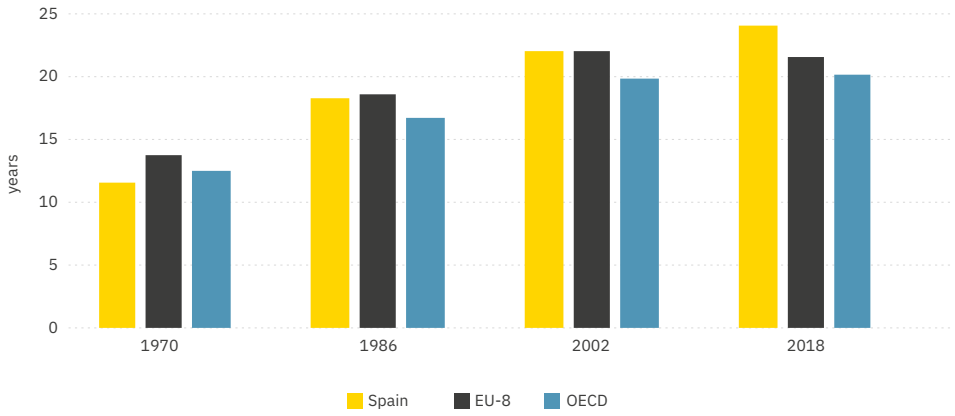
Source: Authors' own, based on Eurostat data.[41]

This dependency rate is still lower than that of other European countries such as Italy (36%) or Finland (35%), but this is due to the fact that Spain's baby boom occurred later. It will be during the next three decades when the effects of demographic ageing will become more pronounced, **leading to a series of social and economic challenges that our country will have to face**. These include four that we address here: 1) Changing standard working ages to align with increasing longevity; 2) increased public spending on pensions; 3) the adequacy of health services; and 4) the need to provide long-term care services for an already considerable and growing part of the population.

I. Aligning standard working ages with increasing longevity

Spain's retirement age of 65 was set in 1967. At that time, much of the population reached retirement age in poor health, after a life of deprivation, strenuous physical labour and very limited access to medical services. Today, the situation is very different. **The development of the welfare state and medical advances have greatly improved our health in older age, meaning that most people reach 65 in good shape, and extending the average life in retirement from 12 to 24 years** [Fig. 9].

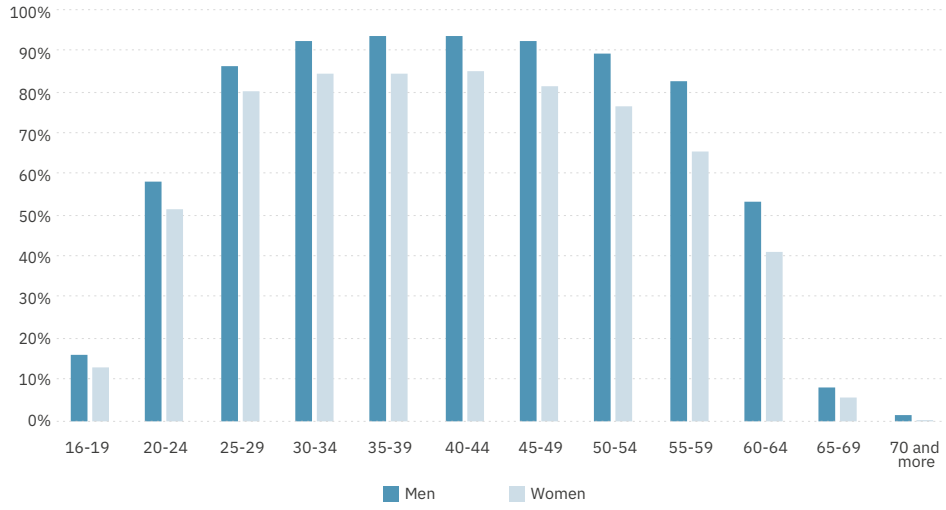
Fig. 9. **Expected number of years in retirement**



Source: Source: Authors´ own, based on INE data.[42]

Despite this biological revolution and the regulatory changes introduced in recent decades, **in Spain, 65 continues to mark the transition from working life to retirement**. Proof of this is the strong reduction in activity rates as the population approaches this age [Fig. 10].

Fig. 10. **Activity rates in Spain by age group and gender, 2019**

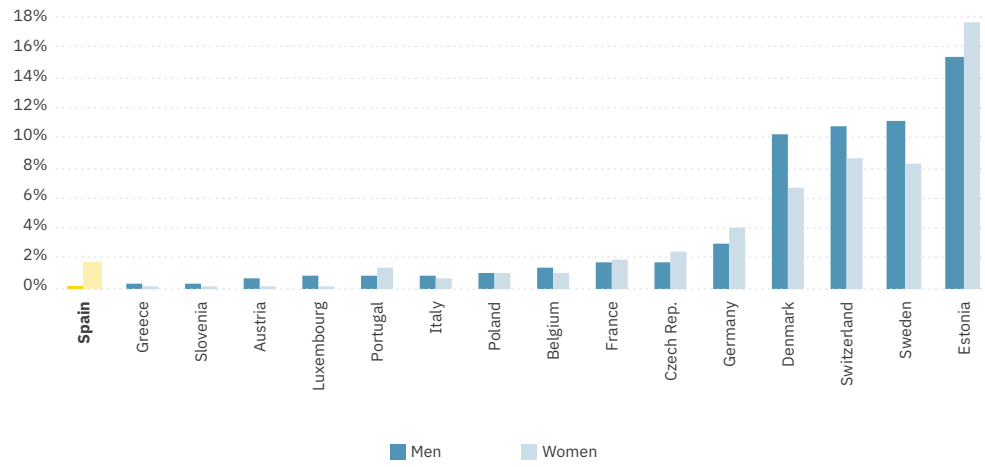


Source: Source: Author´s own based on INE data.[43]

This abrupt transition between working life and retirement does not align with a time when most people reach that age in good physical and mental condition. **The view of old age as a time of uniform decline, dominated by illness and inactivity, is becoming less and less valid**, and means that the diversity of profiles, needs and behaviours of people at this stage of their life need to be recognised. **A new paradigm is therefore beginning to take shape** - one that is more flexible and personalised and that takes account of the different social, economic and health circumstances of each individual and their preferences, regardless of their age.

The keystone of this new paradigm is the concept of "active ageing" which is understood as the process of optimising people's opportunities for health, participation and security as they age, in order to improve their quality of life and well-being.[44] Applied to the field of work, active ageing implies **that each person should be able to decide whether or not to continue working after the legal retirement age**, and to establish the mechanisms and conditions necessary for them to be able to do so in a favourable situation. This is the case, for example, in Scandinavian countries, where a significant proportion of older people combine their retirement with some form of work, often associated with leadership positions, advisory work, or filling in for younger workers' leave and absences. [Fig. 11].[45]

Fig. 11. People aged 60-69 who work and receive a pension, 2014-15



Source: Source: Authors´ own , based on OECD data.[46]

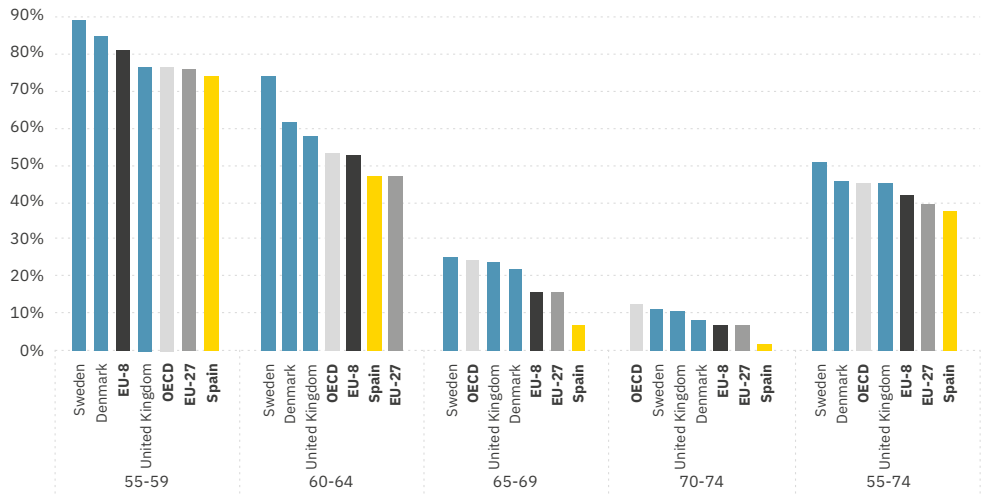
If well executed, **active ageing produces a win-win situation**. Citizens are able to stay active and influential in the economic and social life of their country, along with all the gains in autonomy and health that this brings. It is worth noting that, according to several regional studies, **more than a third of retired people in Spain would have liked to continue working after retirement.**[47]

Countries also benefit, as they retain a valuable and experienced working population, reduce public spending on pensions, and increase their labour force (or, in the case of Spain, mitigate its future contraction), as the evidence generally suggests that **older people's increased participation in labour market is not detrimental to young people finding employment**, as the jobs performed by both are complementary rather than substitutes for each other.[48]

For these and other reasons, **prolonging working life is now a declared policy aim in all developed countries and supported by the main international organisations.**

Spain has also pursued this goal, although with results that are still lower than those of the leading countries in this area. Despite recent improvements, especially among women, **the activity rate between the ages of 55 and 74 in our country is still lower than the EU and OECD average,** and is far from that of countries such as Sweden, Denmark and the UK [Fig. 12]. The difference is especially notable among those who are working at 70 to 74, where Spain has the second lowest activity rate in the EU.[49] This is remarkable if we take into account that, with some differences by groups, life expectancy and living in good health in Spain is higher than that of our European neighbours.

Fig. 12. **Activity rate by age group, 2019**



Source: Author's own based on data from the OECD.[50]

The lower rate of participation in labour market by older workers in Spain is due to several factors.[51] First: legislative and institutional factors. There are currently **very few incentives to continue working beyond retirement age**, and existing mechanisms for reconciling pensions and work - such as active retirement (which is mostly taken up by the self-employed)[52] are used by only a minority.[53] Secondly, there are factors associated with employment law in Spain, such as collective agreements that include mandatory retirement at the age of 65.[54] Finally, there are factors arising from **our productive structure and the formation of our human capital**. Although the impact of physically demanding activities has been reduced, the smaller size of knowledge-intensive sectors,[55] the predominance of small businesses[56] and the low rates of adults participating in training and requalification programmes[57] [see chapters 1 and 3], have limited the increase in activity rates among older people.

This lower level of older people in the job market has strongly negative effects for the country: it reduces our capacity to generate wealth, hinders the sustainability of public accounts, and reduces the welfare of the entire population (not just that of older people).

II. Increased public spending on pensions

One of the main challenges arising from an ageing population is the potential increase in expenditure on pensions. The Spanish public system provides pensions for three contingencies: permanent disability, death (orphan's, widow's, widower's and family members' pensions) and retirement. There are also two types of pensions: contributory pensions (for those who have contributed sufficiently during their working life, or for their survivors) and non-contributory pensions (designed to guarantee a minimum income for those who cannot access the former). The bulk of the pension system relates to contributory pensions, of which more than 60% are retirement pensions. These are mainly financed by contributions made by companies and workers,[58] meaning that, to ensure they are sustainable, **the balance between revenues and expenditure needs to be maintained over time**.

For several decades, the difference between revenues from social security contributions and expenditure on contributory pensions was positive,[59] which enabled a reserve fund to be built up to cover possible contingencies. However, from 2008 onwards, demographic ageing, early retirement due to the financial crisis [60]and the progressive increase in the ratio between the average pension and the average wage [61] meant that public spending on this item rose from 7.6% of GDP to 10.8% in 2019.[62] This, together with the reduction in social contributions caused by the 2008 and 2011 crises, resulted in a deterioration in the position of the Social Security system.[63]

The current level of pension expenditure does not, *in itself*, place a disproportionate burden on the system. The percentage of GDP that Spain devotes today to the payment of total public pensions is similar to that of the EU-27 average and is lower than that of EU-8 countries such as Austria or France.[64] However, **the projected increase over the next three decades, when the more populous baby boom cohorts reach retirement age, constitutes a major challenge. And it will have to be tackled through social dialogue, a redesign of public policies and a review of the material and intangible realities around retirement.**

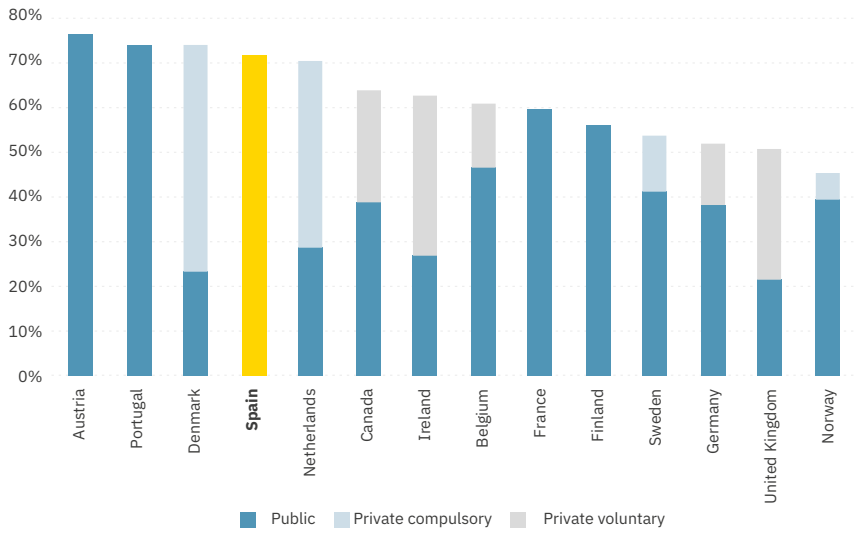
Spain has already taken important steps in this direction. With the 2011 reform, some relevant measures were established with the aim to contain the increase in expenditure, including the progressive increase in the retirement age to 67 in 2027 and the increase in the contribution period required to receive 100% of the pension from 35 to 37 years.[65] However, **in certain areas, there is still some way to go.** Here, we highlight three of the main issues around which the debate is currently focused.

The first relates to the retirement age. Most analyses agree that practices such as reducing early retirement and increasing older people's participation in labour market are needed to bring the effective retirement age closer to the legal age. There are, however, disagreements as to whether or not the legal retirement age (beyond age 67 set for 2027) will have to be further delayed as life expectancy continues to increase.

The second refers to the evolution of the replacement rate, defined as the percentage that pensions represent out of income received before retirement. There is an intense debate being held about this issue in Spain. On the one hand, there are those who emphasise the fact that Spain has one of the highest replacement rates in the EU [Fig. 13], and argue that retirees receive, on average, more than they contributed.[66] On the other hand, there are those who emphasise the

considerable variety and inequality that exists behind the average;[67] the important economic support that the Spanish retired population provides to their families (especially in periods of crisis and high unemployment); [68] and the fact that the risk of poverty or social exclusion among the over 65s in Spain is higher than in other European countries.[69] The key lies in ensuring that the replacement rate properly relates to the relationship that needs to exist between a public pension system that provides enough and is also sustainable, as well as intergenerational equity, which the system should aim for.

Fig. 13. **Gross pension rates of replacement (public, private mandatory and private voluntary), 2018**



Source: Author's own based on data from the OECD.[70]

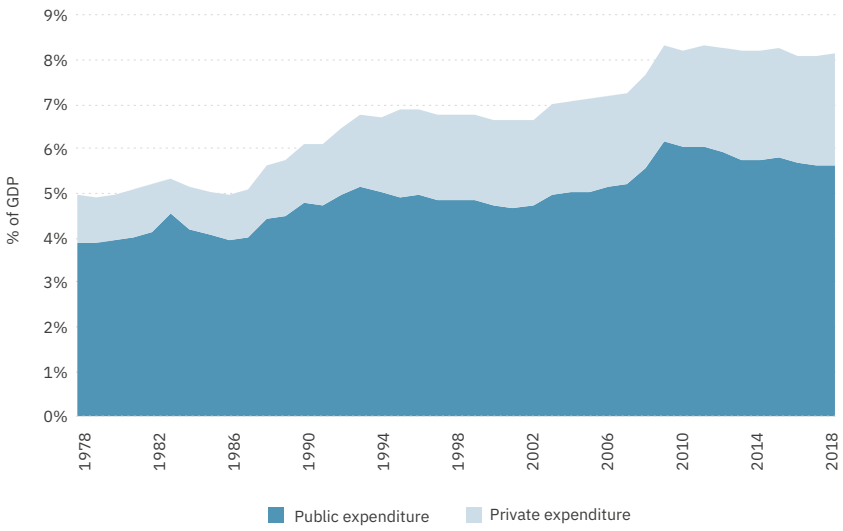
The third - and final - issue is that of financing. In Spain, almost all retirement pensions are financed by the state, as there is no widespread system of supplementary social security pensions.[71] Conversely, in other advanced countries, **there are mixed systems that complement the public pension with private pensions (essentially, these are private employment plans) that are mandatory, quasi-mandatory** (as in Denmark, the Netherlands and Sweden, where they have almost universal coverage[72]), **or voluntary but very widespread** (as in Canada, Ireland and the UK) [Fig. 13]. Many claim that **Spain will need to progressively adopt one of these hybrid models**. Others suggest that it will also be necessary to **raise contributions, finance a larger part of pensions through taxes,**[73] **and/or reformulate the expenditure covered by social security contributions**, so that all of it is used to pay contributory pensions, in line with the latest recommendations under the Toledo Pact.[74] Currently, these contributions also cover, for example, employment incentive policies and family support policies. Covering these non-contributory expenses from the General National Budget, instead of via social security contributions, could help to balance the Social Security system funds.[75]

All these options have their advantages and disadvantages,[76] so it will be up to the country as a whole to use social dialogue and the framework of the Toledo Pact, **to reach a consensus as to which is/are the most appropriate to achieve the triple goals of of strengthening financial sustainability, providing adequate retirement income, and ensuring intergenerational equity.**

III. Adequacy of the health system

Over the last 40 years, healthcare spending in Spain has increased by almost 3.2 percentage points to 8.1% of GDP [Fig. 14]. Part of this increase has been due to the ageing of our population, given that the elderly require more services of this nature. So much so that, in 2005, the average per-capita expenditure for people aged 65 to 74 was double the average expenditure of the total population. For over 75s, it was almost triple.[77]

Fig. 14. **Health spending in Spain**

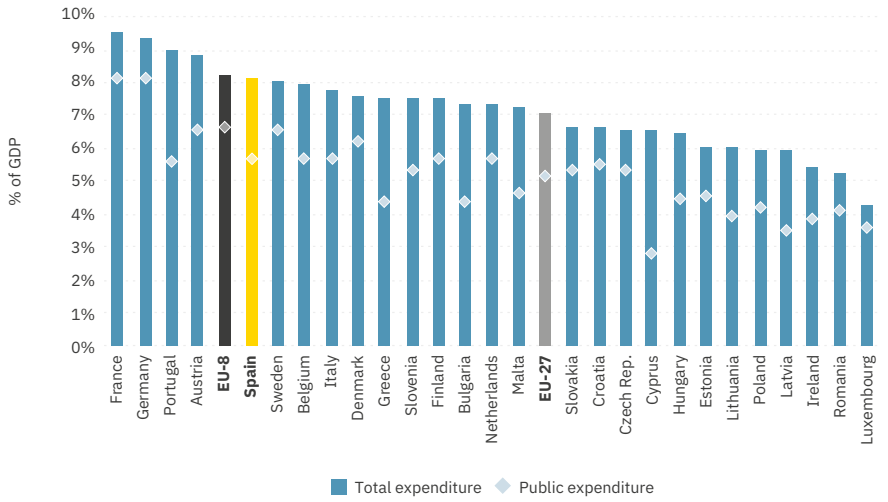


Source: Authors' own, based on OECD data.[78]

Nevertheless, **it would be a mistake to think that the increase in longevity is the main determining factor behind the increase in health spending, or that both phenomena are mechanically linked**. Numerous studies have shown that, although age is positively related to the use of health services, proximity to death is a much more relevant variable.[79] This is because, in reality, it is not the number of years a person has lived that determines resource use**, but the level of health the person enjoys**. Adopting healthier behaviours and habits, implementing therapeutic innovations, and reducing the time it takes to diagnose certain chronic conditions, mean that better health can be maintained in later life. These are therefore fundamental for the evolution of health spending.[80]

This proven fact has profound implications for a country like ours. In Spain, **health spending will continue to increase in the coming decades**. This is inevitable and also necessary to be able to provide a quality universal service, as since the financial crisis of 2008, public health expenditure has remained practically stagnant [Fig. 14] and is currently at lower levels than many other European countries [Fig. 15].[81]

Fig. 15. **Health spending, 2018**



Source: Authors' own, based on Eurostat data.[82]

Part of this increase in expenditure will be determined by ageing of the population which means it is unavoidable. However, another important part will depend on the **health situation of the older population** and the way in which the health services offered to them and the rest of the population are structured. **In these two areas, efficiency gains can and should be sought to avoid excessive growth of health spending**. Among other things, primary care will need to be strengthened seeing as it has lost out relatively over the last decade.[83] Access to new treatments and technologies will need to be enabled along with better coordination between health and dependency care services, and prevention and health promotion policies,[84] as these help to delay or reduce the prevalence of chronic diseases and multimorbidity[85] among older cohorts.

IV. Coverage of long-term care services

The increased longevity of the population is associated with a **growing need for long-term care, due to the relationship between age and dependency**.[86] The provision of this care is an essential part of the system of inter-generational cohesion that binds any country together. It is also a common need that we may all end up calling on at some point in our lives.

In Spain, as in the rest of Europe, care is implemented in a hybrid space that involves families, the public sector and the private sector.[87] **Informal (family) care plays the greatest role in our system**.[88] 57% of people aged 65+ who need care are cared for in a purely informal setting,[89] compared to 14% in the Netherlands and 24% in France[Fig. 16]. In fact, it is estimated that the theoretical economic value of informal care in Spain is much higher than current public spending on long-term care.[90]

Fig. 16. **Forms of long-term care for people aged 65+ (% of cases)**

Country	Informal care	Mixed care	Formal home care	Residences
Netherlands	14	28	17	42
Sweden	27	27	11	35
Denmark	21	37	15	27
Belgium	20	35	14	31
France	24	42	14	20
Germany	36	35	7	21
Austria	36	38	12	15
Spain	**57**	**26**	**8**	**8**
Italy	62	22	8	7

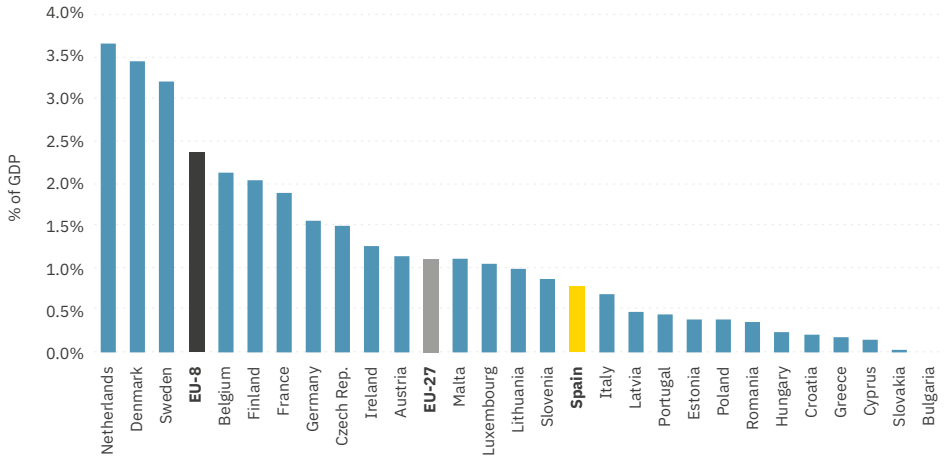
Source: Authors' own based on Barczyk and Kredler data.[91]

This peculiarity is the result of a range of social, economic and cultural factors. One of the main ones is **the preference to be cared for at home and the high importance that people attach to family.**[92] This informal care is mostly provided by **female relatives**, who tend to devote a lot of time to these tasks, as care is concentrated among people with a high degree of dependency.[93] These women often receive **little social support and recognition** and pay a high professional and personal price for their service.[94] Although there are emotional benefits from these tasks, the negative effects on caregivers' quality of life are not insignificant,[95] and are an important factor behind gender inequality in Spain.[96] In Spain, 42% of inactive women do not participate in the labour market due to care responsibilities (both for adults and children), compared to 6% of men. The equivalent percentages for the EU-27 are 32% and 5%, respectively.[97] In recent years, we have witnessed a **progressive change in the profile of caregivers**, due to the increase in the demand for care and the decrease in the number of potential family caregivers, as a result of demographic change and women's greater participation in work.[98] In particular, there has been an increase in the age of caregivers along with a greater participation of men.[99]

Formal care continues to be a minority in Spain, despite the strong growth experienced in recent years.[100] Generally, formal care is characterised by a low degree of professional development and a continued high level of job insecurity.[101] This contrasts with the model for Scandinavian and central European countries.[102] As regards similar **residential care and care homes**, only 8% of the over-65s in need of care are provided in this way, compared with 20% in France and 42% in the Netherlands.[103]

One of the main issues to be resolved within our care system is to improve its financing - in order to increase what it can cover as well as the quality of services and employment in the sector. Although public spending on long-term care has increased over the last decade - and stood at 0.8% of GDP in 2018 - it still lags behind that of most of Europe's more developed countries [Fig. 17].

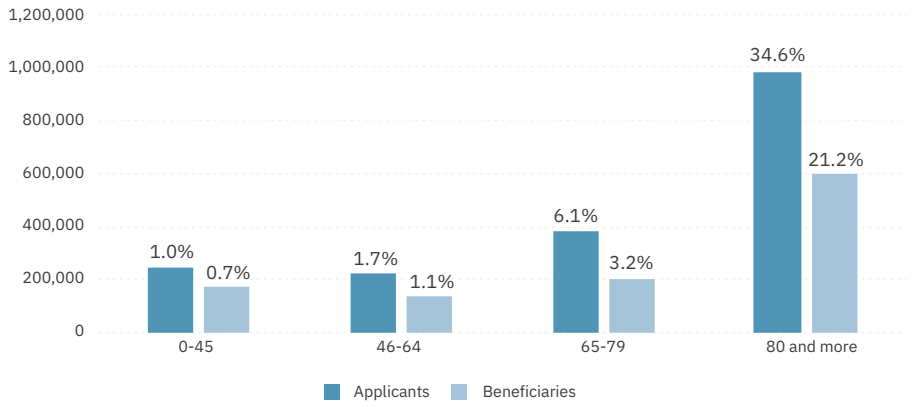
Fig. 17. **Public expenditure on long-term care, 2018**



Source: Authors' own, based on Eurostat data.[104]

The *Promotion of Personal Autonomy and Care for Dependent Persons Act* of 2006,[105] which was passed in order to correct this situation, represented a **crucial regulatory advance in the area of social rights, and gave rise to a mixed system of public protection that combines economic benefits and services**. Although its deployment was limited by the budgetary constraints caused by the economic crises of 2008 and 2011, today there are more than 1.1 million people who recieve benefits or services through this,[106] 72% of whom are aged 65 or over [Fig. 18].

Fig. 18. **Persons applying for and benefiting from the Autonomy and Dependent Care System and % of the population in each cohort, 2020**



Source: Authors' own based on INE and Imserso data.[107]

This law has achieved very positive results, including improving the mental health of caregivers[108] and reducing the number of hospitalisations associated with the roll-out of long-term care services.[109] However, there are still important issues to be resolved, such as promoting autonomy (which is one of the priority goals of the law and the development of which has been very limited so far), reducing waiting lists, and variable coverage between autonomous communities[110] as well as among degrees of dependency and socio-economic groups.[111] Furthermore, a significant proportion of public funding has been directed towards monetary benefits associated with family care and,[112] although it may have increased the welfare of the most needy households,[113] it has to some extent distorted the initial philosophy behind the law (prioritising benefits in services). It has also caused a series of inefficiencies in the system that need to be corrected.[114]

THE FUTURE: THE CHANGES THAT WILL LEAVE US AS A LONGER-LIVING SOCIETY

The short term: Spanish demographics in the time of coronavirus

The coronavirus pandemic has precipitated the death of thousands of our country's citizens, and has hit the elderly population particularly hard. They have been especially vulnerable to Covid-19 as a result of age,[115] comorbidities[116] and the deficiencies recorded in many care institutions.[117]

According to preliminary estimates by the INE, **the excess mortality generated in 2020 could reduce life expectancy in our country by almost a year**.[118] This increase in mortality, together with the sharp fall in migratory flows and the reduction in births,[119] could lead to a fall in Spain's population in the short term.[120] It is still too early to conclude that, on this occasion, the fall in income and employment will translate into a **reduction in the fertility rate** in Spain in the medium term,[121] as occurred with the 2008 and 2011 crises.[122] The duration of the pandemic itself and the related recession will determine whether the sum of higher mortality, lower migration and lower births will ultimately prolong the demographic effects of Covid-19 beyond 2020-21.

The impact of the current economic situation on the population's health condition will be key. History tells us that **economic downturns have negative effects on health**, and that these tend to be distributed asymmetrically, with the most vulnerable groups (including the elderly) being most severely affected.[123] This shows the importance of improving people's resilience through healthier lifestyles and a greater promotion of autonomy and personal development.

The medium and long term: the challenges and opportunities of the demographic change to come

Be that as it may, everything suggests that the disruptive effect of the pandemic on life expectancy in Spain will be temporary and that **life expectancy will continue to increase over the coming decades** without showing signs of stagnation. The introduction of health innovations and further improvements in lifestyle habits will further delay the traditional causes of death and mean that people in Spain live even longer. Thus, it is estimated that **life expectancy at birth will increase by 3.8 years for men and 3.1 years for women between now and 2050, reaching almost 85 and 90 years, respectively**.[124]

This increase in life expectancy will exacerbate the process of demographic ageing during this century, whilst the other two forces that determine it (fertility and migration) will be unable to reverse it.

The demographic projections set out in this *Strategy*[125] assume **an increase in the fertility rate** in the future, from 1.2 children per woman today to 1.4 in 2050. It seems unlikely, however, that this rate will increase much further and, in any case, not enough to reach the population replacement rate.[126] Nor is an aggregate increase in the birth rate expected. Among other things, this is due to the fact that:

– The cohorts of women of childbearing age will shrink considerably,[127] such that the aggregate effect of potentially higher fertility will be smaller.

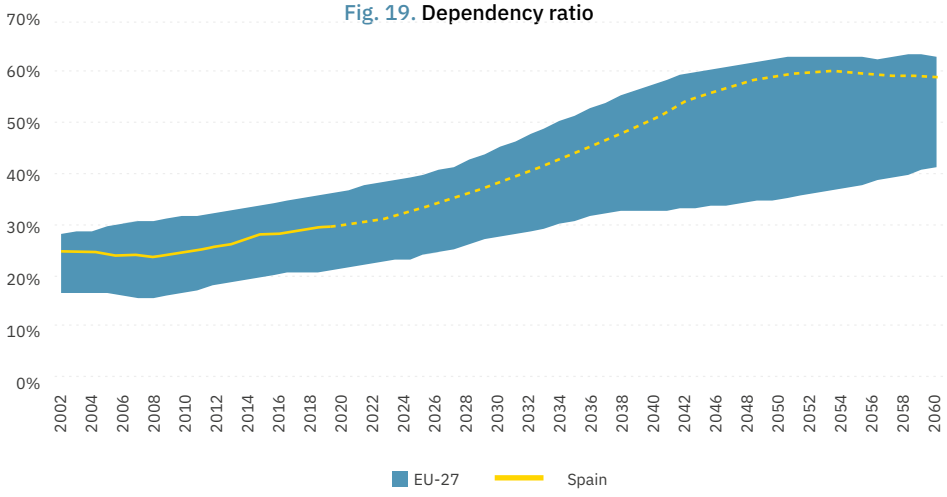
– Not all impediments to becoming a mother are financial.[128] In Spain, 24% of women who have not had children at the end of their childbearing years say they did not want to be mothers. 22% say that the most important reason is not having found the right partner. 7% highlight impediments to work-life balance. And only 5% refer financial reasons as the most significant factor in their decision.[129]

– Immigration will not solve low fertility either. Although it is true that women of immigrant origin have more children in our country than native women, we must consider that the female migratory contingents are not always made up of women of childbearing age [130] and that, very often, the women who arrive in our country have already had the children they wanted to have in their country of origin.[131] Furthermore, it should be borne in mind that, although the fertility rate of women of foreign origin is higher than that of native women, the former tend to adopt the reproductive patterns of native Spanish women quickly.[132]

As far as **immigration** is concerned, this *Strategy* assumes that **Spain will continue to welcome and integrate hundreds of thousands of immigrants**.[133] Specifically, a migration balance of about 191,000 people per year is projected between now and 2050, slightly higher than the average between 1990 and 2019.[134] This influx of people will partially help to mitigate the demographic challenge in the short and medium term. However, in the long term, it will not solve it on its own, as the immigrant population also ages and tends to align with national fertility patterns.[135]

With this, it is reasonable to assume that in 2050, **1 in 3 people in Spain will be 65 or over**, and that our dependency ratio will rise to 60% [Fig. 19], surpassed in the EU only by Portugal, Greece and Italy. From the middle of the century onwards, this trend will stabilise as the more numerous *baby boomer* cohorts reduce. Until then, however, change will come at an accelerated pace.

Fig. 19. **Dependency ratio**



Source: Authors' own, based on Eurostat data.[216]

In this context, **the challenges associated with increasing longevity, as identified above, will intensify markedly. However, valuable opportunities will also arise if we are able to anticipate and adapt our society to the new demographic reality.**

I. The need to accelerate the process of aligning standard working ages with increased life expectancy

Demographic change will mean a **significant decline in our working population**. It is estimated that, over the next three decades, Spain will lose 3.7 million people of working age (ie those aged 16-64), a fall of 12% compared to the current situation. This will mainly happen from 2030 onwards.[136] In the absence of a significant increase in the employment rate and productivity, **this decline in the working-age population will translate into a reduction in Spain's economic growth and per-capita income** [see chapter 1].[137]

Our country has several options available to it if it wants to neutralise this demographic effect.

The first involves correcting the structural deficiencies in our labour market, in the interest of raising the aggregate employment rate to the levels of Europe's most advanced countries. In particular, this will entail improving the employment rates of getting young people and women, and reducing the high levels of temporary and insecure jobs [see chapter 7]. With regard to this, it should be kept in mind that the lower rate of people aged 55-64 working also hides an issue of significant long-term unemployment.[138]

The second option entails driving up labour productivity through a firm commitment to lifelong education and training, innovation and technological take-up across the production sector. Improving the efficiency with which we operate is particularly important in a context where demographic ageing itself may cause additional difficulties to productivity growth [see chapter 1].

The third option, which is closely linked to the above, entails a better alignment of standard working ages and changing life expectancy, and making more and better use of the knowledge and skills of the older population.[139] Although there are variations between different groups, most research indicates that **life expectancy in good health will also continue to increase in the coming decades**.[140] This will make many of the stereotypes currently associated with age (lack of productiveness, isolation, dependence) more obsolete, and people will be able to develop and continue to contribute their talent and experience for longer and become key social and economic stakeholders for the future of our society.

At this level, two major changes can be seen. On the one hand, everything points to the fact that **the standard working ages will change - in a flexible, non-consistent way - to adapt to the increase in life expectancy**. This will bring significant benefits both for our ageing population (improved health and well-being) as well as for the country as a whole (retention of valuable and experienced skills, increase in the available labour force and greater wealth generation).[141] **Spain has already set out a progressive increase in the legal retirement age to 67 in 2027.**[142] Whilst this is not a low threshold in the European context,[143] it is a static limit that may become obsolete as life expectancy increases.[144] An alternative option - that is perhaps more in line with the differences that exist in people's ability to prolong their working lives - is to act on the effective retirement age, offering incentives to encourage people to remain in the labour market beyond the normal age.

On the other hand, it is more likely that there will be **a progressive increase in participation in the labour market among older cohorts** [see chapter 7]. This second change has great potential for Spain, given that, as we have seen, the level of participation in work among over-55s is much lower than that of countries like Sweden, Denmark (belonging to the EU-8) and the UK. **If we succeed in raising working activity rates among 55-74 year-olds to the levels seen in these countries** (an average increase of almost 6 percentage points compared with 2019), **Spain would add 1.6 million active people,**[145] **which would greatly help to mitigate the future negative impacts from the decline in the size of the labour force in intermediate ages on economic growth. It will also help sustain our welfare state** [Fig. 20].[146]

Fig. 20. Alternative scenarios for Spain's active population in later life

Sources: Authors' own, based on Eurostat and OECD data.[147]

If our country is to succeed in increasing the over-55s' participation in work, we will need to undertake profound transformations involving all social stakeholders. It will need people who are able and willing to work longer, and for companies and public institutions that are willing and have incentives to hire them.[148] To do this, we will need to:

– Match future jobs to the skills and interests of older workers, so that the option of staying in work is viable and appealing to them. This will involve creating new jobs in companies and the public sector, and adapting existing jobs to the age of the people doing them, by implementing flexible options. Advancing age is often associated with deteriorating physical capacity and skills related to dealing with new technologies, but it also brings with it more experience and the development of essential skills in many areas.[149] The retention of experience, inter-generational cooperation and lifelong learning (especially in digital technology) should be promoted in order to avoid an increase in the risk of age-related exclusion from the labour market.[150] Similarly, working environments should be adapted to the diverse needs of the older working population as this will help to avoid early retirement due to health problems.[151] The extension of teleworking could be extremely useful.[152]

– Create fiscal and wage mechanisms that bring adaptation, more flexibility and greater participation of older cohorts in the labour market. In Spain there is a lack of effective incentives to continue working beyond the legal retirement age. This situation will need to be put right, with strong links being created between the job market and retirement, so that staying in work is appealing at any age. In doing so, careful consideration should be given to inequalities in healthy life expectancy.

– Breaking stereotypes, making those who work and those who employ understand that the physical situation and working capacities of 70-year-olds are not very different from those of 65-year-olds.

Naturally, **it won't all be about work.** Active ageing also implies that senior citizens are actively involved in society, and are found in a wide range of spaces beyond the labour market. These include volunteering, social participation, family care, study, and a long list of other areas. The "social participation" data of the *Active Ageing Index* show an upward trend in this type of activity among the Spanish population. In the long term, the aspiration should be to become similar to benchmark countries in this regard - such as Belgium and the Netherlands.[153]

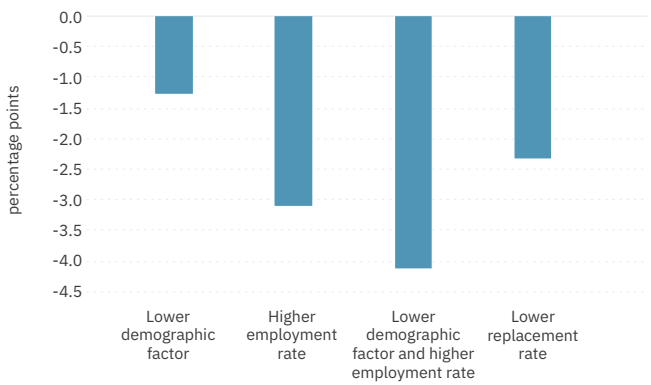
II. Aligning the pension system to new demographic and social realities

The future increase in longevity will accentuate the challenge of the sustainability of our public pension system. In 2050, there will be 1.7 people of working age for every person over the age of 64. This compares with 3.4 today.[154] The various simulation exercises carried out suggest that Spain's spending on contributory pensions will be between 15.2% and 16.9% of GDP in 2050,[155] compared with 10.8% in 2019.[156] This increase could be lower depending on the impact of the measures currently being discussed. However, as we have already noted, **the key to the system's sustainability does not lie exclusively in expenditure, but in the necessary relationship between expenditure and revenues. It is here that the greatest uncertainties emerge.**

The revenues depend on economic growth, job creation and social security contributions (the latter being relatively high in comparison with other countries). Even if the reforms aimed at raising productivity and the employment rate in our country are able to relaunch income growth in the long term, we cannot rule out seeing a scenario of more moderate economic and employment growth than in previous decades [see chapters 1 and 7]. In this scenario, **the gap between pension expenditure and revenues from social security contributions will tend to widen**. It is therefore essential to understand what factors will determine the evolution of future pension expenditure, so that the most appropriate menu of proactive strategies can be prepared.

Figure 21 offers an initial approximation on this,[157] illustrating the way in which demographic, economic, employment and institutional factors could impact pension expenditure as a proportion of GDP in our country between now and 2050. Unlike the estimates previously noted, this is an illustrative exercise and does not cover the interaction between the different explanatory factors.

Fig. 21. **Change in public spending on contributory pensions (% of GDP) in Spain under alternative scenarios, in relation to a baseline scenario, 2050**



Sources: Authors' own, based on data from Eurostat, INE and the Department of Inclusion, Social Security and Migration.[158]

We start from a scenario in which the dependency ratio (which is calculated from age 67), evolves in line with Eurostat projections to reach 53.3% in 2050, while the employment rate over the working age population and the replacement rate remain at 2019 levels.[159] A reduction in the dependency ratio of the order of 3.5 points, resulting from **a gradual aligning of working life with the increase in life expectancy** and/or a greater migration of the working-age population than assumed in the baseline scenario, **would reduce expenditure by just over 1 GDP point**. **An even larger impact of 3 GDP points would be obtained by raising the aggregate employment rate** to 72% from the current 60% [see chapter 7].[160] A combination of this scenario of higher employment with a lower dependency ratio would allow a reduction of **4 points in the GDP expenditure ratio**. In fact, this increase in the employment rate could be partly due to higher activity and employment rates among older cohorts, whether induced or self-initiated. In turn, a reduction in the replacement rate - due to legal changes in calculating pensions or higher wage growth associated with higher productivity growth - could also reduce pension expenditure as a share of GDP. For example, reducing the replacement rate by 6 points would contain pension expenditure by more than 2 points.[161] It should be noted that, with higher productivity growth, higher pensions can be achieved even if the replacement rate reduces.

From this exercise we can see the enormous complexity of the reform that is required. In the coming years, Spain's pension system will have to overcome **the triple challenge of strengthening financial sustainability, providing adequate retirement income, and ensuring inter-generational equity**.[162] To this end, the increased resources required to adjust income or redistribute expenditure items will need to be defined and anticipated, and the implications of the decisions taken on inter-generational equity will need to be clarified. Whichever route is taken, it will need to respect the principle of equality for all generations, including the younger ones.

The Toledo Pact is taking some steps in this direction. It includes, among other things, the need to gradually bring the effective retirement age closer to the legal retirement age; promote the extension of working life; and promote complementary social welfare.[163] In line with this, **promoting occupational pension plans** as adjuncts to the public pension is gaining in strength. The aim is to promote a culture of saving throughout life, but without ignoring the differences in the population's capacity to do so: people with levels of lower income will find it more difficult to build a savings buffer and therefore special attention will need to be paid to them. In fact, consideration is being given to the creation of a **public fund to facilitate access to employment plans by SMEs and the self-employed**.[164]

Regardless, **there is still a lot of unfinished business**. Far from being over, the debate on pensions has only just begun. It is essential that decisions are taken as soon as possible so that we can **design the appropriate mechanisms to avoid abrupt adjustments in the long term.** This must also be done on the basis of a forward-looking approach, taking account of the social and economic changes that will take place in Spain between now and 2050, and reflecting on the ways in which our public pension system will need to adapt accordingly. For example, it will be necessary to study the way that more fragmented and varied working careers than today's will affect the way that retirement pensions are calculated. It will also be necessary to rethink the functioning of pensions such as widows' pensions and how they progressively adapt to a world in which women will have levels of educational training and professional development comparable to those of men, whilst not forgetting the important role of protection that they still play today.[165] Future reviews will also have to take into account the potential loss of contributions due to family care.[166] The recent approval of a new supplement aimed at further reducing the gender gap in pensions is another step in this direction.[167]

III. Changes in the use of health services

As we have already seen, **demographic change alone is not expected to drive up health system spending**, although this will depend to a large extent on the health situation of older cohorts and the way in which the structure and cover of health benefits evolves. The projections made in the European Commission's 2018 Ageing Report set out different scenarios for the rise in Public Health Expenditure (PHE) depending on the way in which the population's health evolves.[168] **In a scenario in which gains in life expectancy are not accompanied by improved state of health, the effect of ageing would increase public health spending by 0.9% GDP by 2050**.[169] However, **if we want to maintain a leading healthcare system that responds to future needs and demands for services, this increase in spending should be higher.**

For a complete prognosis, we need to add **the possible disruptive effects of technological and health developments** to this base scenario. In the coming decades, we may see the widespread use of revolutionary pharmaceutical and biotechnological innovations, such as gene therapy, stem cells, the big data and artificial intelligence systems, robotics and wearables. These will allow the development of medicine that is much more personalised, predictive and effective, especially in therapeutic areas such as oncology.[170] Technology will also make it possible to predict survival time more accurately and, with it, the consequences of diseases at the end of life. The concept of "quality of death" will complement the concept of quality of life. There will be a significant development of palliative care services and social positions on ethical issues will develop in regard to the right to a dignified death. In this regard, it is worth highlighting the recent passing of the law regulating euthanasia in our country, making Spain the sixth country in the world to legalise death with dignity.[171]

All these advances will bring with them challenges and opportunities for the sustainability of the National Health System and they should be analysed as soon as possible. We will need to have a clear plan for the kind of health service we want to have as a country, and design precise standards that will enable us to determine the benefits and effectiveness of health innovations. In this regard, it should be borne in mind that in Spain, as in most countries, the prices of health innovations are not set by the market, but are established through negotiation between public decision-makers and the companies marketing them. This means that **the role of public policies and the regulatory framework will be key to controlling health spending**. The aim should be to relate the price that the health authority pays for new technologies and treatments to their therapeutic and social value.[172]

The future will also bring the emergence of **new communicable diseases** (as HIV/AIDS was in the 1980s and Covid-19 is today) **and an increase in other non-communicable diseases** such as mental and neurodegenerative diseases. This will force us to seek better coordination between the National Health System and the Autonomy and Dependent Care System. We will also need to adapt our health system, moving from an organisational model that is highly focused on treating acute events (as it is at the moment) to a **model more focused on chronic disorders and illnesses**.[173]

Similarly, the extent to which this type of illness proliferates and extends will depend on the implementation of new **health promotion and prevention policies and early diagnosis mechanisms**. As is well known, the determinants of health are multiple and go far beyond the health sphere.[174] The spread of social practices such as sedentary lifestyles, smoking and not following a Mediterranean diet will have profound effects on the health of the elderly and on public health spending [see chapter 9]. To alleviate this, these practices will need to be combatted at root, with education in healthy habits being promoted and the health perspective being included in all policies. On this, it should be stressed that, although in Spain we can find examples of good, extensive **public health policies** and **healthy ageing**,[175] there is no considered, mature and applied framework for health policies aimed at the long term. It will need to be created in the coming years.

These types of reforms, together with other organisational changes and improvements in health governance, **may have a greater effect on the evolution of health spending than aspects due to demographic ageing itself, and may in turn serve to strengthen the role of the National Health System as a source of innovation and generator of quality employment.**

IV. The need to provide quality long term services to a growing part of the population

Our country's care system will change dramatically over the coming decades. The coronavirus pandemic has highlighted the enormous importance of care and **the room for improvement in the model of residential care** which, along with the demographic, health and cultural changes already mentioned, will precipitate a profound expansion and transformation of the system.

The relationship between longevity and dependency, coupled with the reduced availability of traditional caregivers, point to an **increasing need for long-term care** and a **degree of informal care being replaced by professional services**.[176] It is not yet clear how this combination will be structured, but what is certain is that informal care will continue to be decisive and, in many cases, complementary to professional care.

Something else that is certain is that **the focus will increasingly be on people.** The traditional model will be redefined and new forms of integrated, person-centred care will emerge, designed to ensure that individuals receiving care can continue to maintain their independence and autonomy.[177]

The strong preference, on the one hand, of the population to grow older at home,[178] and the increase in single-person households among people over 65,[179] on the other, pose a major challenge for the design of these future services. It is most likely that **care homes will be transformed** and evolve from the current "residential care home" model to a "home-based" model.[180] In parallel, new options will emerge, such as self-care formulas based on technological innovations (telemedicine, *apps*, internet monitoring, home automation adaptations), **cohabitation** with inter-generational support among non-family members, **senior cohousing** in its multiple forms (collaborative, cooperative, collective housing),[181] and "time banks" or volunteering assistance aimed at avoiding unwanted loneliness and encouraging such people to participate in society.[182]

With regard to the **profile of family carers**, this will also go through some transformations as a result of the demographic change itself, with a growing involvement of couples (rather than daughters), men and older people as main carers.[183] Alternating the roles of "caregiver" and "cared-for" will be increasingly frequent, with possible overlaps between them, especially during the initial stage of old age.[184]

Projections made by the *Ageing Report* suggest that, under a scenario where gains in life expectancy are not accompanied by improvements in health, Spain's public spending on long-term care could rise to 1.8% of GDP in 2050, compared with 0.8% today.[185] Under a scenario of transition to professional care, spending would rise to 2.2% of GDP. However, if we converge in terms of costs and cover with other EU countries, public spending would rise to 3.0% of GDP. Given the current situation, **an intermediate spending scenario of between 2.2% and 3.0% is the most plausible**. In fact, our calculations indicate that, **in the next three decades, the number of people over the age of 65 benefiting from dependency assistance in Spain could double from the current 806,963 to more than 1,600,000 in 2050**.[186] Other studies show similar figures.[187]

For sure, improvements in the population's habits and technological advances will significantly reduce care needs in relative terms. However, it is also true that the level of cover for support should be increased compared to what it is now. It follows that **care needs will grow dramatically in absolute terms between now and 2050**. This will be a remarkable challenge for our country, but also **a magnificent opportunity for businesses and for job creation**, the scope of which could even extend beyond the national population. Spain is considered one of the best destinations in the world to live after retirement,[188] thanks to its excellent geographical position, climate, way of life, infrastructure and transport network. If we exploit this advantage well, our country could become a leader at European and global levels in the provision of services to the elderly and create remarkable economic activity around it,[189] which would be in addition to the benefits yielded by the silver economy in sectors like such as mobility, leisure, education and housing [see chapter 1].

WHAT COULD BE DONE TO ADAPT OUR WELFARE STATE TO A LONGER-LIVING SOCIETY

Between now and 2050, Spain will need to change a large part of its social, economic and labour structures and adapt them to the inevitable and fortunate reality of a longer-living society. Doing so will involve, among other things, **improving the employability of young people, increasing activity rates among the over-55s, reforming the pension system to achieve financial sustainability, adapting the health system and vastly expanding the care system.** However, there is nothing to suggest that these transformations cannot be carried out and even become opportunities to increase the prosperity and well-being of all citizens (not just the elderly). This positive approach should guide future policy decisions.

Of course, it is difficult to achieve that which cannot be measured. It is therefore essential that, in the coming years, we use social dialogue to reach a consensus on a **dashboard of quantifiable indicators and a list of specific goals** that will enable us to monitor the progress made and guide the ambition of our reforms. Here are some suggestions which follow the principles outlined in the Introduction to this *Strategy*:

Goal 28. Progressively increase over-55's participation in work so that, by 2050, they are closer to the levels seen in such as Sweden and Denmark, today's leading countries in this regard. This will require creating the necessary incentives for people who wish to continue working and for employers to be able to recruit them.

Goal 29. Progressively raise public spending on health to 7% of GDP over the next decade, in order to meet the future needs and demands for health services of a long-living society.

Goal 30. Expand coverage and improve the quality of the long-term care system, raising its funding to around 2.5% of GDP by 2050, paying particular attention to how it is coordinated with the health system.

Goal 31. Reduce the waiting time between recognising someone's situation of dependency within the framework of the Autonomy and Dependent Care System and granting them benefits.

Table of indicators and targets

Indicators		Place	Average 2015-2019 or latest data available*	Targets		
				2030	2040	2050
28 Activity rate[191]	Between 55 and 64 years old (%)	Spain	62%*	63%	64%	67%
		EU-27	62%*	–	–	–
		EU-8	68%*	–	–	–
	Between 65 and 74 years old (%)	Spain	5%*	7%	9%	11%
		EU-27	11%*	–	–	–
		EU-8	11%*	–	–	–
29 Public expenditure on health (% GDP) excluding health expenditure on long-term care[192]		Spain	5.7%	7.0%	7.0%	7.0%
		EU-27	5.1%	–	–	–
		EU-8	6.6%	–	–	–
30 Public expenditure on long-term care (% of GDP)[193]		Spain	0.8%	1.5%	2.0%	2.5%
		EU-27	1.1%	–	–	–
		EU-8	2.3%	–	–	–
31 Percentage of people who are entitled to SAAD benefits but do not receive them[194]		Spain	17%*	0%	0%	0%
		EU-27	n.d.	–	–	–
		EU-8	n.d.	–	–	–

To achieve these goals, Spain will need to undertake profound reforms and launch ambitious initiatives on at least the following fronts:

Front 1: Make health a central focus of public policies, in order to improve the resilience of the population at older ages

Four key policies are suggested to achieve this:

- Create a National Strategy for Healthy Ageing, based on the basic principle that health is affected by all policies and not solely by those that are considered to be strictly health policies. This strategy should be designed with the involvement of all society's stakeholders. It should focus on prevention and self-care of health throughout life (education on habits for healthy living from an early age is key) as well as strengthening public health policies and reducing health inequalities (based on gender, educational level, occupation and place of residence).[194] Due to their special prevalence and impact on the elderly population, mental health and neurodegenerative diseases should be core priorities in health policies [see chapter 9].

- Establish an autonomous independent Health Policy Assessment Agency, the purpose of which is to evaluate ex post - before, during, and after - interventions that have the greatest potential to improve life expectancy in good health and reduce inequalities. Those that demonstrate success should be built on and those that have social opportunity costs higher than the benefits achieved should be dropped.

– To underpin the solvency of the National Health System,[195] making structural changes in terms of organisation of health services along three basic lines:

  • Promote profound institutional changes that allow for the creation of a framework for good health governance. This would include: 1) increasing the transparency of the information provided to users, professionals in the sector, and the general public, facilitating access to planning reports on health services and health policies, communicating the cost of health services and providing free access to the results of the health services themselves by processes and centres; 2) improving the accountability mechanisms of the party responsible in the health system; 3) encouraging involvement and commitment of citizens and the professional sector in decision-making (for example, promoting the free choice of health centres and professionals, and making documents on health projects and policies available for consultation by professionals and the public); and 4) encouraging evaluation of health strategies and policies.[196]

  • Transition from a healthcare organisational model highly oriented towards the treatment of acute events, such as the one we have today, to a model that is more focused on chronic conditions. That is, devote more resources to controlling the development of chronic diseases and focus on secondary prevention (detecting diseases at early stages) and tertiary prevention of these events (treatment and rehabilitation to avoid diseases from worsening).[197] This will require strengthening primary care and further improving care coordination (primary and hospital care) as well as coordination between health services and long-term care. It will also be essential to prepare for potential emerging diseases, as the Covid-19 health crisis has shown us.

– Ensure that public financing and use of health services and benefits are oriented towards the efficient and equitable delivery of health outcomes. This would involve rules and procedures so that funding medical services, medicines and health technologies is done on the basis of its cost-effectiveness, and also taking into account criteria relating to equity. It would also involve evaluating the effective use of services, as well as the health provider organisations. Finally, it would entail discontinuing interventions that are commonly applied in health practice but whose effectiveness, safety and efficiency have not been proven (specific "do not do" programmes).[198]

Front 2: Substantially increase older people's participation in work and society, taking account of differences in the health of the population.

To achieve this, we propose the following:

– Progressively moving towards simplifying and adapting early, partial, flexible and active retirement schemes in order to improve the compatibility between pensions and work. To this end, it will be necessary to take into account the balance between the two objectives required of the compatibility programmes: increasing job vacancies and containing the Social Security system's financial costs. One way of achieving this would be to encourage active retirement, improving the percentage of the pension enjoyed during people's working stage, updating the pension at the end of the compatibility period, and establishing specific incentives for employers (such as reducing salary compensation linked to career length), among other things.[199]

– Develop comprehensive programmes for retaining older workers and bringing them back into work.[200] Retention must incorporate elements of recycling, updating and modernisation within the company, as well as aspects relating to health, well-being and adapting to the workplace. Reintegration, on the other hand, must be based on transforming the skills of people who cannot continue in the jobs they have been doing - either for health reasons or because of the excessive physical burden involved (for example "training work sabbatical").[201] A key aspect of these comprehensive programmes will entail aligning timetables and working hours to the physical and mental conditions of older employees.

– Create programmes based around individualised orientation services for preparing for transitions from working life to retirement.

– Implement campaigns that promote a change in the perception of old age, cutting out the negative stereotypes and prejudices that currently exist. It must be ensured that age is not a criterion for being excluded from work or any other field.

– Support entrepreneurship among seniors, improving incentives for older people to create their own businesses aligned with their interests and life values, and supporting the setting up of contact networks to encourage the sharing of knowledge and best practice among this group.[202]

– Set up spaces and programmes in which older people can maintain and promote active citizenship which include the development of interpersonal networks and the creation of new links. Older people who participate in general social activities or for their community could be recognised by receiving in-kind (non-pecuniary) compensation and enjoy public goods and services of their choice, or "credits" that could be exchanged for these services or other benefits.

Front 3: Guarantee sufficient pensions within a framework of a fully sustainable Social Security system

Strengthening the sufficiency and sustainability of future pensions must be a priority aim for the State and Spanish society as a whole. As we have seen, the demographic and economic changes that will take place between now and 2050 will add extra pressure on the public system. Improvements in the pattern of economic growth and the functioning of the labour market (increasing the employment rate and reducing employment insecurity) as proposed in chapters 1 and 7 of this *Strategy* will help, in part, to overcome this challenge. There are also a host of measures (some of which have already been outlined in the recommendations approved by the Toledo Pact)[203] that can be adopted and implemented to ensure the dual aim of sufficiency (with a special emphasis on improving the purchasing power of minimum pensions) and long-term sustainability. Among them, we highlight three:

– Develop a system of supplementary pensions that, without undermining the centrality of the public system and its sufficiency, will by 2050 gradually approach those of today's most advanced European countries in this regard. This would make it possible to supplement retirement income from the public system, achieving higher total replacement rates and

thus improving the extent to which retirement income as a whole is adequate, whilst at the same time making progress on the goal of making the pension system sustainable. A supplementary pension system like this would encourage savings, which would also contribute to more sustained economic growth. To achieve its purpose, this system should be owned personally such that it accompanies the beneficiary through the different phases of their active life and is portable between companies, and is illiquid until retirement. Exceptions to this would be situations of need such as serious illness, occupational disability or cessation of activity in the case of self-employed workers, among other reasons. Furthermore, it should be developed within a framework of dialogue between companies and workers.

- Continue to reform the public pension system to make it more sustainable, and align it to demographic changes (life expectancy) as they occur, introducing periodic review mechanisms associated with changes in economic and employment dynamics. It would also be advisable to develop measures to bring the contribution criteria for those working under the Self-Employed Regime into line with those of the General Regime, linking the contributions of the self-employed to their actual net income. Progress also needs to be made in protecting non-conventional workers, given their foreseeable increase in the future.

- Establish an advanced role for active retirement that allows us to prolong our working life in a satisfactory way for all of us.

- In the coming decades, and once the effect of the other measures has been assessed, the need to align the retirement age with the increase in life expectancy should be looked at, whilst paying attention to health inequalities.

These are just some of the ways to ensure sustainability in the system. Spain may opt for other complementary alternatives. In any case, the path to be taken must be one that **ensures fairness and equity between different groups and generations (present and future), so that the financing of pensions for some cohorts is not at the expense of an excessive burden on others.** In this regard, it would be advisable to **make explicit the implications on inter-generational equity** of any decisions taken, as well as **increase transparency** in the information offered to citizens in terms of calculating benefits, accrued rights, or financing Social Security, with the aim of reducing the population's uncertainty about their future pension and helping them to plan their retirement better.[204]

Front 4: Transform the Long-Term Care (LTC) System

There are issues to be resolved within our country's care system that cannot be delayed: improving and simplifying the management of the Autonomy and Dependent Care System (SAAD); reducing waiting lists; strengthening home care; prioritising direct provision of services; increasing funding; and the need for a comprehensive review of the SAAD. On this, it is worth noting the path opened by the recently approved *Shock Plan for the Autonomy and Dependent Care System.*[205]

In order to strengthen these action points and advance improvements to the care system as a whole, several measures are proposed:[206]

— Make progress towards greater professionalisation of LTC:

- Develop a National LTC Training Strategy, aimed at achieving improvements in the training, qualification and accreditation of professionals working in the sector.

- Increase the proportion of non-financial benefits (day centres, night centres, telecare, home help service, residential centres), and agree a minimum percentage of total benefits earmarked for services to encourage autonomy. Clear conditions for accessing financial benefits associated with home-based care (budgets, care inspections) should be also established, and in-kind services prioritised.

- Remove barriers to accessing LTC services, by setting explicit maximum time limits for evaluating and providing the required service, and conveying information to the public to enable them to choose a care provider, based on the quality of care, the services offered and the price.

- Improve coordination between the National Health System and LTC, through appropriate organisational development and with a view to models of care for chronic conditions and person-centred care. To support this change, the planning of health services and LTC should be integrated. A single information system should also be set up for the provision of these services, and encourage the role of "case management" professional.

— Caring for caregivers by:

- Devoting a percentage of the system's resources to training them.

- Promoting "respite and support services for carers".

- Creating specific psychological support programmes for caregivers.

- Reviewing employment regulations to protect caregivers, regardless of how they are hired (whether by a household or by an institution).

- Promoting a culture of care across generations and genders for a more equitable redistribution of informal care.

- Raising the social standing of care work, through education and campaigns to raise awareness of its importance.

- Encouraging co-responsibility in caring for the elderly, through greater numbers of men working in this area.

— Drive forward changes in forms of care:

- Encouraging citizens to choose the most suitable place for their care (home, institution, mixed).

- Favouring a person-centred approach[207] as an ethical model for LTC - both at home and in care homes.

- Promoting the use of new technologies (apps, internet monitoring, home automation adaptations) in the homes of people with limited autonomy.

- Driving the development of new forms of housing (sheltered housing, self-managed collective housing) and a reinventing of residential care to smaller and more modular models, such as cohabitation units, with more homely and personalised environments and settings.

– Encourage the creation of systematised LTC knowledge:

  - Improve information systems for residential and home-based LTC - nationally and in a standardised way - involving the collection of regular information on the types, services, characteristics and users.

  - Promoting research to build knowledge and analysis on the different forms of LTC.

  - Sponsoring pilots for experimenting with and validating new LTC models - both in homes and care homes.

Front 5: Make it easier for women to have the number of children they really want to have

In Spain, we have fewer children than we would like to have.[208] The data reveal that women in Spain would like to have 1.9 children on average,[209] whereas the current fertility level is only at 1.2.[210] The most effective way to move in this direction is to achieve the improvements in employment and redistribution discussed in chapters 1, 7 and 8 of this *Strategy*, with a special emphasis on reducing job insecurity and improving work-life balance. At the same time, we will need to bolster family policies that have already produced the best results in other nearby countries.[211] Among others, we highlight the following:

– Promote greater equality in the sharing of care work and co-responsibility.[212]

– Strengthen the available options for state funded high quality early childhood education until over 50% of children aged 0 to 3 are in school (the national average is currently 37%).[213] Countries like Sweden and Denmark are already above this percentage, with a high level of involvement by state schools.[214]

– Supplement the educational options for 0-3 year olds with assistance services that ensure effective schooling of children from the most vulnerable environments. It is proposed that families in receipt of the Minimum Living Wage should also have automatic access to school dinners and grants for fees at this stage of education.[215]

CHALLENGE #5: GET OUR WELFARE STATE READY FOR A LONGER-LIVING SOCIETY

[1] Pinilla Pallejà, Rafael, and Francisco José Goerlich Gisbert. *Esperanza de vida en España a lo largo del siglo XX. Las tablas de mortalidad del Instituto Nacional de Estadística*. Bilbao: Fundación BBVA, Documentos de trabajo, n.º 11, 2006. https://www.fbbva.es/wp-content/uploads/2017/05/dat/DT_2006_11.pdf.

[2] The figure corresponds to the year 2017. For further details, see: OECD. *Health Status*. https://stats.oecd.org/.

[3] See Epidemiological Transition and Health Transition theories. Refer to: Frenk, Julio, *et al*. "Elements for a Theory of the Health Transition." *Health Transition Review* 1, n.º 1, 1991. www.jstor.org/stable/40608615; Olshansky, S. Jay, and A. Brian Ault. "The Fourth Stage of the Epidemiologic Transition: The Age of Delayed Degenerative Diseases." *The Milbank Quarterly* 64, n.º 3, 1986. https://www.jstor.org/stable/3350025?seq=1; and Omran, Abdel R. "The Epidemiologic Transition: A Theory of the Epidemiology of Population Change." *The Milbank Memorial Fund Quarterly* 49, n.º 4, 1971. https://doi.org/10.1111/j.1468-0009.2005.00398.x.

[4] The "cardiovascular revolution" has led to a considerable reduction in deaths from heart and cerebrovascular diseases and has been key to the reduction in mortality among the elderly population in recent decades. For further details see: García González, Juan M. "¿Por qué vivimos más? Descomposición por causa de la esperanza de vida española de 1980 a 2009." *Revista Española de Investigaciones Sociológicas* 148, 2014. https://doi.org/10.5477/cis/reis.148.39; and Robles González, Elena. "¿De qué se mueren los ancianos en España?" *Estudios Geográficos* 70, 2009. https://doi.org/10.3989/estgeogr.0465.

[5] On the one hand, there is a gender gap in life expectancy in favour of women, which has been maintained over time (in 2019, women aged 65 had a life expectancy of 23.4 years, compared to 19.5 years for men). On the other hand, higher educational attainment is associated with higher survival at all ages. The relationship between the two factors, gender and educational attainment, also indicates that the higher the level of education attained, the smaller the gap in survival between men and women. For further details, see: Requena, Miguel. "La desigualdad ante la muerte: educación y esperanza de vida en España." *Perspectives Demogràfiques*, n.º 006, 2017. https://ddd.uab.cat/record/174321.

[6] Data for the period 1908-74 are from the *Human Mortality Database* nd those from 1975 to 2019, from the INE. For further details, see: Human Mortality Database. *Life expectancy at the age of 65 in Spain*. https://www.mortality.org/; and INE. *Tablas de mortalidad. Tablas de mortalidad por año, sexo, edad y funciones.* https://www.ine.es/dyngs/INEbase/es/operacion.htm?c=Estadistica_C&cid=1254736177004&menu=resultados&idp=1254735573002.

[7] Belenes, Raimon. "Un balance personal de 25 años de gestión sanitaria moderna en el Sistema Nacional de Salud." *Gaceta Sanitaria* 17, n.º 2, 2003. https://www.scielosp.org/article/gs/2003.v17n2/150-156/.

[8] Official State Gazette. *Spanish Constitution*. Madrid, 1978. https://www.boe.es/eli/es/c/1978/12/27/(1)/con.

[9] Official State Gazette. *Ley 14/1986, de 25 de abril, General de Sanidad.* Madrid, 1986. https://www.boe.es/eli/es/l/1986/04/25/14/con .

[10] See, among others: García Armesto, Sandra, *et al*. *Spain: Análisis del sistema sanitario. Sistemas sanitarios en transición*. 2011. https://www.mscbs.gob.es/organizacion/sns/planCalidadSNS/pdf/equidad/observatorioEuropeo/EspanaAnalisisSistemaSanitario2010.pdf; and Jiménez Palacios, Alfonso. "El Sistema Nacional de Salud 20 años después." *Revista de Administración Sanitaria Siglo XXI* 4, n.º 2, 2006. https://www.elsevier.es/es-revista-revista-administracion-sanitaria-siglo-xxi-261-articulo-el-sistema-nacional-salud-20-13091840.

[11] Variation between 1978 and 2018. The health expenditure reported here does not include long-term care services. For further details, see: OECD. *Health expenditure and financing.* https://stats.oecd.org/.

[12] The average number of years of schooling increased from 15 in 1980 to 39 in 2017. See: Carreras, Albert, and Xavier Tafunell Sambola. *Estadísticas históricas de España, siglos XIX-XX*. Bilbao: Fundación BBVA, 2006. https://www.fbbva.es/wp-content/uploads/2017/05/dat/DE_2006_estadisticas_historicas.pdf; and WHO. *The Global Health Observatory. Medical doctors (per 10 000 population)*. https://www.who.int/data/gho.

[13] Official State Gazette. *Real Decreto 1088/1989, de 8 de septiembre, por el que se extiende la cobertura de la asistencia sanitaria de la Seguridad Social a las personas sin recursos económicos suficientes*. Madrid, 1989. https://www.boe.es/eli/es/rd/1989/09/08/1088 .

[14] Official State Gazette. *Ley 16/2003, de 28 de mayo, de cohesión y calidad del Sistema Nacional de Salud.* Madrid, 2003. https://www.boe.es/eli/es/l/2003/05/28/16/con; and *Real Decreto-ley 7/2018, de 27 de julio, sobre el acceso universal al Sistema Nacional de Salud*. Madrid, 2018. https://www.boe.es/eli/es/rdl/2018/07/27/7.

[15] The main rankings of quality and efficiency in the world's healthcare sectors place Spain in a good relative position. For example, our health care system ranks 19th out of 195 according to the *Health Access and Quality Index* and 15th out of 195 according to the *Global Health Security Index*. For further details, see: GBD 2016 Healthcare Access and Quality Collaborators. "Measuring performance on the Healthcare Access and Quality Index for 195 countries and territories and selected subnational locations: a systematic analysis from the Global Burden of Disease Study 2016."*The Lancet* 391, n.º 10136, 2018. http://dx.doi.org/10.1016/S0140-6736(18)30994-2; Health Consumer Powerhouse. *Euro Health Consumer Index 2018 report*. 2019.https://healthpowerhouse.com/media/EHCI-2018/EHCI-2018-report.pdf; Nuclear Threat Initiative, Johns Hopkins Center for Health Security, and The Economist Intelligence Unit. *Global health security index: Building collective action and accountability*. 2019. https://www.ghsindex.org/wp-content/uploads/2020/04/2019-Global-Health-Security-Index.pdf; and Tandon, Ajay, Christopher J.L. Murray, Jeremy A. Lauer, and David B. Evans. "Measuring overall health system performance for 191 countries." *World Health Organization, GPE Discussion Paper*, n.º 30, 2000. https://www.who.int/healthinfo/paper30.pdf.

[16] OECD. *Spain: Country Health Profile 2019, State of Health in the EU*.

Paris: OECD Publishing; Brussels: European Observatory on Health Systems and Policies, 2019. https://doi.org/10.1787/8f834636-en.

[17] Eurostat. *Self-reported unmet needs for medical examination by sex, age, main reason declared and income quintile [hlth_silc_08]*. https://ec.europa.eu/eurostat/data/database.

[18] Department for Health. *Nota de prensa: España revalida en 2019 su liderazgo mundial en donación de órganos y aporta el 20% de los donantes de la UE y el 6% del mundo.* Madrid, 2020. http://www.ont.es/Documents/07.09.2020%20NPONT%20RegistroMundial_.pdf .

[19] See: Global Observatory on Donation and Transplantation. *Newsletter Transplant. International Figures on Donation and Transplantation 2019*. 2020. http://www.ont.es/publicaciones/Documents/NEWSLETTER%202020_baja.pdf; and Matesanz, Rafael (ed.). *El modelo español de coordinación y trasplantes*. Madrid: Aula Médica, 2008. http://www.ont.es/publicaciones/Documents/modeloespanol.pdf.

[20] Department for Health. *Nota de prensa: España revalida en 2019 su liderazgo mundial en donación de órganos y aporta el 20% de los donantes de la UE y el 6% del mundo.* Madrid, 2020. http://www.ont.es/Documents/07.09.2020%20NPONT%20RegistroMundial_.pdf .

[21] Unmet health care needs due to cost, distance or waiting times. The low and high income population corresponds to the first and fifth income quintile, respectively. See: Eurostat. *Self-reported unmet needs for medical examination by sex, age, main reason declared and income quintile [hlth_silc_08]*. https://ec.europa.eu/eurostat/data/database.

[22] Global Observatory on Donation and Transplantation. *Global Data*. http://www.transplant-observatory.org/data-charts-and-tables/.

[23] Official State Gazette. *Ley 26/1990, de 20 de diciembre, por la que se establecen en la Seguridad Social prestaciones no contributivas.* Madrid, 1990. https://www.boe.es/eli/es/l/1990/12/20/26.

[24] In addition, the ratio of contributory pensions to total population has risen from 12% in 1980 to 21% in 2019 For further details, refer to: INE. *Cifras de población. Población residente por fecha, sexo y edad.* https://www.ine.es/dyngs/INEbase/es/operacion.htm?c=Estadistica_C&cid=1254736176951&menu=resultados&idp=1254735572981 ; and Department of Education and Vocational Training. *Estadísticas. Prestaciones de Seguridad Social y otra protección social*. https://expinterweb.mitramiss.gob.es/series/.

[25] Variable expressed in constant 2015 euros (base year). 2020, the average from January to November of the average amount of the contributory retirement pension is shown. See: AMECO. *National consumer price index (All-items) [ZCPIN]*. https://ec.europa.eu/economy_finance/ameco/user/serie/SelectSerie.cfm ; and Department of Education and Vocational Training. *Estadísticas. Prestaciones de Seguridad Social y otra protección social.* https://expinterweb.mitramiss.gob.es/series/.

[26] This number of benefit recipients, although insufficient, is 2.6 times higher than in 2008. In December 2008, there were 422,846 beneficiaries of the System for Autonomy and Care for Dependency with benefits; in January 2021, this figure rose to 1,120,233 people. For further details, see: Instituto de Mayores y Servicios Sociales. *Estadísticas. Sistema para la Autonomía y Atención a la Dependencia. Histórico. Informes publicados.* https://www.imserso.es/imserso_01/documentacion/estadisticas/info_d/estadisticas/est_inf/inf_gp/2020/index.htm.

[27] According to the WHO, health is defined as "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity". Therefore, the health of an individual or a population cannot be assessed solely on the basis of the prevalence of physical illness or mental disorders (negative health), but must also incorporate the possibility of developing one's physical, intellectual and social potential to the best of one's ability (positive health). On this issue, see: WHO "Constitution." WHO, https://www.who.int/about/who-we-are/constitution.

[28] Inequality in health at older ages is a reflection of inequality throughout the life cycle. Thus, women expect to live longer, but in poorer health; people with lower levels of education also live fewer years and more of them in poor health; and there are regional divergences between people living in the north of Spain and in the rest of the country. For further details, see: Costa-Font, Joan, Cristina Hernández-Quevedo, and Dolores Jiménez-Rubio. "Income inequalities in unhealthy lifestyles in England and Spain." *Economics & Human Biology* 13, 2014. https://doi.org/10.1016/j.ehb.2013.03.003; Gispert, Rosa, Miguel Ruíz-Ramos, María Arán Barés, Francisco Viciana, and Guillém Clot-Razquin. "Diferencias en la esperanza de vida libre de discapacidad por sexo y Comunidades Autónomas en España."*Revista Española de Salud Pública* 81, n.º 2, 2007. http://scielo.isciii.es/scielo.php?script=sci_arttext&pid=S1135-57272007000200006; Gómez Redondo, Rosa, and Celia Fernández-Carro. "Personas mayores, Discapacidad y Dependencia." In Department of Health, Social Services and Equality, State Secretariat for Social Services and Equality and Instituto de Mayores y Servicios Sociales (eds.). *Informe 2014: Las Personas Mayores en España. Datos Estadísticos Estatales y por Comunidades Autónomas*. Madrid: Instituto de Mayores y Servicios Sociales, Colección Documentos, Serie Documentos Estadísticos, n.º 22029, 2016. 329-42; Martín, Unai, Antía Domínguez-Rodríguez, and Amaia Bacigalupe. "Desigualdades sociales en salud en población mayor: una aportación desde la salud pública al debate sobre el retraso de la edad de jubilación en España." *Gaceta Sanitaria* 33, n.º 1, 2019. https://doi.org/10.1016/j.gaceta.2017.10.010; Pujol Rodríguez, Rogelio, Antonio Abellán, and María Puga. "Evolución y diferencias territoriales de la Esperanza de Vida Libre de Discapacidad a los 65 años en España." In *XIV Congreso Nacional de la Población*. Seville: AGE, 2014; Requena, Miguel. "La desigualdad ante la muerte: educación y esperanza de vida en España." *Perspectives Demogràfiques*, n.º 006, 2017. https://ddd.uab.cat/record/174321. https://ddd.uab.cat/record/174321; and Solé-Auró, Aïda, Unai Martín, and Antía Domínguez Rodríguez. "Educational Inequalities in Life and Healthy Life Expectancies among the 50-Plus in Spain." *International Journal of Environmental Research and Public Health* 17, n.º 3558, 2020. https://doi.org/10.3390/ijerph17103558 .

[29] Eurostat. *Healthy life years by sex (from 2004 onwards) [hlth_hlye]*. https://ec.europa.eu/eurostat/data/database.

[30] INE. *Encuesta Nacional de Salud. Encuesta 2017. Valoración del estado de salud percibido en los últimos 12 meses según sexo y grupo de edad.* https://www.ine.es/dyngs/INEbase/es/operacion.htm?c=Estadistica_C&cid=1254736176783&menu=resultados&idp=1254735573175#!tabs-1254736195650.

[31] OECD. *Family Database*. https://stats.oecd.org/.

[32] INE. *Indicadores demográficos básicos. Indicador Coyuntural de Fecundidad según orden del nacimiento y nacionalidad (española/extranjera) de la madre.* https://www.ine.es/dyngs/INEbase/es/operacion.htm?c=Estadistica_C&cid=1254736177003&menu=resultados&idp=1254735573002#!tabs-1254736195380.

[33] Planelles Romero, Joaquín. "El futuro de la población. La población del futuro." In Economists withour Borders. *Demografía: Cambios en el modelo Reproductivo*. Dossieres EsF, n.º 36, 2020. 28-33. https://ecosfron.org/wp-content/uploads/2020/01/Dossieres-EsF-36-DEMOGRAF%C3%8DA.pdf.

[34] On this question, see: Esteve, A., D. Devolder, and A. Domingo. "La infecundidad en España: tic-tac, tic-tac, tic-tac!!!" *Perspectives Demogràfiques,* n.º 001, 2016; and Seiz, Marta. "Voluntary Childlessness in Southern Europe: The Case of Spain." *Population Review* 52, n.º 1, 2013. https://doi.org/10.1353/prv.2013.0006.

[35] On this question, see, among others: Castro-Martín, Teresa, and Teresa Martín-García. "La fecundidad en España: entre las más bajas del mundo y sin muchas perspectivas de recuperación." In Juan Manuel García González, and Dolores Puga (coords.). *Retos demográficos*, Madrid: Funcas, Panorama Social, n.º 23, 2016. 11-26. https://www.funcas.es/revista/retos-demograficos-julio-2016/; Esteve, Albert, and Rocío Treviño. "Los grandes porqués de la (in) fecundidad en España." *Perspectives Demogràfiques*, n.º 015, 2019. https://ddd.uab.cat/record/174321. *Encuesta de Fecundidad. Encuesta 2018*. https://www.ine.es/dyngs/INEbase/es/operacion.htm?c=Estadistica_C&cid=1254736177006&menu=resultados&idp=1254735573002#!tabs-1254736195659.

[36] Pérez Díaz, Julio. "Duración de la vida, natalidad y migraciones en España." *Economiaz, Revista vasca de Economía* 96, n.º 2, 2019. https://EconPapers.repec.org/RePEc:ekz:ekonoz:2019203.

[37] INE. *Migraciones exteriores. Saldo migratorio con el extranjero.* https://www.ine.es/jaxiT3/Datos.htm?t=24403#!tabs-tabla.

[38] INE. *Cifras de población. Población residente por fecha, sexo y edad*. https://www.ine.es/dyngs/INEbase/es/operacion.htm?c=Estadistica_C&cid=1254736176951&menu=resultados&idp=1254735572981.

[39] The minimum working age in Spain is 16 years, but to facilitate international comparison, it is presented as from 15 years and up to 64 years.

[40] The data correspond to the values as of 1 January. For further details see: INE. *Cifras de población. Población residente por fecha, sexo y edad.* https://www.ine.es/dyngs/INEbase/es/operacion.htm?c=Estadistica_C&cid=1254736176951&menu=resultados&idp=1254735572981.

[41] Dependency ratio measured as the population aged 65 and over out of the population aged 15-64. The EU-8 and EU-27 are constructed as the simple average of the values of the individual countries. For further details, see: Eurostat. *Old-age-dependency ratio [tps00198].* https://ec.europa.eu/eurostat/data/database. For further details on the construction of the EU-8, see the*Apunte metodológico* número I.

[42] This number of years is calculated on the basis of the effective retirement age. The average for both genders is shown. The EU-8 and the OECD are constructed as the simple average of the values of the individual countries. For 1970 and 1986, the EU-8 does not include Germany due to lack of data. For further details, see: OECD. *Expected number of years in retirement, by sex*. https://stats.oecd.org/.

[43] The activity rate by age group is defined as the ratio of the active population (employed and unemployed) to the total population in each age group. For further details, see: INE. *Encuesta de Población Activa. Tasas de actividad por sexo y grupo de edad.* https://www.ine.es/dyngs/INEbase/es/operacion.htm?c=Estadistica_C&cid=1254736176918&menu=resultados&idp=1254735976595#!tabs-1254736195128.

[44] WHO. *Active ageing: a policy framework*. Madrid, 2002. https://www.who.int/ageing/publications/active_ageing/en/ .

[45] In Spain, some regional studies suggest that a not insignificant percentage of people over 55 would prefer to combine their working hours with a partial pension rather than opt for retirement. For further details, refer to: Del Barrio, Elena, Olga Mayoral, and Mayte Sancho (Matia Instituto Gerontológico). *Estudio sobre las condiciones de vida de las personas de 55 y más años en Euskadi*. Vitoria-Gasteiz: Servicio Central de Publicaciones del Gobierno Vasco, Documentos de Bienestar Social, n.º 77, 2015. https://www.matiainstituto.net/es/publicaciones/estudio-sobre-las-condiciones-de-vida-de-las-personas-de-55-y-mas-anos-en-euskadi.

[46] OECD.*Ageing and Employment Policies: United States 2018: Working Better with Age and Fighting Unequal Ageing, Ageing and Employment Policies.* Paris: OECD Publishing, 2018. https://doi.org/10.1787/9789264190115-en.

[47] Del Barrio, Elena, Olga Mayoral, and Mayte Sancho (Matia Instituto Gerontológico). *Estudio sobre las condiciones de vida de las personas de 55 y más años en Euskadi*. Vitoria-Gasteiz: Servicio Central de Publicaciones del Gobierno Vasco, Documentos de Bienestar Social, n.º 77, 2015. https://www.matiainstituto.net/es/publicaciones/estudio-sobre-las-condiciones-de-vida-de-las-personas-de-55-y-mas-anos-en-euskadi.

[48] National and international evidence suggests that higher labour force participation of older people tends to be associated with higher employment and lower unemployment among young people. However, in the case of Portugal and Italy, some studies, although not all available, suggest that there is a substitution effect in the short and medium term. See: Böheim, René, and Thomas Nice. "The effect of early retirement schemes on youth employment." *IZA World of Labor 70,* 2019. https://doi.org/10.15185/izawol.70.v2; and Boldrin, Michele, Pilar García-Gómez, and Sergi Jiménez-Martín. "Social Security Incentives, Exit from the Workforce and Entry of the Young", and Gruber, Jonathan, Kevin Milligan, and David A. Wise. "Introduction and Summary." In Jonathan Gruber and David A. Wise (eds.). *Social Security Programs around the world: the relationship to youth employment*. Chicago: University of Chicago Press, 2010. 261-94. http://www.nber.org/chapters/c8250. For more details on the case of Portugal, see: Martins, Pedro S., Alvaro A. Novo, and Pedro Portugal. "Increasing the Legal Retirement Age: The Impact on Wages, Worker Flows and Firm Performance." *IZA Discussion Papers*, n.º 4187, 2009. https://www.iza.org/publications/dp/4187/increasing-the-legal-retirement-age-the-impact-on-wages-workerflows- and-firm-performance. On the case of Italy, see: Boeri, Tito, Pietro Garibaldi, and Espen R. Moen. "A Clash of Generations? Increase in Retirement Age and Labor Demand for Youth." *CEPR Discussion Paper,* n.º DP11422, 2016. https://ssrn.com/abstract=2820077; Bovini, G., and M. Paradisi. "Labor substitutability and the impact of raising the retirement age." *Working Paper*, 2019.

https://scholar.harvard.edu/files/paradisi/files/paradisi_jmp.pdf; and Carta, Francesca, Francesco D'Amuri, and Till M. von Wachter. "Workforce aging, pension reforms, and firm outcomes." *NBER Working Paper*, n.º 28407, 2021. https://doi.org/10.3386/w25695. https://www.nber.org/papers/w28407.

[49] It should be noted that this was not always the case. When looking at the activity rates of people over 55 in the 1970s, they were higher. This, together with improvements in health, suggests that the potential for employment in older cohorts is high and has increased in recent years. In particular, "residual labour capacity" (measured as the difference between the activity rate in the 1970s and today, at constant mortality) has increased by more than 10 years in the last three decades. Refer to: García-Gómez, Pilar, Sergi Jiménez-Martín, and Judit Vall Castelló. "Health Capacity to Work at Older Ages: Evidence from Spain." In David A. Wise (ed.). *Social Security Programs and Retirement around the World: The Capacity to Work at Older Ages*. Chicago: University of Chicago Press, 2017. 269-300. https://www.nber.org/chapters/c13746.

[50] The activity rate by age group is defined as the ratio of the active population (employed and unemployed) to the total population in each age group. The UE-8, the EU-27 and the OECD are constructed as the simple average of the values of the individual countries. For further details, see: OECD. *LFS by sex and age – indicators*. https://stats.oecd.org/.

[51] Herce San Miguel, José A. "Longevidad y mercado de trabajo." *Economiaz, Revista vasca de Economía*, n.º 96, 2019. https://www.euskadi.eus/web01-a2reveko/es/k86aEkonomiazWar/ekonomiaz/abrirArticulo?idpubl=92&registro=10 .

[52] In the case of self-employed workers, the percentage of the pension received when combined with work is up to 100% of the pension (provided that the self-employed person can prove that he or she has at least one employee). See: Department for Labour, Migration and Social Security. *Proyecto de presupuestos: Ejercicio 2021*. Madrid, 2020. http://www.seg-social.es/wps/wcm/connect/wss/7fad23dd-65cf-4ff4-baf3-50c5d2fabf61/202120003.pdf?MOD=AJPERES&CVID= .

[53] Among the factors that may explain the reduced use of the current active retirement scheme (in force since 2013), the following should be highlighted: the low level of public awareness of this structure; the fact that it is only allowed from the legal retirement age and with a full contribution history (entitlement to 100% of the regulatory base); the loss of pension income (in general, 50% of the pension to which one would be entitled if this structure were not used); and the disincentive for employers to continue to maintain workers with acquired salary rights (e.g., payment of three years' salary). In addition to active retirement, there are other modalities in Spain that allow the compatibility between pension and work according to a series of criteria: partial retirement (in force since 1984 and reformed in 2001) and flexible retirement (in force since 2002). Only partial retirement has reached relevant figures in the total number of pension registrations granted under the figures that allow compatibility, partly due to the fact that it does not establish penalty coefficients for early retirement. Refer to: Department for Labour, Migration and Social Security. *Proyecto de presupuestos: Ejercicio 2021*. Madrid, 2020. http://www.seg-social.es/wps/wcm/connect/wss/7fad23dd-65cf-4ff4-baf3-50c5d2fabf61/202120003.pdf?MOD=AJPERES&CVID=; and Sánchez Martín, Alfonso R., and Sergi Jiménez Martín. "La compatibilidad del trabajo y el cobro de pensión en España: análisis institucional en el contexto europeo." *FEDEA, Estudios sobre la Economía Española,* n.º 2021/10, 2021. https://documentos.fedea.net/pubs/eee/eee2021-11.pdf .

[54] Official State Gazette. *Real Decreto-ley 28/2018, de 28 de diciembre, para la revalorización de las pensiones públicas y otras medidas urgentes en materia social, laboral y de empleo*. Madrid, 2018. https://www.boe.es/boe/dias/2018/12/29/pdfs/BOE-A-2018-17992.pdf .

[55] The production of manufacturing goods with medium-high technological content accounted for 4% of employment in Spain in 2019, as compared to 5% on average in the EU-8. The difference is wider in the case of knowledge-intensive services: while in Spain they account for 36% of total employment, in the EU-8 this figure rises to 46%. See: Eurostat. *Employment in high and medium-high technology manufacturing sectors and knowledge-intensive service sectors [tsc00011].* https://ec.europa.eu/eurostat/data/database.

[56] Spain has an unfavourable position compared to neighbouring countries in terms of the proportion of older workers in companies with less than 10 employees, regardless of their level of education, which may limit the adaptation of tasks throughout the life cycle. For further details, see: Anghel, Brindusa, and Aitor Lacuesta. "Envejecimiento, productividad y situación laboral." Banco de España, *Artículos Analíticos, Boletín Económico*, n.º 1/2020, 2020. https://www.bde.es/f/webbde/SES/Secciones/Publicaciones/InformesBoletinesRevistas/ArticulosAnaliticos/20/T1/descargar/Fich/be2001-art2.pdf.

[57] Moreover, the proportion of workers in training decreases with age. For further details, see: *Ibid*.

[58] If the contributory pension does not reach a statutory minimum, it is supplemented up to that amount. This minimum supplement is financed by general taxation.

[59] Between 1980 and 2012, the difference between contributory social security expenditure and revenue has been positive. For further details, see: De la Fuente, Ángel, Miguel Ángel García Díaz, and Alfonso R. Sánchez. "La salud financiera del sistema público de pensiones español. Análisis retrospectivo, proyecciones de largo plazo y factores de riesgo." *FEDEA, Estudios sobre la Economía Española,* n.º 2017/04, 2017. *https://documentos.fedea.net/pubs/eee/eee2021-11.pdf* . https://documentos.fedea.net/pubs/eee/eee2017-04.pdf.

[60] The number of pension registrations, which had declined somewhat in the early 2000s, increased from 2005 onwards, always remaining above 230,000 and reaching its highest level ever in 2018 (328,159 new registrations). In this regard, see: Department for Inclusion, Social Security and Migration. *Estadística de histórico de pensiones*. https://w6.seg-social.es/ProsaInternetAnonimo/OnlineAccess?ARQ.SPM.ACTION=LOGIN&ARQ.SPM.APPTYPE=SERVICE&ARQ.IDAPP=ESTA0001.

[61] Banco de España. *Informe Anual 2018*. Madrid, 2019. https://www.bde.es/bde/es/secciones/informes/Publicaciones_an/Informe_anual/index2018.html.

[62] It includes the minimum pension supplement. Excluding the minimum pension supplement, public expenditure on contributory pensions would stand at 10.2% of GDP. For further details, see: INE. *Contabilidad Nacional Anual de España: principales agregados. GDP at market prices.* https://www.ine.es/dyngs/INEbase/es/operacion.htm?c=Estadistica_C&cid=1254736177057&menu=resultados&idp=1254735576581; and

Department for Inclusion, Social Security and Migration. *eSTADISS: Estadísticas de pensiones*. https://bit.ly/3j27PBN.

[63] Social security contributions fell from 108.1 billion euros in 2008 to 98.2 billion euros in 2013. See: Department for Inclusion, Social Security and Migration. *Estadísticas. Presupuesto aprobado. Ingresos.* http://www.seg-social.es/wps/portal/wss/internet/EstadisticasPresupuestosEstudios/Estadisticas/EST66/EST67.

[64] European Commission. *The 2018 Ageing Report: Economic and Budgetary Projections for the EU Member States (2016-2070).* Luxembourg: Publications Office of the European Union, 2018. https://doi.org/10.2765/615631.

[65] However, the possibility of retirement at the age of 65 is maintained for those who have contributed for at least 38 years and six months. In this regard, see: Official State Gazette. *Ley 27/2011, de 1 de agosto, sobre actualización, adecuación y modernización del sistema de Seguridad Social.* Madrid, 2011. https://www.boe.es/buscar/doc.php?id=BOE-A-2011-13242.

[66] On this question, see: Instituto de Actuarios Españoles. *Factor de equidad actuarial del sistema contributivo de pensiones de jubilación español.* 2020. https://www.actuarios.org/wp-content/uploads/2020/09/Informe-IAE-sobre-el-Factor-de-Equidad-Actuarial-del-Sistema-Contributivo-de-Pensiones-de-Espana.pdf; and Moraga, María, and Roberto Ramos. "Una estimación del rendimiento financiero del sistema de pensiones." Banco de España, *Artículos Analíticos, Boletín Económico*, n.º 3/2020, 2020. https://www.bde.es/f/webbde/SES/Secciones/Publicaciones/InformesBoletinesRevistas/ArticulosAnaliticos/20/T3/descargar/Fich/be2003-art24.pdf.

[67] The situation is particularly adverse for older women and for self-employed and non-standard workers, who are becoming increasingly important in our society. In fact, retirement pensions for the self-employed scheme, which is characterised by widespread adherence to minimum contribution bases during working life, were 41% lower than the average pensions received in the general scheme in 2019. For further details, see: Social Protection Committee, and European Commission. *The 2018 Pension Adequacy Report Vol. II: Country Profiles.* Luxembourg: Publications Office of the European Union, 2018. https://doi.org/10.2767/653851; and Department for Inclusion, Social Security and Migration. *eSTADISS: Estadísticas de pensiones.* https://bit.ly/3j27PBN.

[68] On this question, see: Centro de Investigaciones Sociológicas. *Barómetro de marzo 2018. Avance de resultados*. Madrid: Estudio, n.º 3207, 2018. http://datos.cis.es/pdf/Es3207mar_A.pdf; and Salvetti & Llombart, and Educo. *El papel de los abuelos en la crisis económica*. 2015. http://envejecimiento.csic.es/documentacion/biblioteca/registro.htm?id=59808.

[69] In 2019, the percentage of people over 65 years of age at risk of poverty or social exclusion in our country was 16%, compared to 14% in the EU-8 (calculated as the simple average of the values for each country), although lower than for people aged 18-64 (27%). For further details, see: Eurostat. *People at risk of poverty or social exclusion by age and sex [ilc_peps01]*. https://ec.europa.eu/eurostat/data/database.

[70] OECD. *Pensions at a Glance 2019: OECD and G20 Indicators.* Paris: OECD Publishing, 2019. https://doi.org/10.1787/b6d3dcfc-en.

[71] AIReF. *Evaluación del gasto público 2019: Beneficios Fiscales*. 2020. https://www.airef.es/wp-content/uploads/2020/PDF-WEB-BF-1.pdf#page=75.

[72] For further details, see: Social Protection Committee and European Commission. *The 2018 Pension Adequacy Report Vol. I: Current and Future Income Adequacy in Old Age in the EU.* Luxembourg: Publications Office of the European Union, 2018. https://doi.org/10.2767/406275; and OECD. *Pensions at a Glance 2019: OECD and G20 Indicators.* Paris: OECD Publishing, 2019. https://doi.org/10.1787/b6d3dcfc-en. On the Swedish experience of pension reform, refer to: Boada-Penas, María del Carmen. "Reformas del sistema de pensiones: La Experiencia Sueca." *FEDEA, Documento de Trabajo,* n.º 2021/03, 2021. https://documentos.fedea.net/pubs/dt/2021/dt2021-03.pdf.

[73] It should be considered that social contributions in Spain are already higher than in the EU average, and that recourse to general taxation would obscure the direct and transparent relationship between income and benefits typical of a pay-as-you-go system. Moreover, by being borne by the whole population, an increase in general taxation would reduce pensions in net terms. For further details see: Hernández de Cos, Pablo, Juan Francisco Jimeno, and Roberto Ramos. "El sistema público de pensiones en España: Situación actual, retos y alternativas de reforma." *Documentos Ocasionales,* n.º 1701, Banco de España, 2017. https://www.bde.es/f/webbde/SES/Secciones/Publicaciones/PublicacionesSeriadas/DocumentosOcasionales/17/Fich/do1701.pdf.

[74] Official Gazette of the Spanish Parliament. *Informe de evaluación y reforma del Pacto de Toledo.* Madrid, 2020. https://www.congreso.es/public_oficiales/L14/CONG/BOCG/D/BOCG-14-D-187.PDF .

[75] Ministerio de Inclusión, Seguridad Social y Migraciones. "¿Qué gastos no contributivos financia la Seguridad Social?" Department for Inclusion, Social Security and Migration, https://revista.seg-social.es/2020/10/29/que-son-los-gastos-impropios-de-la-seguridad-social/.

[76] The implementation of a notional accounts system, in which the public pension is calculated on the basis of the social security contributions made by the worker since entering the labour market, their life expectancy at the time of retirement and the expected economic conditions, is another of the alternatives envisaged. An important point to mention is the need for economic and demographic projections to change smoothly and not to be overly responsive to cyclical changes in the economy in the short term. To the extent that initial pensions end up being higher or lower than they should have been, due to a prediction error, it would be necessary to provide for an additional adjustment by, for example, an annual revaluation below or above the CPI, respectively. For further details, see: Devesa, José Enrique, and Rafael Domenech. "Sostenibilidad y suficiencia. Las cuentas nocionales como un mecanismo de disciplina." In Instituto Santalucía (ed.). *Pensiones del futuro*. Madrid: Instituto Santalucía. https://institutosantalucia.es/pensiones-del-futuro/; and Devesa, Enrique, and Rafael Domenech. "Las cuentas nocionales individuales: elemento central de la reforma del sistema de pensiones en España." *FEDEA, Policy Papers,* n.º 2021/02, 2021. https://documentos.fedea.net/pubs/fpp/2021/02/FPP2021-02.pdf.

[77] Grupo De Trabajo De Análisis Del Gasto Sanitario - IGAE. "Informe del grupo de trabajo de análisis del gasto sanitario." 2005. https://www.hacienda.gob.es/Documentacion/Publico/PortalVarios/FinanciacionTerritorial/Autonomica/IGTGS2005.pdf.

[78] The health expenditure reported here does not include long-term care services. For data, see: OECD. *Health expenditure and financing.* https://stats.oecd.org/.

[79] Zweifel, Peter, Stefan Felder, and Markus Meiers. "Ageing of population and health care expenditure: a red herring?" *Health Economics* 8, n.º 6, 1999. https://doi.org/10.1002/(SICI)1099-1050(199909)8:6<485::AID-HEC461>3.0.CO;2-4.

[80] On this question, see: Breyer, Friedrich, Joan Costa-Font, and Stefan Felder. "Ageing, health, and health care." *Oxford Review of Economic Policy* 26, n.º 4, 2010. https://doi.org/10.1093/oxrep/grq032; Carreras, Marc, Pere Ibern, and José María Inoriza. "Ageing and healthcare expenditures: Exploring the role of individual health status." *Health Economics* 27, n.º 5, 2018. https://doi.org/10.1002/hec.3635; and Costa-Font, Joan, and Cristina Vilaplana-Prieto. "More Than One Red Herring'? Heterogeneous Effects of Ageing on Healthcare Utilisation." *Health Economics,* 2020. https://doi.org/10.1002/hec.4035.

[81] It should be noted that Spain has a significant tax collection gap with respect to the most developed countries in Europe [see chapter 8]. This conditions the availability of resources to spend, among other things, on public health spending.

[82] The health expenditure reported here does not include long-term care services. The EU-8 and EU-27 are constructed as the simple average of the values of the individual countries. For further details, see: Eurostat. *Expenditure for selected health care functions by health care financing schemes [HLTH_SHA11_HCHF].* https://ec.europa.eu/eurostat/data/database.

[83] In the last decade, most of the public health budget has been devoted to hospitals, with less weight given to primary care. See: Department of Health. *Estadística de Gasto Sanitario Público (EGSP). Serie 2002-2019 (Gasto sanitario público según criterio de devengo: Gasto real). Servicios hospitalarios y especializados y Servicios primarios de salud.* https://www.mscbs.gob.es/estadEstudios/estadisticas/inforRecopilaciones/gastoSanitario2005/home.htm.

[84] In 2018, in Spain, spending on preventive and public health services accounted for 2.1% of current health expenditure, while in the EU-8 this was 2.7%. When comparing this per capita expenditure in the same year at current prices and in PPPs, the differences are of a greater magnitude: in Spain it was 73 dollars per person compared to an EU-8 average of 144 dollars. Data corresponding to the EU-27 have been constructed as the simple average of the values of the individual countries. For further details, see: OECD. *Health expenditure and financing. Preventive care.* https://stats.oecd.org/Index.aspx?DataSetCode=SHA#.

[85] In 2018, in Spain, spending on preventive and public health services accounted for 2.1% of current health expenditure, while in the EU-8 this was 2.7%.

[86] Dependency is understood as the limitation, in many different forms and degrees, to carry out daily activities due to physical or cognitive problems.

[87] Martín Palomo, María Teresa. "El *care,* un debate abierto: de las políticas de tiempos al *social care." Cuestiones de género: de la igualdad y la diferencia,* n.º 4, 2009. http://dx.doi.org/10.18002/cg.v0i4.3817.

[88] Informal care is care provided by a person, usually from the affective environment of the cared-for person, who is not a professional caregiver and therefore does not enjoy employment rights such as salary, predetermined working hours or holidays. On this question, see: Triantafillou, J., *et al. Informal care in the long-term care system: European Overview Paper*. Athens/Vienna: Interlinks, 2010. https://www.euro.centre.org/downloads/detail/768.

[89] Martínez-Buján, Raquel. "Los modelos territoriales de organización social del cuidado a personas mayores en los hogares." *Revista Española de Investigaciones Sociológicas*, n.º 145, 2014. http://dx.doi.org/10.5477/cis/reis.145.99.

[90] On this question, see: Barczyk, Daniel, and Matthias Kredler. "Long-Term Care Across Europe and the United States: The Role of Informal and Formal Care." *Fiscal Studies* 40, 2019. https://doi.org/10.1111/1475-5890.12200; and Oliva-Moreno, Juan, Luz María Peña-Longobardo, and Cristina Vilaplana-Prieto. "An Estimation of the Value of Informal Care Provided to Dependent People in Spain." *Applied Health Economics and Health Policy* 13, 2015. https://doi.org/10.1007/s40258-015-0161-x.

[91] Mixed care includes cases where formal home-based care is complemented by 20-80% informal care. For further details, see: Barczyk, Daniel, and Matthias Kredler. "Long-Term Care Across Europe and the United States: The Role of Informal and Formal Care." *Fiscal Studies* 40, 2019. https://doi.org/10.1111/1475-5890.12200.

[92] Surveys in Spain suggest that, in the case of needing help, most people choose to stay at home as the most desirable residential option, despite the increase in preference for different care alternatives over the last decades. For further details, see: Costa-Font, Joan, David Elvira, and Oscar Mascarilla-Miró. "`Ageing in Place'? Exploring Elderly People's Housing Preferences in Spain." *Urban Studies* 46, n.º 2, 2009. https://doi.org/10.1177/0042098008099356; Del Barrio, Elena, and Mayte Sancho. *Primero las personas: cuidar como nos gustaría ser cuidados/as. Resultados de la Encuesta sobre cuidados*. Barcelona: Obra Social "la Caixa", 2016; Fernández-Carro, Celia. "¿Hacia la «desfamiliarización» del cuidado predilecto? Un análisis del contexto español (1997-2009)." *Revista Española de Investigaciones Sociológicas* 164, 2018. http://dx.doi.org/10.5477/cis/reis.164.57; and Moreno-Colom, Sara, *et al*. "Significados e imaginarios de los cuidados de larga duración en España. Una aproximación cualitativa desde el discurso de las cuidadoras." *Papeles del CEIC International Journal on Collective Identity Research* 2016/1, n.º 145, 2016. http://dx.doi.org/10.1387/pceic.15195.

[93] See: Barczyk, Daniel, and Matthias Kredler. "Long-Term Care Across Europe and the United States: The Role of Informal and Formal Care." *Fiscal Studies* 40, 2019. https://doi.org/10.1111/1475-5890.12200; Durán Heras, María Ángeles. "La otra economía española." In Cristóbal Torres Albero (ed.). *Spain 2015 Situación Social*. Centro de Investigaciones Sociológicas, 2015. 472-86; and Tobío, Constanza, *et al. El cuidado de las personas. Un reto para el siglo XXI*. Barcelona: Obra Social Fundación "la Caixa", Colección Estudios Sociales, n.º 28, 2010.

[94] On this question, see, among others: Blanco, Agustín, Antonio Chueca, and José Antonio López-Ruiz (coord. and eds.). *Informe España 2017*. Madrid: Universidad Pontificia Comillas, Cátedra J.M. Martín Patino, 2017. https://digital.csic.es/bitstream/10261/159550/1/2017-FEncuentro.pdf; and García-Mochón, Leticia, *et al*. "Determinants of Burden and Satisfaction in Informal Caregivers: Two Sides of the Same Coin? The CUIDAR-SE Study." *International Journal of Environmental Research and Public Health* 16, n.º 4378, 2019. https://doi.org/10.3390/

ijerph16224378.

[95] For further details, see: Blanco, Agustín, Antonio Chueca, and José Antonio López-Ruiz (coord. and eds.). *Informe España 2017*. Madrid: Universidad Pontificia Comillas, Cátedra J.M. Martín Patino, 2017. https://digital.csic.es/bitstream/10261/159550/1/2017-FEncuentro.pdf; and Del Barrio, Elena, and Mayte Sancho. *Primero las personas: cuidar como nos gustaría ser cuidados/as. Resultados de la Encuesta sobre cuidados*. Barcelona: Obra Social "la Caixa", 2016.

[96] Carrasco, Cristina, Cristina Borderías, and Teresa Torns. "Introducción. El trabajo de cuidados: antecedentes históricos y debates actuales." In Cristina Carrasco, Cristina Borderías, and Teresa Torns (eds.). *El trabajo de cuidados: Historia, teoría y políticas*. Madrid: Los libros de La Catarata/ Fuhem Ecosocial, 2011. 13-95.

[97] Eurostat. *Inactive population due to caring responsibilities by sex [sdg_05_40]*. https://ec.europa.eu/eurostat/data/database.

[98] Refer to: Elizalde-San Miguel, Begoña. "¿Femenino e informal? El modelo tradicional de cuidados a examen desde una perspectiva demográfica." *Revista Prisma Social,* n.º21, 2018. https://revistaprismasocial.es/article/view/2466/2652; Fernández-Carro, Celia, Rosa Gómez-Redondo, and Noelia Cámara-Izquierdo. "The availability of carers for older disabled people in Spain: demographic insights and policy implications." *International Journal of Care and Caring* 3, n.º 3, 2019. https://doi.org/10.1332/239788219X15488381886380; and Gómez Redondo, Rosa, Celia Fernández Carro, and Noelia Cámara Izquierdo. *¿Quién cuida a quién? La disponibilidad de cuidadores informales para personas mayores en España. Una aproximación demográfica basada en datos de encuesta*. Madrid: Informes Envejecimiento en red, n.º 20, 2018. http://envejecimiento.csic.es/documentos/documentos/enred-info20-quiencuida.pdf.

[99] See: Abellán, Antonio, *et al*. "Partner care, gender equality, and ageing in Spain and Sweden." *International Journal of Ageing and Later Life* 11, n.º 1, 2017. https://doi.org/10.3384/ijal.1652-8670.16-305; and Zueras, Pilar, Jeroen Spijker, and Amand Blanes. "Evolución del perfil de los cuidadores de personas de 65 y más años con discapacidad en la persistencia de un modelo de cuidado familiar." *Revista Española de Geriatría y Gerontología* 53, n.º 2, 2018. https://doi.org/10.1016/j.regg.2017.07.004.

[100] International migrant women have been key in the provision of care services to older people. Refer to: Blanco, Agustín, Antonio Chueca, and José Antonio López-Ruiz (coord. and eds.). *Informe España 2017*. Madrid: Universidad Pontificia Comillas, Cátedra J.M. Martín Patino, 2017. https://digital.csic.es/bitstream/10261/159550/1/2017-FEncuentro.pdf; and Díaz Gorfinkiel, Magdalena, and Raquel Martínez-Buján. "Mujeres migrantes y trabajos de cuidados: transformaciones del sector doméstico en España." In Elisa Chuliá Rodrigo, and María Miyar Busto (coords.). *Gender gap*, Madrid: Funcas, *Panorama Social,* n.º 27, 2018. 105-18. https://www.funcas.es/revista/brechas-de-genero-julio-2018/.

[101] For further details, see: OECD. *Who Cares? Attracting and Retaining Care Workers for the Elderly.* OECD Health Policy Studies. Paris: OECD Publishing, 2020. https://doi.org/10.1787/92c0ef68-en; and Vara, María-Jesús. "Long-Term Care for Elder Women in Spain: Advances and Limitations." *Journal of Aging & Social Policy* 26, n.º 4, 2014. https://doi.org/10.1080/08959420.2014.939894.

[102] Costa-Font, Joan, Christophe Courbage, and Katherine Swartz. "Financing Long-Term Care: Ex Ante, Ex Post or Both?" *Health Economics* 24, 2015. https://doi.org/10.1002/hec.3152.

[103] Barczyk, Daniel, and Matthias Kredler. "Long-Term Care Across Europe and the United States: The Role of Informal and Formal Care." *Fiscal Studies* 40, 2019. https://doi.org/10.1111/1475-5890.12200.

[104] Public spending on long-term care includes health and social care components. Social assistance expenditure data are not available for all countries. The EU-8 and EU-27 are constructed as the simple average of the values of the individual countries. For further details, see: Eurostat. *Expenditure for selected health care functions by health care financing schemes [HLTH_SHA11_HCHF]*. https://ec.europa.eu/eurostat/data/database.

[105] Official State Gazette. *Ley 39/2006, de 14 de diciembre, de Promoción de la Autonomía Personal y Atención a las personas en situación de dependencia.* Madrid, 2006. https://www.boe.es/eli/es/l/2006/12/14/39/con.

[106] Out of a total of 1.3 million eligible beneficiaries. Data as of 31 December 2020. See: Instituto de Mayores y Servicios Sociales. *Estadísticas. Sistema para la Autonomía y Atención a la Dependencia. Histórico. Informes publicados.* https://www.imserso.es/imserso_01/documentacion/estadisticas/info_d/estadisticas/est_inf/inf_gp/2020/index.htm.

[107] Data from the System for Autonomy and Care for Dependency as of 30 November 2020. For further details, see: INE. *Cifras de población. Población residente por fecha, sexo y edad.* https://www.ine.es/dyngs/INEbase/es/operacion.htm?c=Estadistica_C&cid=1254736176951&menu=resultados&idp=1254735572981; and Instituto de Mayores y Servicios Sociales. *Estadísticas. Sistema para la Autonomía y Atención a la Dependencia. Histórico. Informes publicados.* https://www.imserso.es/imserso_01/documentacion/estadisticas/info_d/estadisticas/est_inf/inf_gp/2020/index.htm.

[108] Costa-Font, Joan. "Caring for Carers? Long Term Care Subsidization and Caregivers Wellbeing." In *Elderly Care in France and in Europe*. Paris: Paris School of Economics, 2019.

[109] Costa-Font, Joan, Sergi Jiménez-Martin, and Cristina Vilaplana. "Does long-term care subsidization reduce hospital admissions and utilization?" *Journal of Health Economics* 58, 2018. https://doi.org/10.1016/j.jhealeco.2018.01.002.

[110] For further details, see: Jiménez, Sergi, and Analia Viola. "Observatorio de la Dependencia: Tercer informe, Noviembre 2019." FEDEA, *Estudios sobre la Economía Española,* n.º 2019/42, 2019. https://ideas.repec.org/p/fda/fdaeee/eee2019-42.html; and Rodríguez Cabrero, Gregorio, *et al*. *ESPN Thematic Report on Challenges in Long-term Care: Spain*. Brussels: European Commission, 2018. https://ec.europa.eu/social/BlobServlet?docId=19869&langId=en.

[111] On this question, see: García-Gómez, Pilar, *et al*. "Unravelling Hidden Inequities in a Universal Public Long-Term Care System." *Tinbergen Institute Discussion Paper,* n.º 2019-011/V, 2019. http://dx.doi.org/10.2139/ssrn.3329198; and García-Gómez, Pilar, *et al*. "Inequity in long-term care use and unmet need: Two sides of the same coin." *Journal of Health Economics* 39, 2015. https://doi.org/10.1016/j.jhealeco.2014.11.004.

[112] Jiménez, Sergi, and Analia Viola. "Observatorio de la Dependencia: Tercer informe, Noviembre 2019." *FEDEA*, *Estudios sobre la Economía Española,* n.º 2019/42, 2019. https://ideas.repec.org/p/fda/fdaeee/eee2019-42.html.

[113] Barczyk, Daniel, and Matthias Kredler. "Evaluating Long-Term-Care Policy Options, Taking the Family Seriously." *The Review of Economic Studies* 85, n.º 2, 2018. https://doi.org/10.1093/restud/rdx036.

[114] Costa-Font, Joan, and Cristina Vilaplana-Prieto. "Does the Expansion of Public Long-Term Care Funding Affect Saving Behaviour?" *Fiscal Studies*38, n.º 3, 2017. https://doi.org/10.1111/j.1475-5890.2017.12139.

[115] Symptoms in older people can be very varied (gastrointestinal disorders or loss of appetite; tiredness; reduced mobility; bleeding, increased confusion, delirium...), which underlines the difficulty of early detection by mere symptomatology. In this regard, see: Department of Social Rights and Agenda 2030. *Informe del grupo de trabajo covid-19 y residencias.* Madrid, 2020. https://www.mscbs.gob.es/ssi/imserso/docs/GTCOVID_19_RESIDENCIAS.pdf.

[116] See: Grupo de Trabajo Multidisciplinar. *Informe del GTM sobre el impacto de la COVID-19 en las personas mayores, con especial énfasis en las que viven en residencias*. 2020. https://www.ciencia.gob.es/stfls/MICINN/Ministerio/FICHEROS/Informe_residencias_GDT_MinisterioCyI.pdf; and Jiménez-Martín, Sergi, and Analía Viola. "La asistencia residencial en España y COVID-19." *FEDEA, Estudios sobre la Economía Española*, n.º 2020/20, 2020. https://documentos.fedea.net/pubs/eee/eee2020-20.pdf.

[117] Department for Health. *Información científica-técnica. Enfermedad por coronavirus, COVID-19*. Madrid, 2020. https://www.mscbs.gob.es/profesionales/saludPublica/ccayes/alertasActual/nCov-China/documentos/ITCoronavirus.pdf.

[118] According to the INE, by 0.9 years for men and 0.8 years for women. INE. *Nota de prensa: Proyecciones de Población 2020-2070*. Madrid: Nota de prensa, 2020. https://www.ine.es/prensa/pp_2020_2070.pdf. Other related preliminary studies include: Abellán García, Antonio, and Rogelio Pujos Rodríguez. "COVID-19 y efecto en la esperanza de vida." Envejecimiento en red, http://envejecimientoenred.es/covid-19-y-perdida-de-esperanza-de-vida/; and Trias-Llimos, Sergi, Tim Riffe, and Usama Bilal. "Monitoring life expectancy levels during the COVID-19 pandemic: Example of the unequal impact in Spanish regions." *MedRxiv*, 2020. https://doi.org/10.1101/2020.06.03.20120972.

[119] There were 20.4% fewer births in December 2020 than in the same month in 2019 (the lowest for a month since 1941). In this regard, see: INE. *Estadística experimental – Estimación Mensual de Nacimientos*. Madrid: Nota de prensa, 2021. https://www.ine.es/prensa/experimental_emn.pdf.

[120] INE. *Nota de prensa: Proyecciones de Población 2020-2070*. Madrid: Nota de prensa, 2020. https://www.ine.es/prensa/pp_2020_2070.pdf.

[121] Although there were 20.4% fewer births in December 2020 than in the same month in 2019 (the lowest for a month since 1941), it is still too early to predict a lasting effect. In this regard, see: INE. *Estadística experimental – Estimación Mensual de Nacimientos*. Madrid: Nota de prensa, 2021. https://www.ine.es/prensa/experimental_emn.pdf.

[122] See: Castro-Martín, Teresa, Teresa Martín-García, Antonio Abellán, Rogelio Pujol, and Dolores Puga. "Tras las huellas de la crisis económica en la demografía española." In Pau Marí-Klose (coord.). *Un balance social de la crisis.* Madrid: Funcas, Panorama Social, n.º 22, 2015. 43-60. https://www.funcas.es/wp-content/uploads/Migracion/Articulos/FUNCAS_PS/022art04.pdf; and INE. *Tasa Global de Fecundidad según nacionalidad (española/extranjera) de la madre*. https://www.ine.es/dynt3/inebase/index.htm?padre=1149&capsel=1149.

[123] Department of Health, Consumer Affairs and Social Welfare. *Crisis económica y salud en España*. Madrid, 2018. https://www.mscbs.gob.es/estadEstudios/estadisticas/docs/CRISIS_ECONOMICA_Y_SALUD.pdf.

[124] The demographic projections of the Eurostat baseline scenario are considered. Refer to: Eurostat. *Assumptions for life expectancy at birth by sex and type of projection [proj_19nalexpy0]*. https://ec.europa.eu/eurostat/data/database.

[125] Eurostat. *Population on 1st January by age and type of projection [proj_19naasfr].* https://ec.europa.eu/eurostat/data/database.

[126] In fact, none of the demographic projections or forecasts made by other organisations for Spain (Eurostat in the favourable fertility scenario, INE, AIReF, or the United Nations) envisage an increase in the fertility rate sufficient to reach the population replacement level (traditionally 2.1 children per woman). These fertility rates, moreover, are based on the absence of mortality in these generations of women. In this regard, see: AIReF. *Datos. Cifras de población*. https://www.airef.es/es/cifras-de-poblacion/; Eurostat. *Assumptions for fertility rates by age and type of projection [proj_19naasfr]*. https://ec.europa.eu/eurostat/data/database; Eurostat. "Archive: Estadísticas de población a nivel regional." Eurostat, https://ec.europa.eu/eurostat/statistics-explained/index.php/Archive:Estad%C3%ADsticas_de_poblaci%C3%B3n_a_nivel_regional; INE. *Indicadores de fecundidad*. Https://ec.europa.eu/eurostat/data/database;; and United Nations. *Total Fertility*. https://population.un.org/wpp/Download/Standard/Fertility/.

[127] The absolute number of women of reproductive age (considering women aged 18-49) will progressively decrease. In 2050, according to Eurostat's baseline scenario, there will be at least one million fewer women of childbearing age than there are today. In this regard, see: Eurostat. *Population on 1st January by age, sex and type of projection [proj_19np].* https://ec.europa.eu/eurostat/web/products-datasets/-/tps00002.

[128] 20% of the total number of women surveyed cited either work and work-life balance or economic reasons for not having had children. The figure for the sum of these reasons drops to 12% among surveyed women These reasons, however, are more important in explaining the delay in childbearing: 35% of all the women surveyed said these were the main reasons for delaying childbearing. See: INE. *Encuesta de fecundidad 2018*. https://www.ine.es/dynt3/inebase/es/index.htm?padre=5497.

[129] Considering women aged 50 and over. For further details, see: INE. *Encuesta de fecundidad 2018*. https://www.ine.es/dynt3/inebase/es/index.htm?padre=5497.

[130] In 2019, around 40% of women arriving in our country are over 50 or

under 19. In this regard, see: INE. *Migraciones exteriores*. https://www.ine.es/dyngs/INEbase/es/operacion.htm?c=Estadistica_C&cid=1254736177000&menu=ultiDatos&idp=1254735573002.

[131] Taking into account the average ages at childbearing in the countries of origin, and the average age of the women who migrate to Spain, it is very likely that some of them have already had the desired children in their country of origin.

[132] In the period from 2002 to 2019, foreign women showed a decrease in their fertility rate from 1.86 to 1.59 children. See: INE. *Indicadores de fecundidad*. https://www.ine.es/jaxiT3/Datos.htm?t=1407.

[133] For further details on the elaboration of the graph, see the*Methodology note* number III

[134] Eurostat. *Assumptions for net migration by age, sex and type of projection [proj_19nanmig]*; *Emigration by age and sex [migr_emi2]*; and *Immigration by age and sex [migr_imm8]*. https://ec.europa.eu/eurostat/data/database.

[135] For further details, see: Collier, Paul. *Exodus: How Migration is Changing Our World*. Oxford: Oxford University Press, 2013; and Economic and Social Council. *Informe 02/2019. La inmigración en España: efectos y oportunidades*. Madrid, 2019. http://www.ces.es/documents/10180/5209150/Inf0219.pdf.

[136] Eurostat. *Population on 1st January by age, sex and type of projection [proj_19np]*. https://ec.europa.eu/eurostat/data/database.

[137] On this question, see: Aksoy, Yunus, *et al.* "Demographic Structure and Macroeconomic Trends." *American Economic Journal: Macroeconomics*, 11, n.º 1, 2019. https://doi.org/10.1257/mac.20170114; and Guillemette, Yvan, and David Turner. "The Long View: Scenarios for the World Economy to 2060." *OECD Economic Policy Papers,* n.º 22, París: OECD Publishing, 2018. https://doi.org/10.1787/b4f4e03e-en.

[138] Among the long-term unemployed who have been unemployed for two years or more, 24% are aged 55-64 in 2019. For further details, see: INE. *Encuesta de Población Activa. Paris nivel de formación alcanzado, sexo y grupo de edad*. https://www.ine.es/dyngs/INEbase/operacion.htm?c=Estadistica_C&cid=1254736176918&menu=resultados&secc=1254736195129&idp=1254735976595#!tabs-1254736195129.

[139] OECD. *Working Better with Age, Ageing and Employment Policies*. Paris: OECD Publishing, 2019. https://doi.org/10.1787/c4d4f66a-en.

[140] It is essential to bear in mind that these developments will not be the same for all citizens due to the existence of many inequalities determined by factors such as level of education or place of residence. In addition, there will be bottlenecks that will require major scientific efforts to overcome, such as neurodegenerative diseases (e.g. dementias, Alzheimer's) or mental health problems (e.g. depression, anxiety). On these questions, see: OMS. *The Epidemiology and Impact of Dementia. Current State and Future Trends.* 2015. https://www.who.int/mental_health/neurology/dementia/dementia_thematicbrief_epidemiology.pdf; and WHO. "Mental Disorders." WHO, https://www.who.int/news-room/fact-sheets/detail/mental-disorders; Pujol Rodríguez, Rogelio, Antonio Abellán, and María Puga. "Evolución y diferencias territoriales de la Esperanza de Vida Libre de Discapacidad a los 65 años en España." In *XIV Congreso Nacional de la Población*. Seville: AGE, 2014; and Solé-Auró, Aïda, Unai Martín, and Antía Domínguez Rodríguez. "Educational Inequalities in Life and Healthy Life Expectancies among the 50-Plus in Spain." *International Journal of Environmental Research and Public Health* 17, n.º 3558, 2020. https://doi.org/10.3390/ijerph17103558.

[141] Guillemette, Yvan, and David Turner. "The Long View: Scenarios for the World Economy to 2060." *OECD Economic Policy Papers,* n.º 22, Paris: OECD Publishing, 2018. https://doi.org/10.1787/b4f4e03e-en.

[142] However, the possibility of retirement at the age of 65 is maintained for those who have contributed for at least 38 years and six months.

[143] European Commission. *The 2021 Ageing Report: Underlying Assumptions & Projection Methodologie*s. Luxembourg: Publications Office of the European Union, n.º 142, 2020. https://ec.europa.eu/info/sites/info/files/economy-finance/ip142_en.pdf.

[144] To solve this situation, a country like Portugal, similar to Spain in the level and composition of its replacement rate, has opted to implement a dynamic and progressive increase in the retirement age, raising it by a proportion equivalent to two-thirds of future increases in life expectancy. See: Ventura Bravo, Jorge Miguel, and José Antonio Herce. *Las pensiones en España y Portugal. Descripción de los esquemas y evolución reciente comparada*. Madrid: Instituto BBVA de Pensiones, Documento de Trabajo, n.º 2/2014, 2014. https://www.jubilaciondefuturo.es/recursos/doc/pensiones/20131003/posts/2015-2-las-pensiones-en-espana-y-portugal-final-esp.pdf.

[145] This estimate is based on the evolution of the population in each age cohort according to Eurostat's demographic projections. In the baseline scenario, the active population is estimated assuming that labour force participation rates are held constant at 2019 values for all age groups. In the alternative scenarios, a progressive convergence of the Spanish participation rates in the 55-74 age cohorts is assumed until reaching, in 2050, the participation rates for these same cohorts of each benchmark country in 2019.

[146] Es relevante tener en cuenta que los países referentes probablemente también aumentarán sus tasas de actividad en la población de edad avanzada hasta 2050, ya que experimentarán cambios demográficos similares. At present, Japan, a world leader in longevity and ageing, with a population aged 65 and over accounting for 28% of its total population in 2018, has substantially higher activity rates in cohorts aged 55 and over. If Spain were to aim for the same, it would gain 3.5 million assets (compared to a scenario where activity rates in these cohorts remain stable at 2019 values). For further details, see: OECD. *Historical population data*. https://stats.oecd.org/.

[147] See: Eurostat. *Population on 1st January by age, sex and type of projection [proj_19np]*. https://ec.europa.eu/eurostat/data/database; and OCDE. *LFS by sex and age – indicators*. https://stats.oecd.org/.

[148] OECD. *Working Better with Age, Ageing and Employment Policies*. Paris: OECD Publishing, 2019. https://doi.org/10.1787/c4d4f66a-en.

[149] Anghel, Brindusa, and Aitor Lacuesta. "Envejecimiento, productividad y situación laboral." *Banco de España, Artículos Analíticos, Boletín Económico,* n.º 1/2020, 2020. https://www.bde.es/f/webbde/SES/Secciones/Publicaciones/InformesBoletinesRevistas/ArticulosAnaliticos/20/T1/descargar/Fich/be2001-art2.pdf.

[150] Economic and Social Council. *El futuro del trabajo.* Madrid, 2018. http://www.ces.es/documents/10180/5182488/Inf0318.pdf/79443c12-b15b-850d-afbc-8ac0336193d1 .

[151] OECD. *Working Better with Age, Ageing and Employment Policies*.

Paris: OECD Publishing, 2019. https://doi.org/10.1787/c4d4f66a-en.

[152] Hudomiet, Péter, *et al*. "The effects of job characteristics on retirement." *Journal of Pension Economics and Finance*, 2020. https://doi.org/10.1017/S1474747220000025.

[153] UNECE. *Active Ageing Index 2018*. https://statswiki.unece.org/display/AAI/II.+Results.

[154] Dependency ratio measured as the population aged 65 and over out of the population aged 15-64. For further details, see: Eurostat. *Population on 1st January by age, sex and type of projection [proj_19np]*. https://ec.europa.eu/eurostat/data/database.

[155] Official State Gazette. *Ley 23/2013, de 23 de diciembre, reguladora del Factor de Sostenibilidad y del Índice de Revalorización del Sistema de Pensiones de la Seguridad Social.* Madrid, 2013. https://www.boe.es/eli/es/l/2013/12/23/23 .

[156] These estimates do not incorporate the effects of the 2013 reform, so that pensions are updated with the CPI and the sustainability factor is not introduced. The increase to 15.2% of GDP corresponds to AIReF's estimate for 2050, which incorporates the 2011 reform. Under these assumptions, De la Fuente, García Díaz and Sánchez estimate that pension expenditure, under a baseline demographic scenario, would rise to 16.9% of GDP in 2052. For further details, see: AIRef. *Actualización de previsiones demográficas y de gasto en pensiones. Documento Técnico*, n.º 1/20. 2020. https://www.airef.es/wp-content/uploads/2020/09/PREVIS-DEMOGRAFICAS/200928-Documento-T%C3%A9cnico-previsiones-demogr%C3%A1ficas-y-gasto-en-pensiones.pdf; and De la Fuente, Ángel, Miguel Ángel García Díaz, and Alfonso R. Sánchez. "¿Hacia una contrarreforma de pensiones? Notas para el Pacto de Toledo." *Hacienda Pública Española / Review of Public Economics* 232, n.º 1, IEF, 2020 https://ideas.repec.org/a/hpe/journl/y2020v232i1p113-144.html

[157] For a comparison of existing methodologies to simulate pension expenditure see: Jimeno, Juan F., Juan A. Rojas, and Sergio Puente. "Modelling the impact of aging on social security expenditures." *Economic Modelling* 25, n.º 2, 2008. https://doi.org/10.1016/j.econmod.2007.04.015.

[158] Public expenditure on contributory pensions is simulated by incorporating the minimum pension supplement. With regard to the determinants of their future development, it is worth noting: 1) the demographic factor is the proportion of people of legal retirement age or older in the working-age population; 2) the replacement rate is defined for these calculations as the ratio between the average pension and the average wage (the latter from the National Accounts); 3) the employment rate is constructed as the ratio of full-time employed (National Accounts) to the working-age population; 4) the share of wages in GDP and the pension coverage rate (number of contributory pensions among the population at the legal retirement age) are kept constant at the 2019 values (41.4% and 1.06, respectively). Refer to: Eurostat. *Population on 1st January by age, sex and type of projection [proj_19np]*. https://ec.europa.eu/eurostat/data/database; INE. *Cifras de población*. *Población residente por fecha, sexo y edad.* https://www.ine.es/dyngs/INEbase/es/operacion.htm?c=Estadistica_C&cid=1254736176951&menu=resultados&idp=1254735572981; *Contabilidad Nacional Anual de España: principales agregados. PIB a precios de mercado y Remuneración y empleo por ramas de actividad.* https://www.ine.es/dyngs/INEbase/es/operacion.htm?c=Estadistica_C&cid=1254736177057&menu=resultados&idp=1254735576581; and Department for Inclusion, Social Security and Migration. *eSTADISS: Estadísticas de pensiones*. https://bit.ly/3j27PBN. For further details on the methodology used, see: Hernández de Cos, Pablo, Juan Francisco Jimeno, and Roberto Ramos. "El sistema público de pensiones en España: Situación actual, retos y alternativas de reforma." *Banco de España, Documentos Ocasionales,* n.º 1701, 2017. https://www.bde.es/f/webbde/SES/Secciones/Publicaciones/PublicacionesSeriadas/DocumentosOcasionales/17/Fich/do1701.pdf.

[159] The replacement rate (AIReF) or the system's level of generosity (De la Fuente *et al.*) is expected to fall progressively in the future even if no additional measures to those already in place are taken. For further details, see: AIReF. *Actualización de previsiones demográficas y de gasto en pensiones.* Documento Técnico, n.º 1/20, 2020. https://www.airef.es/wp-content/uploads/2020/09/PREVIS-DEMOGRAFICAS/200928-Documento-T%C3%A9cnico-previsiones-demogr%C3%A1ficas-y-gasto-en-pensiones.pdf; and De la Fuente, Ángel, Miguel Ángel García Díaz, and Alfonso R. Sánchez. "¿Hacia una contrarreforma de pensiones? Notas para el Pacto de Toledo." *Hacienda Pública Española / Review of Public Economics* 232, n.º 1, IEF, 2020. https://ideas.repec.org/a/hpe/journl/y2020v232i1p113-144.html.

[160] It is assumed that the employment rate considered here (full-time employed persons over the working-age population) grows in the same proportion as the total employed persons over the working-age population in a baseline scenario in which its future evolution is projected from the historical average from 1995 to 2019[see Chapter 7].

[161] Variation estimated on the basis of the effects of the 2011 reform and those that would be generated by the incorporation of a sustainability factor similar to that envisaged in the 2013 reform. For further details, see AIReF. *Actualización de previsiones demográficas y de gasto en pensiones. Documento Técnico,* n.º 1/20, 2020. https://www.airef.es/wp-content/uploads/2020/09/PREVIS-DEMOGRAFICAS/200928-Documento-T%C3%A9cnico-previsiones-demogr%C3%A1ficas-y-gasto-en-pensiones.pdf.

[162] Rouzet, Dorothée, *et al.* "Fiscal challenges and inclusive growth in ageing societies." *OECD Economic* Policy Papers, n.º 27, Paris: OECD Publishing, 2019. https://doi.org/10.1787/c553d8d2-en.

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[164] The experience of the *National Employment Savings Trust* (NEST) in the UK is a good reference in this field. Refer to: Nest Pensions, https://www.nestpensions.org.uk/schemeweb/nest.html.

[165] The recent Toledo Pact establishes: "the comprehensive reform of widowhood involves adapting the configuration of the pension to the new social and family realities, as well as to socio-economic circumstances, in order to improve the protection of pensioners without other resources, and to adapt the protection of less vulnerable groups". For further details, refer to: Official Gazette of the Spanish Parliament. *Informe de evaluación y reforma del Pacto de Toledo*. Madrid, 2020. https://www.congreso.es/public_oficiales/L14/CONG/BOCG/D/BOCG-14-D-187.PDF; and Fuster, Luisa. "Pensiones y género. Brecha de Género en las pensiones contributivas en España." In Instituto Santalucía (ed.). *Pensiones del futuro*. Madrid: Instituto

Santalucía. https://institutosantalucia.es/pensiones-del-futuro/. A recent study concludes that without widowhood pensions the gender gap in contributory pensions would be 60% instead of the current 30%. Moreover, without this pension, 50% of female pensioners would not receive a contributory pension. For further details, see: Fuster, Luisa. "Las pensiones de viudedad en España." *FEDEA, Estudios sobre la Economía Española,* n.º 2021/06, 2021. https://documentos.fedea.net/pubs/eee/eee2021-06.pdf .

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[167] Official State Gazette. *Real Decreto-ley 3/2021, de 2 de febrero, por el que se adoptan medidas para la reducción de la brecha de género y otras materias en los ámbitos de la Seguridad Social y económico*. Madrid, 2021. https://www.boe.es/diario_boe/txt.php?id=BOE-A-2021-1529 .

[168] In the 2018 *Ageing Report* population projections published by Eurostat in 2017 are taken. Furthermore, the macroeconomic scenario assumes that real GDP growth will gradually increase to 1.8% per year in 2050. For this reason, the estimated increase in health expenditure as a share of GDP does not fully correspond to that which would occur in a baseline scenario where GDP growth is obtained by extrapolating past trends in its determinants into the future [see chapter 1]. For further details, see: European Commission. *The 2018 Ageing Report: Economic and Budgetary Projections for the EU Member States (2016-2070).* Luxembourg: Publications Office of the European Union, 2018. https://doi.org/10.2765/615631.

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[170] More information in: Hammond, Rey. *The world in 2040: Future Health, Care and Wellbeing.* Allianz Care, 2019. https://image.health.allianzcare-emails.com/lib/fe9b12747766047874/m/1/30a0836e-6ce7-4b9c-8b47-99a206299502.pdf; and Center for the Governance of Change. *Innovation, sustainability and the future of Healthcare*. Madrid: IE University, 2020. https://www.ie.edu/cgc/research/innovation-sustainability-future-healthcare/.

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[175] Zunzunegui, María Victoria , and François Béland. "Políticas intersectoriales para abordar el reto del envejecimiento activo. Informe SESPAS 2010." *Gaceta Sanitaria* 24, 2010. https://doi.org/10.1016/j.gaceta.2010.08.004.

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[177] See: Martínez Rodríguez, Teresa, *et al. Modelo de atención centrada en la persona. Presentación de los Cuadernos prácticos*. Madrid: Informes Envejecimiento en red, n.º 12, 2015. http://envejecimiento.csic.es/documentos/documentos/enred-modeloatencioncuadernosmatia.pdf; and WHO. *WHO global strategy on people-centred and integrated health services*. Geneva, 2015. https://www.who.int/servicedeliverysafety/areas/people-centred-care/global-strategy/en/.

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[180] Martínez Rodríguez, Teresa, *et al. Modelo de atención centrada en la persona. Presentación de los Cuadernos prácticos*. Madrid: Informes Envejecimiento en red, n.º 12, 2015. http://envejecimiento.csic.es/documentos/documentos/enred-modeloatencioncuadernosmatia.pdf.

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y tamaño del hogar al que pertenece. https://www.ine.es/dyngs/INEbase/es/operacion.htm?c=Estadistica_C&cid=1254736176952&menu=resultados&idp=1254735572981#!tabs-1254736195199; Vega-Solís, Cristina, and Raquel Martínez-Buján. "Explorando el lugar de lo comunitario en los estudios de género sobre sostenibilidad, reproducción y cuidados." *Quaderns-e Institut Català d'Antropologia*, n.º 22, 2017. https://www.antropologia.cat/estatic/files/5_Vega_Martinez.pdf; and Velarde-Mayol, C., S. Fragua-Gil, and J.M. García-de-Cecilia. "Validación de la escala de soledad de UCLA y perfil social en la población anciana que vive sola." SEMERGEN – *Medicina de Familia* 42, n.º 3, 2016. https://doi.org/10.1016/j.semerg.2015.05.017.

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[185] In the 2018 *Ageing Report* population projections published by Eurostat in 2017 are taken. Furthermore, the macroeconomic scenario assumes that real GDP growth will gradually increase to 1.8% per year in 2050. For this reason, the estimated increase in long-term care expenditure as a share of GDP does not fully correspond to that which would occur in a baseline scenario where GDP growth is obtained by extrapolating past trends in its determinants into the future [see chapter 1]. For further details, see: European Commission. *The 2018 Ageing Report: Economic and Budgetary Projections for the EU Member States (2016-2070).* Luxembourg: Publications Office of the European Union, 2018. https://doi.org/10.2765/615631.

[186] In order to project the number of potential beneficiaries of long-term care benefits, we take as a reference the age brackets of 65 and over in 2050 based on Eurostat's demographic projections, and assume that the proportion of beneficiaries with benefits from the System for Autonomy and Care for Dependency in these age cohorts remains constant with respect to 2020. Data from the System for Autonomy and Care for Dependency as of 31 December 2020. See: Eurostat. *Population on 1st January by age, sex and type of projection [proj_19np].* https://ec.europa.eu/eurostat/data/database; INE. *Cifras de población. Población residente por fecha, sexo y edad.* https://www.ine.es/dyngs/INEbase/es/operacion.htm?c=Estadistica_C&cid=1254736176951&menu=resultados&idp=1254735572981; and Instituto de Mayores y Servicios Sociales. *Estadísticas. Sistema para la Autonomía y Atención a la Dependencia. Histórico. Informes publicados.* https://www.imserso.es/imserso_01/documentacion/estadisticas/info_d/estadisticas/est_inf/inf_gp/2020/index.htm.

[187] For further details, see: Fernández Pérez, José Luis, and José Antonio Herce San Miguel (dirs.). *Los retos socio-económicos del envejecimiento en España*. Madrid: Consultores de las Administraciones Públicas, 2009; and Sosvilla Rivero, Simón, and Ignacio Moral Arce. "Estimación de los beneficiarios de prestaciones de dependencia en España y del gasto asociado a su atención para 2007-2045." *Gaceta Sanitaria* 25, 2011. https://doi.org/10.1016/j.gaceta.2011.09.022 .

[188] U.S. News & World Report. "Best Countries for a Comfortable Retirement." U.S. News & World Report, https://www.usnews.com/news/best-countries/best-comfortable-retirement.

[189] International Labour Organization. *Care work and care jobs for the future of decent work.* Geneve, 2018. https://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/---publ/documents/publication/wcms_633135.pdf .

[190] The activity rate is defined as the ratio between the active population in each of the represented age cohorts and the population in that age group. The EU-8 and EU-27 are constructed as the simple average of the values of the individual countries. The observed figure is from 2019. For further details, see: OECD. *LFS by sex and age – indicators*. https://stats.oecd.org/.The activity rate is defined as the ratio between the active population in each of the represented age cohorts and the population in that age group. The EU-8 and EU-27 are constructed as the simple average of the values of the individual countries. The observed figure is from 2019. For further details, see: OECD. LFS by sex and age – indicators. https://stats.oecd.org/.

[191] The health expenditure reported here does not include long-term care services. The EU-8 and EU-27 are constructed as the simple average of the values of the individual countries. Data for the EU-8 and Spain are from the OECD and data for the EU-27, from Eurostat. The observed figure is the average from 2015 to 2018. For further details, see: Eurostat. *Expenditure for selected health care functions by health care financing schemes [HLTH_SHA11_HCHF].* https://ec.europa.eu/eurostat/data/database; and OECD. *Health expenditure and financing. Government/compulsory schemes. Long-term care (health) and long-term care (social).* https://stats.oecd.org/Index.aspx?DataSetCode=SHA.

[192] Public expenditure on long-term care includes health and social care components. Social assistance expenditure data are not available for all countries. The EU-8 and EU-27 are constructed as the simple average of the values of the individual countries. Data for the EU-8 and Spain are from the OECD and data for the EU-27, from Eurostat. The observed figure is the average from 2015 to 2018. For further details, see: Eurostat. *Expenditure for selected health care functions by health care financing schemes [HLTH_SHA11_HCHF].* https://ec.europa.eu/eurostat/data/database; and OECD. *Health expenditure and financing. Government/compulsory schemes. Current expenditure on health (all functions) and long-term care (health).*https://stats.oecd.org/Index.aspx?DataSetCode=SHA. Public expenditure on long-term care includes health and social care components. Social assistance expenditure data are not available for all countries. The EU-8 and EU-27 are constructed as the simple average of the values of the individual countries. Data for the EU-8 and Spain are from the OECD and data for the EU-27, from Eurostat. The observed figure is the average from 2015 to 2018. For further details, see: Eurostat. Expenditure for selected health care functions by health care financing schemes [HLTH_SHA11_

HCHF. https://ec.europa.eu/eurostat/data/database; OECD]. Health expenditure and financing. Government/compulsory schemes. Current expenditure on health (all functions) and long-term care (health). https://stats.oecd.org/Index.aspx?DataSetCode=SHA.

[193] The numerator includes the beneficiaries of the System for Autonomy and Care for Dependency (SAAD) who, although they have the right to a benefit, are not receiving it. The denominator includes all the beneficiaries of the Sistema para la Autonomía y Atención a la Dependencia who have been recognised as entitled to a benefit. The data observed is the situation as of December 2020. For further details, see: Instituto de Mayores y Servicios Sociales. *Estadísticas. Sistema para la Autonomía y Atención a la Dependencia. Histórico. Informes publicados.* https://www.imserso.es/imserso_01/documentacion/estadisticas/info_d/estadisticas/est_inf/inf_gp/2020/index.htm.The numerator includes the beneficiaries of the System for Autonomy and Care for Dependency (SAAD) who, although they have the right to a benefit, are not receiving it. The denominator includes all the beneficiaries of the Sistema para la Autonomía y Atención a la Dependencia who have been recognised as entitled to a benefit. The data observed is the situation as of December 2020. For further details, see: Instituto de Mayores y Servicios Sociales. Estadísticas. Sistema para la Autonomía y Atención a la Dependencia. Histórico. Informes publicados. https://www.imserso.es/imserso_01/documentacion/estadisticas/info_d/estadisticas/est_inf/inf_gp/2020/index.htm.

[194] The Basque Government's Health in All Policies (SeTP, Salud en todas las políticas) initiative is an interesting example of an ambitious and comprehensive initiative. For further details on the initiative, see: Department of Health of the Basque Government. "Salud en todas las políticas." Department of Health of the Basque Government, https://www.euskadi.eus/gobierno-vasco/salud-todas-las-politicas/inicio/.

[195] The draft of the "Recovery, Transformation and Resilience Plan" includes in its component 18 "Renewal and expansion of the capacities of the National Health System" more than 1 billion euros to, among other things, develop a plan to invest in high-tech equipment in the National Health System, reinforce prevention and health promotion and increase the capacity to respond to health crises. See: Government of Spain. *Recovery, Transformation and Resilience Plan*. Madrid, 2021. https://www.lamoncloa.gob.es/presidente/actividades/Documents/2021/130421-%20Plan%20de%20recuperacion%2C%20Transformacion%20y%20Resiliencia.pdf.

[196] For a detailed analysis of possible proposals for action in this field, refer to: Asociación de Economía de la Salud. "Capítulo IV. Buen gobierno de la sanidad." In *Sistema Nacional de Salud: diagnóstico y propuestas de avance.* 2014. http://www.aes.es/Publicaciones/SNS_version_completa.pdf.

[197] Department of Health, Social Services and Equality. *Estrategia para el Abordaje de la Cronicidad en el Sistema Nacional de Salud*. Madrid, 2012. https://www.mscbs.gob.es/organizacion/sns/planCalidadSNS/pdf/ESTRATEGIA_ABORDAJE_CRONICIDAD.pdf.

[198] It refers to interventions that are routinely applied in healthcare practice but (1) are performed outside the approved or clinically relevant indication; (2) are effective and safe, but there are other first-line alternatives with better cost-effectiveness and safety outcomes; and (3) there is no solid scientific evidence on their appropriateness and therapeutic utility. See: Department of Health, Social Services and Equality. "Compromiso por la calidad de las sociedades científicas en España." Department of Health, Social Services and Equality, https://www.mscbs.gob.es/organizacion/sns/planCalidadSNS/cal_sscc.htm.

[199] For further details on the international comparison of pension and work reconciliation arrangements, the current situation in Spain and the debate on future directions for improvement, see: Jiménez Martín, Sergi. "Jubilación Activa." *FEDEA, Documentos de trabajo*, n.º 2021/02, 2021. https://documentos.fedea.net/pubs/dt/2021/dt2021-02.pdf; and Sánchez Martín, Alfonso R., and Sergi Jiménez Martín. "La compatibilidad del trabajo y el cobro de pensión en España: análisis institucional en el contexto europeo."*FEDEA, Estudios sobre la Economía Española*, n.º 2021/10, 2021. https://documentos.fedea.net/pubs/eee/eee2021-11.pdf.

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[201] Herce, José Antonio. "Trans-formación." *Empresa Global,* n.º 95, 2010. http://www.empresaglobal.es/EGAFI/descargas/1051548/1633772/trans-formacion.pdf.

[202] On this question, see: Halabisky, D. "Entrepreneurial Activities in Europe - Senior Entrepreneurship." *OECD Economic Policy Papers*, n.º 2, Paris: OECD Publishing, 2012. https://doi.org/10.1787/5jxrcml7lhxq-en; and Liang, James, Hui Wang, and Edward P. Lazear. "Demographics and Entrepreneurship." *Journal of Political Economy* 126, n.º S1, 2018. https://doi.org/10.1086/698750.

[203] Official Gazette of the Spanish Parliament.*Informe de evaluación y reforma del Pacto de Toledo.* Madrid, 2020. https://www.congreso.es/public_oficiales/L14/CONG/BOCG/D/BOCG-14-D-187.PDF.

[204] Since 2011, the General Social Security Act has already stipulated that the Social Security Administration must inform each worker of his or her future entitlement to ordinary retirement, by means of the so-called "orange letter or envelope". An example of good practice in this regard is the *orange envelope* in Sweden. See: Boada-Penas, María del Carmen. "Reformas del sistema de pensiones: La Experiencia Sueca." *FEDEA, Documento de Trabajo,* n.º 2021/03, 2021. https://documentos.fedea.net/pubs/dt/2021/dt2021-03.pdf; and Official State Gazette. *Ley 27/2011, de 1 de agosto, sobre actualización, adecuación y modernización del sistema de Seguridad Social.* Madrid, 2011. https://www.boe.es/buscar/doc.php?id=BOE-A-2011-13242.

[205] Department of Social Rights and Agenda 2030. *On this, it is worth noting the path opened by the recently approved Shock Plan for the Autonomy and Dependent Care System*. Madrid, 2020. https://www.montepio.es/wp-content/uploads/2020/05/Plan-de-Choque-Dependencia_resumen-de-propuestas_02-10-2020.pdf.

[206] In this respect, it is also worth noting the boost that European recovery funds can provide. The draft of the "Recovery, Transformation and Resilience Plan" in its component 22 "Shock plan for the care economy and reinforcement of inclusion policies" provides for more than 3.5 billion euros for, among other things, the strengthening of care for dependent persons and the promotion of the change of model in long-term care. See: Government of Spain. *Recovery, Transformation and Resilience Plan*. Madrid, 2021. https://www.lamoncloa.gob.es/presidente/actividades/Documents/2021/130421-%20Plan%20de%20recuperacion%2C%20Transformacion%20y%20Resiliencia.pdf.

[207] See: Martínez Rodríguez, Teresa, *et al*. *Modelo de atención centrada en la persona. Presentación de los Cuadernos prácticos*. Madrid: Informes envejecimiento en red, n.º 12, 2015. http://envejecimiento.csic.es/documentos/documentos/enred-modeloatencioncuadernosmatia.pdf; and WHO. *WHO global strategy on people-centred and integrated health services*. Geneva, 2015. https://www.who.int/servicedeliverysafety/areas/people-centred-care/global-strategy/en/ .

[208] 21% of women aged 18-55 have had fewer children than desired. 42% of women in Spain aged between 18 and 55 have had their first child later than they considered ideal. For more information, see: INE. *Encuesta de fecundidad 2018*. https://www.ine.es/dynt3/inebase/es/index.htm?padre=5497.

[209] Considering women aged 18 and over. For further details, see: INE. *Encuesta de fecundidad 2018*. https://www.ine.es/dynt3/inebase/es/index.htm?padre=5497.

[210] INE. *Indicador coyuntural de fecundidad, 2019*. https://www.ine.es/dyngs/INEbase/es/operacion.htm?c=Estadistica_C&cid=1254736177003&menu=ultiDatos&idp=1254735573002.

[211] In addition to the policies proposed below, in Chapter 8 of this *Strategy* two policies that may have an effect on the birth rate are proposed: an improvement in the child benefit for each child under 18 years and a reform of family benefits in personal income tax. In the long run, the effectiveness of family policies based on direct monetary incentives may be compromised. In Spain, the introduction of an allowance of 2,500 euros per child increased fertility by 3% between 2007 and 2010, but its elimination decreased it by 6%, See: González, Libertad, and Sofia Trommlerová. "Cash Transfers and Fertility: How the Introduction and Cancellation of a Child Benefit Affected Births and Abortions." *Journal of Human Resources*, 2021. https://www.barcelonagse.eu/file/8108/download?token=j4sLFbkf.

[212] Borràs, Vicent, Marc Ajenjo, and Sara Moreno-Colom. "More time parenting in Spain: a possible change towards gender equality?" *Journal of Family Studies* 27, 2021. https://doi.org/10.1080/13229400.2018.1440618.

[213] For further details, see: Eurostat. *Pupils in early childhood and primary education by education level and age - as % of corresponding age population [educ_uoe_enrp07]*. https://ec.europa.eu/eurostat/data/database; and Department of Education and Vocational Training. *Escolarización y entorno educativo. Tasas de escolarización en las edades teóricas de los niveles no obligatorios. Educación infantil.* Madrid, 2020. https://www.educacionyfp.gob.es/inee/indicadores/sistema-estatal/mapa-indicadores.html.

[214] See: Gandasegui Díaz, Vicente, Begoña Elizalde-San Miguel, and Maria T. Sanz. "Back to the Future: a Sensitivity Analysis to Predict Future Fertility Rates Considering the Influence of Family Policies—The Cases of Spain and Norway." *Social Indicators Research*, 2020. https://doi.org/10.1007/s11205-020-02566-7; and Sanz, Maria T., Vicente Díaz Gandasegui, and Begoña Elizalde-San Miguel. "Sense and sensibility: using a model to examine the relationship between public pre-school places and fertility." *The Journal of Mathematical Sociology* 43, n.º 4, 2019. https://doi.org/10.1080/0022250X.2019.1583226.

[215] The Renta Valenciana de Inclusión now includes canteen and school expenses grants. For further details: Generalitat Valenciana. "Renta Valenciana de Inclusión." Generalitat Valenciana, http://inclusio.gva.es/es/web/integracion-inclusionsocial-cooperacion/renta-valenciana-de-inclusion-rvi.

[Dependency] ratio measured as the population aged 65 and over out of the population aged 15-64. The forward projection corresponds to the Eurostat baseline scenario. For further details, see: Eurostat. *Demographic balances and indicators by type of projection [proj_19ndbi]*; and *Old-age-dependency ratio [tps00198]*. https://ec.europa.eu/eurostat/data/database.