HEALTH IN THE EUROPEAN SEMESTER.
THE SUSTAINABILITY OF HEALTH EXPENDITURE IN SPAIN AFTER THE COVID-19 PANDEMIC

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Abstract

In this paper, we analyse the sustainability of the Spanish NHS following the coronavirus pandemic in the context of the European economic governance. We have used some instruments that underpin the analyses in the context of the European Semester and have benefited from the results of the economic surveillance by the Commission Services concerning Spain and its NHS. We have calculated the indicator used to gauge the sustainability of the public spending in health based on the most updated figures. In addition, we have outlined the most pressing priorities for structural reforms aligned with the objectives of the Recovery and Resilience Plan for the European Union, which are in line with the priorities for accessing the Recovery Fund Next Generation EU. This does not exhaust the needs of structural reforms in the NHS and the Regional Health Services but constitutes a solid orientation for priority setting. In line with the challenges typically identified by the EU regarding the Spanish NHS, which mainly focus on its resilience, the three crucial elements highlighted in the 2020 European Semester Specific Recommendation for Spain, namely its workforce, critical medical products and infrastructure, have seen their existing structural challenges stressed with the outbreak of the COVID-19 pandemic. One-off investments addressing critical medical products and infrastructure, e.g. through EU Recovery funds, are expected to have a positive impact on the resilience of the NHS and, ultimately, in its long-term sustainability. On the other hand, we estimate that, in 2020, 3,004 million Euros (current prices) were required in addition to the remuneration of employees that would have been needed had the pandemic not occurred. This could have a non-negligible impact on the sustainability of public spending in health. Depending on the way the recruited professionals remain in or exit the system, the impact in the long-term could range from a neutral one to a raise in the health expenditure sustainability indicator up to 0.98 pp between 2019 and 2069. This is an important impact considering that most recent estimates by the EPC's Working Group on Ageing Populations and Sustainability have gauged this change in 1.3 pp for the period 2019-2070. Addressing the shortcomings and inefficiencies in the recruitment and working conditions of health workers pointed out by the Commission would need to strike a balance between the recruitment policy objectives to cover the needs of health workforce and fiscal consolidation objectives. They would affect mainly the Regional Health Services of which Extremadura, Canarias, Asturias, Cantabria, Murcia, and Castilla-La Mancha face higher sustainability challenges associated with public spending in health due to the ageing population. Depending on the decisions adopted concerning the evolution of health professionals, the degree of fiscal consolidation required would vary. Should it be necessary, the EU fiscal CSR to Spain in 2021 points out that the priority for fiscal consolidation could be approached from the broader perspective of the composition of public finances and the quality of budgetary measures, further from addressing the resilience of the NHS.

Keywords: Health expenditure, fiscal sustainability, EU economic policy coordination.
JEL Codes: H51, H68, H75, I15.

Content

1. Introduction

According to Ursula van der Leyen's statement, "*The close relation between saving lives and saving livelihoods has never been so clear.*" LeJGDE (2020). In her speaking at the World Health Summit of 25 October 2020, the President of the European Commission stated that "*We cannot wait for the end of the pandemic to repair and prepare for the future. We will build the foundations of a stronger European Health Union in which 27 countries work together to detect, prepare and respond collectively*." EU (2020a). The European Commission is building a strong European Health Union to better protect the health of its citizens, equip the EU and its Member States to better prevent and address future pandemics and to improve the resilience of Europe's health systems (EU (2020b); EU (05/08/2021)). This includes a European Health Union legislative package (EP (2021a)).

To assess the scope that EU institutions have to develop and implement an EU-level health agenda, it is important to understand the legal basis for EU action in the field.

According to Article 168 TFEU,[1] even though the powers of the EU may seem restrictive to act on public health, the so-called "integration clause" (Articles 9 and 168(1) of the TFEU and Article 35 of the CFREU[2]) mandates the EU to ensure that all its policies and activities adopt a high level of public health protection.[3] Thus, providing the EU with the possibility to rely upon a broad range of relevant legal bases in areas that influence population health to achieve public health objectives (EP (2019a)). Even though this in itself provides a limited basis for additional legally binding measures concerning public health.[4] In addition, these powers focus on public health policy[5] (led by the Directorate-General for Health and Food Safety (DG SANTE) within the Commission). Indeed, the EU's action in the field of health is based on:

1. The shared competency on common safety concerns in public health matters, for the aspects defined in the Treaties (Articles 4(2)(k) and 168(4) of the TFEU).[6]

[1] Treaty on the Functioning of the European Union. European Union Law (2012b).
[2] Charter of Fundamental Rights of the European Union. European Union Law (2012c).
[3] *"It should be noted that mainstreaming obligations do not expand EU competence, but help achieve coherence between policies and actions within existing spheres of competence with a view of taking all EU objectives into account."* EP (2019a).
[4] Further details can be found in EP (2019a), EP (2020a), EP (2020b), EP (2020c), WHO (2019a) and WHO (2021).
[5] Under Article 5(2) of the Treaty of the European Union-TEU, "the Union shall act only within the limits of the competences conferred upon it by the Member States in the Treaties. Competences not conferred on the EU remain with the Member States." European Union Law (2012a)
[6] Having conferred a shared competency on the Union in a specific area means that the Union and the Member States may legislate and adopt legally binding acts in that area. The Member States shall exercise their competence to the extent that the Union has not exercised its competence. The Member States shall again exercise their competence to the extent that the Union has decided to cease exercising its competence.

2. The competency to carry out actions to support, coordinate or supplement the actions of the Member States concerning protection and improvement of human health (Articles 2(5), 6(a), 168(1) to 168(3) and 168(5) of the TFEU).[7]
3. The mandate to respect the responsibilities of the Member States for the definition of their health policy and for the organisation and delivery of health services and medical care (Article 168(7) of the TFEU).

There is no EU health system because the Member States individually enjoy primary responsibility for organising and delivering their own health services. The EU does not support the organisation and provision of health services at the Member-State level. Instead, EU action complements national policies and facilitates cooperation between Member States (EP (2020a)).

Consequently, further from public health matters as attributed by the Treaties, basically covering the health security function to prevent health threats' negative effects; and further from EU complementary action, in line with the principles of proportionality and subsidiarity through the EU agenda for health systems,[8] there is no formal health policy at EU level as this is a Member State prerogative and no Treaties provision bound the Member States to coordinate their health policies.

On the other hand, a Member State's health system is a part of its economic sector. As such, it is bound to additional forms of EU policy, each working in a different way and emerging from a different body of law. Notably the European surveillance of Member States economic policies under the framework of the European Semester,[9] the internal market,[10] and environment and

[7] Having conferred a competency on the Union to carry out actions to support, coordinate or supplement the actions of the Member States in the area of protection and improvement of human health means that these actions shall be under the conditions laid down in the Treaties and the Union cannot supersede Member States' competence in these areas or harmonise Member States' laws or regulations. The conditions laid down in the Treaties focus on public health.

[8] In addition to the EU action on building a European Health Union (EU (05/08/2021)) and the Programme for the Union's action in the field of health ('EU4Health Programme' -European Union Law (2021)), the Strategic Plan 2020-2024 of DG Health and Food Safety (EU (2020c)) guide the EU agenda for health systems, following the EU agenda on health systems launched in 2014 (EU (2014b). Please refer also to EU (19/08/2021a).

[9] The Member States are bounded to coordinate their economic policies within the Union in accordance with policy guidelines adopted by the Council (Article 5(1), 120 and 121 of the TFEU). Since 2011, the EU implements the economic coordination through the so-called European Semester: an economic governance framework under which both economic, fiscal and socioeconomic policy coordination have been aligned. Pursuant to the economic policies coordination, under the European Semester, the Council has adopted health system's structural reform recommendations, as we will describe in detail in this paper. The legal nature of the Country Specific Recommendations (CSRs) entails that "*The CSRs are to be taken into account by Member States in the process of national decision-making and, in particular, in drafting the budgetary plans for the forthcoming year. A failure to implement the recommendations might result in further procedural steps under the respective EU law and ultimately in sanctions under the Excessive Deficit Procedure and the Excessive Imbalances Procedure and the related fines and/or suspension of up to five European Funds – European Regional Development Fund (ERDF), European Social Fund (ESF), Cohesion Fund (CF), European Agricultural Fund for Rural Development (EAFRD) and European Maritime & Fisheries Fund (EMFF).*" EP (2014). In particular, regarding the 2021 cycle, the positive assessment of payment requests will be subject to the satisfactory fulfilment of the relevant milestones and targets of the Recovery and Resilience Plans (RRP) (European Council (2020); EP (2020d)). Even when the CSRs might not be binding, they are politically binding insofar they are endorsed by the European Council and formally adopted by the Council and thus, they would be hard to ignore by the Member States (EP (2018), EP (2020e)).

[10] "*In particular, the EU has a shared competence with Member States to ensure the establishment and functioning of the internal market. This EU competence is broad and has been frequently used to promote market integration and public health objectives: to promote the mutual*

consumer protection.[11] In addition, as part of the social protection system, it is under the Union initiatives to ensure coordination of Member States' social policies.[12,13]

The purpose of this paper is to address the fiscal sustainability of the Spanish NHS after the pandemic COVID-19, including some basic aspects focused on the regions, benefiting from the analyses developed in the context of the European Semester and from its role to support the strengthening of health systems through structural reforms. This role has been stressed with the link of the Recovery and Resilience Facility (RRF) to the European Semester cycle in 2021 during the coronavirus pandemic. However, the Semester has been since 2011, and will remain after the pandemic, a framework to support the implementation of health systems' structural reforms, aiming at striking a balance between strengthening their financial sustainability and ensuring access to high-quality health care to adequately meet people's needs.

Rigorous and balanced economic policies should be based on a set of structural reforms to improve the performance of the Member States' economies. Since its inception, support for structural reforms has been one of the explicit objectives of the European Semester. Though initially mainly focused on surveillance and coordination of fiscal policies, the economic coordination, and thus the Semester, was extended beyond fiscal to broader economic policies; and it evolved towards a strong emphasis on the structural features and reforms that currently pervade the Semester. In addition, the European Semester has been strengthened across time including by linking the EU budget to reforms undertaken in the Member States. Indeed, the EU has contributed to improving the structural features of Member States by providing support to carry out reforms through different financing mechanisms, such as aligning the EU's top economic priorities and the programming of the European Structural and Investment Funds (ESI Funds) and (until 2020) through the Structural Reform Support Service (SRSS) (EU (19/07/2021a)). In 2021, the European Semester has been temporarily adapted to coordinate with the Recovery and Resilience Facility (EU (19/07/2021b); (EU (19/07/2021c)). Once again, the European Semester reforms' priorities have been linked to financing tools under the multiannual

recognition of the professional qualifications of health workers; the free movement of medical services; or the approximation of the laws of the Member States on tobacco control or food information and food safety standards." EP(2019a). Please see also EU(2001).

[11] Shared competence between the Union and the Member States applies in the area of consumer protection. The objectives of the EU on consumer protection include contributing to "*the health, safety and economic interests of consumers*" (Article 169 of the TFEU). Health-related examples include food safety, labelling and nutritional health claims (WHO (2019)).

[12] Such as Regulation (EC) No 883/2004 of the European Parliament and of the Council of 29 April 2004 on the coordination of social security systems (EP(2019b)).

[13] For further details on policy tools that can support the strengthening of health systems, please refer to EP (2019a), EP (2019b), EP (2020a) EP (2020b) EP (2020c), EU (19/08/2021b), EU (05/08/2021), EU (2014a), European Union Law (2021), WHO (2019a), WHO (2021), among others.

financial framework; and now in addition to the "*Next Generation EU*" temporary instrument, designed to boost the post-COVID-19 recovery.

In this paper, we approach the analysis of the sustainability of the Spanish NHS from the point of view that it is part of the economic policy coordination and that there are multiple pathways that channel health system's benefits into economic growth, fiscal stability and socioeconomic development. Therefore, to come to a meaningful assessment and to identify sound and effective policy reforms the fiscal sustainability of health expenditure should be analysed at the same time and with an integrated approach including the economic and socioeconomic dimensions of the health system. When the need to improve the fiscal sustainability of the health expenditure is identified, it shall be explained by and combined with associated challenges in the other dimensions of the health system. Moreover, although no sustainability concerns come to light, we should consider relevant challenges to the health systems that may hinder their well functioning and results, thus affecting their long-term sustainability. The European Semester framework of EU economic governance is a fit for purpose channel to implement this integrated approach that, in addition, can facilitate the alignment of EU and national policy objectives, which could be a source of financing for health system structural reforms.

The paper is organised as follows. After the introduction, in point 2, we describe the European Semester in brief. Then, in point 3, we address the two-way relationship between health and economic, socioeconomic and fiscal policy, and the multiple pathways through which the health system is a driver of economic growth, which will help in identifying reform priorities. In point 4, we show the priorities for the structural health reforms established by the successive European Semester's cycles since 2011, both for the Union as a whole and for Spain's specific situation, with a view to drawing some lessons for future action. Next, in point 5, we focus on the analysis of the sustainability of health expenditure in Spain, which is at the core of the mentioned priorities, including by depicting the impact of the coronavirus pandemic. We summarise our conclusions in point 6. In addition, we include some technical annexes to support our analyses in points 7-15 and, finally, provide some references in point 16.

2. The European Semester in brief

The European Semester is the "*relevant well-established framework of the European Union to coordinate economic, employment and social reforms and investments, putting people and their well-being at the centre*." (EU (15/11/2021); EU (2021)).

The rules of the EU's economic governance are applied in the context of the European Semester, based on an annual cycle of coordination and surveillance to identify and address possible challenges and needs for structural reforms the EU may face.[14]

Now, it is necessary to temporarily adapt the European Semester to the pandemic context. The European Semester 2021 is an exceptional cycle intrinsically linked to the Recovery and Resilience Facility and their deadlines will overlap during the 2021 exercise. (EU (19/07/2021b,c)).

That being said, in this point, we start by presenting the "*regular cycle of the European Semester,*" as it was before 2021, considering that, in this paper, we analyse the period 2011-2021. To this end, we use Figure 1, showed below, which summarises the "*regular cycle*" and distinguishes the role of each of the actors involved in the cycle: The European Commission; the European Council and the Council of the European Union (Council); the national governments; and the European Parliament.

The cycle starts in September when each year the Commission initiates *"a detailed analysis of each Member States' budgetary plan, its macroeconomic challenges and needs for structural reforms."* Following the analytical process, "*It then provides EU governments with proposals for country-specific recommendations for the next 12-18 months." "The Council endorses and formally adopts the Commission proposals." "National governments make policy decisions in response to the country-specific recommendations, based on whatever action they deem appropriate.*" EU (20/07/2021). Finally, the European Parliament enhances the Economic Dialogue between the Union institutions and expresses its opinion on the Annual Growth Survey

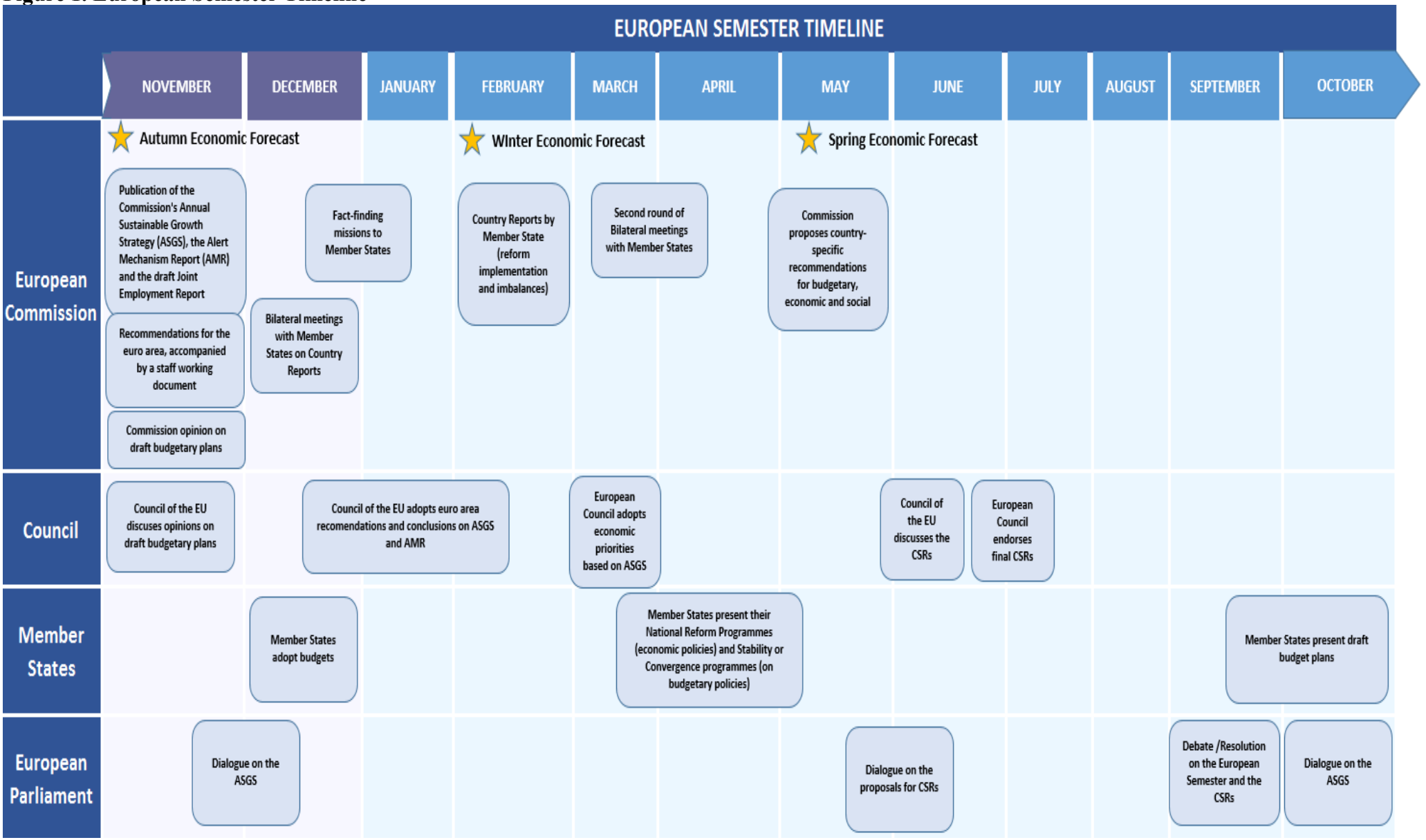
[14] "*In its original design, the Semester was a real semester, i.e. a six-month coordination cycle, ranging from March to September of each year, the period that corresponds to the preparatory phase of budget law in most countries. This was very much in line with the idea of a mechanism to coordinate, budgetary policies ex-ante." "Over time, […] the attention of the Semester gradually shifted to the more general issue of how to make economies more flexible and productive." "In 2015, the European Commission decided to streamline the functioning of the Semester. To this end, the length of the semester cycle has been extended by six months, making it a full one-year process, starting in November, with the Commission's annual growth survey, and ending in October of the following year, with the submission of the draft budgetary plans."* Alcidi, C. et al. (2017).

(AGS) or, as of 2019, Annual Sustainable Growth Strategy (ASGS)[15] as well as, in late autumn, on the ongoing European Semester cycle. "*Furthermore, the Commission's powers to impose extra reporting requirements within the framework of the new regulation on monitoring and assessing draft budgetary plans and ensuring correction of the excessive deficit of the Member States in the euro area will now have to be renewed every three years, with Parliament or the Council able to revoke them*." (EP (2021b, c)).

Regarding the European Semester cycle for 2021, in September 2020, the Commission published the Annual Sustainable Growth Strategy 2021 (ASGS), setting out the general economic and social priorities for such an exceptional cycle. A single integrated document has been introduced to embody the National Reform Programs (NRPs) and the National Recovery and Resilience Plans. Its submission was due by March-April 2021. The Commission's assessments of the plans will replace the European Semester Country Reports (CRs), which is foreseen by the end of August. Country-Specific Recommendations (CSRs) will be only on the budgetary situation and there will be no structural country-specific recommendations in 2021 for those Member States that will have submitted Recovery and Resilience Plans. The Commission will continue to monitor and assess the risk of macroeconomic imbalances during the new Semester cycle, with a focus on emerging risks caused by the coronavirus crisis. We show the timeline for this cycle in Figure 2. (EU (19/07/2021b)).

[15] Annual Sustainable Growth Survey in 2022.

Figure 1. European Semester Timeline



Source: EU (15/07/2021c) and Eurostat (2017).

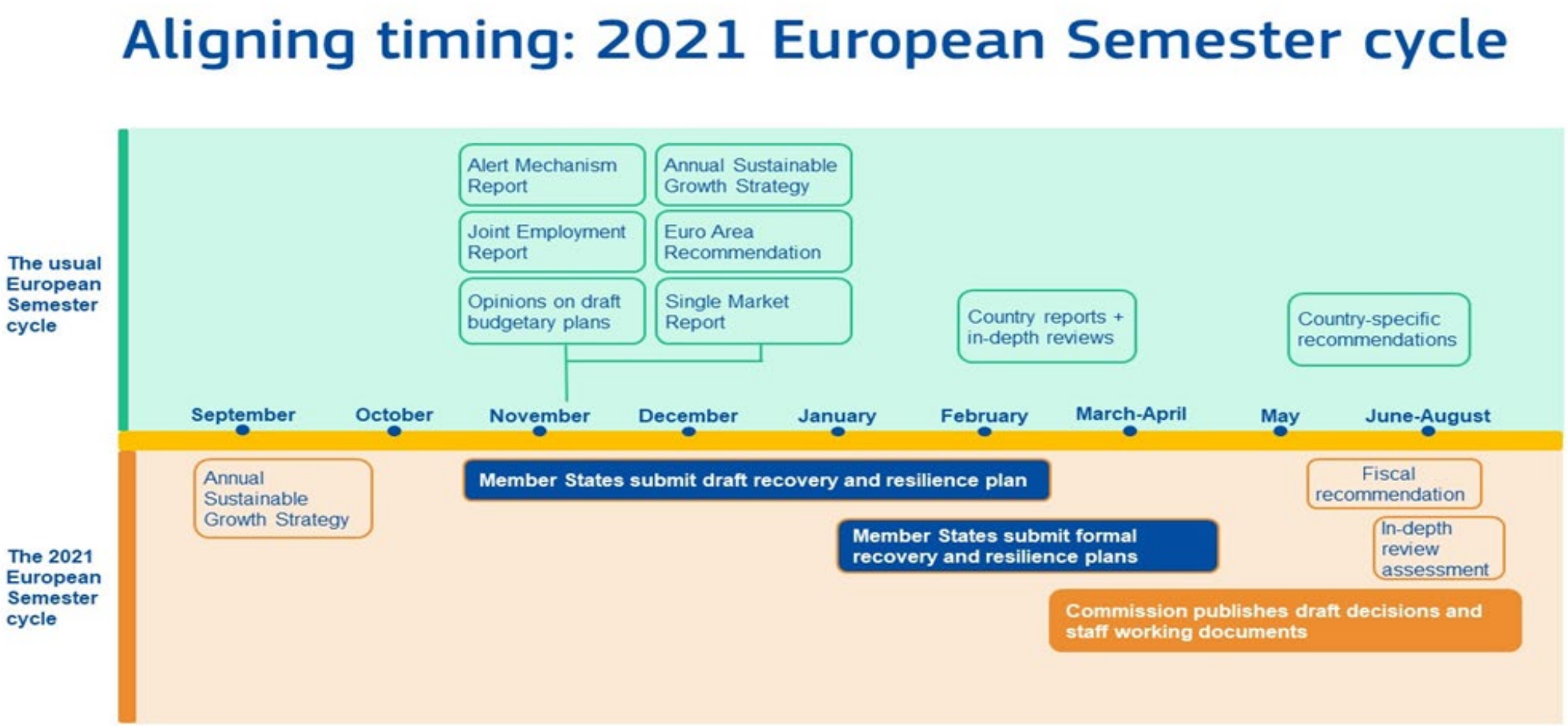
Note 1 to Figure 1 on Key elements of the Semester

Annual Sustainable Growth Strategy (ASGS) **Annual Growth Survey (AGS) (previously)**	Sets out general economic and social priorities for the EU and provides Member States with policy guidance for the following year in line with the Integrated Guidelines (guidelines for the employment policies of the Member States —Joint Employment Report— and guidelines for the economic policies of the Member States — Broad Economic Policy Guidelines (BEPGs)—).[16]
Alert Mechanism Report (AMR)	The starting point of the annual Macroeconomic Imbalances Procedure (MIP). The MIP aims to identify potential risks early on, prevent the emergence of harmful macroeconomic imbalances and correct the imbalances already in place.
Recommendations for the euro area	Based on the draft budgetary plan, which euro area Member States present by mid-October, the Commission adopts an Opinion on each plan. The recommendations for the euro area address key issues for the functioning of the euro area and provide orientation on concrete actions for their implementation, which are reflected in the country-specific specific recommendations where appropriate. The euro area recommendations allow for better integration of the euro area and national dimensions of EU economic governance and therefore strengthen the surveillance process. They are accompanied by the report on the euro area, a staff-working document.
Draft budgetary plans	For euro area Member States, they must present to the Commission draft budgetary plans for the following year by 15 October. The Commission then assesses the plans against the requirements of the Stability and Growth Pact and the relevant country-specific recommendations. It issues an Opinion on each of the budgetary plans in November, so that this guidance is taken into account when national budgets are finalised.
Country Reports	Analysing the economic situation of each Member State and progress in implementing the country-specific economic policy recommendations issued during the previous cycle. For those Member States selected in the Alert Mechanism Report, the country report includes the findings of the so-called "in-depth review" analysing potential macroeconomic imbalances in the Member State.
Member States' National Reform Programmes & Stability or Convergence Programmes	Three-year budget plans, the former for euro area countries, the latter for other EU Member States. In these programmes, countries report on the specific policies they are implementing and intend to adopt to boost jobs and growth, prevent or correct macroeconomic imbalances, and on their concrete plans to ensure compliance with EU's fiscal rules as well as with any outstanding country-specific – and where applicable euro area – recommendations.
Country-Specific Recommendations	The Commission then assesses the Member States' plans and presents a series of new country-specific recommendations to each of them.

Note 2 to Figure 1 on the use of the row label "Council": We use "Council" as a row label to refer to both the European Council and the Council of the European Union.

[16] The Broad Economic Policy Guidelines (BEPGs) (European Union Law (2015a,b)) are guidelines on macroeconomic and structural policies that aim to coordinate the European Union (EU) countries' economic policies so as to achieve common goals. In 2010, the BEPGs were brought together with the employment guidelines under the single heading of Integrated Guidelines (IGs), and are the basis of the European employment strategy. The IGs are the main instrument for coordinating EU countries' reform efforts in the area of labour market and social policies, adopted every year by the Council. The IGs were first adopted together in 2010. Whilst the broad economic policy guidelines remain valid for any duration of time, the employment guidelines need to be drawn up each year. Thus, since 2010, the BEPGs have been revised only once, in 2015. On the contrary, the employment guidelines (Joint Employment Report) have been revised on a yearly basis. In 2018 the employment guidelines were aligned with the principles of the European Pillar of Social Rights proclaimed in November 2017 by the European Parliament, the Council and the Commission (EU(2021d); EU (15/11/2021)). The guidelines for the employment policies of the Member States have been also amended to align the text integrating the four dimensions of the Annual Sustainable Growth Strategy (ASGS) and in particular, the environmental sustainability dimension, reflecting the Stronger Social Europe for Just Transitions narrative and integrating the UN Sustainable Development Goals (SDGs).

Figure 2. European Semester 2021 Timeline



Source: EU (19/07/2021b,d); EP (2021d); EU (2020d); EU (27/10/2021).
Note: During the 2021 Semester Cycle, exceptionally, due to the preparations and adoptions of the Recovery and Resilience Plans under the Recovery and Resilience Facility, Country Specific Recommendations (CSRs) are limited to fiscal recommendations on the 2021 Stability and Convergence Programmes. The Council has adopted them on 18 June 2021 based on a Commission recommendation for Council opinions proposed on 2 June 2021. These opinions reflect the continuation of the general escape clause.[17] No further Country Specific Recommendations (CSRs) have been issued under the European Semester. Instead, Member States are requested to take into account the 2019 and 2020 CSRs in their Recovery and Resilience Plans (in accordance with Regulation 2021/241and with the recitals of the 2020 CSRs).

[17] The clause, as set out in Articles 5(1), 6(3), 9(1) and 10(3) of Regulation (EC) 1466/97 and Articles 3(5) and 5(2) of Regulation (EC) 1467/97, facilitates the coordination of budgetary policies in times of severe economic downturn, allowing for a coordinated and orderly temporary deviation from the normal requirements for all Member States.

3. Health systems and the EU's economic policy coordination

Several Council conclusions[18] have put forward that health, while a value in itself, is also a pre-condition to achieving economic growth, and investments in health should be acknowledged as a contributor to economic growth. In this vein, The Council has called for ensuring "*the necessary coordination at national and EU level in order to adequately represent the health sector in the process of the European Semester*." Box 1 summarises the most relevant Council conclusions in this regard. The purpose of this point is to highlight the association of the European Union's economic policy objectives with the well functioning of the Member States' health systems and thus the European Health Union's objectives.

According to the available evidence, there is an endogenous relationship between health systems (health expenditure) and economic growth (output/GDP). Thus, acknowledging that the health system is not the only, and might not be the stronger, determinant of population health, it seems relevant to disentangle the two-way relationship between health and economic growth with a view to facilitating the identification of health system reforms priorities through better understanding the underlying pathways in the mentioned relationship.[19]

On the one hand, economic growth is a contributor to health improvements. By way of example, there is a vast literature analysing GDP as a driver of health expenditure, which in turn is generally associated with greater longevity (particularly at lower income levels). We refer the reader to the analyses developed in the orbit of the Working Group of Ageing Population and Sustainability of the Economic Policy Committee[20] (AWG) as well as those by the OECD in the series "*Health at a Glance*,"[21] among others, as well as to research supported by the EU[22]. According to the report "*Health at a Glance 2017*" (OECD (2017)): *"… on average, a 10% increase in health spending per capita is associated with a gain of 3.5 months of life expectancy […] a 10% increase in income per capita is associated with a gain of 2.2 months of life expectancy."* In this vein, a report written by the National Institute for Public Health and the Environment of the Netherlands together with the Erasmus University (EU (2015)) shows that *"On average, more health spending was associated with better health. This effect was clearest for countries with lower levels of spending. The inclusion*

[18] Thus expressing a political position on health and the European Semester. Please refer to https://www.consilium.europa.eu/en/council-eu/conclusions-resolutions/.
[19] Bloom, D.E. et al. (2018); Buchan, J. et al. (2016); EU (2005); EU(2020); EU(2021); Raghupathi, V. (2020), Hou, X. et al. (2013), OECD (2010); OECD (2017); Wang, F. (2015); WHO (2016); Leung, M. et al. (2003); among others.
[20] EPC.
[21] https://www.oecd-ilibrary.org/social-issues-migration-health/health-at-a-glance-2019_4dd50c09-en; https://ec.europa.eu/health/state/glance_es.
[22] https://ec.europa.eu/eip/ageing/library/efficiency-estimates-health-care-systems_en.html.

of confounding factors, especially Gross Domestic Product (GDP) per capita, substantially reduced the size of the correlation between health spending and population health. However, it was not possible to distinguish the impact of health spending and GDP with the data at hand."

On the other hand, the health system is a driver of economic growth through multiple pathways that channel health system's benefits into economic growth. We have classified them in three dimensions: economic, fiscal and socioeconomic. We summarise below our findings in the literature concerning the mentioned pathways.

➢ *Economic dimension*[23]

- ***Health is an essential component of human capital***. A direct consumption good and an argument in the preference function of individuals, health is an instrumental good that allows individuals to engage in increased levels of activity, with both market-valued (economic productivity) and non-market-valued (employability; transformation of leisure time in multiple forms of social participation) benefits. Growing evidence suggests that adequate investment in health can offer high economic returns. In low and middle-income countries, around one-quarter of economic growth between 2000 and 2011 is estimated to result from improvements to health. The returns on investment in health are estimated to be 9 to 1. One extra year of life expectancy has been shown to raise GDP per capita by about 4%.
- ***The health system produces market-valued economic output*** through the employment of staff; through investments in manufactured capital, such as buildings and related facilities; through the purchase of equipment and technologies, supplies (particularly pharmaceuticals, and medical products, economic sectors of high added value) and services; through the development of communications, logistics and supply networks; and through investments in human capital, such as training and education. The aggregate size of the EU's health sector is substantial. At almost 1.4 trillion per year, the combined health sector of the EU's 27 Member States (MS)[24] is larger, in terms of economic output, than that of any MS in the Union, except Germany, France and Italy.[25] Furthermore, estimates in developed economies suggest that each dollar spent in the health sector results in an additional US$ 0.77 contribution to economic growth because of indirect and induced effects.[26]
- ***Investing in strong health systems have further positive externalities distinctly related to economic growth.***
  - ***The health system drives technological innovations*** in many areas, including genetics, biochemistry, engineering and information technology. Exports of pharmaceuticals, equipment and medical services have also been an important driver of growth in many countries. For example, The EU pharmaceutical industry generated a production of around EUR 310 bn in 2020. Its R&D expenditure is estimated at EUR 39 bn, meaning an R&D intensity of 13%, which is higher than other sectors. The sector employs 830,000, of which 125,000 are in R&D. It offers a positive trade balance for Europe: around EUR 155 bn in 2020.
  - ***It is a channel for diversification*** considering that health sector employment tends to be countercyclical. This means that health employment often continues to grow even when other sectors are shrinking, or that it shrinks less in response to economic shocks than other sectors. Across the OECD countries, employment in health and social work grew by 48% between 2000 and 2014, while jobs in industry and agriculture declined.

[23] Bloom, D.E. et al. (2018); EFPIA (2021); Eurostat; Lauer, J.A. et al. (2016); WHO (2016); Hou, X. et al. (2013); Raghupathi, V. (2020); Wang, F. (2015); WHO Global Health Expenditure Database.
[24] Statistical data in this paper refer to EU-27
[25] This is an approximate lower bound as accounted for by the System of Health Accounts. However, certain categories of market-valued economic output are ignored in health accounts: expenditure-based figures for the health sector do not include goods and services related to the nutritional, sports and fitness industries, receipts from over-the-counter medicines or expenditures on home care services, all of which are important constituents of the broader "health economy". Nor do expenditure statistics include indirect and induced effects that in Germany, for instance, would contribute with an additional 8% in terms of indirect and induced effects on the value of final consumption to the direct 11% contribution of the "expanded health economy" in terms of production. Lauer, J.A. et al. (2016).
[26] Lauer, J.A. et al. (2016) provide evidence against previous findings supporting that the health sector suffer from Baumol's "cost disease." Thus, showing that the health sector is not unproductive, inefficient or a drag on the economy. Thus, some evidence suggests that expenditures on health are not dead-weight drags on the economy, but rather can be associated with productivity gains in other sectors.

- The health system provides an important ***health security function to prevent the pandemics' negative effects*** on the economic growth because of the disruptions in food production, essential refurbishments to or investments in manufactured capital, trade, commerce, tourism and travel bookings, and movement of populations. Resilient health systems capable of responding to emerging pandemic threats are an economic asset.

- ***The health system has a role in macroeconomic stability***. Evidence provided by the literature shows that, over the past several decades, the health system as an economic sector has become an increasingly important component of the global economy, evinced by the growing trend of health expenditures as a share of gross domestic product (GDP). The increasing importance of the health system in the global economy is the result of the mentioned two-way relationship between health and income and the increase in both public and private expenditures on health, which in some cases can be flagged as alarming. Please refer to Chart 1.

  As said, the relationship between health and economic growth has been examined extensively across multiple studies showing that improvements in health can lead to an increase in Gross Domestic Product (GDP) and vice versa. However, there is an ongoing debate on what kind of healthcare spending and what level of optimal spending is beneficial for economic development.

  According to the OECD analyses, typically, health systems are economically sustainable when the benefits of health spending exceed their costs. In our view, this should be understood including opportunity costs: An increase in health expenditure, which could raise economic growth, might crowd out other expenditures, such as spending on education or infrastructure inputs that could also stimulate it.

  Determining how much is too much for the economic dimension of the health system is not an easy task considering the endogenous relation between health spending and GDP, compounded with an endogenous relation between health expenditure and life expectancy (Leung, M. et al (2003). The study by Wang, F. (2015), addresses this endogeneity to investigate whether raising health expenditure can effectively improve economic performance, and find the optimal level of health expenditure to maximize economic growth in the context of OECD countries over the period 1990 to 2009. It shows that the relationship between health spending and economic growth is non-linear and when the ratio of health spending to GDP is less (alternatively, more) than the optimal level (7.55%) increases in health spending are associated with faster (alternatively, slower) economic growth.

  The evolution of health spending shows a significant increase especially in high-income countries, reflecting a high demand by populations for health services, which is expected to continue, mainly in developing countries.

  In UE countries, health spending has increased 1.38 pp of GDP between 2000 and 2018 and reaches a 10% of GDP.

➢ *Fiscal dimension*[27]

- ***Linked to macroeconomic stability, the fiscal footprint of the health systems is large in the EU.*** Although most of the services provided by health systems are private goods,[28] market failures present in the health system and social preferences[29] have shaped a strong public intervention of the aforementioned health systems in upper-middle to high-income countries (Charts 2 to 4). This is specially the situation in the EU where public expenditure in health accounts for almost 75-80% of total health spending.

  The evolution of health spending shows a significant increase in public expenditures, especially in high-income countries. In the EU, public spending in health has gained 1 pp of GDP between 2000 and 2018, and represented in 2018 a 14-15% of the Government expenditure. It is apparent from the consistent and sizable increases in public spending that the fiscal footprint of the health sector is large in the EU. However, efforts to reduce the

[27] EPC's AWG Ageing Reports; Eurostat; OECD (2010); Health Statistics; WHO Global Health Expenditure Database;.

[28] In the sense that their consumption can be withheld until a payment is made in exchange for them (excludability principle), and once consumed they cannot be consumed again (rivalry principle). In contrast, prevention and promotion services are public goods, in the sense that once they are provided no one can be excluded from consuming them (they are non-excludable), and one person's consumption of them does not prevent anyone else's (they are non-rival in consumption). Smiths, R. D. (2003).

[29] "*By far the largest government involvement in the health sector is in the market for medical care, and its derivative health insurance. Medical care markets are plagued by a host of potential problems, […]: incomplete information on the part of patients; asymmetric information between consumers and producers about what patients really need; inability to tell whether services are justified, even ex post; externalities from consumption; moral hazard from insurance; adverse selection in insurance; and redistributive goals not met by the market. With such a litany of problems, it is no surprise that free markets for medical care function poorly.*" Cutler, D. (2002).

level and composition of public spending due to tightened fiscal constraints has moderated the rhythm of increase, and the percentage of public health spending over the GDP in the EU has moved as of 2014 slightly below the average of high-income countries.

Future health care spending trends constitute an important driver of the fiscal challenge in the EU and thus a key element for the Member States to attain their Medium-Term Objectives—MTOs for their budgetary position, to ensure rapid progress towards sustainability.

- ***The fiscal challenge is notably determined by the challenge posed by population ageing.*** Thus, in the context of the EU's economic governance, and specifically of the Stability and Growth Pact, action by the Commission and the Council regarding the sustainability of the Member States' public finances should be based on the common budgetary projections by the EPC's Working Group on Ageing Populations and Sustainability (AWG). The subsequent reports of the EPC's AWG have put forward that health expenditure is a relevant factor in the long-term sustainability of public finances. In its latest Ageing Report, the EPC's AWG foresees that curative and rehabilitative public expenditure accounts for 5.7% of GDP in 2019 and is projected to increase by 1.3 pp of GDP (above the EU average) to reach 7% of GDP in 2070 under the AWG reference scenario. In addition, long-term care expenditure (health and social care) is projected to increase 0.8 pp of GDP to reach 1.5% of GDP in 2070 under the AWG reference scenario. Larger increases could take place under higher risk scenarios.

➢ *Socioeconomic dimension*[30]

- ***The health system is a job generator.*** Health care is a labour intensive and high-skilled sector. Demand for health services will continue to increase, creating new jobs with a high potential to be decent jobs. It plays an increasingly important role in sustainable development.

  While jobs in industry and agriculture showed a stagnant trend in the EU, the "health and social work" sector has seen a large rise in employment over the last few years, with over 2.6 million new jobs created in the Union (between the first quarter of 2009 and the first quarter of 2017). Moreover, it represents a potential for high-skilled employment: workers in the "health and social work" sector have a level of education far above the average of all sectors. Furthermore, the health workforce[31] has a job multiplier effect: On one hand, available estimates suggest that globally one to two other workers support each worker trained in a health occupation; on the other hand, the health sector's contribution to economic growth translates into more jobs because of indirect and induced effects. Strengthening health systems creates jobs in many other sectors and public services.

  Health employment, in particular, offers the possibility of jobs to members of social groups that have traditionally been unemployed or underemployed, such as women[32] and youths, as well as to populations in remote, rural or underserved communities.
- ***The health system offers social protection benefits.*** The financial risk of health expenditure, by causing impoverishment, diverting resources from other expenditures, or resulting in the underuse of essential health services, constitutes a powerful force to create persistent, intergenerational inequalities. Inequality has a direct negative effect on growth, and very small reductions in income inequality have been found to lead to increases in long-term growth of around 0.1% of GDP per year. In addition to the forms of social protection offered by formal employment in the health sector, the financial risk protection offered by a health system with the public financing of a package of essential health services constitutes an important spillover benefit that directly promotes both economic growth and its sustainability.
- ***Publicly financed health services offer an important guarantor of basic social cohesion*** by promoting population health, social protection and income redistribution. It is practically a truism that political stability is an important precondition for economic growth. What is less obvious is that the causality also works in the converse direction: persistent socioeconomic inequalities have sparked massive levels of political instability that in turn have caused catastrophic hardships, economic and otherwise, for substantial populations, as well as causing significant negative knock-on effects for neighbouring and regional governments and societies.

[30] EU (21/07/2021); Lauer, J.A. et al. (2016); OECD (2015); WHO (2016).
[31] HWF
[32] Health and social work remains a sector heavily biased towards a female workforce: four out of five workers in this sector are women and the percentage remained substantially unchanged in the period under consideration. EU (21/07/2021).

➢ *Box 1. Council conclusions referring to health systems and the Semester*

22 June 2006: On common values and principles in EU Health Systems (OJ 2006 C 146), highlighting the common overarching values of "universality, access to good quality care, equity and solidarity" and recognising the challenges that lie ahead in reconciling individual needs with the available finances, as the population of Europe ages, as expectations rise, and as medicine advances.

6 June 2011: On modern, responsive and sustainable health systems, (OJ 2011 C 202), launching a "reflection process" (which took place in 2011-2013 and concluded in 2013), where the Council called "*for the need that the health sector should play an adequate role in the implementation of the Europe 2020 Strategy. Investments in health should be acknowledged as a contributor to economic growth. While health is a value in itself, it is also a pre-condition to achieve economic growth*."

8 July 2011: On the European Pact for Mental Health and Well-being (OJ C 202, 8.7.2011, p. 1–3), recognising that "*according to recent research evidence a high level of mental health and well-being of the population is an important factor for the economy, and that mental disorders lead to economic loss for instance through lower business productivity, lower participation in employment, and costs to individuals, families, and communities dealing with mental disorders*."

12 December 2013: (OJ C 376, 21.12.2013, p. 3) Inviting the Commission and the Member States to "ensure the necessary coordination at national and EU level in order to adequately represent the health sector in the process of the European Semester, and to streamline the on-going healthcare assessments at EU level, in particular through strengthened coordination and cooperation with the Social Protection Committee and the Economic Policy Committee, and by examining and establishing a working relationship between the Working Party on Public Health at Senior Level and the Social Protection Committee and the Economic Policy Committee, and by examining and establishing a working relationship between the Working Party on Public Health at Senior Level and the Social Protection Committee."

10 July 2014: On the economic crisis and healthcare (OJ 2014 C 217), following the Commission Communication (COM(2014) 215 final), recalling "the discussions at the Informal Meeting of Ministers of Health held in Athens on 28-29 April 2014 on the 'Economic crisis and healthcare' which highlighted the importance of health reforms to overcome the crisis … ; there was broad consensus to improve further access to healthcare particularly for the most vulnerable populations, while the issue of involvement of the Ministers of Health into the European Semester process was also raised." The Council also invited the Member States and the Commission to "Reinforce cooperation and better coordination between the Social Protection Committee (SPC) and the Working Party on Public Health at Senior Level (WPPHSL) so that Ministries of Health can actively contribute within the framework of the European Semester."

8 November 2016: (ECOFIN) On the EPC- Commission Joint Report on Health systems and fiscal sustainability (complemented by a discussion at Eurogroup on 10 October 2016), where the Council acknowledged that "achieving the twin aim of ensuring fiscal sustainability and access to good quality health care services for all, by improving the efficiency and effectiveness of health and long-term care systems, is therefore particularly important" and "invites the Commission to factor these findings into their analysis and draft recommendations in its economic policy coordination activities in the framework of the European Semester and explore how Union action can complement national policies, with a clear focus on fiscal sustainability."

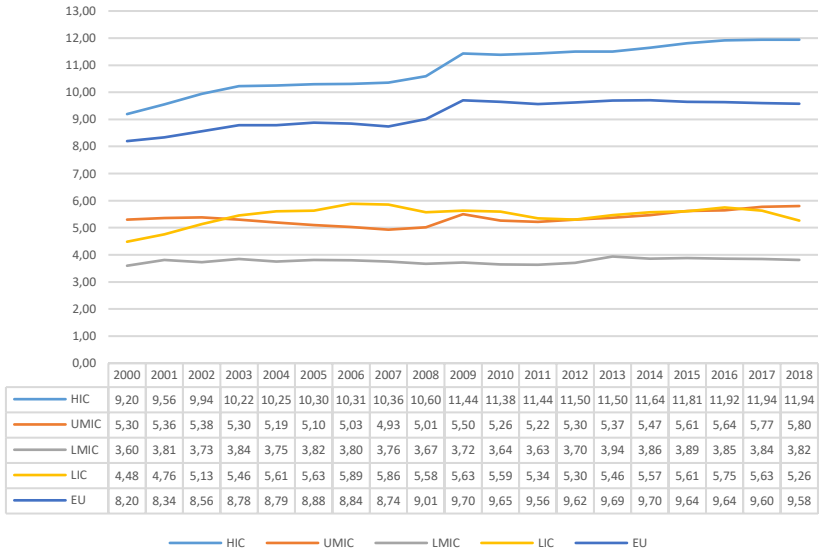
30 June 2017: On Encouraging Member States-driven Voluntary Cooperation between Health Systems (OJ C 206, 30.6.2017, p. 3–7): "*Whilst REITERATING that health is valuable in itself, CONSIDERS that health systems deliver a wider social benefit that goes beyond human health protection and make a major contribution to social cohesion, social justice and economic growth*."

21 December 2017: On Health in the Digital Society (OJ C 440, 21.12.2017, p. 3–9): "*The health systems also have a potential as engines for economic growth, offering economic opportunities, especially for the small and medium-sized enterprises developing innovative data-driven digital solutions*."

26 November 2019: On the Economy of Wellbeing (OJ C 400, 26.11.2019, p. 9–14)**: "***The European Semester provides a framework for the coordination of Member States' economic policies and is an important tool for monitoring the implementation of the Europe 2020 strategy and key areas covered by the Pillar. The number of specific recommendations involving social, employment, education, training and equality policies, health and long-term care, pensions, poverty and social exclusion has grown gradually and today these topics account for nearly half of them. Well-designed and sustainable social, employment, education and health policies as well as gender equality are indispensable for sustainable and inclusive long-term economic growth. Cross-sectoral cooperation and a good balance between economic and these policies thus play an important role in the European Semester*."

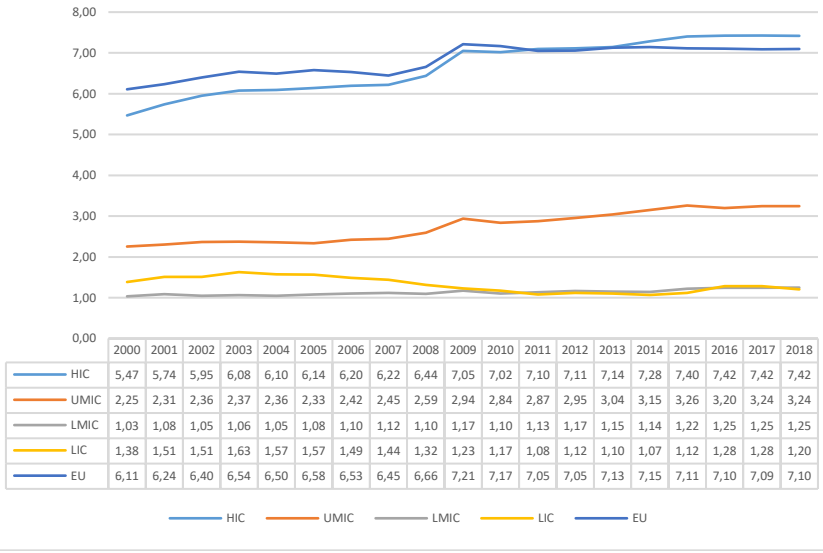
Sources: Eur-Lex: https://eur-lex.europa.eu/homepage.html?locale=es; Council (2016).

Chart 1. Current Health Expenditure (CHE) as % Gross Domestic Product (GDP)



	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
HIC	9,20	9,56	9,94	10,22	10,25	10,30	10,31	10,36	10,60	11,44	11,38	11,44	11,50	11,50	11,64	11,81	11,92	11,94	11,94
UMIC	5,30	5,36	5,38	5,30	5,19	5,10	5,03	4,93	5,01	5,50	5,26	5,22	5,30	5,37	5,47	5,61	5,64	5,77	5,80
LMIC	3,60	3,81	3,73	3,84	3,75	3,82	3,80	3,76	3,67	3,72	3,64	3,63	3,70	3,94	3,86	3,89	3,85	3,84	3,82
LIC	4,48	4,76	5,13	5,46	5,61	5,63	5,89	5,86	5,58	5,63	5,59	5,34	5,30	5,46	5,57	5,61	5,75	5,63	5,26
EU	8,20	8,34	8,56	8,78	8,79	8,88	8,84	8,74	9,01	9,70	9,65	9,56	9,62	9,69	9,70	9,64	9,64	9,60	9,58

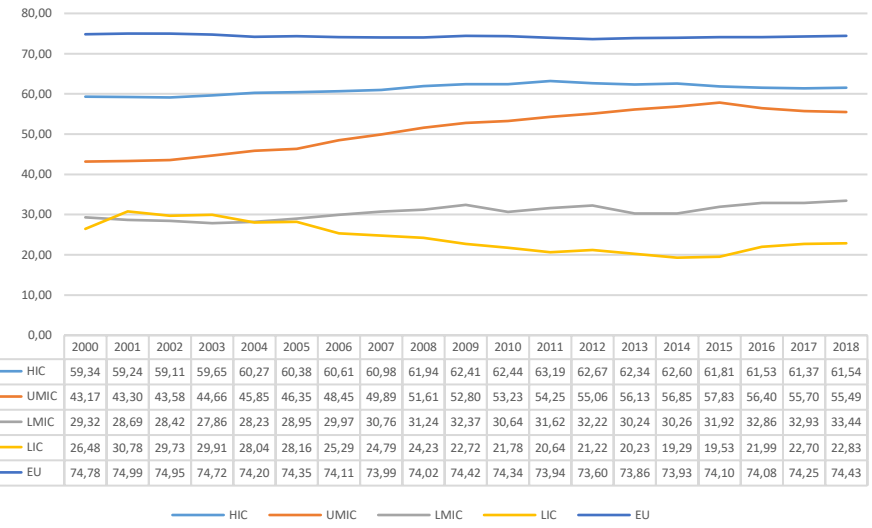
Chart 2. Domestic General Government Health Expenditure (GGHE-D) as % Gross Domestic Product (GDP)



	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
HIC	5,47	5,74	5,95	6,08	6,10	6,14	6,20	6,22	6,44	7,05	7,02	7,10	7,11	7,14	7,28	7,40	7,42	7,42	7,42
UMIC	2,25	2,31	2,36	2,37	2,36	2,33	2,42	2,45	2,59	2,94	2,84	2,87	2,95	3,04	3,15	3,26	3,20	3,24	3,24
LMIC	1,03	1,08	1,05	1,06	1,05	1,08	1,10	1,12	1,10	1,17	1,10	1,13	1,17	1,15	1,14	1,22	1,25	1,25	1,25
LIC	1,38	1,51	1,51	1,63	1,57	1,57	1,49	1,44	1,32	1,23	1,17	1,08	1,12	1,10	1,07	1,12	1,28	1,28	1,20
EU	6,11	6,24	6,40	6,54	6,50	6,58	6,53	6,45	6,66	7,21	7,17	7,05	7,05	7,13	7,15	7,11	7,10	7,09	7,10

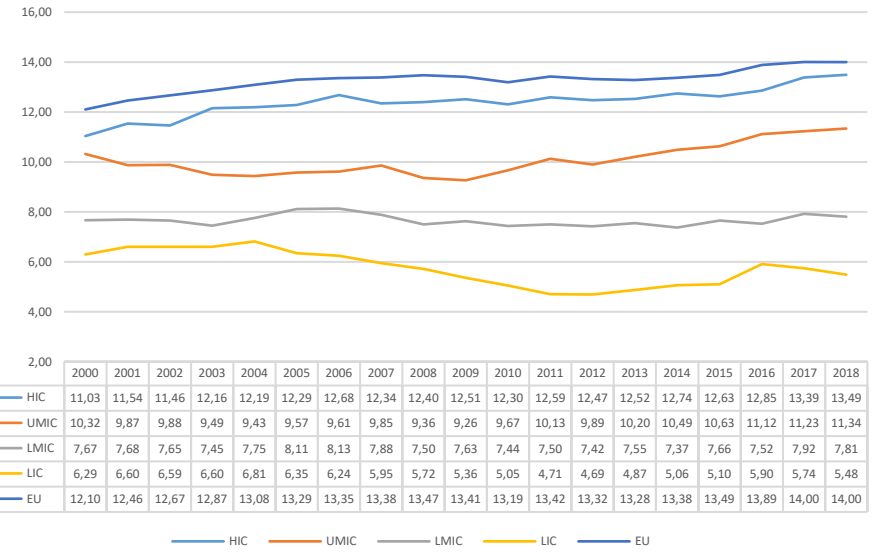
Source: Own calculations based on WHO Global Health Expenditure Database: https://apps.who.int/nha/database/Select/Indicators/en. **HIC**: High Income Countries; **UMIC**: Upper-Middle Income Countries; **LMIC**: Low-Middle Income Countries; **LIC**: Low Income Countries; **EU**: European Union (27).

Chart 3. Domestic General Government Health Expenditure (GGHE-D) as % Current Health Expenditure CHE)



	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
HIC	59,34	59,24	59,11	59,65	60,27	60,38	60,61	60,98	61,94	62,41	62,44	63,19	62,67	62,34	62,60	61,81	61,53	61,37	61,54
UMIC	43,17	43,30	43,58	44,66	45,85	46,35	48,45	49,89	51,61	52,80	53,23	54,25	55,06	56,13	56,85	57,83	56,40	55,70	55,49
LMIC	29,32	28,69	28,42	27,86	28,23	28,95	29,97	30,76	31,24	32,37	30,64	31,62	32,22	30,24	30,26	31,92	32,86	32,93	33,44
LIC	26,48	30,78	29,73	29,91	28,04	28,16	25,29	24,79	24,23	22,72	21,78	20,64	21,22	20,23	19,29	19,53	21,99	22,70	22,83
EU	74,78	74,99	74,95	74,72	74,20	74,35	74,11	73,99	74,02	74,42	74,34	73,94	73,60	73,86	73,93	74,10	74,08	74,25	74,43

Chart 4. Domestic General Government Health Expenditure (GGHE-D) as % General Government Health Expenditure (GGE)



	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
HIC	11,03	11,54	11,46	12,16	12,19	12,29	12,68	12,34	12,40	12,51	12,30	12,59	12,47	12,52	12,74	12,63	12,85	13,39	13,49
UMIC	10,32	9,87	9,88	9,49	9,43	9,57	9,61	9,85	9,36	9,26	9,67	10,13	9,89	10,20	10,49	10,63	11,12	11,23	11,34
LMIC	7,67	7,68	7,65	7,45	7,75	8,11	8,13	7,88	7,50	7,63	7,44	7,50	7,42	7,55	7,37	7,66	7,52	7,92	7,81
LIC	6,29	6,60	6,59	6,60	6,81	6,35	6,24	5,95	5,72	5,36	5,05	4,71	4,69	4,87	5,06	5,10	5,90	5,74	5,48
EU	12,10	12,46	12,67	12,87	13,08	13,29	13,35	13,38	13,47	13,41	13,19	13,42	13,32	13,28	13,38	13,49	13,89	14,00	14,00

4. Health system reform priorities in Spain as set by the European Semester

In this point, we analyse the European Semester priorities for health system structural reforms in Spain during the period 2011-2021 with the aim of identifying their main foci. We start with the priorities set for the whole EU by the AGS/ASGS. Then we address how, in the Country Reports and the Country Specific Recommendations for Spain, the overarching objective to be achieved at the EU level is conditioned to Spain in accordance with its specific circumstances.

To facilitate the analysis, we have used a stylised framework to categorise each year's priorities by core areas, and components, of the health system where challenges may arise needing structural reforms. We have built it based on the framework used by the European Commission in its agenda "*On effective, accessible and resilient health systems*" (EU (2014b)). We have completed it with the OECD's framework for "*Health Care Quality and Outcomes*" (OECD (31/08/2021)). In addition, we have included some additional elements to record the extent to which AGS's priorities for reform have been associated with the different ways of producing the health service[33] or to relevant areas with spillover effects of the well functioning of the health system. The core areas and the components are listed in Figure 3. To gauge the extent to which the EU considers that one component constitute a priority challenge for addressing structural reform, we have measured the "*intensity of the priority*" by the number of years the component has been flagged as a priority during the period 2011-2021, where the unit for the accounting is the year.

Figure 3. Ad hoc stylised framework to categorise priorities by core areas of the health system and its components

CORE AREAS & COMPONENTS																					FURTHER ELEMENTS									
Health Care Quality and Outcomes				Accessibility					Resilience												Health Functions/ Health Service Production Modes					Spillover Effects				
Health Care Quality and Outcomes	Effectiveness	Safeness	Responsiveness	Accessibility	Population Coverage	Benefit Coverage	Availability	Affordability	Resilience	Fiscal Sustainability	Cost-Effectiveness	Stable Funding Mechanisms	Sound Risk Adjustment Methods	Good Governance / (public procurement/innovation)	Information Flows in the System (e-health/ digitalisation)	Adequate Costing of Health Services (HTA)	A health workforce of adequate capacity and with the right skills		Prevention and Promotion	Hospital Care	Primary Health Care	Integration of care	Medicines	Foster Economic Growth/ Macroeconomic Stability	Competition and Competitiveness	Labour Market Participation	Productivity	Social Safety Nets/ Social Inclusion/ Equal opportunities

Notes: i) In blue, the items of the European Commission agenda "*On effective, accessible and resilient health systems*" and in orange those of the OECD; ii) Please note that one of the components of each area coincides with the whole area. This is because sometimes the EU focuses on the whole area as a priority for structural reforms.

[33] Based on ECFIN's work to identify fiscal sustainability challenges in the area of health (EU (2014c)).

4.1. The AGS/ASGS priorities for health system structural reforms

The AGS/ASGS set out the priorities for structural reforms at the EU level, including those for the health sector. We present them in Annex I, grouped by the overarching areas of general economic policy priorities set for each year (the main headings in the AGS/ASGS).

We observe that the European Semester has increasingly focused on health system structural reforms over the period 2011-2021. In 2011, structural reforms of the health systems were not considered a priority in the AGS. However, as of this year, the intensity of the priority[34] for addressing health system challenges shows an increasing trend (Chart 5). It decreased drastically in 2020 but, in 2021, it recovered its historical maximum.

Structural reform priorities along the period 2011 to 2021 mainly focus on strengthening the resilience of the health system, which has the highest intensity of priority (Chart 6). During this period, excluding 2011, addressing the resilience of the health system, be it as a whole or concerning any of its components, has been flagged as a challenge to monitor every year. The components of the resilience of health systems have been highlighted as challenges 27 times out of 51. In percentage, resilience was related to 53% of the times that some of the components of the health systems had been flagged as a structural challenge to be addressed.

Within this area, the fiscal sustainability and cost-effectiveness of the systems have been the main concerns, followed by the good governance (mainly public procurement and innovation) and the resilience of the system as a whole. Some attention is paid to the improvement of the information flows in the system (e-health; digitalisation; …)[35], and (though to a lesser extent) to stable funding mechanisms and adequate costing of health services (concerning HTA). Chart 6.3.

The AGS/ASGS focuses on accessibility 25% of the times. Most of the times, the focus is on accessibility to health care as a whole. However, the affordability of health care is a specifically relevant concern. Though also included, population and benefits coverage, as

[34] We measure the intensity of the priority of a core area/component by the number of times it has been flagged in the AGS/ASGS as a priority to address structural reforms during the period 2011-2021, where the unit for the accounting is the year. In total, the components of the core areas in our framework have been flagged as a priority for structural reforms 51 times.
[35] We notice that in 2021 the ASGS (EU priorities for the Resilience and Recovery Plan) has a strong focus on the digitalisation of the economy and this includes the health systems.

well as the availability of services (where the focus is on timely access), register lower intensities (Chart 6.2).

Finally, the quality of care and outcomes records the lowest intensity (22% of the times). Most times, the focus is on the area as a whole. Within this area, it seems that the effectiveness of the system is the main concern. Responsiveness (patient-centred health care) has been flagged just one time during the period 2011-2021 as a priority challenge and no priorities specifically focus on patient safety (Chart 6.1).

Improving social safety nets, social inclusion or equal opportunities have been related to or have been the ultimate goal of structural health reform priorities around one-third of the times spillover effects have been mentioned (Chart 8). Other one-third is for increasing labour participation and productivity. The rest is related to fostering economic growth along with competition and competitiveness.

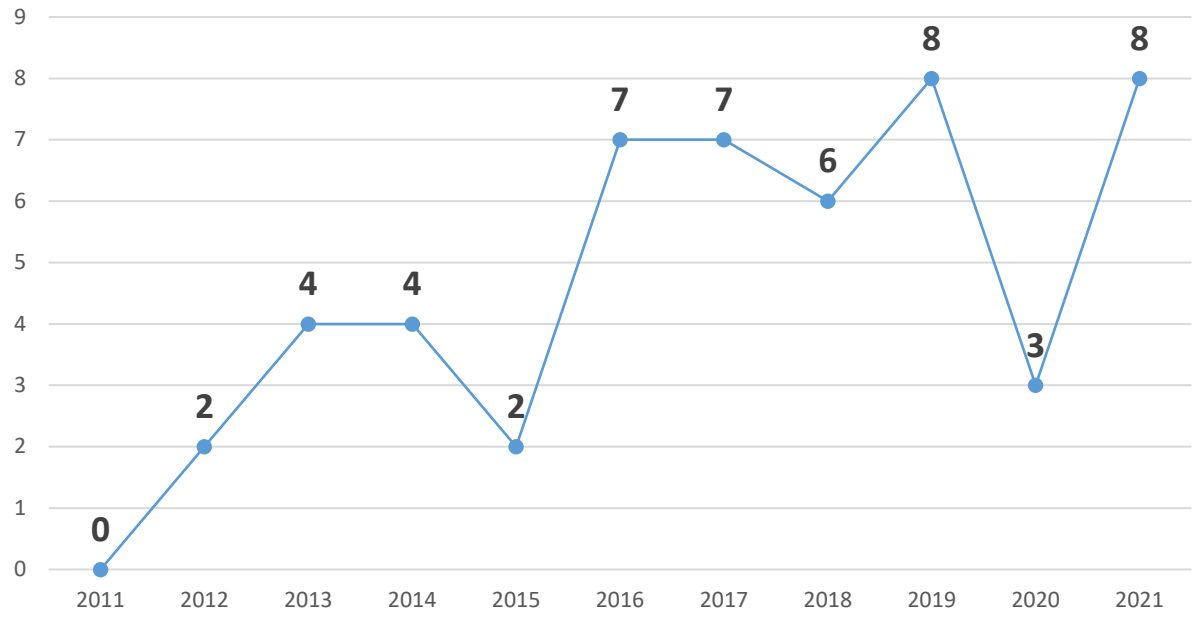
On a few occasions, health reform priorities have been linked to improving or streamlining some health service production modes (prevention and promotion, primary health care, integration of care and medicines). Chart 7.

In summary, priorities for health system reforms in the EU are oriented to strike a balance between strengthening financial sustainability and ensuring access to high-quality health care to adequately meet people's needs by improving their cost-effectiveness. It is expected that reforms to the health systems prepare them to be resilient and act as essential social safety nets that effectively contribute to fostering people's productivity and labour market participation. The modernisation of the health system is key to developing its high employment potential and its contribution to smart, sustainable and inclusive economic growth. Pivotal pieces of the health system reforms as identified in the AGS/ASGS are:

- Ensuring the provision of universal high-quality health care services that is fiscally sound, affordable and timely accessible.
- Investing in connectivity to bridge the digital divide and address regional and social disparities ensuring regional convergence on access to healthcare.
- Investing in innovations such as in digitalisation (e-health), information channels, data, and artificial intelligence.
- Assessing the relative effectiveness of health technologies (HTA).

- Streamlining the use of medicines, improving primary health care and integration of care as well as encouraging health promotion and disease prevention.
- A better public procurement in the health system.
- Enhancing competition and competitiveness by eliminating unjustified restrictions for professional services in the health sector.

Chart 5. Evolution of AGS/ASGS intensity of health priorities 2011-2021



Core Area/Components		2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2011-2021
Health Care Quality and Outcomes	Health Care Quality and Outcomes			•		•		•	•	•		•	6
	Effectiveness				•		•	•				•	4
	Safeness												0
	Responsiveness				•								1
Accessibility	Accessibility			•			•	•	•	•	•	•	7
	Population Coverage									•			1
	Benefit Coverage									•			1
	Availability								•				1
	Affordability								•	•		•	3
Resilience	Resilience							•				•	2
	Fiscal Sustainability		•	•	•		•	•	•	•	•	•	9
	Cost-Effectiveness		•	•	•	•	•	•	•	•			8
	Stable Funding Mechanisms											•	1
	Sound Risk Adjustment Methods												0
	Good Governance (public procurement/innovation)						•	•		•	•		4
	Information Flows in the System (e-health/ digitalisation)						•					•	2
	Adequate Costing of Health Services (HTA)						•						1
	A health workforce of adequate capacity and with the right skills												0
		0	2	4	4	2	7	7	6	8	3	8	51

***Source**: Authors' own work.*

Chart 6. AGS/ASGS intensity of health priorities by area 2011-2021

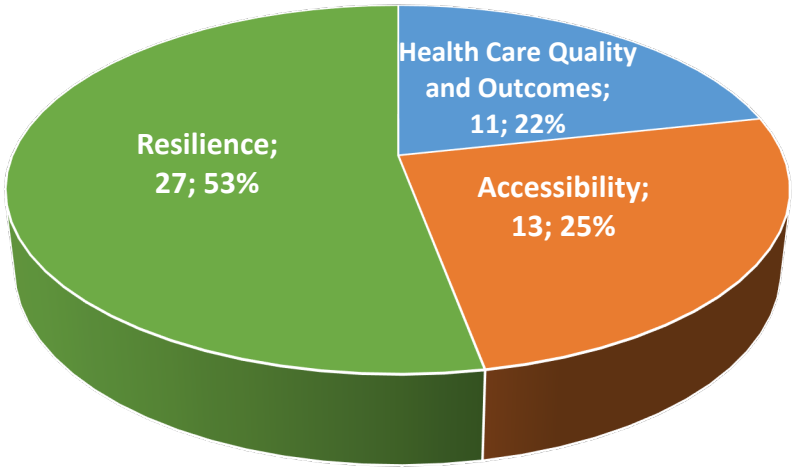


Chart 6.1. AGS/ASGS intensity of health priorities by quality/outcomes components 2011-2021

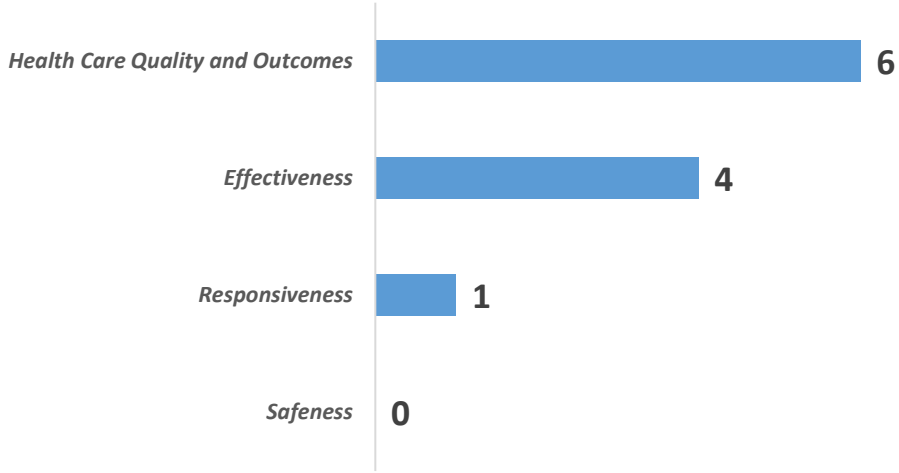


Chart 6.2. AGS/ASGS intensity of health priorities by accessibility components 2011-2021

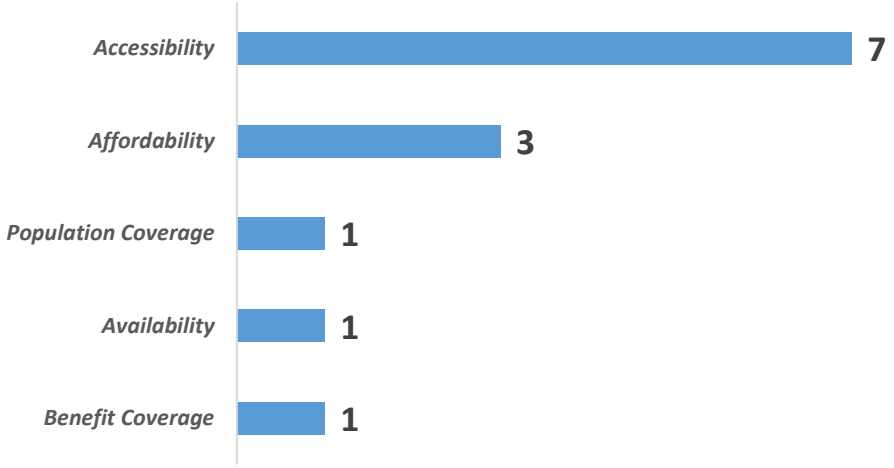
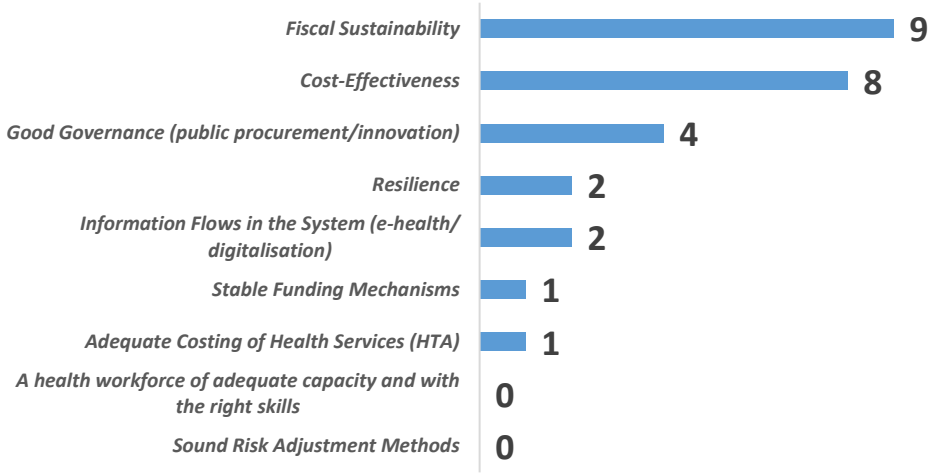
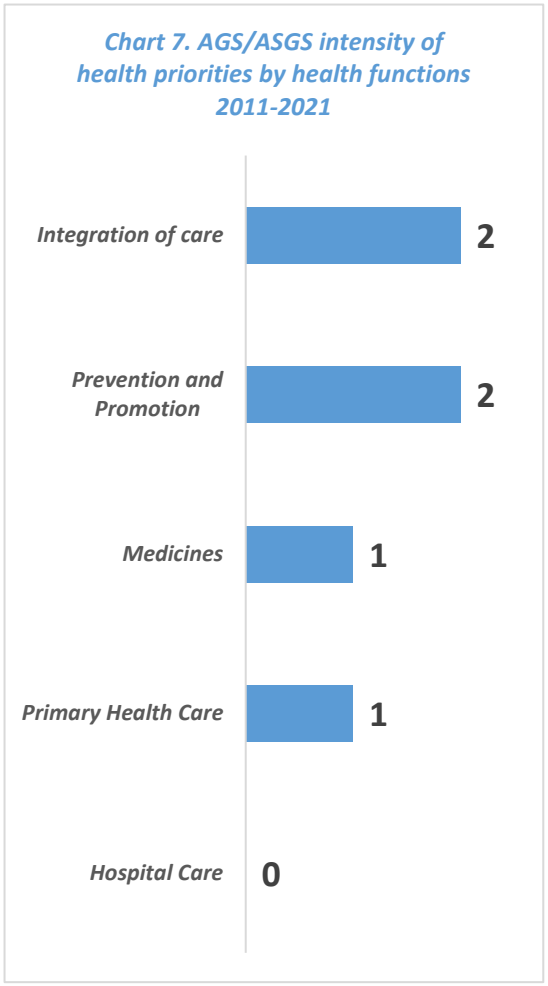


Chart 6.3. AGS/ASGS intensity of health priorities by resilience components 2011-2021



***Source**: Authors' own work. **Note**: The numbers in Charts 5.1 to 5.3 correspond to the intensity of the component: number of times it is flagged in the AGS/ASGS as a priority for structural reforms.*



	Production modes					
	Prevention and Promotion	Hospital Care	Primary Health Care	Integration of care	Medicines	
2011						0
2012						0
2013						0
2014						0
2015						0
2016	•		•	•	•	4
2017						0
2018						0
2019	•			•		2
2020						0
2021						0
	2	0	1	2	1	6

	Spillover effects					
	Foster Economic Growth Macroeconomic Stability	Competition and Competitiveness	Labour Market Participation	Productivity	Social Safety Nets Social Inclusion Equal opportunities	
2011						0
2012	•	•	•		•	4
2013						0
2014					•	1
2015						0
2016			•	•		2
2017	•	•	•		•	4
2018			•	•	•	3
2019					•	1
2020					•	1
2021	•			•	•	3
	3	2	4	3	7	19

Source: *Authors' own work.*

4.2. The CRs on Spanish priorities on health system structural reforms

In the process of the European Semester, the overarching objective to be achieved at the EU level is conditioned to each Member State in accordance with its specific circumstances. The European Commission issues, on a yearly basis, Country Reports for each Member State assessing the progress on structural reforms, and on the prevention and correction of fiscal and macroeconomic imbalances.

In Annex II, we present the priorities for the structural health reforms put forward by the successive Country Reports of Spain (CR_ES) since 2011, grouped by the overarching areas of policy priorities set for each year as shown in the first column.

We observe that the focus of the European Semester concerning health system structural reforms in Spain has an irregular intensity over the period 2011-2021, showing two maximum peaks in 2014 and 2021. It increased from 2011 to 2014 and from 2018 to 2021 (Chart 9).

Structural reform priorities along the period 2011 to 2021 mainly focus on strengthening the resilience of the health system, which has the highest intensity of priority (Chart 10). During this period, excluding 2011, addressing the resilience of the health system, be it as a whole or concerning any of its components, has been flagged every year as a challenge that requires attention. The components of the health system resilience have been highlighted as challenges 40 times out of 58. In percentage, resilience was related to 69% of the times that some of the components of the health system have been flagged as a structural challenge, a higher percentage than the EU average.

Within this area, the fiscal sustainability of the National Health System (NHS) has been the main concern, followed by the cost-effectiveness, its good governance (mainly public procurement and innovation), the information flows in the system (e-health/ digitalisation), and ensuring a health workforce of adequate capacity and with the right skills, all of them with the same intensity. The issue of an adequate costing of health services (HTA) is also relevant within the resilience challenge. Finally, the resilience of the NHS as a whole has been only flagged once, and no challenge has been identified regarding stable funding mechanisms and sound risk adjustment methods. This is

coherent with the nature of the Spanish NHS, which is publicly financed with general taxation and with universal population coverage and quasi-universal benefits coverage (Chart 10.3).

In summary, priorities for health system reforms in Spain, during the period 2011-2021, identified by the Commission Services focus on fiscal sustainability as a major risk to ensure the resilience of the NHS and point out to the need of addressing reforms concerning:

- Fiscal consolidation at all levels of government by developing a strong fiscal framework, ensuring transparency and accountability, and conducting spending reviews.
- Improve coordination between the different levels of government.
- Health technology assessment to promote effective medical interventions and prevent the use of those that are less effective or unnecessary.
- Streamline procedures pertaining to the pricing, selection and purchasing of medicines, including reference prices.
- Expand the use of generic medicines and biosimilars.
- Better control of pharmaceutical expenditure, particularly in hospitals.
- Strengthening the relative role of primary care provision
- Addressing the high share of avoidable hospital admissions.
- Integration, coordination and continuity of the different levels of healthcare services and care providers, including social care.
- Integrated clinical approaches to chronic conditions.
- Fostering health promotion and disease prevention, and tackling with the growing care needs associated with lifestyle risk factors and chronic conditions.
- Addressing the widespread use of part-time and temporary contracts and the decline in salaries.
- Incentive-improving changes in remuneration systems and career development of healthcare personnel, including incentives for mobility throughout the entire national health system.
- Introduction of clinical management where physicians have more responsibility for their budgets in health establishments.
- Investments to promote the digitalisation of the National Health Service, e.g. developing e-health solutions such as digital clinical records and electronic prescriptions; the use of big data and investments in personalised medicine.
- Sufficient research and innovation funding for health.
- Strengthening centralised e-procurement for health supplies.
- Eliminating unjustified restrictions for professional services in the health sector.
- Addressing co-payments.

The CR_ES focuses on accessibility 28% of the times, a higher percentage than the EU average. This might seem incoherent with previous statements on the nature of the Spanish NHS. However, it should be taken into account that the challenges needing structural reforms, though under the umbrella of the overarching priorities for the Union, are conditioned to the specific circumstances of each Member State. Indeed, the Commission Services acknowledge that "*The system continues to achieve good results in both outcomes and accessibility*" (Country Report of Spain in 2016) and "*Spain performs better than the EU average in providing access to childcare and to health care services*." (Country Report of Spain in 2019). However, in the specific context of Spain, the Commission Services identified some vulnerabilities that put at risk the accessibility in the NHS with a major focus on overall accessibility and availability (Chart 10.2).

These weaknesses are focused on vulnerable groups, affordability of dental care, waiting times and the availability of services, equipment and infrastructure in some regions: These are compounded with overall regional disparities in access to and quality of certain types of health care. More specifically:

- The need to maintain accessibility for undocumented immigrants (before 2018).
- The need to address the affordability of dental care, especially for the low-income population.
- The need to address the increase of waiting lists.
- The need to address regional disparities in access to health care, including those concerning depopulation.
- The need to address staff shortages, such as for nurses and general physicians in primary care, especially in some regions.
- The need to address a better territorial distribution of healthcare professionals.

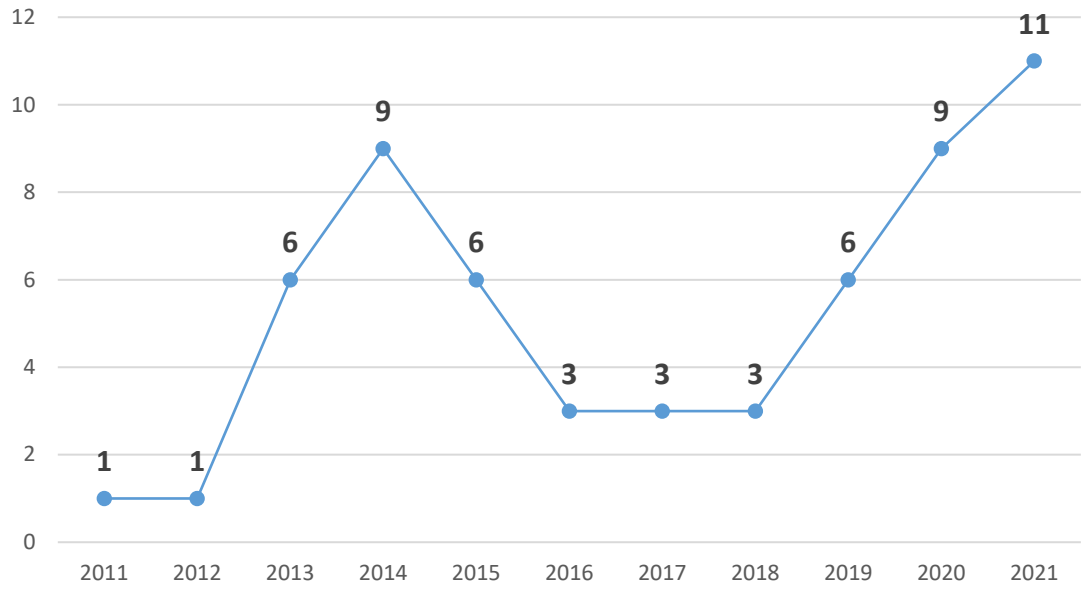
Finally, quality of care and outcomes records the lowest intensity, 3% of the times, far below the percentage for the EU as a whole, in accordance with the fact acknowledged in some Country Report that the Spanish NHS achieves good results in outcomes (Chart 10.3). Indeed, the two mentions to quality and outcomes as a health challenge in Spain are associated with regional disparities in quality and effectiveness of public services.

Improving social safety nets, social inclusion or equal opportunities has been related to or has been the ultimate goal of structural health reform priorities almost half of the times

spillover effects have been mentioned (Chart 12). The other half has been related to fostering economic growth and stability (increasing labour participation, productivity, and competition and competitiveness).

On a few occasions, health reform priorities have been linked to improving or streamlining some health service production modes (prevention and promotion, primary health care, integration of care and medicines). Chart 11.

Chart 9. Evolution of CR_ES intensity of health priorities 2011-2021



Core Area/Components		2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2011-2021
Health Care Quality and Outcomes	Health Care Quality and Outcomes											•	1
	Effectiveness									•			1
	Safeness												0
	Responsiveness												0
Accessibility	Accessibility				•	•		•	•	•	•	•	7
	Population Coverage											•	1
	Benefit Coverage				•							•	2
	Availability				•				•	•	•	•	5
	Affordability										•		1
Resilience	Resilience											•	1
	Fiscal Sustainability	•	•	•	•	•	•	•	•	•	•	•	11
	Cost-Effectiveness			•	•	•	•				•	•	6
	Stable Funding Mechanisms												0
	Sound Risk Adjustment Methods												0
	Good Governance (Public			•	•		•	•			•	•	6
	Information Flows in the System (e-health/			•	•	•				•	•	•	6
	Adequate Costing of Health Services			•	•	•					•		4
	A health workforce of adequate capacity and with the right skills			•	•	•				•	•	•	6
		1	1	6	9	6	3	3	3	6	9	11	58

***Source**: Authors' own work.*

Chart 10. CR_ES intensity of health priorities by area 2011-2021

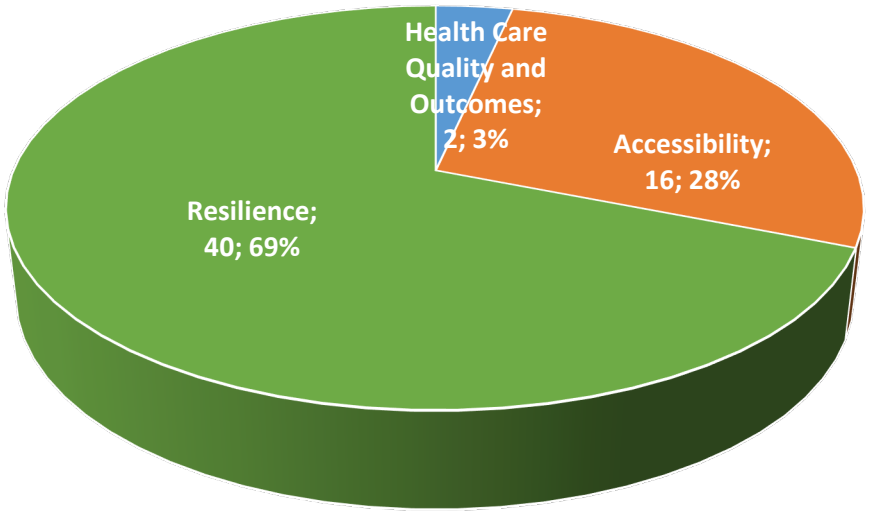


Chart 10.1. CR_ES intensity of health priorities by quality/outcomes components 2011-2021

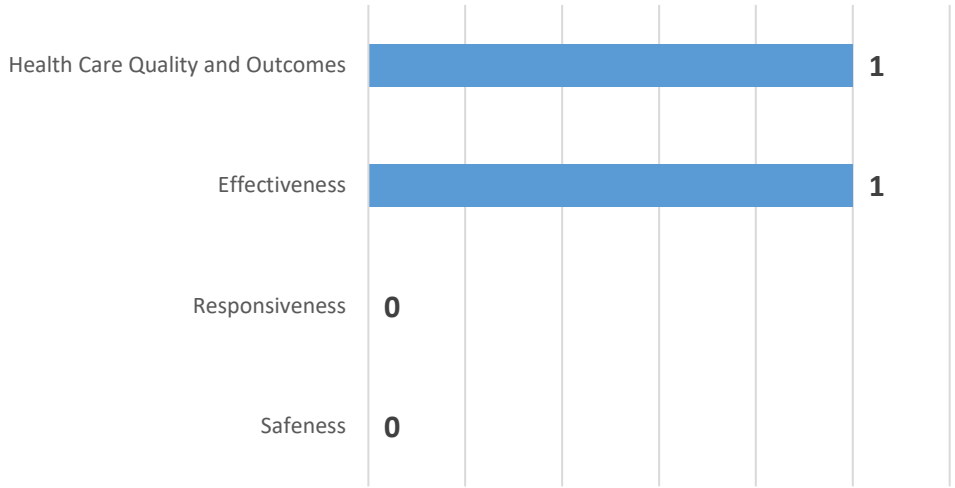


Chart 10.2. CR_ES intensity of health priorities by accessibility components 2011-2021

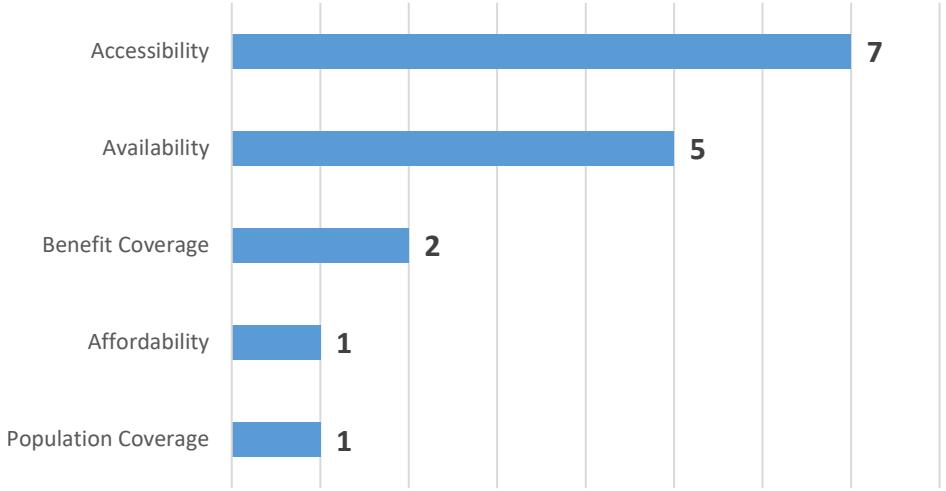
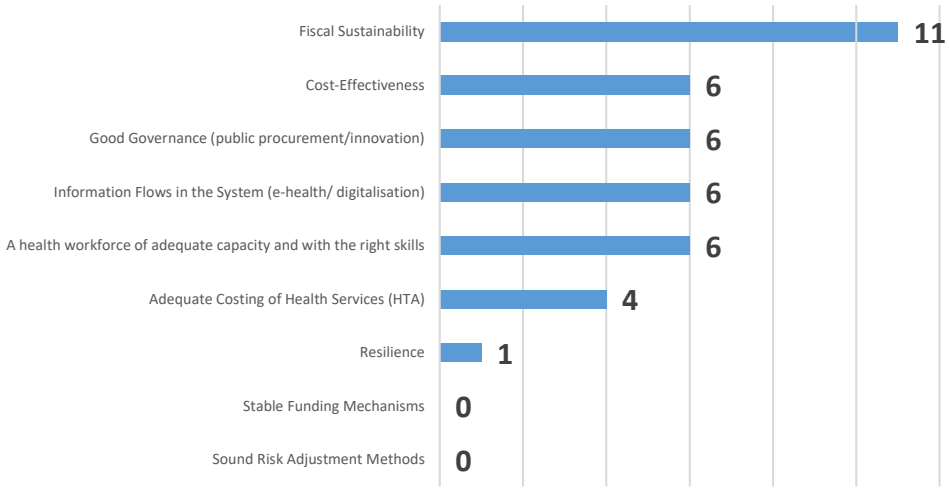
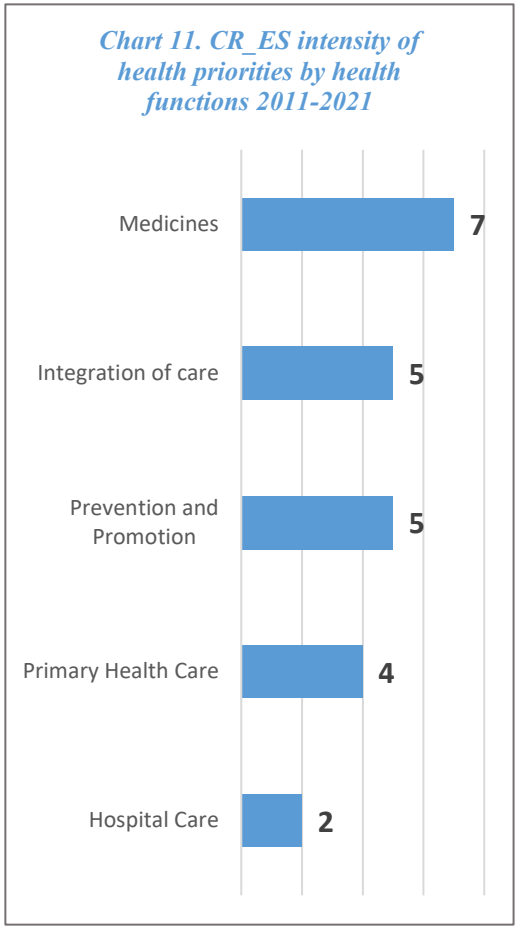


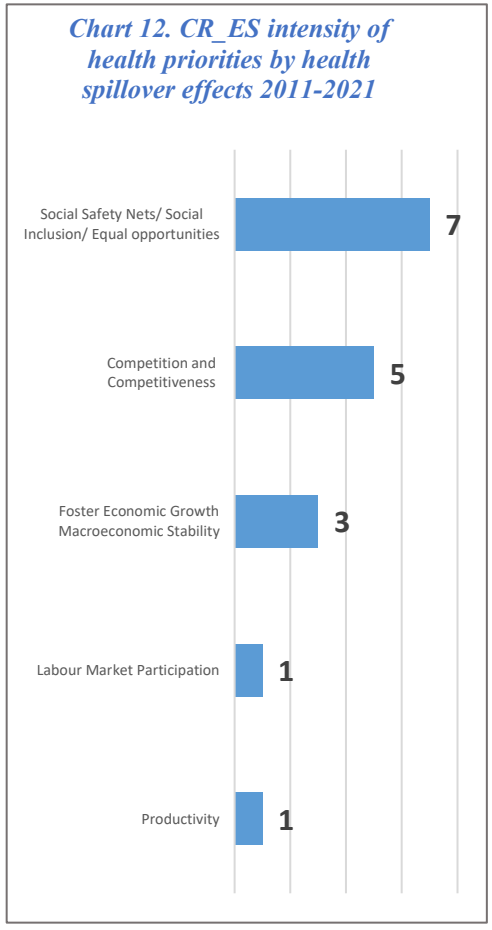
Chart 10.3. CR_ES intensity of health priorities by resilience components 2011-2021



***Source**: Authors' own work.*



	Production modes					
	Prevention and Promotion	Hospital Care	Primary Health Care	Integration of care	Medicines	
2011						0
2012						0
2013			•	•	•	3
2014				•	•	2
2015	•			•	•	3
2016	•				•	2
2017						0
2018						0
2019	•	•	•	•	•	5
2020	•		•		•	3
2021	•	•	•	•	•	5
	5	2	4	5	7	23



	Spillover effects					
	Foster Economic Growth Macroeconomic Stability	Competition and Competitiveness	Labour Market Participation	Productivity	Social Safety Nets Social Inclusion Equal opportunities	
2011	•	•				2
2012						0
2013						0
2014	•	•			•	3
2015		•	•		•	3
2016		•				1
2017					•	1
2018					•	1
2019				•	•	2
2020					•	1
2021	•	•			•	3
	3	5	1	1	7	17

***Source**: Authors' own work.*

4.3. The CSRs on Spanish priorities for health system structural reforms

Based on the country-specific analyses reflected in the CR_ES, the Commission has proposed, and the Council has adopted, Country Specific Recommendations for Spain (CSR_ES). The national government is supposed to implement these recommendations along the next 12-18 months. Where necessary, they have addressed challenges to the health system. Spain has received country-specific recommendations to address health reforms in 2013, 2014, 2015, 2020 and 2021 (fiscal recommendation). We present them in Annex III, including the recitals that motivate why the European Commission concluded that the flagged challenge merited priority attention.

Between 2011 and 2015, the focus of the CSR_ES concerning health system structural reforms has been improving the cost-effectiveness in the healthcare sector and pharmaceutical expenditure while maintaining accessibility for vulnerable groups by:

- In 2013:
  - Reducing hospital pharmaceutical spending.
  - Strengthening coordination across types of care.
  - Improving incentives for an efficient use of resources.

- In 2014:
  - Further rationalising pharmaceutical spending, including in hospitals.
  - Strengthening coordination across types of care.

In 2020 and 2021, the focus has moved to address the exceptional effects of the COVID-19 pandemic in order to prepare the necessary return to the normal functioning of our societies and economies, as well as to sustainable growth. The need for crisis preparedness plans in the health sector has come to the forefront, thus highlighting the urgency to "*strengthen the health system's resilience and capacity, as regards health workers, critical medical products and infrastructure*" (2020 CSR_ES). Spain, like all Member States, should pursue reforms that strengthen the coverage, adequacy, and sustainability of health and social protection systems for all, paying particular attention to the composition of public finances, both on the revenue and expenditure sides of the budget, and to the quality of budgetary measures, in order to ensure a sustainable and inclusive recovery. Priority should be given to "*fiscal structural reforms that will help provide financing for public policy priorities and contribute to the long-term sustainability of public finances, including by strengthening the coverage, adequacy, and sustainability of health and social protection systems for all"* (2021 fiscal CSR_ES).

Including the recitals of the CSR_ES, which provide valuable information on the grounds for the recommendations, we observe that the health system's resilience was the target 77% of the times that health system challenges in Spain were identified by the EC during the European Semester processes, most times focused on fiscal sustainability. The need to address reforms to improve the accessibility of the Spanish NHS account for 18% of the times; and issues related to health care quality and outcomes account for 5% (Charts 13 to 14). This is coherent with several stylised facts observed in the data provided by the EU in the Country Health Profile for Spain and the Ageing Report 2021 (EU (2017a); EU (2019a); (EU (2021a)):

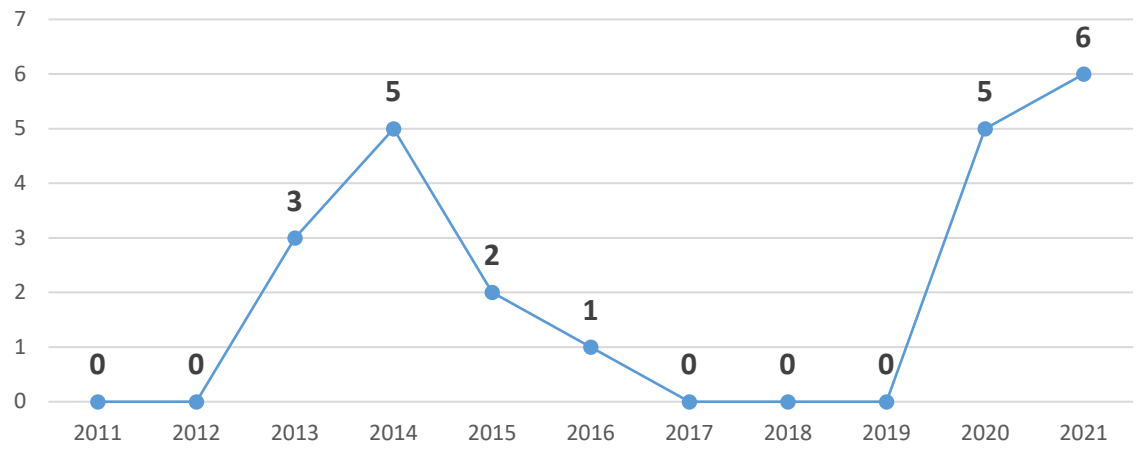
- ***Effectiveness:***
    - *"Amenable mortality in Spain remains one of the lowest in EU countries, indicating that the health care system is effective in treating people with life-threatening conditions."*
    - *"Spain has among the lowest mortality rates from preventable and treatable causes, pointing towards generally effective public health and health care interventions in avoiding premature mortality."*
- ***Accessibility:***
    - *"Access to health care in Spain is generally good. Nonetheless, waiting times remain a concern, and unmet needs have grown for pharmaceuticals and services less covered by public health insurance, such as dental care."*
    - *"All citizens in Spain are covered by statutory health insurance, but public coverage is lower for pharmaceuticals, and dental care is not covered. As a result, unmet needs for dental care are higher, particularly for people on low incomes. Waiting times for doctor consultations and elective surgery are persisting issues."*
- ***Resilience:***
    - *"A series of emergency measures were taken after the economic crisis to reduce public spending on health, but most of these measures did not involve structural changes in the health system. With a rapidly ageing population, one of the main challenges for the Spanish health system will be to achieve further efficiency gains in health and long-term care delivery."*

- *"Budgetary pressures to respond to growing needs for health and long-term care will increase in the years ahead owing to population ageing. Some progress has been achieved in promoting greater care coordination for people with chronic conditions, but there is growing recognition by all stakeholders that strengthening primary care should be a key priority*."
- *"Following the economic crisis, health spending decreased for several years, but started to increase again from 2015. In 2017, Spain allocated 8.9 % of its GDP to health spending, a lower proportion than the EU average of 9.8 %. Budgetary pressures in the coming decades are expected to arise from growing needs for health care and long-term care due to population ageing*."
- Health care spending as a percentage of GDP, according to the AWG reference scenario provided by the EU in the Ageing Report 2021, will change 1.3 pp between 2019 and 2070, 0.4 pp more than the EU average.

In the process of the European Semester, at the EU level the emphasis is on the overarching objective to be achieved, while the definition of the measures needed to attain it is largely left to the discretion of national authorities. The Commission's evaluation concerning the CSR_ES indicates that the progress made in implementing the health CSRs of the Council Recommendations for Spain is limited or some progress.[36]

[36] The Commission's evaluation is published in the subsequent CRs. According to the CR_ES of 2015: "*The following categories are used to assess progress in implementing the 2014 CSRs of the Council Recommendation: No progress: The Member State has neither announced nor adopted any measures to address the CSR. This category also applies if a Member State has commissioned a study group to evaluate possible measures. Limited progress: The Member State has announced some measures to address the CSR, but these measures appear insufficient and/or their adoption/implementation is at risk. Some progress: The Member State has announced or adopted measures to address the CSR. These measures are promising, but not all of them have been implemented yet and implementation is not certain in all cases. Substantial progress: The Member State has adopted measures, most of which have been implemented. These measures go a long way in addressing the CSR. Fully addressed: The Member State has adopted and implemented measures that address the CSR appropriately*."

Chart 13. Evolution of CSR&Recitals_ES intensity of health priorities 2011-2021



Core Area/Components		2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2011-2021
Health Care Quality and Outcomes	Health Care Quality and Outcomes											●	1
	Effectiveness												0
	Safeness												0
	Responsiveness												0
Accessibility	Accessibility			●	●								2
	Population Coverage											●	1
	Benefit Coverage				●								1
	Availability												0
	Affordability												0
Resilience	Resilience										●	●	2
	Fiscal Sustainability					●	●				●	●	4
	Cost-Effectiveness			●	●	●							3
	Stable Funding Mechanisms												0
	Sound Risk Adjustment Methods												0
	Good Governance (Public procurement/Innovation)				●						●	●	3
	Information Flows in the System (e-health/ digitalisation)				●						●	●	3
	Adequate Costing of Health Services (HTA)			●									1
	A health workforce of adequate capacity and with the right skills										●		1
		0	0	3	5	2	1	0	0	0	5	6	22

***Source**: Authors' own work.*

Chart 14. CSR_ES intensity of health priorities by area 2011-2021

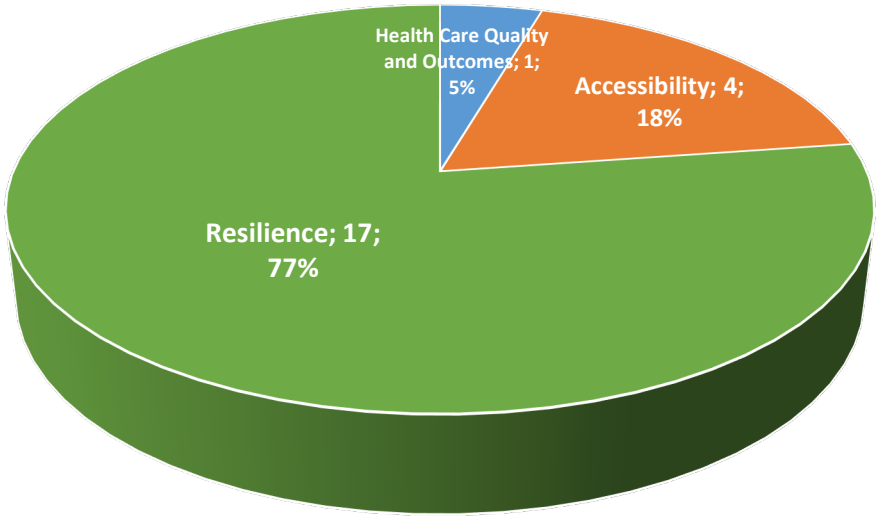


Chart 14.1. CSR_ES intensity of health priorities by quality/outcomes components 2011-2021

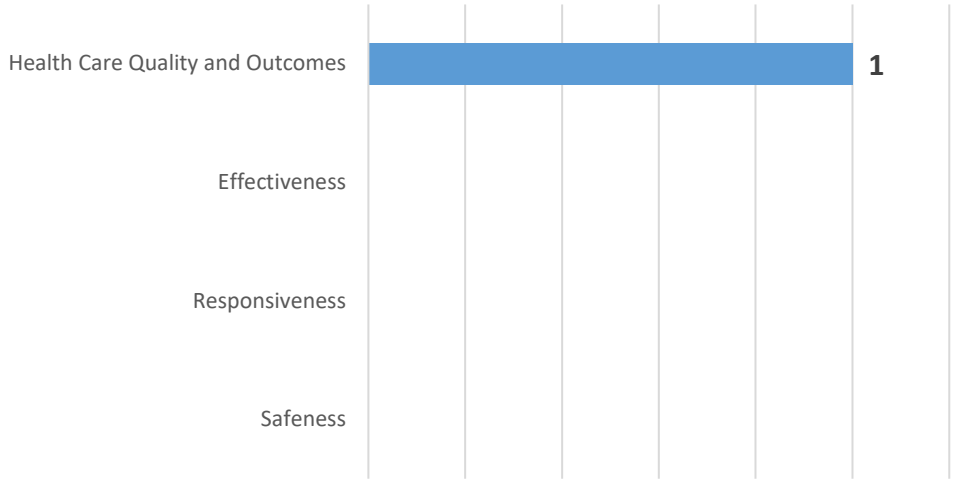


Chart 14.2. CSR_ES intensity of health priorities by accessibility components 2011-2021

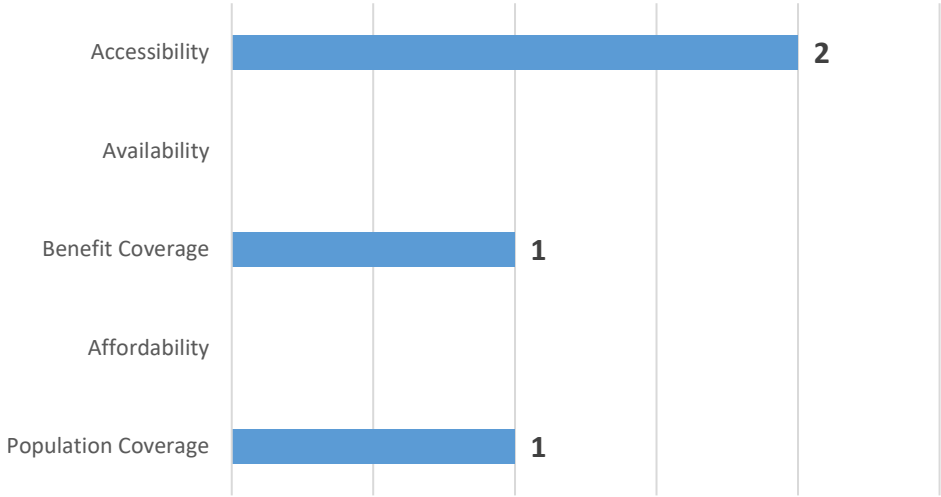
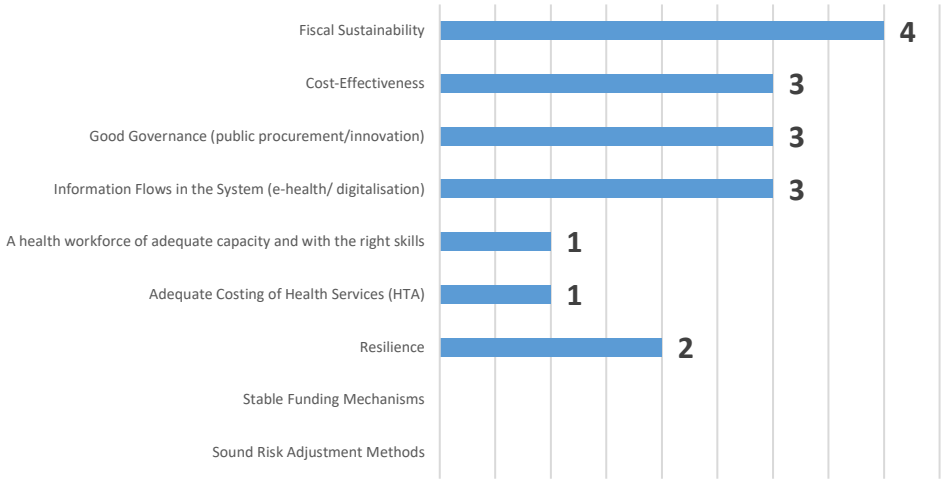


Chart 14.3. CSR_ES intensity of health priorities by resilience components 2011-2021



***Source**: Authors' own work.*

5. Health expenditure sustainability in Spain

In our view, in the near future, the pressing need for NHS structural reforms will focus on fiscal sustainability. Indeed, the outlook derived from the European Semester analyses for Spain between 2011 and 2021 depicts a health system that is adequately effective and accessible, for which the main focus of the structural challenges lies on its resilience and, more specifically, on its fiscal sustainability.[37]

Recent measures adopted by the national government address the European Semester country-specific recommendations to Spain from 2011 to 2021 regarding accessibility and effectiveness. These measures are the full universalisation of healthcare in 2018,[38] the improvement of the coverage and quality of some benefits funded by the NHS,[39] and the extension of the pharmaceutical co-payment exemptions, in 2019.[40] They will eventually reinforce the accessibility and effectiveness of the NHS.

On the other hand, the successive Ageing Reports (AR) from the EPC's AWG published by the Commission from 2001 to 2021 have shown that the sustainability indicator for Spain's public spending in health[41] has been typically above the EU average, showing that the sustainability challenge has been typically more pressing in Spain than in the EU as a whole, especially the AR 2021. Although, at the end of the analysed periods, Spain has been normally below the EU in terms of health expenditure as a percentage of GDP, meaning that the country had some additional manoeuvre time to bring the NHS to a fiscal stability path, at least until the pandemic shock.

Currently, after having increased exceptionally the public expenditure in health to tackle the shock of the pandemic (we estimate that in 2020 public expenditure in acute health

[37] We note that this does not mean that the resilience of the Spanish NHS ranks low among EU Member States. The country-specific analyses of the European Semester are just that, country-specific, highlighting the most pressing challenges in the context of each Member State.
[38] Including all persons with Spanish nationality and foreign people who have established their residence in Spanish territory. Royal Decree-Law 7/2018, of July 27, on universal access to the National Health System.
[39] Order SCB / 480/2019, of April 26, updates the common portfolio of health services concerning population screening for cervical cancer; the eye reader; micropigmentation of the mammary areola and nipple as part of breast reconstruction; and the extension of the financing age of hearing aids. Order SCB / 45/2019, of January 22, updates the portfolio of ortho-prosthetic services, including quality guarantees, in order to facilitate a more adequate service adjusted to the needs of each user. Although addressing oral health is still pending, there is an initiative in the Parliament, approved by the Health Commission on 3 February 2021, urging the Government to develop an Oral Health Plan to progressively increase the coverage and benefits of oral care in the common portfolio of services of the National Health System, so as to guarantee equitable access to these benefits. Congreso de los Diputados (15/11/2021a); Congreso de los Diputados (15/11/2021b).
[40] Please refer to Law 11/2020, of December 30, on general budgets of the State for the year 2021: https://www.boe.es/buscar/pdf/2020/BOE-A-2020-17339-consolidado.pdf
[41] Change in pp of health expenditure as a percentage of GDP over the projection period, i.e in the long-term. Please refer to EU (2001b), EU (2003), EU (2006), EU (2008), EU (2009), EU (2011), EU (2012), EU (2014d), EU (2015), EU (2017b), EU (2018), EU (2020e), EU (2021a).

services amounted to 83,990 million Euros in current prices, 7.49% of GDP), it is of utmost relevance to assess its impact on the fiscal sustainability of the NHS. Thus, shedding some light on the extent to which Spain needs to accelerate NHS structural reforms to comply with most recent CSRs and therefore be in a favourable position to obtain the Next Generation EU funds.[42] Considering that the EU recovery funds is oriented to help Member States implement reforms and investments that are in line with the EU's priorities and that address the challenges identified in country-specific recommendations under the European Semester framework of economic and social policy coordination.

Regarding how NHS structural reforms could be prioritised, it seems reasonable to focus primarily on the recommendations from the most recent European Semester analyses that we would outline in two elements:

1. Strengthen the health system's resilience and capacity, as regards health workers, critical medical products and infrastructure.
2. Strengthen the coverage, adequacy, and sustainability of the NHS at the same time that the country pays particular attention to the composition of public finances and the quality of budgetary measures.

The three crucial elements of the NHS highlighted in the 2020 CSR, namely its workforce, critical medical products and infrastructure, have seen their existing structural challenges stressed with the outbreak of the COVID-19 pandemic. We list them below as described by the European Semester processes from 2011 to 2021:

- Concerning the **health workforce**, shortcomings and inefficiencies in the recruitment and working conditions of health workers are compounded with regional disparities in terms of staff and difficulties regarding the coordination between different levels of government. Temporary contracts are widespread in Spain including in sectors with less marked seasonality such as health. In addition, the share

[42] According to the European Commission guidelines for Member States on Recovery and Resilience Plans, "Member States should provide a detailed explanation of how the challenges identified in the country-specific recommendations, in particular the 2019 and 2020 Semester cycles, are addressed by the proposed measures. They should also explain how the plans are consistent with the challenges identified in the most recent Council recommendation on the economic policy of the euro area for Member States whose currency is the euro." "Member States should look at the full set of country-specific recommendations addressed to them by the Council, in particular under the 2019 and 2020 Semester cycles. Unless the Commission has assessed the progress with these recommendations as 'substantial progress' or 'full implementation', all country-specific recommendations are considered to be relevant." EU (2021b); EU (2021c).

of public employees on temporary contracts has shown a steady increase despite the commitment to reduce it.[43] Please refer to Annex IV.

- Concerning **medical products**, inefficiencies in the purchase and use of pharmacy-dispensed medicines, which follow several years of the EU flagging the need to reform the public procurement system, including in the health sector. Despite the action taken, e-procurement take-up is low and the dispersion of the e-procurement platforms used by contracting authorities at the regional level increases companies' compliance costs, all while often finding a lack of competition between tenderers. In addition, the use of generic medicines remains below the EU average and has not increased since 2014. After several years of the EU flagging the challenge of pharmaceuticals spending in hospitals, it continues to rise and spending levels present considerable regional disparities. Please refer to Annex V.
- Concerning **infrastructure**, shortfalls in investment in physical infrastructures with regional disparities. There is a need to invest in high-technology equipment and in fostering the digitalisation of the health system. Please refer to Annex VI.

In the Spanish NHS, these three crucial elements cover 71% of public expenditure in health. Thus, although focusing on them does not exhaust the fields where reform action would be required in the NHS, structural reforms of the health workforce, medical products and infrastructure constitute a good lever to facilitate fiscal consolidation. One-off investments addressing critical medical products and infrastructure, e.g. through EU Recovery funds, could be expected to have a positive impact on the resilience of the NHS and, ultimately, in its long-term sustainability. On the other hand, addressing the shortcomings and inefficiencies in the recruitment and working conditions of health workers would need to strike a balance between the recruitment policy objectives to cover the needs of health workforce and fiscal consolidation objectives. However, should the NHS require additional resources, fiscal consolidation action could shift attention to the composition of public finances and the quality of budgetary measures.

In this point, intending to facilitate the decision making-process, we calculate the selected health spending sustainability indicator, namely the change of public expenditure in

[43] Nonetheless, in April 2021, the Recovery, Transformation and Resilience Plan of Spain foresaw, in its component 18, the reinforcement of professional capacities and reduction of temporary employment. More recently, in July 2021, the government adopted the Royal Decree-Law 14/2021, of July 6, on urgent measures for the reduction of temporary employment in public employment.

health as a percentage of GDP over the period 2019-2069, including the effect of the additional resources allocated to the Spanish NHS to address the pandemic. To this end, we proceed as follows:

1. We calculate the projections of health spending with base year 2019 excluding the effect of the pandemic. To this end, we use the AWG methodology[44]. The base year corresponds to the latest one with available data from the Spanish public spending in health statistics, both EGSP (national health satellite accounts), COFOG and SHA.

2. We estimate the additional resources approved until now that have been or will be allocated to the health system to address the pandemic and its aftermaths during 2020-2026. They have been or will be funded by the Spanish government (e.g. COVID fund in 2020)[45] and by the European Next Generation EU[46] funds (Recovery and Resilience Facility-RRF[47] and REACT-EU[48]).

3. We calculate the resources required by the NHS for the additional health workforce hired to tackle the pandemic and propose different scenarios on how they will exit or remain in the NHS.

[44] This projection model has been applied to Spain by Blanco et al. (2011) and Blanco et al. (2013). Please refer to EU (2001b), EU (2003), EU (2006), EU (2008), EU (2009), EU (2011), EU (2012), EU (2014d), EU (2015), EU (2017b), EU (2018), EU (2020e), EU (2021a).

[45] Royal Decree-Law 22/2020 creates the COVID-19 fund endowed with an extraordinary credit of 16,000 million euros, which is set up as an exceptional budget fund, non-reimbursable, whose purpose is to provide additional financing through transfers to the Regions, to address the budgetary impact derived from COVID-19 crisis. The COVID-19 Fund is made up of four tranches. Two of them earmarked to health (tranches 1 and 2) approved respectively by Order HAC / 667/2020, of July 17, with an endowment of 6,000 million euros, and by Order HAC / 809/2020, of September 1, endowed with 2,000 million euros. The educational section has been approved by Order HAC / 809/2020, of September 1, endowed with 2,000 million euros. Finally, the fourth tranche has been approved by Order HAC / 1097/2020, of 24 of November, endowed with 5,000 million euros to compensate for the reduction in regional resources due to the downturn in economic activity.

[46] The Council Regulation (EU) 2020/2094 of 14 December 2020 establishing a European Union Recovery Instrument to support the recovery in the aftermath of the COVID-19 crisis (https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32020R2094&from=EN); the European Council on 21 July 2020 (EUCO) approved the particular actions to take and goals to reach (https://www.consilium.europa.eu/media/45109/210720-euco-final-conclusions-en.pdf); the Regulation (EU) 2021/241 of the European Parliament and of the Council of 12 February 2021 established the Recovery and Resilience Facility (https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32021R0241&from=EN).

[47] On 13 July 2021, the Council of the European Union (ECOFIN) adopted the Council implementing decision on the approval of the assessment of the recovery and resilience plan for Spain, following a positive assessment from the Commission of the Spanish Recovery and Resilience Plan received by the Council in June 2021 (https://www.consilium.europa.eu/en/press/press-releases/2021/07/13/council-gives-green-light-to-first-recovery-disbursements/ and https://www.consilium.europa.eu/media/51497/st10756-en21_v4.pdf). The Union shall make available to Spain a financial contribution in the form of non-repayable support amounting to EUR 69,512,589,611.14. An amount of EUR 46,592,869,727 shall be available to be legally committed by 31 December 2022. Subject to the update provided for in Article 11(2) of Regulation (EU) 2021/241 calculating an amount for Spain equal to or more than this amount, a further amount of EUR 22,919,719,884 shall be available to be legally committed from 1 January 2023 until 31 December 2023 (https://eur-lex.europa.eu/resource.html?uri=cellar:4f067743-ceb8-11eb-ac72-01aa75ed71a1.0001.02/DOC_1&format=PDF). We have not account for the rest of the RRF resources (up to a total of 140 billion Euros in the period 2021-2026) which will be in the form of loans that Spain is yet to request – it has until 2026 to do so (https://www.lamoncloa.gob.es/lang/en/gobierno/councilministers/Paginas/2020/20200721council.aspx).

[48] The REACT-EU fund is part of a broader European aid package approved by the European Commission in July 2020, called Next Generation EU. The REACT-EU has an allocation of about 12,436 million euros for Spain, 10,000 of them distributed among the Regions, 8,000 in 2021 and 2,000 in 2022. The remaining 2,436 million will be managed by the Ministry of Health mainly for the purchase of vaccines. The REACT-EU initiative is planned to help the Regions to strengthen the Welfare State, protect public services and reactivate the economy after the impact of the pandemic caused by COVID-19.

4. We integrate all the previous estimates.

5.1. Health spending projections with base year 2019 excluding the effect of the pandemic at the national and regional levels

We use the AWG methodology designed for the analysis of the long-term economic and budgetary impact of the ageing of the European population, which allows for comparative analyses. This means that we focus on acute health care expenditure[49] in consonance with the adopted methodology, where spending on long-term care (health and social) is projected separately. Therefore, the target health expenditure for the projections is NHS' or alternatively the Regional Health Services' (RHS) total health expenditure excluding long-term care.

Our base year is 2019. Thus, we start with the health expenditure profiles by age and sex that we present in Annex VII. The projection period is 2019-2069[50] for the national level and 2019-2034 for the regional one. Each year of the projection period, public expenditure in health results from adding the health expenditure corresponding to the population of all age and sex groups. For each age and sex group, we calculate their health expenditure by multiplying the number of people in the group by its per capita health expenditure in the base year, which is kept constant or progressively shifted in direct proportion to the projected gains in the age and sex-specific life expectancy embedded in the baseline population projection.[51] The result is finally multiplied by the increase of the per capita GDP, which is adjusted, where appropriate, by the elasticity according to the selected hypotheses.[52]

[49] The definition used for "acute care" rely on the WHO criteria and look for coherence with the concepts of System of Health Accounts (SHA) Manual (OECD, 2000 and 2011). The WHO refers to acute medical care as that which emphasizes the unique attribute of time pressure. Therefore, acute care includes all actions of promotion, prevention, cure, rehabilitation or palliative, whether they are aimed at individuals or populations, whose main objective is to improve health and whose effectiveness depends largely on intervention sensitive to time and often fast (https://www.who.int/bulletin/volumes/91/5/12-112664/en/). Thus, the definition we use for 'acute care' includes health care whose purpose is curative and rehabilitative but not long-term care. We operationalise this definition by including all the health care functions in the following SHA categories:

i) *Curative and rehabilitative care* (**HC.1-HC.2**);
ii) *Ancillary services* (non-specified by function) (**HC.4**);
iii) *Medical goods* (non-specified by function) (**HC.5**); and
iv) *Preventive care, Governance and health system financing and administration, and others* (**HC.6-HC.**9).

[50] This is conditioned by the demographic scenario that we use, the one by the Spanish INE, which provides life expectance by age and sex until 2069. We can only analyse the period 2019-2070 when we focus on the constant health or pure demographic scenario, where health expenditure profiles remain constant independently of the evolution of life expectancy.

[51] We use the demographic projections of the Spanish INE that at the national level cover the period 2019-2069 and at the regional one 2019-2034. Life expectancy evolves according to the embedded assumptions of each one. We notice that the demographic scenario used by the AWG is the one by Eurostat, which is the same as the one by the Spanish National Statistical Office (INE) at the national level with the exception that Eurostat provides data at 1 July and INE at 1 January. Please note that, currently, we have no life expectancy projections to measure the impact on health expenditure of the effect of the pandemic on mortality. Thus, in this regard, the most unfavourable scenario is that of "constant health:" the health expenditure profiles remain constant throughout the projection period.

[52] We use the macroeconomic projections of the AWG. We use the rates of growth of GDP at the national level for the projections at the regional one, thus capturing only regional differences due to the demographic effect: population ageing.

We have chosen for our reference scenario the same parameters as those of the AWG reference scenario:

i) The proportion of the projected gains in the age and sex-specific life expectancy used to shift the profiles is set to 0.5; i.e. the 2019 profiles shift by half the change in age-specific life expectancy, meaning that half of the years gained in life expectancy are lived in good health (compression of morbidity).

ii) The income elasticity of health spending is set to 1.1 in 2019 converging to 1 by 2070.

iii) The macro-economic scenario is that of the AWG as of 2021 and the demographic one is that of the National Statistical Office, both at the national and regional levels.[53]

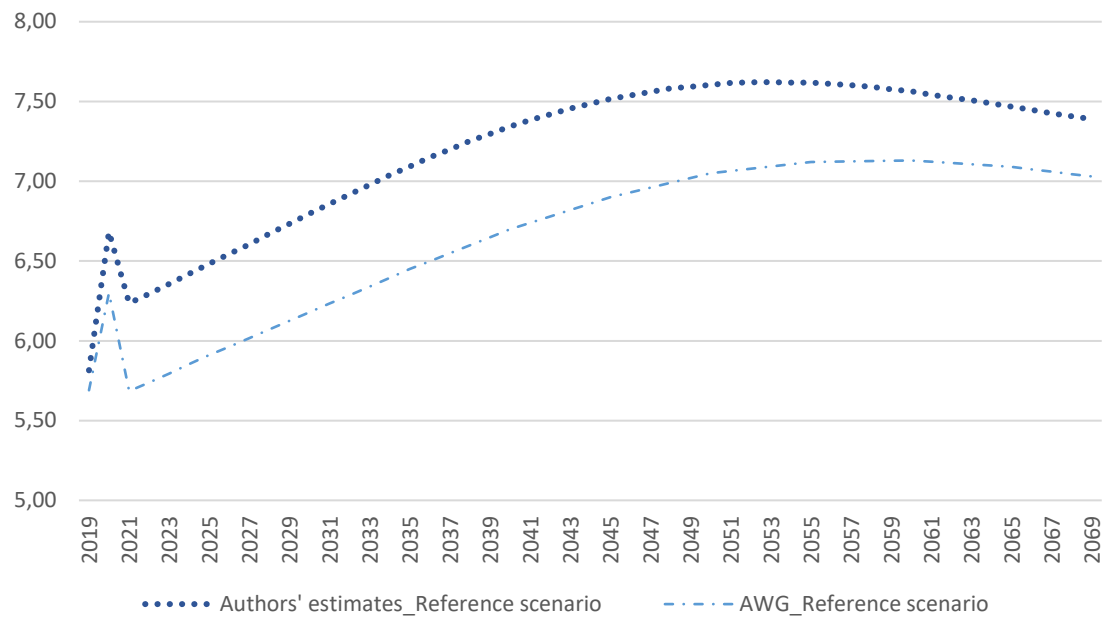
In addition, we have considered scenarios where we keep the age and sex profiles constant as in 2019 (constant health scenarios). We have also included alternative hypotheses for the elasticity: 1 throughout the projection period and 0.9671[54] in 2019 converging to 1 by 2070. We provide the data for these scenarios in Annex VIII. We observe that improving the health status and moving to an elasticity assumption below 1, according to recent estimates by Blanco, A. (2021), improves significantly the sustainability indicator.

Focusing on the reference scenario, we estimate that over the period 2019-2069 the change in pp of public expenditure in health over the GDP is 1.57 pp This differ from the estimated by the AR 2021 over the period 2019-2070, which is 1.33 pp, for the following reasons (Table 1 and Chart 15):

- First, because we have used the data currently published for the SHA and the COFOG by Eurostat referred to 2019 to quantify acute health spending.[55] Therefore, the current estimate for the share of public expenditure in acute health care over the GDP is 5.81%, instead of 5.69% as in the AR 2021.
- In 2020 and 2021, further from the needed health benefits for the COVID-19, we have maintained the average real benefit per person constant as in 2019.
- We have used the INE's population projections instead of that of Eurostat.[56]

[53] As said, the demographic scenario used by the AWG is the one by Eurostat, which is the same as the one by the Spanish National Statistical Office (INE) with the exception that Eurostat provides data at 1 July and INE at 1 January.
[54] In Spain, during the period 2003-2017, the income elasticity of public spending in health is estimated as 0.9671. Blanco, A. (2021). This scenario, lift some pressure from the fiscal sustainability.
[55] https://ec.europa.eu/eurostat/web/health/data/database; https://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=gov_10a_exp&lang=en.
[56] The differences of population in absolute value range from 0.02% to 7.53% across the projection period (2014-2070).

Chart 15. Projections of public expenditure in health. Reference scenario. Percentage of GDP



Source: Authors' own work.

Promemoria:

Projected public spending in health 2019-2069 excluding COVID-19 effect. Percentage of GDP

	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2069
Authors' estimates_Reference scenario	5.81	6.48	6.80	7.09	7.34	7.52	7.60	7.62	7.56	7.47	7.39
AWG_Reference scenario**	5.69	5.91	6.18	6.45	6.70	6.90	7.05	7.12	7.13	7.09	7.03*

* 2070. ** To build the chart on a yearly basis we have used the information published by the EC (https://ec.europa.eu/info/sites/default/files/economy-finance/new_cross_country_tables_ar2021_0.xlsx) and the macroeconomic scenario.

Table 1. Health expenditure sustainability indicator over the periods 2019-2069 and 2019-2030. Reference scenario

	Health expenditure as a percentage of GDP in 2019 (%)	*Authors' estimates*		*AWG's estimates*	
		Change 2019-2069 (pp)	*Change 2019-2030 (pp)*	*Change 2019-2070 (pp)*	*Change 2019-1930 (pp)*
Spain	**5.81(*)**	**1.57**	**0.98**	**1.33**	**0.48**
Andalucía	6.25		1.15		
Aragón	5.68		0.81		
Asturias	7.33		1.31		
Baleares	5.12		0.84		
Canarias	6.81		1.42		
Cantabria	6.46		1.26		
Castilla y León	6.46		1.09		
Castilla-La Mancha	6.96		1.23		
Cataluña	4.74		0.73		
Valencia	6.20		1.08		
Extremadura	8.42		1.48		
Galicia	6.35		1.00		
Madrid	3.63		0.59		
Murcia	7.42		1.24		
Navarra	5.14		0.84		
País Vasco	5.34		0.89		
La Rioja	5.29		0.88		

Source: Authors' own work based on Annex VII. Table 1 to Annex VII. Table 3. INE's population projections. AWG macroeconomic projections.

(*) The starting point of the AWG projections in the AR 2021 was 5.69.

The change over the period 2019-2030 at the national level is 0.98 pp, while the AWG estimates 0.48 pp. At the regional level, most pressing sustainability challenges arise in Extremadura, Canarias, Asturias, Cantabria, Murcia, and Castilla-La Mancha, while Baleares, Navarra, Aragón, Cataluña and Madrid present the lowest values of the health expenditure sustainability indicator. Please note that regional differences only capture the demographic effect: population ageing.

5.2. Additional resources approved until now that have been or will be allocated to the NHS to address the pandemic and its aftermath during 2020-2026

The unprecedented health, economic and social emergency caused by the coronavirus pandemic lead the Spanish government to create the COVID-19 Fund in 2020. Royal Decree-Law 22/2020, of June 16, established an exceptional budget fund, non-reimbursable, whose purpose was to provide additional resources for the regions to face the budgetary impact derived from the crisis caused by the COVID-19. On the ground of the role that the Spanish regions play in the provision of fundamental public services such as education, social services and, especially at the moment, health, which is facing an increase in the demand for care caused by the pandemic, the regions received 9,000 million Euros in 2020 for healthcare services.[57]

In the same vein, the European Union established in 2020 an instrument to support the recovery in the aftermath of the COVID-19 crisis, the Recovery Instrument, with a budget allocation of up to 750 billion Euros in 2018 prices, of which 390 billion Euros will be distributed in the form of grants to the Member States and 360 billion Euros in loans.

Concerning Spain, the funds approved to date that would potentially include provisions for health care services when materialised are the following (Table 2):

[57] Please refer to: https://www.hacienda.gob.es/es-ES/CDI/Paginas/SistemasFinanciacionDeuda/InformacionCCAAs/Fondo_COVID.aspx. In addition, the government of Spain approved on August 3 an extraordinary fund of 13,486 million euros for the regions in order to provide them with greater financing in 2021 to cushion the effects of the COVID-19 crisis on regional finances. Transfers made against this endowment will not be conditional, thus we will capture health spending in 2021 through the projected dynamic of health expenditure.

Table 2. Recovery Fund Next Generation EU – SPAIN Million Euros. Current prices

Total approved disbursements	**82,681.6**
Repayable loans	
Recovery and Resilience Facility (RRF)	*
Non-repayable financial support-grants	**82,681.6**
Recovery and Resilience Facility (RRF)	*69,513*
REACT-EU	*13,169.0*
Others	**

Source: Authors' own work based on:
Eur-Lex:
https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32021R0241&from=EN.
https://eur-lex.europa.eu/resource.html?uri=cellar:4f067743-ceb8-11eb-ac72-01aa75ed71a1.0001.02/DOC_1&format=PDF.
https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32020R2221&from=EN
Spanish Government Presidency:
https://www.lamoncloa.gob.es/temas/fondos-recuperacion/Documents/30042021-Plan_Recuperacion_%20Transformacion_%20Resiliencia.pdf.
https://www.lamoncloa.gob.es/presidente/actividades/Documents/2020/07102020_PreguntasRespuestasPR.pdf.
Ministry of Finance of Spain:
https://www.sepg.pap.hacienda.gob.es/Presup/PGE2021Ley/MaestroDocumentos/PGE-ROM/doc/3/1/3/1/N_21_E_A_1_2_1_2.PDF.
https://www.sepg.pap.hacienda.gob.es/Presup/PGE2022Proyecto/MaestroDocumentos/PGE-ROM/doc/3/1/3/1/N_22_A_A_1_2_1_2.PDF
* The Presidency of the Spanish Government stated in the Recovery, Transformation and Resilience Plan of Spain of April 2021 that Spain plans to request loans for up to 70,000 million euros.
** There are some resources allocated through other funds that we have not included because they do not envisage direct actions on health.
Notes:
On RRF resources:
The disbursement of these amounts will be made over 6 years, until the end of 2026. MRR resources, a medium and long-term instrument, should be used to finance reforms and investments. The term for execution will be a maximum of 4 years in the case of reforms and six in the area of investments.
A total 70% of the non-refundable transfers granted by the RRF must be committed by the European Commission in 2021 and 2022. The remaining 30% will be fully committed by the end of 2023 and may be executed until 2026.
The part corresponding to repayable loans must be repaid before 31 December 2058.
On REACT-EU resources:
An instrument in the short and medium-term, which must be executed in two years, 2021-2022. The REACT-EU funds are regulated by the general rules applicable to the European Structural and Investment Funds, in accordance with the provisions of the regulations in force in the 2014-2020 period and by its own regulation (see above). The programs receiving REACT-EU funds are the ERDF (European Regional Development Fund), ESF (European Social Fund), FEAD (European Aid Fund for the Most Underprivileged) and IEJ (Youth Employment Initiative).

Out of these funds, we have calculated that the amounts listed in Table 3 will be allocated for health care services in the period 2020-2026.

Table 3. Recovery Fund Next Generation EU – Spain. Health endowments *Million Euros. Current prices*

TOOL	Concept	Endowment Million € (current prices)	Year	Earmarked to health (%)	Health Allocations Million € (current prices)	Expenditure Execution Year	Expenditure Execution by Year Million € (current prices)
COVID	1st Tranche	6,000	2020	100%	6,000	2020	6,000
COVID	2nd Tranche	3,000	2020	100%	3,000	2020	3,000
COVID	3rd Tranche	2,000	2020	0%	-		-
COVID	4th Tranche	5,000	2020	0%	-		-
RRF	PGE21 (*)	24,198	2021	2.10%	509	2021	85
RRF						2022	85
RRF						2023	85
RRF						2024	85
RRF						2025	85
RRF						2026	85
RRF	PGE22 (*)	26,900	2022	2.23%	600	2022	120
RRF						2023	120
RRF						2024	120
RRF						2025	120
RRF						2026	120
RRF	PGE23 (*)	22,920	2023	2.10%		2023	121
RRF						2024	121
RRF						2025	121
RRF						2026	121
REACT-EU	PGE21 (*)	2,436	2021	100%	2,436	2021	2,436
REACT-EU	PGE22 (*)	733	2022	100%	733	2022	733
REACT-EU		8,000	2021	31.09% (**)	2,487	2021	2,487
REACT-EU		2,000	2022	31.09% (**)	622	2022	622

Source: Authors' own work based on:
(*) State's general budgets (PGE) for 2021, 2022 (project) and 2023 (forthcoming). Economic and financial report. The European Recovery Funds in the Budgets for 2022: Next Generation EU.
For 2021: https://www.sepg.pap.hacienda.gob.es/Presup/PGE2021Ley/MaestroDocumentos/PGE-ROM/doc/3/1/3/1/N_21_E_A_1_2_1_2.PDF.
For 2022: https://www.sepg.pap.hacienda.gob.es/Presup/PGE2022Proyecto/MaestroDocumentos/PGE-ROM/doc/3/1/3/1/N_22_A_A_1_2_1_1.PDF.
https://www.sepg.pap.hacienda.gob.es/Presup/PGE2022Proyecto/MaestroDocumentos/PGE-ROM/doc/3/1/3/1/N_22_A_A_1_2_1_2.PDF.
(**) Estimated percentage for calculating the amount that the Spanish regions will allocate to health care projects, including their cofounding. Based on:

- The statement made by the minister of finance in the forum on European funds under the slogan "The challenge of management," organized by the EFE Agency and KPMG consulting firm, on March 25 2021, by which "*... the regions have already sent preliminary information with the projects they intend to finance with ERDF funds from REACT-EU, which will focus on basic service infrastructures such as Health, Education and Social Services (32%), Covid-19 Health Expenditure (30%), aid to SMEs (15%), green transition (11%) and digital transformation (9%)*."
- The estimated share of ERDF and ESF in REACT-EU for Spain, which according to the European structural and investment funds data downloaded on 4 October 2021 (https://cohesiondata.ec.europa.eu/themes/13) is 75.4%% for ERDF and 24.6% for ESF (not plausible to include health objectives- https://cohesiondata.ec.europa.eu/stories/s/REACT-EU-Fostering-crisis-repair-and-resilience/26d9-dqzy/**).**
- The estimated co-funding in Spain's regions for the REACT-EU funds, which according to the European structural and investment funds data downloaded on 4 October 2021 (https://cohesiondata.ec.europa.eu/2014-2020/ESIF-2014-2020-FINANCES-PLANNED-DETAILS/e4v6-qrrq/data) is 1.0138.

Note: The amounts for the MRR correspond to the maximum financial contribution for Spain as set forth in the Regulation (EU) 2021/241 of the European Parliament and of the Council of 12 February 2021 establishing the Recovery and Resilience Facility, without prejudice to the updated calculation by 30 June 2022.

Table 4. Execution of transfers and non-refundable health funds by year *(Million Euros/ current prices)*

YEAR	COVID FUND	MRR	REACT-EU	TOTAL
2020	9,000	-	-	9,000
2021	-	85	4,923	5,008
2022	-	205	1,355	1,560
2023	-	325	-	325
2024	-	325	-	325
2025	-	325	-	325
2026	-	325	-	325
TOTAL	**9,000**	**1,591**	**6,278**	**16,869**

5.3. Resources required by the NHS for the additional health workforce hired to tackle the pandemic

According to our estimates (Annex IV. Table 1), 72,000 health professionals were hired in 2020 to cover the pandemic needs.[58] We assume that these professionals have remained in the NHS during 2021. As of 2022, we stage the way in which they leave or remain in the system to estimate the impact on health expenditure. We consider the period 2019 to 2026, which is a reasonable option that allows encompassing the impact of excess expenditure in the health workforce due to the pandemic effect with the execution of the EU Recovery funds.

We propose eight scenarios, detailed in Tables 5.0. to 5.7. We have built them assuming that, during 2021, the professionals working in the NHS by 1 January were maintained. As of January 2022, the number of professionals is staged according to two methods:

E. Progressive evolution of the number of professionals up to a predetermined threshold.
A. Maintenance of the staff in the NHS, stopping new hires until the system absorbs the excess hired in 2020.

Table 5.0. Scenario E0 for the NHS health workforce following the COVID pandemic

SCENARIO E0: **The number of health professionals in 2022 is progressively reduced while maintaining the structure by categories (and therefore the nurse / physician and other-professional / physician ratios) so that the excess spending on human resources accumulated by the COVID-19 during 2020-2021 is compensated over the period 2022-2026 and the final balance is zero.**												
Year	**Health professionals by 1 January**				**Accumulated annual increase/decrease**				**Accumulated annual increase/decrease additional to the "regular" hiring**			
	Total	**Medical doctors**	**Nurses**	**Others**	**Total**	**Medical doctors**	**Nurses**	**Others**	**Total**	**Medical doctors**	**Nurses**	**Others**
Number of staff by 1 January												
2020	**693,421**	161,935	200,825	330,661	72,000	16,814	20,852	34,333	61,410	14,341	17,785	29,284
2021	**765,421**	178,749	221,677	364,995	72,000	16,814	20,852	34,333	50,821	11,868	14,718	24,234
2022	765,421	178,749	221,677	364,995	57,822	13,503	16,746	27,573	26,053	6,084	7,545	12,423
2023	751,243	175,438	217,571	358,234	43,907	10,254	12,716	20,937	1,548	362	448	738
2024	737,328	172,189	213,541	351,598	30,249	7,064	8,761	14,424	-22,699	-5,301	-6,574	-10,824
2025	723,670	168,999	209,586	345,086	16,845	3,934	4,878	8,032	-46,693	-10,904	-13,523	-22,266
2026	710,266	165,869	205,703	338,694	3,688	861	1,068	1,759	-70,439	-16,450	-20,400	-33,589
2027	697,110	162,797	201,893	332,420								
Remuneration of employees (Million Euros/constant prices 2019)												
2020	37,037	17,615	11,322	8,100	3,484	1,657	1,065	762	2,972	1,413	908	650
2021	37,037	17,615	11,322	8,100	3,484	1,657	1,065	762	2,459	1,170	752	538
2022	36,351	17,288	11,112	7,950	2,798	1,331	855	612	1,261	600	385	276
2023	35,678	16,968	10,907	7,803	2,125	1,010	649	465	75	36	23	16
2024	35,017	16,654	10,705	7,659	1,464	696	447	320	-1,098	-522	-336	-240
2025	34,368	16,345	10,506	7,517	815	388	249	178	-2,259	-1,075	-691	-494
2026	33,732	16,043	10,312	7,377	178	85	55	39	-3,408	-1,621	-1,042	-745
Consolidated cost by 1 January 2027:					**0 Euros**							
Increase of the number of doctors between 2020 and 2027:					**0.53%**							
Ratio nurses/ doctors by January 2027:					**1.2402**							

Source: Authors' own work.

[58] Please note that this is an overall estimation comparing stocks at 1 January each year reflecting the net balance of additional professionals, not taking into account exit due to decease or retirement. We consider this appropriate for the purpose of this analysis.

Table 5.1. Scenario E1 for the NHS health workforce following the COVID pandemic

***SCENARIO E1*: The number of health professionals in 2022 is progressively reduced, making the number of doctors in January 2027 equal to that of January 2020 (pre-pandemic levels) and progressively adjusting the nurses / physicians ratio so that the excess spending on human resources accumulated for COVID-19 during 2020-2021 is compensated during the period 2022-2026 and the final balance is zero**												
Year	**Health professionals by 1 January**				**Accumulated annual increase/decrease**				**Accumulated annual increase/decrease additional to the "regular" hiring**			
	Total	**Medical doctors**	**Nurses**	**Others**	**Total**	**Medical doctors**	**Nurses**	**Others**	**Total**	**Medical doctors**	**Nurses**	**Others**
Number of staff by 1 January												
2020	**693,421**	161,935	200,825	330,661	72,000	16,814	20,852	34,333	61,410	14,341	17,785	29,284
2021	**765,421**	178,749	221,677	364,995	72,000	16,814	20,852	34,333	50,821	11,868	14,718	24,234
2022	765,421	178,749	221,677	364,995	58,366	13,317	17,856	27,193	26,597	5,898	8,655	12,044
2023	751,787	175,252	218,681	357,854	44,098	9,889	14,018	20,192	1,739	-3	1,750	-7
2024	737,519	171,824	214,843	350,853	30,102	6,527	10,247	13,328	-22,847	-5,838	-5,088	-11,921
2025	723,523	168,462	211,072	343,989	16,371	3,231	6,542	6,598	-47,167	-11,607	-11,859	-23,700
2026	709,793	165,166	207,367	337,259	2,902	0	2,902	0	-71,225	-17,311	-18,566	-35,348
2027	696,324	161,935	203,727	330,661								
Remuneration of employees (Million Euros/constant prices 2019)												
2020	37,037	17,615	11,322	8,100	3,484	1,657	1,065	762	2,972	1,413	908	650
2021	37,037	17,615	11,322	8,100	3,484	1,657	1,065	762	2,459	1,170	752	538
2022	36,381	17,270	11,169	7,942	2,828	1,312	912	603	1,291	581	442	267
2023	35,692	16,932	10,973	7,787	2,139	974	716	448	89	0	89	0
2024	35,016	16,601	10,781	7,634	1,462	643	523	296	-1,100	-575	-260	-265
2025	34,352	16,276	10,591	7,485	799	318	334	146	-2,275	-1,144	-606	-526
2026	33,701	15,958	10,405	7,338	148	0	148	0	-3,439	-1,706	-948	-784
Consolidated cost by 1 January 2027:					**0 Euros**							
Increase of the number of doctors between 2020 and 2027:					**0%**							
Ratio nurses/ doctors by January 2027:					**1.2582**							

Source: Authors' own work.

Table 5.2. Scenario E2 for the NHS health workforce following the COVID pandemic

***SCENARIO E2*: The number of doctors in 2022 is progressively reduced while the ratio of nurses / physicians is progressively adjusted to reach the adequate value of coverage of needs (1.54) in 2027 so that the excess expenditure on human resources accumulated by the effect of COVID - 19 during 2020-2021 is compensated during the period 2022-2026 and the final balance is zero**												
Year	**Health professionals by 1 January**				**Accumulated annual increase/decrease**				**Accumulated annual increase/decrease additional to the "regular" hiring**			
	Total	**Medical doctors**	**Nurses**	**Others**	**Total**	**Medical doctors**	**Nurses**	**Others**	**Total**	**Medical doctors**	**Nurses**	**Others**
Number of staff by 1 January												
2020	**693,421**	161,935	200,825	330,66	72,000	16,814	20,852	34,333	61,410	14,341	17,785	29,284
2021	**765,421**	178,749	221,677	364,99	72,000	16,814	20,852	34,333	50,821	11,868	14,718	24,234
2022	765,421	178,749	221,677	364,99	66,036	10,563	33,904	21,569	34,267	3,144	24,703	6,420
2023	759,457	172,498	234,729	352,23	46,594	4,531	32,812	9,252	4,236	-5,361	20,544	-10,947
2024	740,015	166,466	233,637	339,91	27,799	-1,291	31,725	-2,636	-25,149	-13,656	16,391	-27,884
2025	721,220	160,644	232,550	328,02	9,628	-6,909	30,644	-14,107	-53,910	-21,747	12,242	-44,405
2026	703,049	155,027	231,469	316,55	-7,940	-12,330	29,567	-25,177	-82,068	-29,641	8,099	-60,525
2027	685,481	149,605	230,392	305,48								
Remuneration of employees (Million Euros/constant prices 2019)												
2020	37,037	17,615	11,322	8,100	3,484	1,657	1,065	762	2,972	1,413	908	650
2021	37,037	17,615	11,322	8,100	3,484	1,657	1,065	762	2,459	1,170	752	538
2022	36,805	16,999	11,989	7,817	3,251	1,041	1,732	479	1,714	310	1,262	142
2023	35,881	16,404	11,933	7,544	2,328	446	1,676	205	278	-528	1,049	-243
2024	34,988	15,830	11,878	7,280	1,435	-127	1,620	-58	-1,127	-1,346	837	-619
2025	34,125	15,277	11,822	7,025	571	-681	1,565	-313	-2,503	-2,143	625	-985
2026	33,290	14,743	11,767	6,780	-264	-1,215	1,510	-559	-3,851	-2,921	414	-1,343
Consolidated cost by 1 January 2027:					**0 Euros**							
Increase of the number of doctors between 2020 and 2027:					**-7.56%**							
Ratio nurses/ doctors by January 2027:					**1.54**							

Source: Authors' own work.

Table 5.3. Scenario E3 for the NHS health workforce following the COVID pandemic

***SCENARIO E3*: The number of health professionals in 2022 is progressively reduced until it reaches the level that covers the estimated needs of doctors in 2027 (5% more than in 2020), adjusting the evolution of the nurses / physicians ratio so that the excess expenditure on human resources accumulated by the effect of COVID - 19 during 2020-2021 is compensated during the period 2022-2026 and the final balance is zero**												
Year	**Health professionals by 1 January**				**Accumulated annual increase/decrease**				**Accumulated annual increase/decrease additional to the "regular" hiring**			
	Total	**Medical doctors**	**Nurses**	**Others**	**Total**	**Medical doctors**	**Nurses**	**Others**	**Total**	**Medical doctors**	**Nurses**	**Others**
Number of staff by 1 January												
2020	**693,421**	161,935	200,825	330,66	72,000	16,814	20,852	34,333	61,410	14,341	17,785	29,284
2021	**765,421**	178,749	221,677	364,99	72,000	16,814	20,852	34,333	50,821	11,868	14,718	24,234
2022	765,421	178,749	221,677	364,99	53,201	15,036	7,463	30,702	21,432	7,617	-1,737	15,553
2023	746,622	176,971	208,288	361,36	42,208	13,275	1,827	27,106	-150	3,383	-10,441	6,907
2024	735,629	175,210	202,652	357,76	31,422	11,532	-3,657	23,547	-21,527	-834	-18,991	-1,702
2025	724,843	173,467	197,168	354,20	20,836	9,806	-8,992	20,022	-42,702	-5,033	-27,393	-10,276
2026	714,257	171,741	191,833	350,68	10,447	8,097	-14,183	16,533	-63,681	-9,214	-35,651	-18,815
2027	703,868	170,032	186,642	347,19								
Remuneration of employees (Million Euros/constant prices 2019)												
2020	37,037	17,615	11,322	8,100	3,484	1,657	1,065	762	2,972	1,413	908	650
2021	37,037	17,615	11,322	8,100	3,484	1,657	1,065	762	2,459	1,170	752	538
2022	36,097	17,439	10,638	8,020	2,544	1,482	381	681	1,007	751	-89	345
2023	35,556	17,266	10,351	7,940	2,003	1,308	93	602	-47	333	-533	153
2024	35,025	17,094	10,070	7,861	1,472	1,136	-187	523	-1,090	-82	-970	-38
2025	34,505	16,924	9,798	7,783	951	966	-459	444	-2,123	-496	-1,399	-228
2026	33,994	16,756	9,533	7,705	440	798	-724	367	-3,146	-908	-1,821	-418
Consolidated cost by 1 January 2027:					**0 Euros**							
Increase of the number of doctors between 2020 and 2027:					**5%**							
Ratio nurses/ doctors by January 2027:					**1.0967**							

Source: Authors' own work.

Table 5.4. Scenario E4 for the NHS health workforce the COVID pandemic

***SCENARIO E4*: The number of health professionals in 2022 is progressively reduced until the number of doctors reaches a level that partially covers the needs in 2027 (3% more than in 2020) while the ratio of nurses / doctors increases progressively increases by 3%.**												
Year	**Health professionals by 1 January**				**Accumulated annual increase/decrease**				**Accumulated annual increase/decrease additional to the "regular" hiring**			
	Total	**Medical doctors**	**Nurses**	**Others**	**Total**	**Medical doctors**	**Nurses**	**Others**	**Total**	**Medical doctors**	**Nurses**	**Others**
Number of staff by 1 January												
2020	**693,421**	161,935	200,825	330,66	72,000	16,814	20,852	34,333	61,410	14,341	17,785	29,284
2021	**765,421**	178,749	221,677	364,99	72,000	16,814	20,852	34,333	50,821	11,868	14,718	24,234
2022	765,421	178,749	221,677	364,99	64,262	14,356	20,591	29,315	32,493	6,937	11,390	14,165
2023	757,683	176,291	221,416	359,97	54,768	11,932	18,471	24,365	12,409	2,040	6,203	4,166
2024	748,189	173,867	219,296	355,02	45,395	9,541	16,371	19,483	-7,553	-2,824	1,036	-5,766
2025	738,816	171,477	217,195	350,14	36,142	7,184	14,290	14,668	-27,396	-7,655	-4,111	-15,630
2026	729,563	169,119	215,115	345,32	27,008	4,858	12,230	9,920	-47,120	-12,453	-9,238	-25,428
2027	720,429	166,793	213,055	340,58								
Remuneration of employees (Million Euros/constant prices 2019)												
2020	37,037	17,615	11,322	8,100	3,484	1,657	1,065	762	2,972	1,413	908	650
2021	37,037	17,615	11,322	8,100	3,484	1,657	1,065	762	2,459	1,170	752	538
2022	36,670	17,372	11,309	7,989	3,117	1,415	1,052	651	1,580	684	582	314
2023	36,213	17,133	11,201	7,879	2,660	1,176	943	541	610	201	317	92
2024	35,762	16,898	11,093	7,771	2,209	940	836	432	-353	-278	53	-128
2025	35,317	16,666	10,987	7,664	1,763	708	730	326	-1,311	-754	-210	-347
2026	34,877	16,436	10,882	7,559	1,324	479	625	220	-2,263	-1,227	-472	-564
Consolidated cost by 1 January 2027:					**3,693 Euros**							
Increase of the number of doctors between 2020 and 2027:					**3%**							
Ratio nurses/ doctors by January 2027:					**1.2774**							

Source: Authors' own work.

Table 5.5. Scenario E5 for the NHS health workforce following the COVID pandemic

***SCENARIO E5*: The number of health professionals in 2022 is progressively increased until reaching the level of professionals that would have been reached by January 2027 with the average annual contracts and maintaining the structure by categories**												
Year	**Health professionals by 1 January**				**Accumulated annual increase/decrease**				**Accumulated annual increase/decrease additional to the "regular" hiring**			
	Total	**Medical doctors**	**Nurses**	**Others**	**Total**	**Medical doctors**	**Nurses**	**Others**	**Total**	**Medical doctors**	**Nurses**	**Others**
Number of staff by 1 January												
2020	**693,421**	161,935	200,825	330,66	72,000	16,814	20,852	34,333	61,410	14,341	17,785	29,284
2021	**765,421**	178,749	221,677	364,99	72,000	16,814	20,852	34,333	50,821	11,868	14,718	24,234
2022	765,421	178,749	221,677	364,99	72,425	16,913	20,975	34,536	40,656	9,494	11,775	19,387
2023	765,846	178,849	221,800	365,19	72,850	17,013	21,099	34,739	30,492	7,121	8,831	14,540
2024	766,272	178,948	221,923	365,40	73,276	17,112	21,222	34,942	20,328	4,747	5,887	9,693
2025	766,697	179,047	222,047	365,60	73,702	17,212	21,345	35,145	10,164	2,374	2,944	4,847
2026	767,123	179,147	222,170	365,80	74,128	17,311	21,468	35,348	0	0	0	0
2027	767,549	179,246	222,293	366,00								
Remuneration of employees (Million Euros/constant prices 2019)												
2020	37,037	17,615	11,322	8,100	3,484	1,657	1,065	762	2,972	1,413	908	650
2021	37,037	17,615	11,322	8,100	3,484	1,657	1,065	762	2,459	1,170	752	538
2022	37,058	17,624	11,329	8,105	3,504	1,667	1,071	766	1,967	936	601	430
2023	37,078	17,634	11,335	8,109	3,525	1,676	1,078	771	1,475	702	451	323
2024	37,099	17,644	11,341	8,114	3,546	1,686	1,084	775	984	468	301	215
2025	37,120	17,654	11,347	8,118	3,566	1,696	1,090	780	492	234	150	108
2026	37,140	17,664	11,354	8,123	3,587	1,706	1,097	784	0	0	0	0
					Consolidated cost by 1 January 2027:			**10,348 Million Euros**				
					Increase of the number of doctors between 2020 and 2027:			**10.69%**				
					Ratio nurses/ doctors by January 2027:			**1.2402**				

Source: Authors' own work.

Table 5.6. Scenario A6 for the NHS health workforce following the COVID pandemic

***SCENARIO A6*: The system progressively absorbs from 2022 the excess of professionals hired by COVID-19 in 2020, paralyzing new hires and maintaining the structure by categories (and therefore the nurses / physicians and other-professional / physicians ratios)**												
Year	**Health professionals by 1 January**				**Accumulated annual increase/decrease**				**Accumulated annual increase/decrease additional to the "regular" hiring**			
	Total	**Medical doctors**	**Nurses**	**Others**	**Total**	**Medical doctors**	**Nurses**	**Others**	**Total**	**Medical doctors**	**Nurses**	**Others**
Number of staff by 1 January												
2020	**693,421**	161,935	200,825	330,66	72,000	16,814	20,852	34,333	61,410	14,341	17,785	29,284
2021	**765,421**	178,749	221,677	364,99	72,000	16,814	20,852	34,333	50,821	11,868	14,718	24,234
2022	765,421	178,749	221,677	364,99	72,000	16,814	20,852	34,333	40,231	9,395	11,651	19,184
2023	765,421	178,749	221,677	364,99	72,000	16,814	20,852	34,333	29,641	6,922	8,585	14,135
2024	765,421	178,749	221,677	364,99	72,000	16,814	20,852	34,333	19,052	4,449	5,518	9,085
2025	765,421	178,749	221,677	364,99	72,000	16,814	20,852	34,333	8,462	1,976	2,451	4,035
2026	765,421	178,749	221,677	364,99	74,128	17,311	21,468	35,348	0	0	0	0
2027	767,549	179,246	222,293	366,01								
Remuneration of employees (Million Euros/constant prices 2019)												
2020	37,037	17,615	11,322	8,100	3,484	1,657	1,065	762	2,972	1,413	908	650
2021	37,037	17,615	11,322	8,100	3,484	1,657	1,065	762	2,459	1,170	752	538
2022	37,037	17,615	11,322	8,100	3,484	1,657	1,065	762	1,947	926	595	426
2023	37,037	17,615	11,322	8,100	3,484	1,657	1,065	762	1,434	682	438	314
2024	37,037	17,615	11,322	8,100	3,484	1,657	1,065	762	922	438	282	202
2025	37,037	17,615	11,322	8,100	3,484	1,657	1,065	762	409	195	125	90
2026	37,140	17,664	11,354	8,123	3,587	1,706	1,096	784	0	0	0	0
					Consolidated cost by 1 January 2027:			**10,143 Million Euros**				
					Increase of the number of doctors between 2020 and 2027:			**10.69 %**				
					Ratio nurses/ doctors by January 2027:			**1.2402**				

Source: Authors' own work.

Table 5.7. *Scenario A7* for the NHS health workforce following the COVID pandemic

***SCENARIO A7*: The system keeps the number of professionals in 2020, but progressively raise the ratio of nurses / doctors to 1.54**												
Year	**Health professionals by 1 January**				**Accumulated annual increase/decrease**				**Accumulated annual increase/decrease additional to the "regular" hiring**			
	Total	**Medical doctors**	**Nurses**	**Others**	**Total**	**Medical doctors**	**Nurses**	**Others**	**Total**	**Medical doctors**	**Nurses**	**Others**
Number of staff by 1 January												
2020	**693,421**	161,935	200,825	330,66	72,000	16,814	20,852	34,333	61,410	14,341	17,785	29,284
2021	**765,421**	178,749	221,677	364,99	72,000	16,814	20,852	34,333	50,821	11,868	14,718	24,234
2022	765,421	178,749	221,677	364,99	72,000	11,918	35,747	24,335	40,231	4,499	26,546	9,186
2023	765,421	173,853	236,572	354,99	72,000	10,246	40,833	20,921	29,641	354	28,565	722
2024	765,421	172,181	241,658	351,58	72,000	8,555	45,977	17,468	19,052	-3,810	30,643	-7,781
2025	765,421	170,490	246,802	348,12	72,000	6,845	51,179	13,977	8,462	-7,993	32,777	-16,322
2026	765,421	168,780	252,004	344,63	72,000	5,117	56,435	10,448	-2,128	-12,194	34,967	-24,900
2027	765,421	167,052	257,260	341,10								
Remuneration of employees (Million Euros/constant prices 2019)												
2020	37,037	17,615	11,322	8,100	3,484	1,657	1,065	762	2,972	1,413	908	650
2021	37,037	17,615	11,322	8,100	3,484	1,657	1,065	762	2,459	1,170	752	538
2022	37,094	17,132	12,083	7,879	3,540	1,174	1,826	540	2,003	443	1,356	204
2023	37,113	16,967	12,343	7,803	3,560	1,010	2,086	464	1,510	35	1,459	16
2024	37,132	16,801	12,605	7,726	3,579	843	2,348	388	1,017	-375	1,565	-173
2025	37,152	16,632	12,871	7,649	3,599	675	2,614	310	524	-788	1,674	-362
2026	37,172	16,462	13,140	7,570	3,619	504	2,882	232	32	-1,202	1,786	-553
Consolidated cost by 1 January 2027:							**10,516 Million Euros**					
Increase of the number of doctors between 2020 and 2027:							**3.16 %**					
Ratio nurses/ doctors by January 2027:							**1.54**					

Source: Authors' own work.

5.4. Integrated scenarios

In this point, we present the result of aggregating the additional resources approved until now that have been or will be allocated to the NHS to address the pandemic and its aftermath during 2020-2026. The added resources have been presented in point 5.2 at the national level, where we focus our analysis now. Presenting the impact of the pandemic by regions requires further analysis.

Up to date, following the decisions adopted by the Spanish government and the Council, we calculate that, between 2020 and 2026, 16,869 million Euros (current prices) will be injected in the Spanish NHS:

- The National government provided 9,000 million Euros in 2020. We estimate that a total amount of 3,004 million Euros (current prices) was required for the remuneration of employees regarding the additional human resources hired by the NHS this year. Depending on the way the recruited professionals remain in or exit the system, the impact in the long-term could range from a neutral one[59] to a raise in the health expenditure sustainability indicator up to 0.98 pp, placing it at 2.56

[59] Should the number of health professionals in 2022 is progressively reduced so that the excess spending on human resources accumulated by the COVID-19 during 2020-2021 is compensated over the period 2022-2026 and the final balance is zero. Please refer to Annex IX.

pp.[60] This is an important impact, considering that most recent estimates by the EPC's Working Group on Ageing Populations and Sustainability have gauged this change in 1.3 pp for the period 2019-2070.

- In addition, according to the Council implementing decision on the approval of the assessment of the recovery and resilience plan for Spain and the General State Budgets of Spain for 2021 and 2022, at least 7,869 million Euros (current prices) will be allocated to the NHS from the Recovery Fund Next Generation EU over the period 2021 to 2026. We have integrated them in our projections adding these quantities according to the execution estimated in point 5.2 and deflating as required.

The different scenarios that we can depict combining our projection assumptions are in Annex IX. In this point, we detail the combination of two HWF scenarios with our reference scenario described in point 5.1. We consider two HWF scenarios that constitute "*low-medium impact*" options representing two situations:

R. In January 2027, the excess of health professionals hired to cover the COVID-19 needs has disappear and excess spending on human resources accumulated by the COVID-19 during 2020-2021 has been compensated over the period 2022-2026 so that the final balance is zero. We chose the HWF scenario 0 in this case.

X. The excess of health professionals hired to cover the COVID-19 needs is progressively reduced until the number of doctors reaches a level that partially or totally covers the needs in 2027 (5% more than in 2020) while the ratio of nurses / doctors progressively increases until it partially or totally covers the needs in 2027 (1.54). This is not a neutral option, which has impact in the long-term sustainability. We chose the HWF scenario 4 in this case.

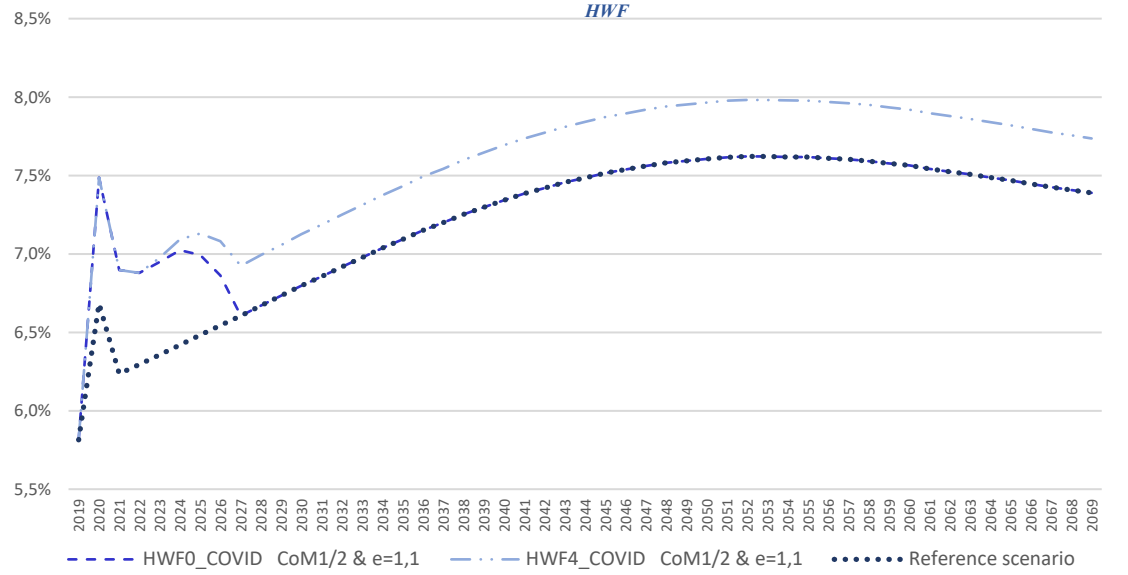
The scenario 0 is a neutral option with no impact in the long-term sustainability. This scenario stages a number of health professionals progressively decreasing as of 2022, while maintaining the structure by categories (and therefore the nurse / physician and

[60] Should the system keep the number of professionals in 2020 and progressively raise the ratio of nurses / doctors to 1.54. Please refer to Annex IX.

other-professional / physician ratios), so that the excess spending on human resources accumulated by the COVID-19 during 2020-2021 is compensated over the period 2022-2026 and the final balance is zero (Chart 16).

The scenario 4 is not a neutral option with impact in the long-term sustainability. This scenario stages a number of health professionals progressively decreasing as of 2022 in such a way that the number of doctors reaches in January 2027 a level that partially covers the needs for this year (3% more than in 2020), while the ratio of nurses / doctors progressively increases by 3%. In this case, in 2027, the system accumulates an excess of 3,693 Euros of 2019 over the COVID free scenario due to remuneration of employees and the sustainability indicator of health spending shifts from 1.57 pp in scenario 0 to 1.92 pp, 0.35 more pp (Chart 16).

Chart 16. Projections of public expenditure in health including the effect the COVID-19 pandemic. Compression of morbidity by half life expectancy gains with elasticity 1.1 in 2019 converging to 1 in 2070 & Scenarios 0 & 4 for HWF



Source: Authors' own work.

Promemoria:

Projected public spending in health 2019-2069 including the COVID-19 effect-Scenario 0												
Constant Euros of 2019	**2019**	**2020**	**2025**	**2030**	**2035**	**2040**	**2045**	**2050**	**2055**	**2060**	**2065**	**2069**
HWF Scenario 0&COVID&Reference scenario	5.81	7.49	6.99	6.80	7.09	7.34	7.52	7.60	7.62	7.56	7.47	7.39
Projected public spending in health 2019-2069 including the COVID-19 effect-Scenario 4												
Constant Euros of 2019	**2019**	**2020**	**2025**	**2030**	**2035**	**2040**	**2045**	**2050**	**2055**	**2060**	**2065**	**2069**
HWF Scenario 4&COVID&Reference scenario	5.81	7.49	7.13	7.12	7.43	7.69	7.87	7.96	7.98	7.92	7.82	7.74

In general, our results show that if a restrictive scenario for the health workforce is followed there will be no change in the sustainability indicator over the whole period. This is the case for the HWF scenarios 0 to 3. They provide different ways to curve the evolution of public expenditure in health to the point where the system would have been should the pandemic had not occurred. To this end, they adjust the evolution of the

professionals so that the excess expenditure on human resources accumulated by the effect of COVID-19 during 2020-2021 is compensated during the period 2022-2026 and the final balance is zero.

On the other hand, if an intermediate situation is considered, such as that of the HWF scenario 4 presented before, as mentioned, we estimate an additional spending of 3,693 Euros (constant prices of 2019) consolidated in the NHS by 2027 that will shift sustainability indicator up to 1.92 pp. More expansive scenarios such as the HWF scenarios 5 to 7, where basically, the system retains the excess of health professional hired in 2020 and stop recruitment until the system absorbs the difference, will have significant impact on its sustainability, shifting the analysed indicator up to 2.56 pp.

6. Summary and conclusions

The shock produced by the COVID-19 pandemic in the NHS has required, and will still need for some years, additional resources to underpin the health system. In Spain, for the time being, an additional amount of 16,869 million Euros for health has been approved to be executed during the period 2020 to 2026. The Spanish government provided 9,000 million Euros in 2020; the rest corresponds to the Recovery Funds Next Generation EU, already approved.

Most of these resources would be one-off investments that properly managed will have a positive impact on the resilience of the NHS and, ultimately, in its long-term sustainability. However, we estimate that, in 2020, 3,004 million Euros (current prices) were required in addition to the remuneration of employees that would have been needed had the pandemic not occurred. This could have a non-negligible impact on the sustainability of public spending in health. Depending on the way in which they remain in or exit the system, this could have, in the long-term, from a neutral impact to a raise the health expenditure sustainability indicator up to 0.98 pp, placing it at 2.56 pp between 2019 and 2069. This is an important impact considering that most recent estimates by the AWG had gauged this change in 1.3 pp for the period 2019-2070.

In this paper, we have analysed the sustainability of the Spanish NHS following the coronavirus pandemic, considering the actions taken until now. The sustainability of public spending in health is the most pressing challenge for the Spanish NHS in accordance with the European Semester analyses during 2011 to 2021. We have benefited from these analyses to outline the priorities for structural reforms aligned with the objectives of the Recovery and Resilience Plan for the European Union and thus aligned with the priorities for accessing the Recovery Fund Next Generation EU.

In line with the challenges typically identified by the EU regarding the Spanish NHS, which mainly focus on its resilience,[61] the three crucial elements highlighted in the 2020 European Semester Country Specific Recommendation (CSR) for Spain, namely its

[61] Please be reminded that this does not mean that the resilience of the Spanish NHS ranks low among EU Member States. The country-specific analyses of the European Semester are just that, country-specific, highlighting the most pressing challenges in the context of each Member State.

workforce, critical medical products and infrastructure, have seen their existing structural challenges stressed with the outbreak of the COVID-19 pandemic.

One-off investments addressing critical medical products and infrastructure could be expected to have a positive impact on the resilience of the NHS and, ultimately, in its long-term sustainability. On the other hand, addressing the shortcomings and inefficiencies in the recruitment and working conditions of health workers would need to strike a balance between the recruitment policy objectives to cover the needs of health workforce and fiscal consolidation objectives. They affect mainly the Regional Health Services of Extremadura, Canarias, Asturias, Cantabria, Murcia, and Castilla-La Mancha, which face higher sustainability challenges associated with public spending in health due to the ageing population.

Depending on the decisions adopted concerning the evolution of health professionals, the degree of fiscal consolidation required would vary. Should it be necessary, the EU fiscal CSR to Spain in 2021 points out that the priority for fiscal consolidation could be approached from the broader perspective of the composition of public finances and the quality of budgetary measures, further from addressing the resilience of the NHS.

We highlight that the assessment presented in this paper has been developed in accordance to the actions adopted and according to the available information until now. This is a first assessment that would require subsequent updates, e.g. to include the impact of the pandemic on the future evolution of life expectancy, including the effect of mortality due to the coronavirus. In addition, concerning the macroeconomic scenario, new forecasts would be needed to capture the COVID-19 effect in the economy, e.g. regarding inflation and the actual evolution of GDP.

In our view, the projections of public spending in health constitute a useful tool to evaluate the resilience of the Spanish health system and it is of upmost relevance to connect the evaluation to comparable analyses by the EU.

Even if there is no EU health system because the Member States individually enjoy primary responsibility for organising and delivering their own health services, there is EU economic governance where the health sector is included. We have argued in this paper

that the economic governance framework of the European Union provides a fit for purpose channel to implement an integrated approach, including the economic and socioeconomic dimensions of the health system, to come to a meaningful assessment and to identify sound and effective policy reforms.

We have benefited in this paper from the European Semester analyses during the exercises of 2011 to 2021 to outline the most pressing priorities for NHS reforms with a view to facilitating the alignment of EU and national policy objectives, which, in addition, could be a source of financing for health system structural reforms.

7. Annex I. Health in the priorities of the European Semester-AGS/ASGS

	ASGS 2021
The Recovery and Resilience Facility: delivering on the EU objective of competitive sustainability	*- The COVID-19 pandemic has highlighted the urgent need to address long-standing challenges that affect the fairness in society.* ***This includes the preparedness and resilience of the national health and social protection systems as well as equal access to affordable and quality health care****, long-term care and childhood care systems, demographic change, globalisation or the digital and green transitions****. The challenges to be addressed may cover areas such as*** *employment, skills,* ***health,*** *education, in particular to address rising inequalities and support those who have been hit hardest by the crisis, such as young generations, women and vulnerable groups.*
Key principles underpinning the Recovery and Resilience Plans: priority setting for Member States	***- The recovery and resilience plans will need to reflect the relevant country-specific challenges and be aligned with the EU priorities. This includes the country-specific recommendations addressed to the Member States in recent years and in particular in the 2019 and 2020 Semester cycles.*** *When translating those recommendations into specific reforms and investments,* ***Member States should focus on those challenges and priorities that will generate the most lasting impact and will strengthen the growth potential, job creation, health systems and economic and social resilience and regional cohesion of the Member State****. At the same time, reforms and investments will have to respect the 'do no harm' principle, using to the extent possible as a reference the EU Taxonomy Regulation.* AN: Spain received a CSR on heath in 2020.
Digital transition and productivity	*- Member States should focus on those reforms and investments that* ***improve connectivity****. This includes for instance fostering and facilitating the widespread deployment of very high capacity networks, including 5G and Gigabit connectivity among urban and rural households and large-scale transport corridors, in line with the EU's 2025 5G and Gigabit connectivity objectives. These investments are important to bridge the digital divide, while avoiding the crowding out of private investment in cases where no market failure exists. As outlined in Next Generation EU, the fast deployment of very high capacity networks, including 5G and fiber, will have positive spillovers on the entire society.* ***These include providing the appropriate bandwidth and coverage for sectors that are essential for the recovery and resilience, such a****s agriculture, transport,* ***health*** *and education. It will also help enhancing Europe's open strategic autonomy, while reaping the benefits from an open economy, by providing support to implement the infrastructure, which will be needed for future applications and processes.*
Fairness	*- Various forms of inequalities limit growth and social cohesion.* ***Ensuring equal access to*** *education,* ***quality healthcare****, as well as strengthening long-term care, will be increasingly important also because the full impact of COVID-19 on public health will persist for years.* ***Ensuring the provision of high quality health care services that is fiscally sound, affordable and accessible, contributes to a healthy and resilient society and to ensuring a productive work force.*** *There is also a need to address the continuously high level of employment and pay gaps between men and women. Adequate support for effective work-life balance policies, ensuring access to quality childcare, income support schemes, reforms of tax and benefit systems supporting quality job creation and reducing disincentives to work are crucial in this respect. Reforms of the social protection system can reduce such inequalities as well as reforms of the tax system, for example by shifting the tax burden from labour to taxes that are less distortive.*
Fostering reforms and investments to support a robust recovery: European flagships	*- Modernise - EU-ID and key digital public services should be modernised and accessible to all. Secure and EU-wide electronic identification and authentication vis-à-vis governments and private actors and access to their services, will provide citizens with control over their online identity and data as well as enable access to online digital services.* ***The digitalisation of public administration and services will increase the effectiveness of both. This includes also the justice and healthcare system.*** *By 2025, Member States should ensure the provision of a European digital identity (e-ID) and public administrations should be providing interoperable, personalised and user-friendly digital public services.*
	ASGS 2020
A new paradigm to address interrelated key challenges	***- Integrating the objectives of the SDGs in the European Semester****, with a specific focus on the economic and employment aspects, provides a unique opportunity* ***to put people, their health*** *and the planet* ***at the centre*** *stage of economic policy. In today's geopolitical context, putting the SDGs at the centre of the Union's policymaking and action* ***also sends a strong message about Europe's commitment towards sustainability****.*
Digital technologies, like Artificial Intelligence or the Internet of Things and access to data are crucial to a more productive and green economy	*- They are changing how we communicate, live and work. The changing dynamics brought about by the digital transformation require additional ambition at EU and national levels in terms of increased investment, innovation-conducive regulation, effective reforms and a human-centric approach based on European values. Europe needs a strong in industrial base, built on a common strategy and pooled resources in key sectors, to be able to produce domestically the technologies it needs to stay at the forefront of global competition. Europe also needs to remain technologically sovereign by investing in innovative technologies like block-chain, high-performance and quantum computing, algorithms and tools to allow data sharing and data usage.* ***Data and Artificial Intelligence are major drivers for innovation that can help us to find solutions to societal challenges, from health*** *to farming and food production, from security to manufacturing.*
Fairness	*- Promoting fairness requires investment in skills, adequate and sustainable social protection systems and fighting against exclusion. Improving the inclusiveness and quality of education and training systems is crucial to foster the inclusion of all people in tomorrow's societies. Early school leaving should be reduced and the quality and attractiveness of vocational education and training increased. Yet, investment in skills is far from sufficient. Social protection systems need to be adapted to protect all those in need, irrespective of their working status. Europe also has to address more efficiently the inequalities borne by groups at risk of exclusion, including persons with a disability, Roma and migrants, to ensure that they can make full use of their potential to contribute to the economy, social protection systems and society.* ***Population ageing makes investing in healthcare and long-term care increasingly important, while ensuring the sustainability of the social protection system in order to ensure intergenerational fairness.*** *- The EU must remain an* ***engine of cohesion****. To address regional and social disparities, opportunities need to be created for those not directly benefiting from market openings and technological change.* ***This includes upgrading skills through better education and training and ensuring appropriate regional convergence on issues like access to healthcare and quality education****. Member States need to continue reforming to that end, using the full support of the tools in the EU budget. Connectivity of regions and accessibility to mobility are crucial both for cohesion and productivity and need to be supported by appropriate investment.*
	AGS 2019
Key challenges looking ahead	***- Europe's ageing population is a challenge for pension, healthcare and long-term care systems****. The ratio between the number of people aged 65 and over and those aged 15-64 is projected to increase from 28.8 % in 2015 to 35.1 % in 2025 and to over 50 % in 2050. This has important implications for future economic growth and distribution of resources: it will require additional measures to* ***ensure both fiscal sustainability and adequate coverage****. The situation of young people is especially concerning, as they may face a double burden: having to pay higher contribution rates while working, and receiving lower pensions after retirement. A more dynamic and inclusive labour market and reformed welfare systems could mitigate the social and public finance risks related to population ageing.*
Focusing reforms efforts on productivity growth, inclusiveness and institutional quality	***- Inclusiveness should also be at the core of reform efforts****, ensuring that productivity gains benefit all citizens****. This requires a stronger focus on*** *quality education, training and adult learning, notably for the low skilled (see dedicated box); appropriate and innovative design of tax-benefits systems and continued or* ***improved access to quality healthcare****, childcare and long-term care services.* ***- Member States should further promote activation and social inclusion policies and universal access to affordable and quality care services.*** *Policy action is particularly needed to foster participation by non-standard workers and the self-employed in social security schemes. Wider access to high-quality care services (e.g. childcare or long-term care) would ensure more opportunities for women to enter or stay in employment and reduce the risk of poverty and social exclusion among children and vulnerable groups. More efficient policies to integrate migrants in the labour market would support their wider social integration.* ***To ensure fiscal sustainability and maintain universal access to quality healthcare, Member States need to increase cost-effectiveness by investing in innovation, improving the integration of healthcare at the primary, specialised outpatient and hospital care levels and strengthening links with social care to meet the needs of an ageing population. A greater focus on prevention is also warranted to underpin these efforts.***
Ensuring macroeconomic stability and sound public finances	*- Ensuring long-term* ***sustainability of public finances is also key****. People today lead longer healthy lives, but demographic change is also exerting increasing* ***pressure on welfare systems****. Pension reforms aimed at adapting the balance between working life and retirement and supporting complementary retirement savings remain essential. Implementing such reforms is often politically difficult and their reversal should be avoided, as this could jeopardise fiscal sustainability, reduce growth potential and intergenerational fairness. Improved governance of public procurement could also greatly contribute to more efficient public spending in several Member States.*
	ASGS 2018
Boosting investment to support the recovery and to increase long-term growth	***- Investments raising productivity are crucial to ensure future growth prospects. Targeted investment in areas such as*** *infrastructure, education, training****, health****, research, digital innovation and the circular economy* ***can increase both productivity and employment****. However, there is a need to prevent the build-up of bubbles linked to the inefficient allocation of resources. As the economic crisis made clear, this is particularly important in the euro area, where economies are financially more integrated and are subject to greater spillover effects. Stronger micro- and macro-prudential supervision may help to achieve this.*
Making the most of EU and national budget opportunities	***- Europeans need affordable, accessible and quality services. Services such as*** *childcare, out-of-school care, education, training, housing,* ***health services*** *and long-term care are essential for ensuring equal opportunities for all. Adequate social housing and other housing assistance are also essential. This also entails protecting vulnerable people against unjustified forced eviction and foreclosures, as well as tackling homelessness.*
Promoting well-functioning labour markets and modern welfare systems	*- The impact of the crisis has coincided with longer-term structural drivers of change. While working lives are becoming longer and career paths less linear, the difficulties faced by younger generations in joining the labour market pose a new challenge. The employment of younger workers has stagnated over the last decade. In 2016, 6.3 million young people aged 15-24 were not in employment, education or training. Intergenerational fairness is becoming a real concern.* ***Without further action, there may be a detrimental impact on output growth, competitiveness, the sustainability of welfare systems, future generations' pension entitlements, their access to healthcare and their future welfare.***
Job creation and fair working conditions	*- Barriers to employment should be reduced, especially for disadvantaged groups, including single parent households, people with disabilities, ethnic minorities, refugees and migrants.* ***Labour market integration efforts must be combined with social integration support, such as*** *childcare,* ***access to healthcare*** *and housing, along with the removal of obstacles such as discrimination on the labour market. Better complementarity between labour market and social integration systems will help all vulnerable groups, generate increased prosperity for all and create stronger social cohesion. An adapted work environment for people with disabilities is also needed, as well as targeted financial support to help them participate fully in the labour market and society as a whole.*
Social protection and inclusion to tackle inequality and poverty	***- Reforms of health care*** *and long-term care* ***systems need to be pursued to enhance their cost-effectiveness, ensure their fiscal sustainability and ensure quality, affordable access. Expenditure on health care and long-term care is set to increase due to population ageing and non-demographic cost drivers such as technological progress in treatments and pharmaceuticals. Policy actions are therefore needed to enable people to stay healthy for longer, by making health systems and long-term care more cost-effective and ensuring timely access to affordable preventive and curative healthcare of good quality.***
	AGS 2017
On responsible fiscal policies ***On social policy***	***- Driven by population ageing and technological developments, public expenditure on health care and long-term care is expected to increase significantly in the coming decades. To safeguard sustainable health systems and support their positive contribution to population health and economic prosperity, further policy action will be needed enabling the individual to stay healthy for longer, while making health systems more effective, accessible and resilient*** *In many Member States, the working-age population and the labour force continue to shrink, notably as a result of low birth rates, ageing, emigration and* ***health-related exits from the labour market****. (…)* ***In this light, Member States need to ensure access to quality services and in-kind benefits, such*** *as childcare, housing,* ***healthcare*** *and long-term care, education and training. Quality services and in-kind benefits contribute to increased labour market participation, notably for women, and to social inclusion. (…)* ***- Health policies should support and reinforce social safety nets and active inclusion strategies, through preventive, but also curative and rehabilitation policies. Member States therefore need to continue to reform their health systems, thus ensuring universal access to cost effective public health and healthcare services. Protecting the population from falling into poverty or social exclusion due to ill-health and related expenditure is essential, both from a social and economic view-point.***
On public procurement in the health sector	Health services are listed as part of the sectors *"where the public sector is a key source of demand"* and where *"public procurement is important for competitiveness as it can drive structural changes."*
	AGS 2016
On health systems	**- Regarding health care** and long-term care **systems, reforms need to continue to enhance their cost-effectiveness and to ensure adequate access. The demographic challenge affects not only pensions but also health care and long-term care related expenditure. A healthier population will also improve labour market participation and labour productivity.** **Member States need to introduce measures to ensure a sustainable financing basis, encourage the provision of and access to effective primary health care services, the cost-effective use of medicines, better public procurement, improve integration of care through up to date information channels (such as e-health), assess the relative effectiveness of health technologies and encourage health promotion and disease prevention.**
On responsible fiscal policies	- (i) there is a need to continue to support growth- and equity-friendly fiscal consolidation in many countries, (ii) tax systems need to address disincentives to employment creation and be made fairer and still more effective, (iii) ***social protection systems should be modernised*** to efficiently respond to risks throughout the lifecycle while remaining fiscally sustainable in view of the upcoming demographic challenges. These priorities support the roadmap set out by the Five Presidents for the completion of the Europe's Economic and Monetary Union. They also include a stronger focus on employment and social performance.
On pursuing structural reforms to modernise our economies	- All Member States should use the current favourable momentum to strengthen their efforts to ensure well-functioning labour, product and capital markets, quality education and training systems, ***modern and efficient social security systems*** and to promote innovation and entrepreneurship.
	AGS 2015
On health systems	**- Healthcare systems need to be reformed to provide quality health care through efficient structures.**
	AGS 2014
On social protection policy	**- There is a widespread need to strengthen the efficiency and financial sustainability of social protection systems, notably pensions and healthcare systems while enhancing their effectiveness and adequacy in meeting social needs and ensuring essential social safety nets.**
	AGS 2013
On health systems	**- In the context of the demographic challenges and the pressure on age-related expenditure, reforms of healthcare systems should be undertaken to ensure cost-effectiveness and sustainability, assessing the performance of these systems against the twin aim of a more efficient use of public resources and access to high quality healthcare.**
	AGS 2012
Pursuing differentiated growth-friendly fiscal consolidation	**- Pursuing the reform and modernisation of** pension systems, respecting national traditions of social dialogue to ensure the financial sustainability and adequacy of pensions, by aligning the retirement age with increasing life expectancy, restricting access to early retirement schemes, supporting longer working lives, equalising the pensionable age between men and women and supporting the development of complementary private savings to enhance retirement incomes. This modernisation should be coupled with a reform of **health systems aiming at cost-efficiency and sustainability**.
A real internal market for services	**- Enhancing competition and competitiveness in the retail sector, reducing barriers for the entry and exit of firms, and eliminating unjustified restrictions for** business and professional services, legal professions, accounting or technical advice**, health and social sectors.**
Mobilising labour for growth	**- Developing initiatives that facilitate the development of sectors with the highest employment potential, including in the** low-carbon, resource-efficient economy ("green jobs"), **health and social sectors** ("white jobs") and in the digital economy.
Protecting the vulnerable	- In addition to economic realities, the social tissue of the EU is being put to the test. The crisis has disproportionately hit those who were already vulnerable and has created new categories of people at risk of poverty. **There are also clear signs of increases in the number of people at risk of income poverty, notably child poverty, and social exclusion, with acute health problems and homelessness in the most extreme cases.**
	ASGS 2011
	- There was not an explicit mention to health in the AGS 2011. Nonetheless, three countries received a recommendation in the field of health to address fiscal consolidation challenges thus ensuring long-term fiscal sustainability.

Source: Own elaboration based on the EU's Annual Growth Surveys. **Note**: In the first column of the table, we indicate the main headings in the AGS/ASGS, which we presume as the overarching areas of general economic policy priorities set for each year. The text in the table reproduces literally what is published in the AGS/ASGS.

8. Annex II. Health in the priorities of the European Semester for Spain-CR_ES

	CR_ES 2021
EXECUTIVE SUMMARY	***The plan pursues the general objective of the Facility to promote the Union's economic, social and territorial cohesion and is balanced in its response to the six policy pillars referred to in Article 3 of the Regulation. Several of the components support significantly health****, economic, social and institutional* ***resilience****, notably through measures* ***seeking to improve the functioning of the public administration, the national health system*** *and to preserve and enhance the natural capital of the country. Measures that seek to enhance the effectiveness of and fairness of tax revenue collection and spending are expected to contribute to economic and social resilience* ***(pillar 5)****. In addition, a number of components are designed to support the policies for the next generation through investments in education, skills, the labour market, social inclusion and social housing* ***(pillar 6)****.* ***The digital transition is supported by investments on digital skills and in the digitalisation of the public administration****, industry and business, as well as on the purchase of digital equipment for education.* ***Substantial investments are designed to promote the digitalisation of the public administration and of the National Health Service****, and simplify public interactions with businesses and citizens.*
2. RECOVERY AND RESILIENCE CHALLENGES: SCENE-SETTER ***2.2. Challenges related to sustainable growth, cohesion, resilience and policies for the next generation*** ***Social and territorial cohesion***	***The lack of opportunities and the search for better living conditions are the main cause of depopulation of rural areas.*** *Overcoming the demographic challenge of the urban and rural divide should be mainstreamed into policy action to improve the business environment,* ***access to basic public services in the fields of health****, education and social-leisure, access to connectivity and digital skills, innovation and technology, and transport infrastructure. This would provide better conditions for enterprises to set up in rural areas, as well as for economic diversification and job creation in there.*
2. RECOVERY AND RESILIENCE CHALLENGES: SCENE-SETTER ***2.2. Challenges related to sustainable growth, cohesion, resilience and policies for the next generation*** ***Health, and economic, social and institutional resilience***	***The COVID-19 pandemic has revealed structural weaknesses in the Spanish health system****. The unprecedented surge in demand for intensive care rapidly brought the health system close to a breaking point, stretching the health workforce to the limit,* ***highlighting staff shortages and precarious working conditions. At the regional level, the crisis revealed uneven capacities to cope with the shock****.* ***The mechanisms of co-ordination across the regions****, between health and long-term care, and between different levels of government* ***have shown shortcomings****.* ***A more resilient health system is critical*** *to better control potential disease outbreaks in the future. Issues to tackle are the* ***modernisation of primary care, shortages in the healthcare workforce, prevention and health promotion measures, the integration of health and social care and the deployment of eHealth tools****.* ***The health system also needs to be adapted to the needs of the ageing population****, as nearly 60% of Spaniards aged 65+ have at least one chronic disease, almost 40% have reported symptoms of depression and more than 20% have some limitations in daily activities.*
2. RECOVERY AND RESILIENCE CHALLENGES: SCENE-SETTER ***2.3. Challenges related to the green and digital transition*** ***GHG emissions and air quality***	***The emission of several air pollutants has decreased over the last decades in Spain. However, ensuring a good level of air quality continues to raise concern,*** *mainly related to nitrogen dioxide (NO2) emissions. In particular, conventional personal transport exacerbates existing problems with air quality and traffic congestion in the main metropolitan areas, namely Madrid and Barcelona,* ***leading to health, social and economic costs that could be avoided or minimised.***
2. RECOVERY AND RESILIENCE CHALLENGES: SCENE-SETTER ***2.3. Challenges related to the green and digital transition*** ***Digital dimension***	***The recovery and resilience plan should contribute to the digital transition and at least 20% of the plan's total allocation needs to contribute to digital objective****s. The measures in the plan should, inter alia, contribute to* ***the digital transformation of the economic and social sectors (including public administration, public services, and the justice and health systems).*** *The objective of the measures in the plan should be to improve not only the* ***competitiveness****, but also the* ***resilience, agility and security of companies and public actors, all while ensuring inclusiveness.***
3. OBJECTIVES, STRUCTURE AND GOVERNANCE OF THE PLAN ***3.1. Overall strategy of the plan***	***The plan is structured around four crosscutting axis*** *placed at the centre of the economic policy strategy from the outset:* ***ecological transition, digital transformation, gender equality and social and territorial cohesion****. The* ***ten policy areas of the Plan*** *aim at driving activity and employment to modernise the economy and society of Spain: (i) urban and rural agenda, the fight against rural depopulation and agricultural development; (ii) resilient infrastructures and ecosystems; (iii) a just and inclusive energy transition; (iv) a public administration for the 21st century; (v) modernisation and digitalisation of the industrial fabric and SMEs, recovery of the tourism sector and promotion of Spain as an entrepreneurial nation;* ***(vi) pledge to support science and innovation and strengthen the capabilities of the national health system;*** *(vii) education and knowledge, lifelong learning and capacity building; (viii) the new care economy and employment policies; (ix) promotion of the culture and sports industries and; (x) modernisation of the tax system for inclusive and sustainable growth. These ten policy areas translate into the 30 components of the Plan. The sixth* ***policy area*** *focuses on* ***science and innovation in general, notably in some strategic determinants, such as*** *artificial intelligence, and it* ***promotes reforms and investments in the health system (Component****s 16 (Artificial Intelligence), 17 (Science, technology and innovation) and* ***18 (Reform of the health system)****). It should enable Spanish firms and researchers to participate more actively in a stronger pan-European research system. The impulse given to research and innovation should underpin and accelerate the modernisation of production processes. First, through the incorporation of existing technologies to incremental innovation and an increase in competitiveness and intangible assets, but also through the launch of innovation processes with a truly disruptive perspective.* ***Measures also aim at rendering the national health system more resilient to ensure the efficient response during shocks and address more systemic challenges, which the COVID-19 pandemic highlighted.*** ***The ninth policy area seeks to boost the culture, audio-visual production and videogames and sports sector, which pay an important contribution to economic activity and to the well-being and health of persons*** *(Components 24 (Cultural industry), 25 (Audio-visual) and 26 (Sports)). Advantage is taken in these fields of the opportunities brought by digitalisation.*
3. OBJECTIVES, STRUCTURE AND GOVERNANCE OF THE PLAN ***3.2. Implementation aspects of the plan*** ***Consistency with the challenges and priorities identified in the most recent euro area recommendations***	*When it comes to recommendation 3 to strengthen national institutional frameworks, measures have been taken to simplify administrative procedures for the efficient absorption of European funds, in particular those of the RRF.* ***The Plan also provides for measures to modernise and digitalise public administrations in its Component 11 (Public Administration), particularly in the areas of health,*** *justice and public employment services.*
3. OBJECTIVES, STRUCTURE AND GOVERNANCE OF THE PLAN ***3.2. Implementation aspects of the plan*** ***Cross-border and multi-country projects***	***The RRP of Spain includes measures that are expected to contribute to progress on existing or future cross-border or multi-country projects.*** *This is the case in transport (TEN-T in Component 6 (long-distance sustainable mobility)). There are also cross-border projects investments in connectivity foreseen in the Connecting Europe Facility 2 (EUR 125 million to improve digital connectivity by means of submarine cables in Component 15 (Digital connectivity) and* ***participation in multi-country projects in research and innovation*** *(R&I partnerships in Horizon 2020 and Horizon Europe, pan-European research infrastructures and multi-country projects* ***for health purposes (The Genome of Europe, personalised medicine and high security laboratories)).***
4. SUMMARY OF THE ASSESSMENT OF THE PLAN ***4.1. Comprehensive and adequately balanced response to the economic and social situation***	***The Plan proposes an appropriate overall balance of reforms and investments addressing the six pillars, reflecting*** *the plan's total financial allocation as well as* ***the challenges the country faces****. The green and digital pillars contributions are very significant in terms of reforms and investments put forward. This reflects the substantial allocation foreseen in the plan for the green and digital transition (respectively, 39.7 % and 28.2%).* ***Most components contribute to smart, inclusive and sustainable growth.*** *Seventeen components contribute to the social and territorial cohesion in the ways described below.* ***Eleven components support health, economic, social and institutional resilience.*** *In addition, eight components support the policies for the next generation.*
4. SUMMARY OF THE ASSESSMENT OF THE PLAN ***4.1. Comprehensive and adequately balanced response to the economic and social situation*** ***Smart, sustainable and inclusive growth***	***The effectiveness of the System of Science, Technology and Innovation will be promoted*** *through reforms and investments in Component 17 (Science, Technology and Innovation) (EUR 3.5 billion), Component 16 (Artificial Intelligence) (EUR 500 million) and Component 21 (Education) of the plan (EUR 1,6 billion) ...* ***Investments will also target major infrastructures of the System of Science, Technology and Innovation, including Data and Computing Infrastructures, to upgrade them to international standards. Specific plans are expected to focus on the following key priority areas: green transition, health***
4. SUMMARY OF THE ASSESSMENT OF THE PLAN ***4.1. Comprehensive and adequately balanced response to the economic and social situation*** ***Social and territorial cohesion***	***Territorial cohesion will be reinforced though a better deployment of public services and infrastructure throughout the territory.*** *Several components specifically relate to these objectives. Component 6 (Sustainable long-distance mobility) will support territorial cohesion by reinforcing inter-regional sustainable mobility, in particular through investments in the European Corridors (EUR 3,2 billion) and the Trans-European Network for Transport Program (EUR 1,8 billion). Component 15 (Digital Connectivity) is expected to reinforce territorial cohesion through the deployment of ultrafast broadband to rural areas (EUR 812 million). Moreover, measures in Component 11 (Public administration) will also support territorial and social cohesion by* ***digitalising key public services and enhancing access to them in rural areas****.* ***This objective will also be achieved though incentives to ensure the deployment of health sector workers throughout the territory in Component 18 (Reinforcement of the Health Sector).***
4. SUMMARY OF THE ASSESSMENT OF THE PLAN ***4.1. Comprehensive and adequately balanced response to the economic and social situation*** ***Health, and economic, social and institutional resilience***	***The resilience of the health sector should be strengthened by various investments and reforms contained in Component 18 (Reform of the Health System) (EUR 1 billion) and in other Components such as 17 (Science, Technology and Innovation)****.* ***The capacities of the health system will be strengthened through investments in equipment, the professional skills of its workforce and by reducing temporary employment in the sector****. The Plan is expected to also ensure a* ***more efficient consumption of medicines and medical devices*** *through legislative reforms. The capacity of the National Health System* ***to prevent and address potential global health threats such as COVID-19 will be reinforced by strengthening the capacities for surveillance, early detection and a rapid response to health crisis and by investing in epidemiological surveillance systems.*** *Through this component and Component 26 (Sports), the plan* ***promotes healthy lifestyles, which should prevent sickness and delay fragility****. Finally, a* ***Health Data Centre (Data Lake for the health sector) will be established to allow for big data analysis for diagnostic and treatment purposes.*** *This is part of a broader process* ***to boost the digitalisation of health services, interoperability and networked services at national, European and international level. Other complementary investments in digitalisation of healthcare are included in Component 11 (Public Administration) and 19 (Digital skills).*** *Finally,* ***innovation in the health sector will be supported by a EUR 490 million investment in Component 17 (Science, Technology and Innovation).*** *The investment will enhance the strategic capacities and internationalisation of the National Health System, notably in what concerns* ***personal medicine, research on ageing, and participation in the multi-country project "The Genome of Europe"****.* ***The institutional resilience of Spain will be strengthened through reforms and investments to enhance its public administration (EUR 4,2 billion). Reforms in Component 11 (Public Administration) will relate to different areas, including regulatory reforms to improve human resources management in the public administration (including to reduce the number of temporary employees), the institutional architecture of economic governance, measures to strengthen the public procurement framework and additional steps to reinforce ex-ante public policy evaluation****. The digitalisation of public services has proven key to establish support mechanism during the pandemic. Under Component 11 (Public administration), Spain plans investments to digitalise the public administration and actions to* ***strengthen the coordination between the different levels of government. The Plan seeks to digitalise key areas related to health****, employment (public employment services), justice, social security and inclusion policies, as well as the digitalisation of territorial administrations. It also envisages actions to enhance the public sector cybersecurity capacities, which are key to detect and respond to cyberattacks.*
4. SUMMARY OF THE ASSESSMENT OF THE PLAN ***4.2. Link with country-specific recommendations and the European Semester*** ***Pension system and long-term fiscal sustainability***	*The RRP of Spain is expected to contribute to addressing a significant subset of challenges identified in the relevant country-specific recommendations, including fiscal aspects thereof, addressed to Spain in the context of the European Semester.* ***Beyond the pension system reform, other reforms in the plan may result in the creation of permanent entitlements to be borne by the national budget. This is the case of the expansion of services under the universal health cover in Component 18 (Reform of the Health System), certain reforms integrating temporary staff as permanent one in the healthcare sector also in Component 18 (Health Reform System)****,...For some of these measures, support from the European Structural and Investment Funds ('ESIF') could alleviate part of the burden on the national budget so that the investment can be sustained in the medium-term. The Spanish authorities have committed to explore this possibility together with regions (who are competent for these policies) with a view to ensuring a lasting impact of RRF investments.*
4. SUMMARY OF THE ASSESSMENT OF THE PLAN ***4.2. Link with country-specific recommendations and the European Semester*** ***Health & long-term care***	***Efforts are needed to increase the resilience and performance of the health system****, and some of the measures foreseen in the plan are expected to contribute to that goal.* ***In 2020, the Council recommended Spain to strengthen its health system's resilience and capacity as regards health workers, critical medical products and infrastructure (CSR 2020.1.2).*** *The Commission has acknowledged in the past that the Spanish health system has been delivering good health outcomes, but the outbreak of the COVID-19 pandemic put an unprecedented strain on the system and revealed its vulnerability to shocks. These have been detailed in Section 2.2.* ***To address those vulnerabilities****, a legislative reform in Component 18 (Reform of the Health System) will* ***improve the working conditions of health workers, notably to reduce the use of temporary contracts****. Measures in that component, such as a EUR 796 million* ***investment in high-technology equipment in hospitals****, as well as* ***reforms to extend the portfolio of services offered by the National Health System to interventions only partially or not covered previously (such as for dental care, early childhood healthcare, genomics and orthopaedic and prosthetic care)****, should contribute to* ***improve healthcare coverage aligning services to the needs of the ageing population and territorial cohesion****.* ***Investments to foster the digitalisation of the health system and the use of big data and investments in personalised medicine will contribute to innovation****.* *The plan also seeks to tackle the challenge of a rapidly ageing population, which will result in increasing healthcare and long-term care demands. Component 18 presents plans for the roll out of the* ***primary care reform****, but Spain has not included associated investments in this area in the plan. Measures in Component 18 (Reform of the Health System) and Component 26 (Sports) of the plan will* ***support prevention and health promotion*** *measures, which respond to the demographic and epidemiological shifts in the population. The Plan responds to some extent to the increased demand for healthcare and long-term care and may help* ***alleviate fiscal sustainability concerns in the future. Cost-effective solutions are necessary to ensure access to a sustainable healthcare of quality for all in the future****. Investments to implement a* ***cost-efficient use of medicines and medical devices*** *in Component 18 (Reform of the Health System) will contribute to that goal. Overall, the measures and investments in the plan contribute to address challenges in this CSR. Finally, it is important to ensure that the ambitious* ***primary care reforms*** *are implemented with the necessary resources.*
4. SUMMARY OF THE ASSESSMENT OF THE PLAN ***4.2. Link with country-specific recommendations and the European Semester*** ***Labour market reforms***	*...* ***the plan of Spain contains measures that should contribute significantly to reducing the high share of temporary contracts, including in the public sector****...* ***This is notably the case in health****, education and justice. Measures in Component 11 (Public administration) envisage a stabilisation process for structural posts occupied by temporary staff through calls for public employment, as well as regulatory changes to avoid abuses in the use of short-term contracts in the administration and changes to allow for a better planning of staff needs.* ***The reform of the statute of health workers in Component 18 (Reform of the Health System) envisages the conversion of temporary contracts into permanent ones for staff who have been performing tasks under a fixed-term contract over a given length of time****. Together, these measures are expected to significantly contribute to reducing the share of temporary contracts.*

4. SUMMARY OF THE ASSESSMENT OF THE PLAN ***4.2. Link with country-specific recommendations and the European Semester*** ***Research and Innovation policy***	***The component also targets specific sectors to help support the*** *green transition (for instance, by bringing down emissions of aerospace and automotive vehicles), as well as the* ***digital, and health system to better prepare for future pandemics****.*
4. SUMMARY OF THE ASSESSMENT OF THE PLAN ***4.2. Link with country-specific recommendations and the European Semester*** ***The digital transition***	*Although Spain is already doing well in the area of digital public services,* ***the RRP will provide additional impulse to the digitalisation of the public administration through investments in*** *Component 11 (Public administration), but also through reforms to simplify and digitalise the procedures for setting up a business, as well as to digitalise further the justice system (Component 13 (Support to SMEs)),* ***the health sector (Component 18 (Reform of the Health System))****, of education and VET (Components 21 and 20) and of sports federations (Component 26 (Sports)).*
4. SUMMARY OF THE ASSESSMENT OF THE PLAN ***4.2. Link with country-specific recommendations and the European Semester*** ***Other public administration aspects***	*Stronger and sustained coordination between the national, regional and local authorities would render the implementation of policies more effective, and the plan contains measures to reinforce existing mechanisms for coordination.* ***Coordinating different levels of government is a challenge in policy areas where both national and regional levels are involved in reforms. These include better regulation, as well as*** *active labour market policies, education,* ***health care and social services.***
4. SUMMARY OF THE ASSESSMENT OF THE PLAN ***4.3. Growth potential, job creation, economic, institutional and social resilience, European Pillar of Social Rights, mitigating the impact of the crisis, and social territorial cohesion and convergence*** ***Strengthening social cohesion***	***The RRP also includes reforms and investments, which are expected to improve access to healthcare and in doing so,*** *contribute to Principle 16 of the Pillar. The Plan will intervene to enhance accessibility of health services in less well-deserved areas by* ***addressing shortages of healthcare workforce and equipment****. Planned reforms and investments will also contribute to expand further the services provided by the system.*
4. SUMMARY OF THE ASSESSMENT OF THE PLAN ***4.6. Digital transition*** ***Digital transition***	*Measures enhancing digital skills are also expected to contribute significantly to the challenges faced by Spain in the use of internet services.* ***The improvement of digital skills in the population, combined with the action on connectivity included in Component 15*** *(Digital Connectivity), that also includes specific connectivity vouchers for the more vulnerable groups,* ***and also combined with the actions on digitalisation of businesses and of the public administration (including the health system) are also expected to increase the overall use of internet services.*** *Spain is a top performer in the area of digital public services, and the plan is expected to further reinforce this excellent performance with a comprehensive package of investments. These investments clearly contribute to the* ***digital transition*** *and a long-lasting impact on the concerned public services is expected in terms of future-readiness,* ***territorial and social cohesion, resilience, growth and efficiency****. In the public administration, the plan includes* ***investments to digitize all levels of government*** *in Component 11 (Public administration),* ***and many public services, such as for instance the national health system****, the justice system and the public procurement system, schools, VET and the universities, and sports federation (EUR 2,3 billion).* ***Digital related investment in the health sector are also included in Component 18*** *(Reform of Health system). The plan will also modernise and strengthen social services with measures to promote innovation and the use of new technologies included in Component 22 (Care Economy, equality and inclusion).*
4. SUMMARY OF THE ASSESSMENT OF THE PLAN ***4.7. Lasting impact of the plan*** ***Lasting impact***	*While the plan as a whole has the potential to tackle some of the root problems underlying labour market and competitiveness challenges in the country,* ***some risks exist as regards its long-lasting impact.*** *A few measures in* ***the plan may create permanent budgetary entitlements*** *(early childhood education and care, vocational education and training, universities,* ***health****).* *A broader ownership of the content of the plan would secure the lasting impact of its measures.* ***Ensuring a buy-in of the plan by actors involved in the implementation of reforms and investments, such as regional and local authorities in Spain, is key. These authorities are competent in areas such as health****, education and vocational education and training. Ensuring a broader ownership during the implementation of the plan of Spain would enhance its lasting impact.*
4. SUMMARY OF THE ASSESSMENT OF THE PLAN ***4.11. Coherence***	***Coordination between the different levels of government has often been identified as a challenge in Spain****, and efforts to improve it could support and complement many other measures in the plan.* ***A stronger and sustained coordination is a long-standing challenge to ensure the effectiveness of policies in areas that fall under the responsibility of regions, such as*** *those related to urban mobility (Component 1 (Sustainable urban mobility)),* ***health*** *(Component 18 (Reform of the Health System)),*
CR_ES 2020	
EXECUTIVE SUMMARY	***Spain has made limited progress on the 2019 country-specific recommendations*** *(CSRs)* ***There has been limited progress in the following areas****:* ***- The institutional framework governing the management of public finances has not been strengthened****. Recommendations stemming from* ***spending reviews*** *by the independent fiscal authority (AIReF), if implemented, have the potential to increase efficiency and effectiveness of public spending in several policy areas.* ***- The newly created governance structure for public procurement is not yet fully operational****. The adoption of the nation-wide public procurement strategy envisaged for 2018 is delayed.* ***Spain is making progress towards achieving the Sustainable Development Goals*** *(SDGs). Spain has made* ***most evident progress with SDG 3 "Good health and well-being"****. Moderate improvements are also recorded for a broad range of the other SDGs. This notwithstanding, some of the individual underlying indicators are significantly lower than the EU average (share of early school leavers, people at risk of poverty, research and innovation, perception of corruption, recycling of municipal waste, land degradation and water).* ***Other key structural issues analysed in this report****, which point to particular challenges for Spain's economy, are the following:* ***- Stronger and sustained coordination between the national, regional and local authorities would render the implementation of policies more effective. Coordination amongst different levels of government is key and remains a challenge in policy areas where both national and regional levels are involved in reforms. These include*** *better regulation and the implementation of internal market rules, as well as active labour market policies, education,* ***health care*** *and social services.*
1. ECONOMIC SITUATION AND OUTLOOK ***Sustainable Development Goals***	***Spain is making progress towards achieving the Sustainable Development Goals*** *(SDGs). On the basis of the trends in the Eurostat indicators over the last five years, the area where* ***progress has been most evident is SDG 3 "Good health and well-being", where all the underlying indicators showed an overall improved performance, despite some regional variations in access to certain types of health care.***
4. REFORM PRIORITIES ***4.1. PUBLIC FINANCES AND TAXATION*** ***4.1.1. DEBT SUSTAINABILITY AND FISCAL RISKS***	***In the long term, Spain faces a medium fiscal sustainability risk****. This conclusion stems from combining the sustainability gap indicator (S2) with a debt sustainability analysis perspective described above. The former shows a gap of 1.8% of GDP that needs to be closed to stabilise debt over the long term. The gap is mainly due to the unfavourable initial budgetary position, though also, to a limited extent, to the projected ageing costs. As was the case for the S1 indicator, the S2 indicator is also based on assumptions regarding pension expenditure that may prove too low, if the announced reversals of some of the pension reforms materialise.* ***Under the more adverse Ageing Working Group risk scenario (whereby healthcare and long-term care costs would exceed those expected from purely demographic factors due to non-demographic drivers such as technological changes and catching-up effects), the S2 indicator would double, to 4.0% of GDP.*** ***To improve the efficiency of public spending, key areas are undergoing thorough reviews.*** *Spain's Independent Authority for Fiscal Responsibility (AIReF) completed seven expenditure reviews in 2019 and four new reviews are underway. They have the potential to lead to improvements in the efficiency and effectiveness of public spending ... Implementation of the recommendations based on the completed reviews has started, but it will be mainly up to the new government to bring the results of the reviews to fruition.* ***Spending reviews: The review of healthcare spending in medication dispensed through prescriptions****, excluding hospital spending, covered about €10 billion of total public expenditure. This represented about 14% of public healthcare expenditure or 0.9% of GDP in 2017. Following a thorough review,* ***18 measures were proposed to improve governance; procedures to do with the pricing, selection and purchase of medicines; and efficiency and equity ...*** *Not all potential savings are easy to quantify, but if the recommendations were implemented in the next few years,* ***AIReF estimates this could yield savings of at least €2 billion*** *(AIReF, 2019a).*
4. REFORM PRIORITIES ***4.3. LABOUR MARKET, EDUCATION AND SOCIAL POLICIES*** ***4.3.1. EMPLOYMENT*** ***Labour market developments***	***Monitoring performance in light of the European Pillar of Social Rights:*** *On the positive side, Spain performs better than the EU average in providing access to childcare and to health care services. However, disparities in access and quality persist across the territory.* ***The Spanish labour market still largely relies on temporary contracts****, many of them of very short duration. Temporary employment has been underpinning job creation and destruction for several decades (Bank of Spain, 2019a). In 2018, 26.9% of employees (age 15-64) worked on a temporary contract, almost twice the EU average. A slight decrease in recent quarters (26.1% in Q3-2019) is driven by the declining weight of fixed term contracts in net employment growth.* ***Temporary contracts are widespread also in sectors with less marked seasonality (e.g. education, health****, manufacturing)* ***and in high-skilled occupations****. 30% of all temporary contracts signed in 2019 were shorter than one week, against 17% in 2007. (1)* ***The share of public employees on temporary contracts continues to increase despite the commitment to reduce it****. In Q4-2019, 27.8% of public sector employees had a temporary contract, 1.5 pps more than in Q4-2018 and about 8 pps more than in 2014 (INE data). The current share is very far from the 8% target set for the end of the 2020 recruitment competitions (see European Commission, 2019a).* ***The recruitment competitions authorised during the last two years, at both central and regional level, are not yet sufficient to reduce fixed-term employment in the public sector****. 181,700 nationwide permanent posts were authorised in 2017-2019 by both the central and regional administrations.* ***Priority was given to the health and education sectors managed by the regions*** *(see Sections 4.3.2 and 4.3.4). Exams for 67,200 of those posts had been organised by November 2019, with 24,500 posts already filled.* *(1) Measures to discourage the use of very short contracts are not proving effective. In January 2019 the premium in the social security charge for common contingencies of contracts lasting 5 days or less rose from 36% to 40%.*
4. REFORM PRIORITIES ***4.3. LABOUR MARKET, EDUCATION AND SOCIAL POLICIES*** ***4.3.2. EDUCATION AND SKILLS***	***Skills shortages in Spain are concentrated on medium to high-level technical occupations.*** *Cedefop (2016) identified* ***the main occupations in which employers currently face difficulties*** *finding a suitable candidate: ICT specialists; medium to high-level professionals in engineering, management, sales and shipping; as well as* ***medical doctors and other health related professionals.***
4. REFORM PRIORITIES ***4.3. LABOUR MARKET, EDUCATION AND SOCIAL POLICIES*** ***4.3.4. HEALTHCARE AND LONG-TERM CARE***	***Spain guarantees universal access to healthcare but out-of-pocket payments on dental care are a barrier to access for low-income households.*** *Spaniards report one of the lowest levels of unmet needs for medical care in the EU (0.2% in 2018). By contrast, the share of unmet needs for dental care is relatively high (4.6%, 1.7 pps above the EU average), particularly among people in the lowest income quintile (12%, 6 pps above the EU average). Direct out-of-pocket spending by households (mainly on dental care and to some extent, on pharmaceuticals) reached 23.6% of total health expenditure in 2017, 7.8 pps above the EU average (OECD, 2019e).* ***A spending review by AIReF highlights that the current co-payment model for pharmaceuticals mostly penalises low-income workers and recipients of minimum income benefits relative to pensioners*** *(AIREF, 2019a).* ***The primary care system performs well, but needs further adaptation to cope with the demographic and epidemiological shifts. Population ageing creates new health care needs, as nearly 60% of Spaniards aged 65+ have at least one chronic disease, more than 20% have some limitations in daily activities and almost 40% have reported symptoms of depression. A new strategic framework for primary and community care (April 2019), is designed to strengthen the role of the Interterritorial Council in its commitment to prioritise financial and human resources dedicated to primary care and step-up the provision of primary care as well as the use of information technologies.*** *The strategic framework still needs to be implemented, including through allocation of relevant resources.* ***Moreover, resources for preventive measures are limited.*** ***There are inefficiencies in the purchase and use of pharmacy-dispensed medicines.*** *A spending review (AIREF, 2019a) concluded that regional variations in spending on pharmacy-dispensed medicines are not explained by healthcare needs****. Some measures, including a new tool for assessing the therapeutic value of medicines, aim to tackle these inefficiencies.*** ***The use of generic medicines remains below the EU average, and has not increased since 2014*** *(48%). An Action Plan for a more sustainable use of medicines is being prepared and includes* ***17 measures to increase the use of generics and biosimilars****.* ***Spending on pharmaceuticals in hospitals continues to rise while spending levels also vary considerably across regions. A spending review of hospital drug and investment expenditure, which is due by 2020, should provide recommendations.*** ***Inefficiencies are also linked to the recruitment and working conditions of health workers. The persistent use of temporary contracts contributes to the large turnover of health workers.*** *The authorisation to recruit 83,100 permanent workers nationwide in 2018-2019 aims to address this challenge, although* ***the recruitment competitions are progressing at slow pace and the transition to permanent employment for healthcare professionals remains insufficient****.* ***The number of nurses per 1,000 people is well below the EU average*** *(5.7 in Spain vs. 8.5 in the EU) and the new advanced nurse practice is still not in place in all regions. There are plans to continue increasing the places accredited and offered for the training of specialists in Family and Community Medicine. However,* ***there is a lack of consensus between educational and health authorities on medium to long-term needs. Measures to promote teamwork in primary care and a better territorial distribution of healthcare professionals still have to be defined.***
4. REFORM PRIORITIES ***4.4. COMPETITIVENESS, REFORMS, AND INVESTMENT*** ***4.4.3. REGIONAL DISPARITIES***	***The vast majority of Spanish regions rank below the EU average on the 2019 EU Regional Competitiveness Index****. Madrid and the Basque Country are exceptions ...* ***Spanish regions score well in terms of health services****, but significant gaps remain with respect to the EU average, mostly in terms of labour market efficiency, higher education and lifelong learning.* ***Large regional disparities persist in key*** *education and* ***social indicators*** *...* ***As regards healthcare, waiting times for elective surgery in Spain are different amongst regions and have overall increased.*** ***Spain faces severe demographic challenges caused by depopulation (mostly in rural areas), and ageing. O****ver 80% of Spain's municipalities saw their population fall between 2011 and 2018.* ***Combined with ageing ..., the effects of depopulation pose a challenge for the provision of basic services, such as healthcare and long-term care services.***
CR_ES 2019	
EXECUTIVE SUMMARY	*Other key structural issues analysed in this country report, which point to particular challenges for Spain's economy, are the following:* *The proportion of people at risk of poverty or social exclusion decreased slightly in 2017 but remains high, particularly among children. Temporary workers, the low-skilled and those not born in the EU face one of the highest in-work poverty risks in the EU. Public spending on family benefits, which is half of the EU average, remains poorly targeted at low-income families.* ***Healthcare delivery could better respond to emerging challenges related to population ageing, disabilities and chronic conditions.***

4. REFORM PRIORITIES ***4.1. PUBLIC FINANCES AND TAXATION*** ***4.1.1. DEBT SUSTAINABILITY AND FISCAL RISKS***	***Long-term sustainability implications of changes to … health care policies****: Also in the health care area, the Spanish authorities have recently implemented a new measure. In July 2018, the Spanish Government adopted a Royal Decree-Law extending health care coverage to undocumented and illegal immigrants (See Section 4.3.3). This Decree-Law was validated by Parliament in September 2018, establishing a legal right to health care.* ***In the long term, Spain is deemed at high fiscal sustainability risk****. This conclusion stems from combining the sustainability gap indicator (S2) with a debt sustainability analysis perspective described above. The former shows a gap of 2.3% of GDP that needs to be closed to stabilise debt over the long-term.* ***The gap is mainly due the unfavourable initial budgetary position, but to a limited extent also to the projected ageing costs****. As was the case for the S1 indicator, the S2 indicator is also based on assumptions regarding pension expenditure that may prove too low, if the announced reversals of some of the pension reforms materialises.* ***Under the more adverse Ageing Working Group risk scenario (whereby healthcare and long-term care costs would exceed those expected from purely demographic factors due to non-demographic drivers such as technological changes and catching-up effects), the S2 indicator would double, to 4.4 % of GDP.***
4. REFORM PRIORITIES ***4.3. LABOUR MARKET, EDUCATION AND SOCIAL POLICIES*** ***4.3.1. LABOUR MARKET***	***Monitoring performance in light of the European Pillar of Social Rights****: On the positive side, Spain performs better than the EU average in providing access to childcare and to health care services.* ***However, disparities in access and quality persist across the territory.***
4. REFORM PRIORITIES ***4.3. LABOUR MARKET, EDUCATION AND SOCIAL POLICIES*** ***4.3.3. SOCIAL POLICIES***	***The social integration of non-EU born migrants and of the Roma lags behind.*** *Spain has one of the largest Roma community in the EU (750 000 people, or 1.6% of the population).* ***While overall they tend to have better education and health outcomes than other Roma communities in the EU, they face a very high and rising risk of poverty and significant gaps in social outcomes vis à vis the rest of the population in Spain.*** ***Inequality of access to medical care is low on average, with exceptions and some variation between regions.*** *In 2017, self-reported unmet need for care was lower than in the EU and with little variation by income groups (1). The extension of access to health care to undocumented migrants in 2018 filled one remaining gap in this area. However,* ***the gap for unmet dental care needs between those in the lowest and highest income quintile was 9.3 pps. vs 5.3 pps. at EU level. In addition, regional disparities in care delivery persist, notably in the use of evidence-based procedures in secondary care and in the rational use of medicines*** *(Bernal et al, 2018).* ***There are increasing shortages of nurses and general physicians in primary care and long-term care services, especially in some regions. The widespread use of part-time and temporary contracts and the decline in salaries may have contributed to the outflow of doctors and nurses seeking employment abroad. These shortages are likely to further increase, as almost one third of the doctors are expected to retire within the next 10 to 15 years, in particular general practitioners.*** ***Rapid population ageing and growing long-standing disability and chronic conditions challenge current healthcare delivery. Despite the increasing pressure on primary care, public spending on hospitals represents an increasing share of total public spending to the expense of primary care. The relatively high share of avoidable hospital admissions in Spain (6.3 vs 5.5 EU average), also illustrates the potential to increase the role of primary care in the prevention and management of acute chronic conditions*** *(2) (OECD and the European Union 2018).* ***Other challenges for primary care include the growing care needs associated to lifestyle risk factors and chronic conditions; and the need to ensure continuity of care across care providers*** *(Bernal et al, 2018).* ***The lack of interoperability of electronic systems hampers the efficient use of available e-health solutions, as well as the coordination and continuity of care, especially in some regions*** *(Oderkirk, 2017).* ***Investment needs:*** *Increased investment in education and training, employment services and social inclusion policies is important* ***for improving Spain's productivity*** *and long-term inclusive growth. Promoting better access to quality and inclusive education is key to employability and social mobility. Investment in modern public employment services is a driver of quality jobs and smoother labour market transitions. High at-risk-of-poverty or social exclusion rates, in particular for children, call for investment in active inclusion policies and social infrastructure (e.g. social housing). Actions promoting labour mobility, entrepreneurship and the social economy can respond to depopulation in some inland regions.* ***Integrating the different strands of healthcare services, while strengthening primary care may help adapt care delivery to population ageing, disability and chronic conditions. Investment should respond to regional needs and disparities in the availability <u>and effectiveness of public services.</u>*** *(1) The benchmarking exercise in the area of minimum income also shows that the gap in unmet needs for medical care between people 18-59 at risk of poverty from very low work intensity households and the rest of the population aged 18-59 is among the lowest in the EU.* *(2) Including diabetes, hypertension, heart failure, COPD and bronchiectasis, and asthma.*
4. REFORM PRIORITIES ***4.4. COMPETITIVENESS, REFORMS, AND INVESTMENT*** ***4.4.3. THE REGIONAL DIMENSION***	*Most Spanish regions rank below the EU average in most indicators of the 2016 Regional Competitiveness Index. … except for health and basic education* ***Urbanisation and demographic pressure in some urban areas, on the one hand, and depopulation and ageing in rural areas, on the other hand, pose challenges.*** *Most of the bigger urban areas have experienced rapid population growth, leading to challenges related to urban sprawl, poverty, traffic congestion, and bad air quality. At the same time, depopulation and acute ageing processes are taking place in certain rural and smaller urban areas, making them less attractive for doing business and* ***increasing the cost of providing public services.*** *There are 14 provinces heavily affected by demographic decline, with more than 25 % of their population aged 65 or older.* ***This represents an additional challenge for the provision of healthcare and long-term care services.***
ANNEX D: INVESTMENT GUIDANCE ON COHESION POLICY FUNDING 2021-2027 FOR SPAIN ***Policy Objective 1: A Smarter Europe – Innovative and smart industrial transformation***	***… develop and promote interoperable e-government and e-services (health****, education and other public services),* ***in particular in remote and outermost regions, and including joint provision of services in border areas****.*
ANNEX D: INVESTMENT GUIDANCE ON COHESION POLICY FUNDING 2021-2027 FOR SPAIN ***Policy Objective 4: A more social Europe – Implementing the European Pillar of Social Rights***	***- fight discrimination****, especially in access to education, labour market and social services.* ***Support*** *social housing infrastructure, jointly with education, employment and* ***health interventions.*** ***- strengthen primary care and integrated care, including through investments in infrastructure and e-health, in particular in regions lagging behind and with a view to reducing health inequalities.***
CR_ES 2018	
4. REFORM PRIORITIES ***4.1. PUBLIC FINANCES AND TAXATION*** ***4.1.1. GENERAL GOVERNMENT DEBT***	***In the longer term, risks to fiscal sustainability due to the unfavourable initial budgetary position are mitigated by savings in age-related expenditure. Savings on non-health ageing related spending (pensions and unemployment benefits) amount to about 2.4 % of GDP, due to the 2011 and 2013 pension reforms and other factors. By contrast, public expenditure on health care and long-term care adds 1.5 % of GDP to the fiscal sustainability gap.*** *This projection is based on current expenditure trends and the expected demographic changes.*
4. REFORM PRIORITIES ***4.3. LABOUR MARKET, EDUCATION AND SOCIAL POLICIES*** ***4.3.3. SOCIAL POLICIES***	***Inequalities in access to health care are low compared to the EU average, although they have slightly increased****. Spain has one of the lowest rates of reported unmet needs for medical care in the EU. The difference in self-declared unmet need for medical examination between the lowest and highest income groups has however increased from 0.2 pps in 2008 to 1.6 pps in 2014. While this gap remains below the EU average, it constitutes a significant change (OECD, 2017c). Furthermore, out-of-pocket medical spending exceeds the EU average by 50 % (3.5 % of overall expenditure against 2.3 % in the EU). 4.4 % of the population stopped taking prescribed medications because they were too expensive.* ***Disparities in access to healthcare are also sizeable.*** *For instance,* ***waiting times*** *for surgery vary between 50 and 160 days* ***across regions****, and there are between 2.7 and 5.3 doctors per 1000 population.*
CR_ES 2017	
EXECUTIVE SUMMARY	*Overall, Spain has made limited progress in addressing the 2016 country-specific recommendations (CSRs). (1)* *However,* ***limited progress was achieved in strengthening public procurement policy frameworks****, and some progress in implementing the fiscal framework law* *<u>No progress was made in the **regulation of professional services**</u>* *(1)* Spain did not received a specific health CSR on health in 2016.
ECONOMIC SITUATION AND OUTLOOK ***Social developments***	***<u>Inequalities in access to healthcare have also risen significantly</u>*** *<u>from low levels during the crisis (1).</u>* *(1) The income quintile gap in self-reported unmet need for medical examination increased from 0.2 pps in 2008 to 1.6 in 2014.*
4. REFORM PRIORITIES ***4.1. PUBLIC FINANCES AND TAXATION*** ***4.1.1. PUBLIC SECTOR DEBT***	*In the longer term,* ***risks to fiscal sustainability are significantly mitigated by savings in age-related expenditure****. These correspond to savings in non-health ageing related spending (pensions, education and unemployment benefits), also due to the recent pension reform. By contrast,* ***public expenditure on health care and long-term care is projected to increase slightly above the average increase for the EU over the horizon till 2060*** *(by 1.1 pp against 0.9 pp, respectively). The projection is based on current expenditure trends and the expected demographic changes.*
4. REFORM PRIORITIES ***4.1. PUBLIC FINANCES AND TAXATION*** ***4.1.3. FISCAL FRAMEWORKS***	***Despite not being de iure a federal country, Spain has a strong regional dimension. Regional governments in Spain are responsible for a variety of expenditure functions, mostly geared towards the provision of public services such as healthcare****, education, and social protection policies.* ***Spain stands out together with Italy for the importance of the healthcare function relative to Austria and Switzerland, and above all, to Germany and Belgium, where healthcare spending is to a large extent centralised****. (1)* ***Regional governments play an important role in shaping policies in Spain****. There is more to the role of government than managing resources and providing services. The regional authority index (Hooghe et al., 2016), a composite indicator measuring the powers of regional governments across ten dimensions, including law making and policy scope, also place Spain in the group of most decentralised countries in the world... [It] also shows that over the past few decades, Spain has reached comparable levels of decentralisation than long-established federal countries. Differences in regions' initial tax capacity call for equalisation transfers under the solidarity principle. …* ***Equalisation transfers are carried out*** *namely through the Guarantee Fund, which aims* ***to ensure that each region receives the same resources relative to its population (adjusted for differences in relevant demand and cost factors) to finance the basic public welfare services (i.e., education, healthcare and social services)****, as well as through the Convergence Funds, which redistribute resources based on regions' ranking in variables such as income per head, population density and population growth.* *Regional expenditure is regaining its pre-crisis levels. …* ***[I]n 2015, the total level of regional expenditure per capita in real terms was very close to the 2006 level. While some expenditure categories****, such as* ***economic affairs, were considerably lower (on account of the fall in gross fixed capital formation, investment aid and subsidies to production) others, namely healthcare and spending on social protection, were above. The application of the Stability Law's expenditure rule, whose implementation details are still not sufficiently specified …, can help underpin the <u>sustainability of expenditure growth, especially for regions for which the annual headline deficit target may not be overly demanding.</u>*** *(1) Over time, the share of taxes in Spain's regional revenue has become more important than the share of transfers from other government levels, namely the central government. In 2015 the share of own taxes – excluding shared taxes on which regional governments have no normative powers, which are treated as transfers in revenue statistics - was slightly smaller than in Germany and Switzerland .*
CR_ES 2016	
EXECUTIVE SUMMARY	*Overall, Spain has made some progress in addressing the 2015 country-specific recommendations.* *Spain has also made some progress to improve the business environment. In particular, some measures have been adopted to remove barriers preventing companies from growing, and has accelerated the implementation of the law on market unity.* ***However, the planned reform of professional services has not yet been adopted.*** *Finally,* ***progress in the area of public finances has been limited****. Although some measures have been taken to* ***increase transparency in regions' finances****,* ***there has been only limited policy action to improve the cost-effectiveness of the healthcare sector and rationalise hospital pharmaceutical spending.***
2. IMBALANCES, RISKS AND ADJUSTMENT ISSUES ***2.3. INDEBTEDNESS AND DELEVERAGING*** ***General government debt***	***In the longer term, risks to fiscal sustainability are lower thanks to the positive impact of reductions in age-related expenditure. These correspond to savings due to the recent pension reform. Expenditure increases in healthcare and long-term care are projected to be compensated by decreases in other ageing related factors (pensions, education and unemployment benefits)****, which — in the case of pensions — will also result in lower income replacement ratios.* ***The Spanish healthcare system faces some sustainability challenges. The system continues to achieve good results in both outcomes and accessibility, while maintaining a relatively low level of expenditure. Nevertheless, it faces a fiscal sustainability challenge in the medium and long-term. Hospital pharmaceutical expenditure registered a strong increase in recent years****, which — according to 2015 in-year data published by Farmaindustria — is set to strengthen further in 2015, even excluding the impact of new anti-hepatitis medications. Moreover,* ***there is scope to improve transparency of procurement of healthcare services at regional level, where there is often a lack of competition between tenderers****.* ***A new voluntary budget rule on healthcare spending for application at regional level was approved in mid-June 2015.*** *The new budget rule limits growth in healthcare and pharmaceutical spending in 2015 and 2016 to the reference rate of medium-term economic growth of the Spanish economy. If eligible spending exceeds that rate, then the region concerned would be prevented from offering healthcare services other than those included in the national basket of health services and would be asked to apply efficiency-enhancing measures. Regional governments can comply with*

	the rule on a voluntary basis, and financial incentives to their participation have been devised by the Ministry of Finance and the Ministry of Health in consultation with the health industry. ***It is however unclear at this stage how many regions will comply with this new rule and therefore what will be its effectiveness in tackling long-term sustainability challenges in the public health sector.*** *There is scope for improving the efficiency of the Spanish economy in the use of resources. Innovative measures to reduce the use of resources and energy can increase savings of small and medium enterprises and improve their competitiveness. Moreover, a still high proportion of municipal waste in Spain is landfilled (around 60 % in 2013, compared to the EU average of 31 %), so that the country is far from reaching the 50 % recycling target by 2020 and moving to an economic model with a more circular use of resources. Finally,* ***personal transport exacerbates seasonal problems with air quality and traffic congestion in major Spanish cities, leading to health and economic costs.***
3.5. PUBLIC ADMINISTRATION, FISCAL FRAMEWORKS AND TAXATION ***Fiscal framework***	***Recent policy developments aim to further increase transparency and accountability in regions' public finances****. These are in addition to the publication since 2013 of monthly regional budget execution data in national account terms. By way of illustration, in October 2015 the Ministry of Finance issued guidelines to help regions to apply the stability law's spending rule.* ***In February 2016, it plans to start publishing detailed data on regional governments' spending on health and pharmaceuticals.*** *Compared with last year, there has also been progress in the preparation of regional government's multiannual budget plans starting in 2016, with among other things, specification of revenue and expenditure for the years covered.*
OVERVIEW TABLE ***Country-specific recommendations (CSRs) assessment***	***CSR1*** *Ensure a durable correction of the excessive deficit by 2016 by taking the necessary structural measures in 2015 and 2016 and using windfall gains to accelerate the deficit and debt reduction. Strengthen transparency and accountability of regional public finances.* ***Improve the cost-effectiveness of the healthcare sector, and rationalise hospital pharmaceutical spending.*** ***Some progress has been made to strengthen transparency and accountability of regional public finances****. On 30/10/15, IGAE, the state general comptroller, issued guidelines on how to implement the spending rule at regional government level. Moreover,* ***the Ministry of Finance is expected to start publishing detailed data on regional governments' spending on health and pharmaceutical products in early 2016, following the amendments made to Spain's general law on healthcare in July 2015****. Despite progress made throughout the previous legislature, there remains room for achieving greater convergence of budgetary codes, budgetary documents, accompanying tables and public accounting rules for regional governments in the interest of transparency.* ***Limited progress has been made in improving the cost-effectiveness of the healthcare sector, and rationalising hospital pharmaceutical spending.*** *The new voluntary fiscal rule supposed to limit growth in healthcare spending in 2015 and 2016 needs to be implemented by regions. The agreement with pharmaceutical industry should in 2016 limit growth in expenditure on original non-generic prescription drugs to the reference GDP growth rate.*
CR_ES 2015	
EXECUTIVE SUMMARY	*This Country Report also assesses progress towards implementing the 2014 Country Specific Recommendations. It concludes that on average, Spain has made some progress in implementing them.* ***Spain made some progress in the implementation of the recommendation on*** *tax reform,* ***improving the cost-effectiveness of the healthcare sector, conducting a spending review****,...*
2. IMBALANCES, RISKS AND ADJUSTMENT ***2.2. INDEBTEDNESS AND DELEVERAGING*** ***Public sector debt***	*Pension and* ***healthcare expenditure have an important impact on long-term public debt dynamics.*** ***Spain has increased cost-effectiveness of the healthcare sector, but challenges remain.*** *The most recent reforms build on a comprehensive framework that has been developed since 2012 to increase the efficiency of healthcare expenditure. The reforms include further rationalisation of public procurement policy and institutional administration, and clearing public arrears.* ***The measures implemented since 2012 have already helped to reduce expenditure and to increase cost-effectiveness, but the pace of budgetary adjustment has moderated in 2014. Moreover, pharmaceutical spending started to grow again, and might rise even further due to the introduction of some innovative medicines.*** ***As regards further improvements in the efficiency of health-care, there seem to be consensus about the following measures: promoting prevention; clinical management and career development of healthcare personnel, including incentives for mobility throughout the entire national health system; e-health solutions; integrated clinical approaches to chronic conditions; integration of primary, specialised, long-term health and social care; and health technology assessment to promote effective medical interventions and prevent the use of those that are less effective or unnecessary****.* ***Regarding access to healthcare for vulnerable groups****, according to a recent report of the national Ombudsmen,* ***a progressive increase in waiting lists has been observed as well as irregular access for undocumented migrants.*** *The government introduced an insurance scheme for those not covered under the healthcare system; a few hundred such insurance contracts have been signed to date.*
3. OTHER STRUCTURAL ISSUES ***3.1. FISCAL FRAMEWORK AND TAXATION*** ***Fiscal framework***	***The government set up in June 2014 a taskforce looking into expenditure reduction in Spain's regions. The working group has looked into ways to further rationalise spending in areas such as healthcare****, education, social spending and public administration. To be effective, measures have to be agreed at the meeting of the Financial and Fiscal Policy Council (a forum gathering representatives* ***from the regions and central government's*** *finance departments), and then be legislated. At the time of writing, measures had been identified but these have not been published and no agreement has been reached at the Financial and Fiscal Policy Council on their adoption.*
3. OTHER STRUCTURAL ISSUES ***3.2. LABOUR MARKET, EDUCATION AND TRAINING AND SOCIAL POLICIES*** ***Social policies***	***Limited progress was made in ensuring an integrated approach between social protection and activation strategies****.* ***The National Action Plan for Social Inclusion 2013-2016 aims at*** *fostering inclusion through the employability of those further away from the labour market through measures such as the provision of individualized integrated pathways; ensuring an income scheme system to financially support those facing bigger difficulties and* ***ensuring the provision of basic services, with a focus on vulnerable groups in the case of*** *social services, education,* ***healthcare*** *and housing. However, there is still uncertainty on its effective implementation and no evaluation or impact assessment has been made available.*
3. OTHER STRUCTURAL ISSUES ***3.3. PRODUCTS AND SERVICES MARKETS*** ***Business environment***	***The implementation of the law on market unity is behind schedule. The law aims at removing measures that may directly or indirectly obstruct the free movement of goods and services and the establishment of economic operators throughout Spain****.* ***It addresses regulatory fragmentation in Spain's internal market,*** *originating from disparities in central and sub-central government legislation governing access to and exercise of economic activities. As of September 2014, all articles of the law had entered into force. The law sets a period of six months to amend provisions in sector-specific legislation that are in direct opposition with it. However, this deadline has not been met and around 400 proposals for amendments (****covering*** *mostly regional legislation on tourism, agriculture, manufacturing,* ***health****, social services and gambling) were still being processed at the time of writing. This delay raises concerns...*
3. OTHER STRUCTURAL ISSUES ***3.4. NETWORK INDUSTRIES AND ENVIRONMENT*** ***Climate change and environment***	*Finally, personal transport exacerbates seasonal* ***problems with air quality and traffic congestion in the major Spanish cities, leading to health and economic costs****.*
OVERVIEW TABLE ***Country-specific recommendations (CSRs) assessment***	***CSR1*** *...* ***Continue to increase the cost effectiveness of the healthcare sector, in particular by further rationalising pharmaceutical spending, including in hospitals and strengthening coordination across types of care, while maintaining accessibility for vulnerable groups****.* ***Some progress was made in the systematic review of expenditure at all levels of government. Proposals to review healthcare****, education, social and public administration* ***regional spending have been discussed in 2014 at the Financial and Fiscal Policy Council meetings. The spending review has not been published, though****.* ***Some progress was made in increasing the cost-effectiveness of the healthcare sector. Reforms to increase the efficiency and monitoring of healthcare expenditure continue, since 2012, in addition to public administration reforms that contributed further to rationalise the sector and to improve its efficiency.***
CR_ES 2014	
EXECUTIVE SUMMARY	***Despite the recent achievements, there are still important challenges to be addressed in several policy areas****:* ***Public finances****:* ***Fiscal consolidation remains a priority*** *to reduce the still high general government deficit (7.1 % of GDP in 2013, of which 0.5 % of GDP related to bank recapitalisations) and put the high general government debt (around 100 % of GDP) on a declining path. While in the stability programme the headline deficit is planned to be brought below 3% in 2016, which is the deadline set in the Council's recommendations in the context of the excessive deficit procedure, the planned fiscal efforts fall short of what recommended by the Council. Moreover, the deficit and debt adjustment paths are subject to downside risks in particular in 2015 and beyond, relating in particular to a somewhat optimistic macroeconomic scenario underpinning the budgetary projections and from the fact that concrete measures to reach the deficit targets from 2015 onwards are not yet sufficiently specified, notably regarding the changes to tax legislation within the framework of the planned tax reform.* ***Spain is enhancing its public finance management, notably with measures taken to underpin the*** *sustainability of the pension system,* ***control healthcare expenditure,*** *reform the public administration and* ***avoid the emergence of new arrears in public administration payments to providers.***
3. CHALLENGES AND ASSESSMENT OF POLICY AGENDA ***3.1. Fiscal policy and taxation*** ***Budgetary developments and debt dynamics***	***The stability programme*** *foresees most of the consolidation over the 2013-17 period to take place on the expenditure side. While this is consistent with keeping tax pressure low, it also* ***calls for reviewing systematically expenditure at all government levels to identify areas where savings could be made and to ensure that these are generated in a growth-friendly way while catering for the needs of the most vulnerable. Key categories of spending have been reviewed recently on occasion of the health, education and public administration reforms, the implementation of which is ongoing. Looking forward, reviews could be extended*** *to areas such as spending on active labour market policies, for instance to re-assess the efficiency and efficacy of current hiring subsidies (see section 3.3).* ***Additional reviews on public administration spending could also take place, especially at sub-central government level.***
3. CHALLENGES AND ASSESSMENT OF POLICY AGENDA ***3.1. Fiscal policy and taxation*** ***Long-term sustainability***	*Amongst the 2013* ***country-specific recommendations for Spain were the need to improve*** *the long-term sustainability of the pension system and to increase* ***the cost-effectiveness of the health-care sector, while maintaining accessibility for vulnerable groups****. The analysis in this SWD leads to the conclusion that Spain has made substantial progress on some aspects, and some progress on others.* *Spain appears to face high fiscal sustainability risks in the medium-term, primarily related to high level of government debt…the contribution from health care expenditure is relatively large (the projected increase in expenditure is 1.2 pp).****It is therefore appropriate for Spain to reduce government debt and further contain age related expenditure growth to contribute to the sustainability of public finances in the long term.*** ***A comprehensive regulatory framework has been developed since 2012 to increase the efficiency and control of health-care expenditure****. This includes reviewing the* ***services covered****;* ***introducing co-payments*** *for some services;* ***changing the reference pricing for pharmaceuticals****; building a* ***centralised purchasing platform*** *for buying* ***medicines****, medical devices or services; developing* ***digital clinical records*** *and* ***electronic prescriptions****; and, preparing for the introduction of* ***clinical management*** *where physicians have more responsibility for their budgets in health establishments. A system of* ***pharmaceutical expenditure control in hospitals*** *has also been designed. The measures that have already been implemented have helped to reduce expenditure and to increase cost-effectiveness.* ***While full implementation of the measures adopted continues, the impact of recent reforms will need to be monitored and valuated to prevent unwarranted effects.*** *As the system moved from a universal health system to a coverage approach,* ***the number of complaints about restrictions on access grew. In addition, an increase in waiting lists has been noted, despite initiatives to guarantee accessibility for vulnerable groups. Measures to improve coordination of health and social services are also being developed to make the healthcare model more efficient in the long-term****.*
3. CHALLENGES AND ASSESSMENT OF POLICY AGENDA ***3.4. Structural measures promoting sustainable growth and competitiveness*** ***Products and services markets***	***The law on the guarantee of market unity, which aims to address regulatory fragmentation in Spain internal market, came into force on 11 December 2013.*** *Its goal is to make it easier for operators to take advantage of economies of scale and scope in the market by providing unrestricted access to economic activities and the right to perform and expand these throughout Spain.* ***Full implementation of the law is of utmost importance.*** *To that end, effective coordination and cooperation among the different levels of government is critical, in particular when it comes to enforcing provisions on supervising economic operators and amending sector specific legislation to remove inconsistencies.* ***The 2014 National Reform Programme describes the planned amendments to sector specific legislation in areas such as*** *railways, gambling, funeral services, social services, retail trade, urban planning, environment, industrial licensing, waste management, education services, temporary employment agencies,* ***health and veterinary services****, hunting and fishing and consumer protection.*
3. CHALLENGES AND ASSESSMENT OF POLICY AGENDA ***3.4. Structural measures promoting sustainable growth and competitiveness*** ***Research, development and innovation***	***Spain's research and innovation system faces challenges and shortcomings. The funding needs to be sufficient to address the health****, energy, transport and climate societal* ***challenges set out****,* ***leverage private investment and make best use of available EU research and innovation funding programmes*** *(such as Horizon 2020, European structural and investment funds, COSME and others).*
3.5. Modernisation of public administration	*In December 2013, an* ***ambitious local administration reform was passed****. It aims to* ***clarify the powers of municipalities in order to: i) remove duplications*** *with other government sub-sectors at local level; ii)* ***streamline the number of local bodies****; iii)* ***rationalise the services provided at local level****; and iv)* ***make the cost of providing local public services more transparent****. Implementing this law is expected to bring significant budgetary savings, the bulk of which will be concentrated in 2015 and 2016 (EUR 6.1 billion, 76 % of total savings according to government estimates).* ***However, the reform is facing resistance from some municipalities*** *and the final savings figures could differ,* ***due to uncertainties surrounding*** *the implementation of provisions on merging municipalities, on the coordination by provincial councils of 'essential' services provided by smaller municipalities,* ***the gradual take up of municipal health and social services competencies by regions and the rationalisation of local entities' institutional administration.*** ***Public procurement policy can contribute to competition and fiscal savings. Recent policy measures require all general entities to publish calls for tenders and their results on the public-sector procurement platform.*** *Measures to develop centralised procurement are currently being adopted.* ***Progress has been made, in particular on pooling purchases of health supplies. However, the current level of e-procurement use is negligible.*** *As with centralised purchasing, e-procurement can save resources. It can also increase transparency and create incentives to streamline procedures.* ***Coordination with regional and local government in gradually increasing the use of e-procurement is needed, including ensuring that appropriate links are created between current electronic platforms.***
4. CONCLUSIONS	*The analysis in this SWD leads to the conclusion that Spain has made some progress in addressing the country-specific recommendations issued in 2013.* ***Notably, Spain has adopted reforms on pensions, healthcare,****... While some reforms are already into force, a majority of them required follow-up actions and, therefore, implementation is ongoing and sometimes still at an early stage. Moreover,* ***the implementation process is not devoid of risks, including those deriving by the need of joint delivery efforts by various tiers of government in several cases*** *(e.g. active labour market policies, market unity, public administration reform).* ***In addition, some key items, such as the reform of professional services and associations, have been delayed.*** *The 2014 national reform and stability programmes and the Commission's analysis in this SWD confirm the overall robustness of last year's reform agenda and are largely set in a line of continuity.* ***The focus is on completing outstanding items, complementing them with new measures where necessary and proceeding swiftly with implementation.***

OVERVIEW TABLE ***Country-specific recommendations (CSRs) assessment***	***CSR1 ... Improve the efficiency and quality of public expenditure at all levels of government, and conduct a systematic review of major spending items by March 2014....*** ***Some progress*** *— Spain did not conduct a specific comprehensive and systematic review of major spending items by March 2014, as recommended in the CSR. However,* ***measures to rationalise spending on health,*** *employment, and public administration provide information on some key expenditure items.* ***CSR1*** *... **Increase the cost-effectiveness of the health-care sector, while maintaining accessibility for vulnerable groups, for example by reducing hospital pharmaceutical spending, strengthening coordination across types of care and improving incentives for an efficient use of resources.*** ***Some progress — Measures to contain expenditure in the healthcare sector have been gradually implemented. Measures to guarantee access to healthcare for vulnerable groups have been taken, but the number of complaints regarding restrictions on access has grown.***
CR_ES 2013	
2. ECONOMIC DEVELOPMENTS AND CHALLENGES ***2.2. Challenges***	***The fiscal impact of the crisis and of projected demographic developments compound each other and make fiscal sustainability a significant challenge****. The high structural primary deficit and substantial increases in gross public debt observed in the wake of the crisis are symptoms of fiscal stress. In the medium and long term,* ***Spain faces population ageing, which will impact public finances due to higher spending on pensions, healthcare and long-term care****. The reforms already introduced will moderate the increase in age-related expenditure.* ***Gradual improvements in the structural primary balance and further reforms containing age-related expenditure growth are necessary to maintain the sustainability of public finances*** *in the long term and to ensure the adequacy of pension.*
3. ASSESSMENT OF THE POLICY AGENDA ***3.1. Fiscal policy and taxation*** ***Long-term sustainability***	*According to the latest long-term projections,* ***public healthcare spending will increase by 1.3 percentage points (pps) of GDP by 2060****.* ***Crisis-related expenditure cuts have helped contain the growth in spending****. Public healthcare expenditure decreased from 7.1 % of GDP in 2010 to 6.7 % in 2011. In 2010 and 2011 savings originated from cuts in the wage bill and pharmaceutical expenditure. In 2012, measures specifying the common basket of healthcare benefits and an extension of co-payments on pharmaceutical products were adopted.* ***However, sustainability challenges remain. Reducing long-term expenditure pressures further would be difficult without better control of pharmaceutical expenditure, particularly in hospitals, strengthening the relative role of primary care provision, better coordination across types of care, incentive-improving changes in remuneration systems, and greater interregional mobility for professionals.*** *The 2013 NRP announces that more measures* ***improving efficiency in healthcare and pharmaceutical expenditure*** *will be adopted later in the year, e.g.* ***revising reference prices and centralising purchasing of pharmaceutical products, and extending co-payments.***
3. ASSESSMENT OF THE POLICY AGENDA ***3.5. Modernisation of public administration***	***The highly decentralised setting calls for enhanced coordination between the various public administrations, both to reduce costs and to limit the administrative burden*** *on companies and households.* ***The Autonomous Communities account for around 35% of total general government expenditure and have legislative powers in the policy areas provided for in their statute laws, such as health*** *and social policies. Local governments are responsible for some 13% of expenditure. Several legislative initiatives have been undertaken or will be completed in the course of 2013 to enhance control and* ***improve coordination among the national, regional and local administrations.*** *An* ***efficient public procurement policy could contribute to transparency and fiscal savings****. While Spain boasts a relatively developed system of electronic publication of contract notices, available statistics show that* ***the size of pooled volumes procured by central purchasing bodies is below the EU average*** *(around 3 % of the total value of public procurement in Spain from 2006 to 2010, compared with an EU average of 12 %).* ***Given the well-known advantages of procurement centralisation*** *(in terms of lower prices), these figures suggest that savings could be reaped from additional pooled purchases. In this respect, the 2013* ***NRP points to strengthening centralised procurement for health supplies****. The use of electronic means in public procurement is another way of economising on resources. Spain has set an ambitious target of conducting 50 % of public procurement above EU thresholds by electronic means.* ***However, the (few) available data show that e-procurement take-up is currently below the target. Moreover, the current dispersion of the e-procurement platforms used by contracting authorities at regional level increases companies' compliance costs.***
CR_ES 2012	
4. POLICY CONSIDERATIONS	***Regarding fiscal policy****, deficit and debt adjustment paths are subject to downside risks even though the envisaged pace of the adjustment in structural terms in 2012-2013 represents significant progress towards the medium-term objective. Macroeconomic developments could turn out less favourable than expected. Moreover, measures are not sufficiently specified from 2013 onwards. Finally,* ***budgetary compliance by regional governments also poses risks to the budgetary strategy****.* ***Strict enforcement of the Budget Stability Law and the adoption of strong fiscal measures at regional level would mitigate the risks of a slippage at regional level. Given the decentralised nature of Spain's public finances, a strong fiscal and institutional framework is essential.***
CR_ES 2011	
4. POLICY CHALLENGES AND ASSESSMENT OF POLICY AGENDA ***4.1 CHALLENGES***	***Reduce the high structural deficit and improve the long-term sustainability of public finances****. A consolidation of public finances is essential to halt the rapid increase in government debt and to restore market confidence. The shift to a less tax-rich economy* ***requires an adjustment of both expenditures and revenues at all levels of government. Dealing with the effects of an ageing population, including higher health-care costs*** *and a significant increase in the ratio of retirees per worker,* ***is an important challenge****.*
4.2 ASSESSMENT OF THE POLICY AGENDA ***4.2.1 Macroeconomic policies*** ***4.2.1.1 Public finances***	***Given the decentralised nature of Spain's public finances, a strong institutional framework is essential for the achievement of fiscal consolidation****. The medium-term budgetary framework has a good track record overall, but the crisis has put Spain's fiscal institutions under strain and exposed* ***a need to tighten the control on regional and local authorities' budgets in order to reduce the risk of non-compliance****. This is particularly important bearing in mind the fact that* ***the regional authorities are responsible for more than 60% of public consumption (notably in areas such as health care and education)*** *and 36% of public investment, and the full entry into force in 2010 of the new financing system, which has considerably increased the regions' share of revenues from personal income tax, VAT and excise duties.*
4.2.3 Growth-enhancing structural measures ***The business environment and competition***	*Spain committed itself under the Euro Plus Pact to present a new* ***law on Professional Services*** *before the summer of 2011. This law* ***plans to limit more stringent requirements to either services performed in the general interest or those requiring maximum protection of the citizen (i.e. health profession)****. However, the scope of the Law remains unclear and some professions such as notaries and registrars do not seem to be addressed.*

Source*:* Authors' own work based on the EU's Country Reports for Spain.

Note: In the first column of the table, we indicate the main headings in the CR_ES, which we presume as the overarching areas of general economic policy priorities. The text in the table reproduces literally what is published in the AGS/ASGS.

9. Annex III. Health in the priorities of the European Semester for Spain-CSR_ES

NO CSR ON HEALTH IN 2011	
CSR_ES 2012:	
NO CSR ON HEALTH IN 2012	
CSR_ES 2013:	
Recital	*The NRP also acknowledges the need to further improve **cost-effectiveness** in healthcare and **pharmaceutical** expenditure, e.g. by revising **reference prices** and **centralising purchasing** of pharmaceutical products, or **extending co-payments.***
CSR1	*Increase the **cost-effectiveness** of the health-care sector, while **maintaining accessibility for vulnerable groups**, for example by reducing **hospital pharmaceutical spending**, strengthening **coordination across types of care** and improving incentives for an **efficient** use of resources.*
CSR_ES 2014:	
Recital	*The 2014 national reform programme also acknowledges the need to keep improving **cost-effectiveness** in healthcare and **pharmaceutical** expenditure, e.g. by **centralising purchasing** of pharmaceutical products, revising the **basket of services**, developing **digital clinical records**, or **strengthening management** of health establishments.*
CSR1	*Continue to increase the **cost-effectiveness** of the health-care sector, in particular by further **rationalising pharmaceutical spending**, including in hospitals and **strengthening coordination across types of car**e, while **maintaining accessibility for vulnerable groups**.*
CSR_ES 2015:	
Recital	*Spain also made **some progress on identifying proposals to rationalise healthcare**, education, and social **spending at regional level**, although these were **not finally adopted**. However, draft legislation to introduce **a spending rule on pharmaceutical and healthcare regional spending** is currently before parliament. Implementation of the preventive, corrective and enforcement measures contained in the Organic Law on Budget Stability and Financial Sustainability is progressing slowly. **Cost-effectiveness in the healthcare sector** has improved, but it **remains essential to keep the growth of pharmaceutical expenditure under control** and, specifically, to **monitor pharmaceutical expenditure in hospitals**.*
CSR1	*Ensure a durable correction of the excessive deficit by 2016 by taking the necessary structural measures in 2015 and 2016 and using windfall gains to accelerate the deficit and debt reduction. Strengthen transparency and accountability of regional public finances. **Improve the cost-effectiveness of the healthcare sector, and rationalise hospital pharmaceutical spending**.*
CSR_ES 2016:	
Recital	*Since 2012, Spain's fiscal framework has been strengthened in order to, among other things, prevent deviations and ensure compliance by all government levels with their respective deficit, debt and expenditure targets. In addition, **a rule for application (on a voluntary basis and, in 2016, made compulsory for most regions) at regional level was approved in mid-2015 to limit growth in expenditure on healthcare and pharmaceutical products, and an agreement between the Government and the pharmaceutical industry was signed in November 2015 to help rationalise spending on pharmaceuticals**. Despite this, in 2015, most regions as well as the social security sector fell significantly short of meeting their domestic fiscal targets. The stability law's expenditure rule was not observed by the central, regional and local government subsectors and **growth in expenditure of pharmaceutical products, namely in hospitals, strengthened further, even excluding the impact of new anti-hepatitis C treatments.***
NO CSR ON HEALTH IN 2016	
CSR_ES 2017:	
NO CSR ON HEALTH IN 2017	
CSR_ES 2018:	
NO CSR ON HEALTH IN 2018	
CSR_ES 2019:	
NO CSR ON HEALTH IN 2019	
CSR_ES 2020:	
Recital	*On 11 March 2020, the World Health Organization officially declared the COVID-19 outbreak a global pandemic. It is a severe public health emergency for citizens, societies and economies. It is putting **national health systems under severe strain**, disrupting global supply chains, causing volatility in financial markets, triggering consumer demand shocks and having negative effects across various sectors. It is threatening people's jobs, their incomes and companies' business. It has delivered a major economic shock that is already having serious repercussions in the European Union. On 13 March 2020, the Commission adopted a Communication calling for a coordinated economic response to the crisis, involving all actors at national and Union level.* *Continued action is required to limit and control the spread of the pandemic, **strengthen the resilience of the national health systems,** mitigate the socio-economic consequences through supportive measures for business and households and to ensure **adequate health and safety conditions at the workplace** with a view to resuming economic activity. The Union should fully use the various tools at its disposal to support Member States' efforts in those areas. In parallel, Member States and the Union should work together to prepare the measures necessary to get back to a normal functioning of our societies and economies and to sustainable growth, integrating inter alia the green transition and the digital transformation, and drawing all lessons from the crisis.* *The current crisis has shown the need for **crisis preparedness plans in the health sector**, which include in particular improved purchasing strategies, diversified supply chains and strategic reserves of essential supplies. They are key elements for developing broader crisis preparedness plans.* *The Union legislator has already amended the relevant legislative frameworks[7] to allow Member States to mobilise all unused resources from the European Structural and Investment Funds so they can **address the exceptional effects of the COVID-19 pandemic**. Those amendments will provide additional flexibility, as well as simplified and streamlined procedures. To alleviate cash flow pressures, Member States can also benefit from a 100% co-financing rate from the Union budget in the 2020-2021 accounting year. Spain is encouraged to make full use of those possibilities to help the individuals and sectors most affected by the challenges.* *In response to the COVID-19 pandemic, and as part of a coordinated Union approach, Spain has adopted budgetary measures to increase the capacity of its health system, contain the pandemic, and provide relief to those individuals and sectors that have been particularly affected. According to the 2020 Stability Programme, those budgetary measures amounted to 3.2% of GDP. The quantification of the deficit-increasing measures broadly coincides with the Commission's estimates, once the different treatment of the cost of automatic stabilisers is taken into account. The measures include strengthening health care services and providing income support to workers put on short-time work schemes. In addition, Spain has announced measures that, while not having a direct budgetary impact, will contribute to support liquidity to businesses, which the 2020 Stability Programme estimates at 9.2% of GDP. Those measures in particular include loan guarantees (8.8% of GDP). Overall, the measures taken by Spain are in line with the guidelines set out in the Commission Communication on a coordinated economic response to the COVID-19 outbreak. The full implementation of those measures, followed by a refocusing of fiscal policies towards achieving prudent medium-term fiscal positions when economic conditions allow, will contribute to preserving fiscal sustainability in the medium term.* *The Spanish authorities have sought to mitigate the impact of the pandemic and of the containment period through various packages of measures that in total amount to EUR 145 billion. In their efforts to tackle the disease, the authorities have increased their expenditure on health and social services. They have also facilitated the use of ERTEs with a view to keep people in employment and support household's income. Employees affected by an ERTE receive a benefit amounting to 70% of their social security contribution base, with a minimum and maximum limit (EUR 502 and EUR 1,402, respectively). The employment relationship remains intact during the duration of the ERTEs, which have been recently extended until 30 June 2020. Firms implementing ERTEs are exempted from having to pay a very large part of the social security contributions for workers covered by the scheme, provided they maintain their jobs for at least six months after the resumption of activities. These measures go hand in hand with specific aid for SMEs and self-employed workers, who constitute the backbone of the Spanish economy (deferral of tax payments, reductions of social security contributions and state guarantees), and are an attempt to help them avoid bankruptcy and quickly resume activity once the crisis is over. Measures have also been adopted to guarantee income support temporarily to non-standard workers who have no access to social security protection.* *The Spanish health system has been delivering good health outcomes despite the comparatively low level of investments. The outbreak of the COVID-19 pandemic has, however, put an unprecedented strain on the system and revealed its vulnerability to shocks. Immediate action is focusing on strengthening capacities in terms of health workers, critical medical products and infrastructure in order to save lives and restore health during the pandemic. Persons with disabilities and the elderly in residential care have been particularly exposed during the crisis. Their continued access to medical and social care, including emergency and intensive care services, needs to be ensured. Later on, efforts should concentrate on improving the resilience of the health system so that it can resume its optimal performance as quickly as possible and better cope with new shocks. The pandemic has revealed existing structural problems, some of which derive from certain shortfalls in investment in physical infrastructures and shortcomings in the recruitment and working conditions of health workers. There are regional disparities in terms of spending, physical resources and staff, and the coordination between different levels of government is not always effective. In the medium-term, healthcare delivery could better respond to the challenges of ageing, growing chronical conditions and disability. Primary care and the development of e-health have a central role to play in this regard. In the medium-term, it will be important to ensure that the likely decrease in resources due to the economic downturn does not affect people's healthcare coverage and result in inequalities in access.* *[7]Regulation (EU) 2020/460 of the European Parliament and of the Council of 30 March 2020 amending Regulations (EU) No 1301/2013, (EU) No 1303/2013 and (EU) No 508/2014 as regards specific measures to mobilise investments in the healthcare systems of Member States and in other sectors of their economies in response to the COVID-19 outbreak (Coronavirus Response Investment Initiative) (OJ L 99, 31.3.2020, p. 5) and Regulation (EU) 2020/558 of the European Parliament and of the Council of 23 April 2020 amending Regulations (EU) No 1301/2013 and (EU) No 1303/2013 as regards specific measures to provide exceptional flexibility for the use of the European Structural and Investments Funds in response to the COVID-19 outbreak (OJ L 130, 24.4.2020, p. 1).*
CSR1	*In line with the general escape clause, take all necessary measures to effectively address the pandemic, sustain the economy and support the ensuing recovery. When economic conditions allow, pursue fiscal policies aimed at achieving prudent medium-term fiscal positions and ensuring debt sustainability, while enhancing investment. **Strengthen the health system's resilience and capacity, as regards health workers, critical medical products and infrastructure.***
CSR_ES 2021 (fiscal):	
Fiscal/ Recital	*Member States should pursue **reforms that strengthen the coverage, adequacy, and sustainability of health and social protection systems for all.*** *In response to the COVID-19 pandemic and related economic downturn, Spain has adopted budgetary measures to strengthen the capacity of its health system, contain the pandemic and provide relief to those individuals and sectors that have been particularly affected. This forceful policy response has cushioned the contraction in GDP, which, in turn, curtailed the increase in government deficit and public debt. **Fiscal measures should maximise support to the recovery without pre-empting future fiscal trajectories.** Therefore, **measures should avoid creating a permanent burden on public finances**. **When Member States introduce permanent measures, they should properly fund them to ensure budgetary neutrality in the medium term**. The measures taken by Spain in 2020 and 2021 have been in line with the Council Recommendation of 20 July 2020. **The discretionary measures adopted by the government in 2020 and 2021 were temporary or matched by offsetting measure**.* *There is a **need for fiscal policy to stand ready to rapidly adapt to the evolution of the pandemic, shifting from emergency relief to more targeted measures once health risks diminish**.* *These crisis-related temporary emergency measures support health systems and compensate workers and firms for the losses in income due to lockdowns and supply chain disruptions; their reversal by the public authorities is contingent on the return of the public health and economic situation to normality.* ***The quality of Member States' budgetary measures appear particularly important.** Fiscal structural reforms aimed at **improving the composition of national budgets** can support potential growth, **create much-needed fiscal space and help ensuring fiscal sustainability over the longer term**, **including in** view of climate change and **health challenges**. On the revenue side, the COVID-19 crisis has reinforced the importance of reforms for more efficient and fairer public revenue systems. On the expenditure side, it has made even more **crucial to increase the level and quality of sustainable and growth-enhancing investments**, consistent with serving the objectives of enhancing growth potential, economic and **social resilience** and the green and digital twin transition. The Recovery and Resilience Plans will allow to improve the composition of national budgets.*
Fiscal CSR3	*Pay particular attention to the **composition of public finances**, both on the revenue and expenditure sides of the budget, and to the **quality of budgetary measures**, to ensure a **sustainable and inclusive recovery**. Prioritise **sustainable and growth-enhancing investment, notably supporting the green and digital transition**. Give priority to fiscal structural reforms that will help provide financing for public policy priorities and contribute to the **long-term sustainability of public finances**, **including by strengthening the coverage, adequacy, and sustainability of health and social protection systems for all**.*

***Source**:* Authors' own work based on the EU's Country Specific Recommendations for Spain.
Note: The text in the table reproduces literally what is published in the CSR_ES.

10. Annex IV: Health workforce data in Spain

The Ministry of Health's analyses on the offer and needs of medical workforce conducted by the University of Las Palmas de Gran Canaria (MS (2012); MS (2019a)) estimate deficits for the period 2018-2030, ranging from -2.9% to -13.4% (reference scenario). On the needs side, between 2020 and 2027[62] it would be required that the number of medical doctors increases by 5% (Figure 10.1 in page 144 of MS (2019a)). Regarding nurses, the needs analyses (MS (2012)) indicate that a ratio of 1.54 nurses per doctor would be adequate for the Spanish NHS. Currently, the ratio is 1.24.

In addition, according to the European Commission, "*the number of doctors and nurses has increased, with a shift towards temporary contracts. Overall in the SNS, 30% of all employees were on temporary contracts in 2017, up from 27% in 2012 (Sanidad CCOO, 2017). The Ministry of Finance signed an agreement with the unions in March 2017 to reduce temporary employment contracts below 8% to increase job stability in the health sector.*" EU (2019a).

Recent data provided by the newspaper "El País," based on a specific exploitation of the microdata from the Labour Force Survey (EPA), show that in the public sector the temporary employment rate of the Public Administration, with health and education at the forefront, reached its record in 2020, with the NHS (41.9%) overpassing the average in the whole Public Administration (28.7%) as well as that of the education system (29.1%). El País (14/03/2021).

We estimate that by January 2021, the latest data available, there were 765,421 professionals working in the Spanish NHS (Annex IV. Table 1), which accounts for 72,000 (10.38%) more than in January 2020. In a "*regular*" year, without the COVID-19 pandemic, we estimate that the increase would have been 10,590 health professionals (the yearly average during the period 2003-2020). Out of the 765,421 professionals, 178,749 were medical doctors (23.35%); 221,677 were nurses (28.96%); and 364,995 other health professionals (47.69%). Annex IV. Table 2.

In 2019, the base year for our projections of health expenditure, we estimate that the average remuneration per employee is 48,388 Euros. As for medical doctor, it would be 98,814 Euros; for nurses 51,429 Euros; and for other health professionals 21,846.

[62] It should be read from January 2020 to January 2027. We set this period because our analysis focuses on the impact on the health system sustainability of the additional allocations of resources during the years 2020 to 2026 when we assume that, according to the *NextGenerationEU* funds regulation, the investments to tackle the pandemic and its aftermath will take place.

Indeed, naming:

- Remuneration of employees in the NHS = MS
- Remuneration per employee in the NHS = S_m
- Remuneration per employee of medical doctors = S_M
- Remuneration per employee of nurses = S_E
- Remuneration per employee of other health professionals = S_O
- Share of medical doctors in total health workforce = π_M
- Share of nurses in total health workforce = π_E
- Share of other health professionals in total health workforce = π_O
- Ratio $S_E / S_M = \alpha$
- Ratio $S_E / S_M = \beta$
- Total health workforce in the NHS = #

We have that:

$$S_m = S_M \pi_M + S_E\pi_E + S_O\pi_O = MS/(\pi_M + \alpha\pi_E + \beta\pi_O)\#.$$

Thus, considering that, in 2019:

- MS = 33,553.26 million Euros, according to the statistic on public expenditure in health (EGSP) published by the Ministry of Health.[63]
- $\alpha = 0.5183$, according to estimates based on OECD.[64]
- $\beta = 0.2252$, according to estimates based on INE data.[65]
- $\pi_M = 0.2335$; $\pi_E = 0.2896$; $\pi_O = 0.4769$ (Table 2).

We have:

S_m = 48,388 Euros.

S_M = 98,814 Euros.

S_E = 51,429 Euros.

S_O = 21,846 Euros.

[63] https://www.mscbs.gob.es/estadEstudios/estadisticas/inforRecopilaciones/gastoSanitario2005/home.htm.
[64] https://stats.oecd.org/index.aspx?queryid=30025#.
[65] https://www.ine.es/jaxiT3/Datos.htm?t=28186; https://www.ine.es/daco/daco42/clasificaciones/cno11_notas.pdf.

Annex IV. Table 1. NHS health workforce. 2002-2021

NHS estimates																				
Regions	**January 2002**	**January 2003**	**January 2004**	**January 2005**	**January 2006**	**January 2007**	**January 2008**	**January 2009**	**January 2010**	**January 2011**	**January 2012**	**January 2013**	**January 2014**	**January 2015**	**January 2016**	**January 2017**	**January 2018**	**January 2019**	**January 2020**	**January 2021**
TOTAL	**502,807**	**520,533**	**529,118**	**563,473**	**576,848**	**601,224**	**627,496**	**642,760**	**650,266**	**652,384**	**674,566**	**660,175**	**637,605**	**636,509**	**643,000**	**654,582**	**665,985**	**684,183**	**693,421**	**765,421**
Andalucía	88,641	93,005	92,516	103,688	108,010	114,343	112,396	111,447	109,401	108,853	109,361	101,305	103,298	103,118	102,991	104,366	108,300	108,935	109,628	130,375
Aragón	18,504	21,754	21,531	21,723	20,848	21,598	22,420	22,867	23,263	22,757	23,052	22,712	22,704	22,140	24,203	24,220	24,564	24,661	24,879	26,548
Asturias	12,182	13,257	14,513	15,146	15,093	15,439	15,525	16,547	16,442	17,017	16,596	16,432	16,418	16,643	16,772	17,198	17,288	17,505	17,854	20,560
Baleares	7,561	9,226	8,384	8,550	8,927	9,538	12,368	12,601	12,708	12,655	17,816	17,307	16,975	15,840	17,922	16,308	15,915	16,228	16,504	15,974
Canarias	24,916	26,667	25,318	25,776	26,972	27,429	27,467	29,159	34,788	35,155	34,571	33,721	33,688	33,387	31,856	33,553	33,472	34,432	36,476	38,721
Cantabria	6,772	6,963	7,107	7,491	8,098	8,624	8,807	8,866	9,076	9,064	8,841	8,861	9,097	9,102	9,446	9,097	9,158	9,384	8,717	10,455
Castilla y León	27,883	30,328	31,249	31,693	33,576	34,524	36,288	37,942	37,776	38,145	37,879	37,786	37,221	37,040	37,539	37,629	37,528	37,570	37,791	37,362
Castilla-la Mancha	17,785	18,789	19,996	20,615	22,036	24,268	26,364	26,590	26,904	26,553	32,753	30,982	30,090	29,498	29,263	29,159	29,424	35,115	30,494	31,189
Cataluña	84,719	85,958	87,484	83,293	82,438	85,716	87,718	90,345	90,154	90,169	99,452	99,408	96,731	98,396	98,732	101,112	105,598	108,175	113,752	129,466
Madrid	57,420	58,786	59,297	75,669	75,966	76,555	86,560	88,632	89,904	88,770	88,440	86,143	81,345	81,531	82,611	89,242	90,372	91,688	93,285	105,293
C. Valenciana	52,695	53,147	54,758	60,042	61,373	66,672	68,022	69,448	70,637	72,494	73,207	73,637	59,304	59,300	59,667	59,775	60,141	63,003	64,471	74,503
Extremadura	10,895	11,529	14,463	14,939	15,609	16,620	16,948	16,965	17,190	17,239	16,804	16,892	16,679	16,955	17,555	17,708	18,122	18,282	18,191	18,197
Galicia	31,586	32,004	32,188	32,282	32,761	32,560	38,141	40,329	39,049	40,178	38,856	38,366	37,921	38,319	39,154	39,741	39,714	40,394	41,153	43,503
Murcia	9,578	10,802	11,477	14,186	15,051	17,713	16,785	18,897	19,848	19,983	20,480	19,900	19,729	19,686	19,751	19,795	19,924	20,238	20,891	24,372
Navarra	7,863	7,749	7,867	7,911	8,583	7,694	8,390	8,502	9,669	9,556	9,521	9,250	9,078	9,115	9,363	9,758	10,213	10,419	10,628	10,802
País Vasco	40,297	36,271	36,542	36,047	36,958	37,204	38,369	38,659	38,490	38,713	41,953	42,749	42,488	41,751	41,534	41,188	41,399	43,431	43,711	43,094
La Rioja	3,508	4,299	4,428	4,422	4,550	4,728	4,928	4,964	4,967	5,082	4,984	4,723	4,840	4,688	4,642	4,732	4,853	4,722	4,995	5,006

Source: Authors' own work based on Tables 2 and 3.

Note: We observe that the number of professionals working in the NHS according to the Ministry of Health overpasses the number as recorded by the Ministry of Regional Policy through the Central Registry of Public Function Personnel (RCP). We assume that typically the NHS employs additional people, not only civil servants. Thus, we have upgraded the data from the RCP with the corresponding ratios calculated in 2018 by Regions as shown in Table 2.

Annex IV. Table 2. NHS health workforce in 2018

Regions	Health workforce 2018	Medical doctors	Nurses	Other health professionals	Ratio NHS/RCP (*)
Total	**665,985**	**155,528**	**192,879**	**317,578**	**1.3404**
Percentage	**100**	**23.35**	**28.96**	**47.69**	
Andalucía	101,339	18,939	27,806	54,594	1.1464
Aragón	22,985	4,174	6,995	11,816	1.3933
Asturias	16,177	3,153	4,891	8,133	1.1190
Baleares	14,892	2,765	4,601	7,526	1.3664
Canarias	31,321	5,034	8,818	17,469	1.4190
Cantabria	8,569	1,563	2,525	4,481	1.1447
Castilla y León	35,116	7,426	10,535	17,155	1.1046
Castilla-La Mancha	27,533	5,583	8,373	13,577	1.1704
Cataluña	98,811	20,597	30,119	48,095	2.5431
Comunidad Valenciana	56,275	12,424	16,796	27,055	1.3542
Extremadura	16,957	2,970	4,649	9,338	1.1051
Galicia	37,161	7,118	10,781	19,262	1.1497
Comunidad de Madrid	84,563	18,203	24,655	41,705	1.2452
Murcia	18,643	4,025	5,312	9,306	1.0104
Navarra	9,557	1,874	2,938	4,745	1.0448
País Vasco	38,738	6,706	12,099	19,933	1.6852
La Rioja	4,541	845	1,335	2,361	1.4071
Ceuta y Melilla	2,011	377	607	1,027	
Not attributed to regions	40,796	31,752	9,044		

Source: Authors' own work based on MS (2019b):
(*) We have distributed by regions the personnel not attributed by regions to calculate the ratio in the last column.

Annex IV. Table 3. NHS health workforce. 2002-2021
Administrative data from the Registry of Personnel at the service of Public Administrations (RCP) on January 1

Regions	January 2002	January 2003	January 2004	January 2005	January 2006	January 2007	January 2008	January 2009	January 2010	January 2011	January 2012	January 2013	January 2014	January 2015	January 2016	January 2017	January 2018	January 2019	January 2020	January 2021
TOTAL	**370,018**	**384,937**	**391,946**	**422,445**	**434,145**	**452,982**	**473,149**	**484,724**	**490,351**	**492,000**	**505,185**	**492,779**	**476,689**	**475,465**	**480,626**	**489,192**	**496,861**	**510,224**	**514,952**	**568,117**
Andalucía	77,321	81,127	80,701	90,446	94,216	99,740	98,042	97,214	95,429	94,951	95,394	88,367	90,106	89,949	89,838	91,037	94,469	95,023	95,627	113,725
Aragón	13,281	15,613	15,453	15,591	14,963	15,501	16,091	16,412	16,696	16,333	16,545	16,301	16,295	15,890	17,371	17,383	17,630	17,700	17,856	19,054
Asturias	10,887	11,847	12,970	13,536	13,488	13,797	13,874	14,788	14,694	15,208	14,831	14,685	14,672	14,873	14,989	15,369	15,450	15,644	15,956	18,374
Baleares	5,533	6,752	6,136	6,257	6,533	6,980	9,051	9,222	9,300	9,261	13,038	12,666	12,423	11,592	13,116	11,935	11,647	11,876	12,078	11,690
Canarias	17,559	18,793	17,842	18,165	19,008	19,330	19,357	20,549	24,516	24,775	24,363	23,764	23,741	23,529	22,450	23,646	23,589	24,265	25,706	27,288
Cantabria	5,916	6,083	6,209	6,544	7,074	7,534	7,694	7,745	7,929	7,918	7,723	7,741	7,947	7,951	8,252	7,947	8,000	8,198	7,615	9,133
Castilla y León	25,242	27,455	28,289	28,691	30,395	31,253	32,850	34,348	34,197	34,531	34,291	34,206	33,695	33,531	33,983	34,064	33,973	34,011	34,211	33,823
Castilla-la Mancha	15,196	16,054	17,085	17,614	18,828	20,735	22,526	22,719	22,988	22,688	27,985	26,472	25,710	25,204	25,003	24,914	25,141	30,003	26,055	26,649
Cataluña	33,313	33,800	34,400	32,752	32,416	33,705	34,492	35,525	35,450	35,456	39,106	39,089	38,036	38,691	38,823	39,759	41,523	42,536	44,729	50,908
Madrid	46,114	47,211	47,621	60,769	61,008	61,481	69,516	71,180	72,201	71,291	71,026	69,181	65,328	65,477	66,344	71,670	72,577	73,634	74,917	84,560
C. Valenciana	38,912	39,246	40,435	44,337	45,320	49,233	50,230	51,283	52,161	53,532	54,059	54,376	43,792	43,789	44,060	44,140	44,410	46,524	47,608	55,016
Extremadura	9,859	10,432	13,087	13,518	14,124	15,039	15,336	15,351	15,555	15,599	15,206	15,285	15,092	15,342	15,885	16,024	16,398	16,543	16,461	16,466
Galicia	27,474	27,838	27,998	28,080	28,496	28,322	33,176	35,079	33,966	34,948	33,798	33,372	32,985	33,331	34,057	34,568	34,544	35,136	35,796	37,840
Murcia	9,480	10,691	11,359	14,040	14,896	17,531	16,613	18,703	19,644	19,778	20,270	19,696	19,526	19,484	19,548	19,592	19,719	20,030	20,676	24,122
Navarra	7,526	7,417	7,530	7,572	8,215	7,364	8,031	8,138	9,255	9,147	9,113	8,854	8,689	8,725	8,962	9,340	9,776	9,973	10,173	10,339
País Vasco	23,912	21,523	21,684	21,390	21,931	22,077	22,768	22,940	22,840	22,972	24,895	25,367	25,212	24,775	24,646	24,441	24,566	25,772	25,938	25,572
La Rioja	2,493	3,055	3,147	3,143	3,234	3,360	3,502	3,528	3,530	3,612	3,542	3,357	3,440	3,332	3,299	3,363	3,449	3,356	3,550	3,558

Source: Authors' own work based on MPT (14/10/2021).

11. Annex V: Pharmaceutical data in Spain

Pharmaceutical spending in 2019, including both medical prescriptions (15.7%) and hospital spending (9.9%), represents 25.6% of total health spending.[66] Hospital spending has gained relevance between 2014 and 2019 with higher annual rates of change than both total health spending and spending on medical prescriptions (Chart 17).

Action taken by the national and regional governments concerning the rational use of medicines[67] has included measures to impulse a greater presence of generic drugs in the market, equating the Spanish situation with that of other neighbouring countries. This, compounded with the strategy on reference prices, has been helpful to curb the double-digit rates of change regarding the expenditure on medical prescriptions in Spain. Nonetheless, according to the European Semester analyses on Spain, the level of introduction of generic medicines in Spain is below the average levels of the EU. On the other hand, most recent official data by the Ministry of Health show that the consumption of generic drugs in terms of market share, measured as percentage drug packages, stagnated in 2015 and began to decline (Chart 18). On its side, the consumption of generic drugs in hospitals is lower than among medical prescriptions: 20.50% in 2016, 22.23% in 2017, and 22.43% in 2018. In this sector, biosimilar medicines are more widespread than generic ones, but still have scope to span. Please refer to MS (2019c).

In addition to the rational use of medicines, centralised public procurement is an action line useful for "doing more with less." The national government started to take action in this direction in 2010. Since 2013, there have been framework agreements between public institutions at the national and regional levels for centralised procurement of medicines and medical devices.[68] Recent measures by the national government support this line of action,[69] but according to the data available, it seems that there is still space for further development. Chart 19.

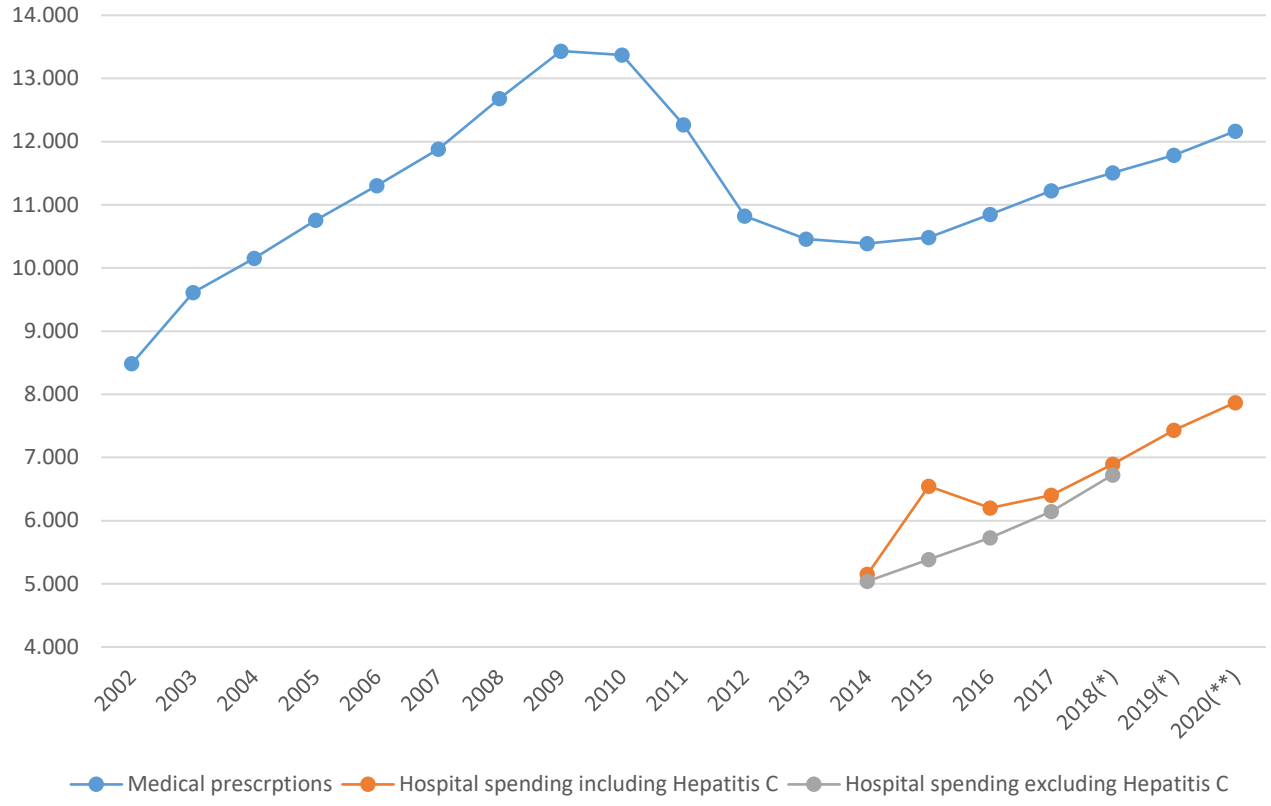
[66] Please refer to https://www.mscbs.gob.es/estadEstudios/estadisticas/sisInfSanSNS/pdf/egspGastoReal.xls and https://www.hacienda.gob.es/CDI/Gasto%20Sanitario/SERIE%20Gasto%20Farmac%C3%A9utico%20y%20Sanitario.xlsx

[67] At the national level, please refer to Law 29/2006, of July 26, on guarantees and rational use of medicines and health products (https://www.boe.es/buscar/pdf/2006/BOE-A-2006-13554-consolidado.pdf).

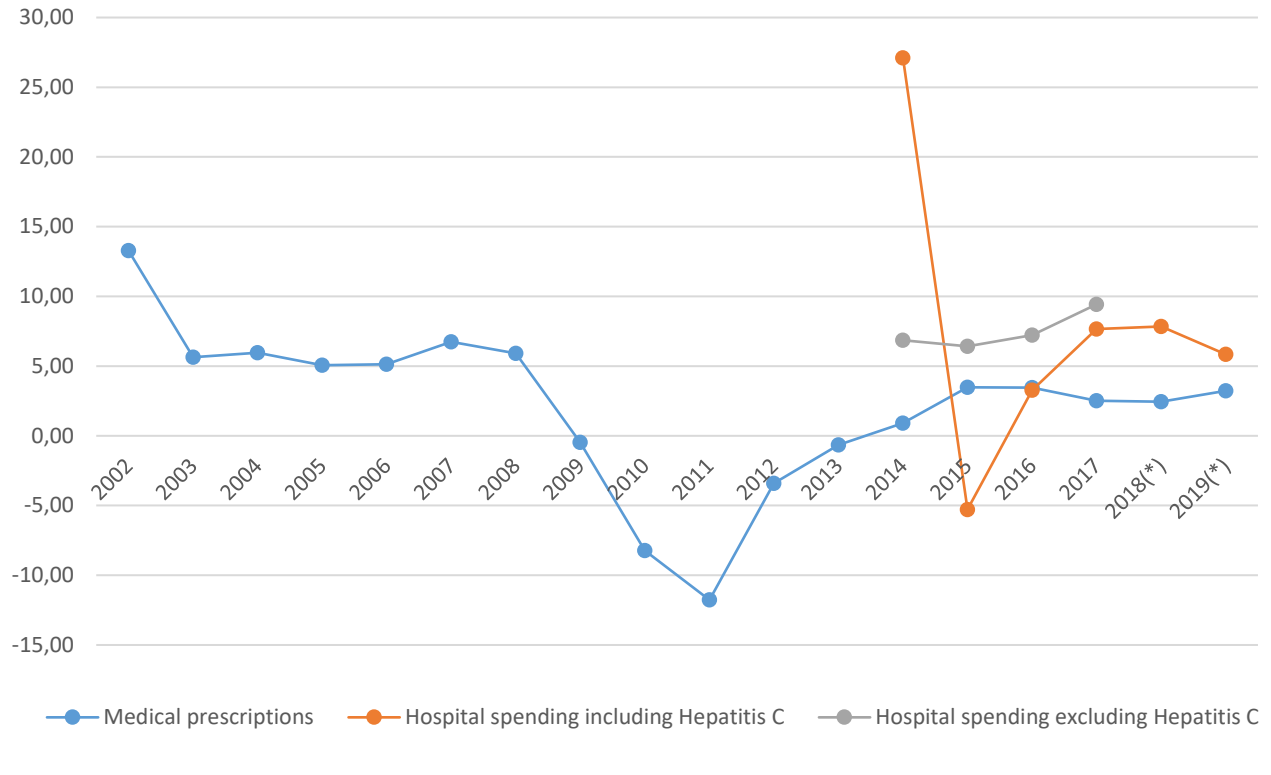
[68] Please refer to https://www.mscbs.gob.es/gabinete/notasPrensa.do?id=4515; https://comprassns.ingesa.sanidad.gob.es/acuerdos-marco?field_estado_value=All.

[69] https://www.boe.es/diario_boe/txt.php?id=BOE-A-2021-10826.

Chart 17. Evolution of pharmaceutical expenditure- medical prescriptions (Million Euros)

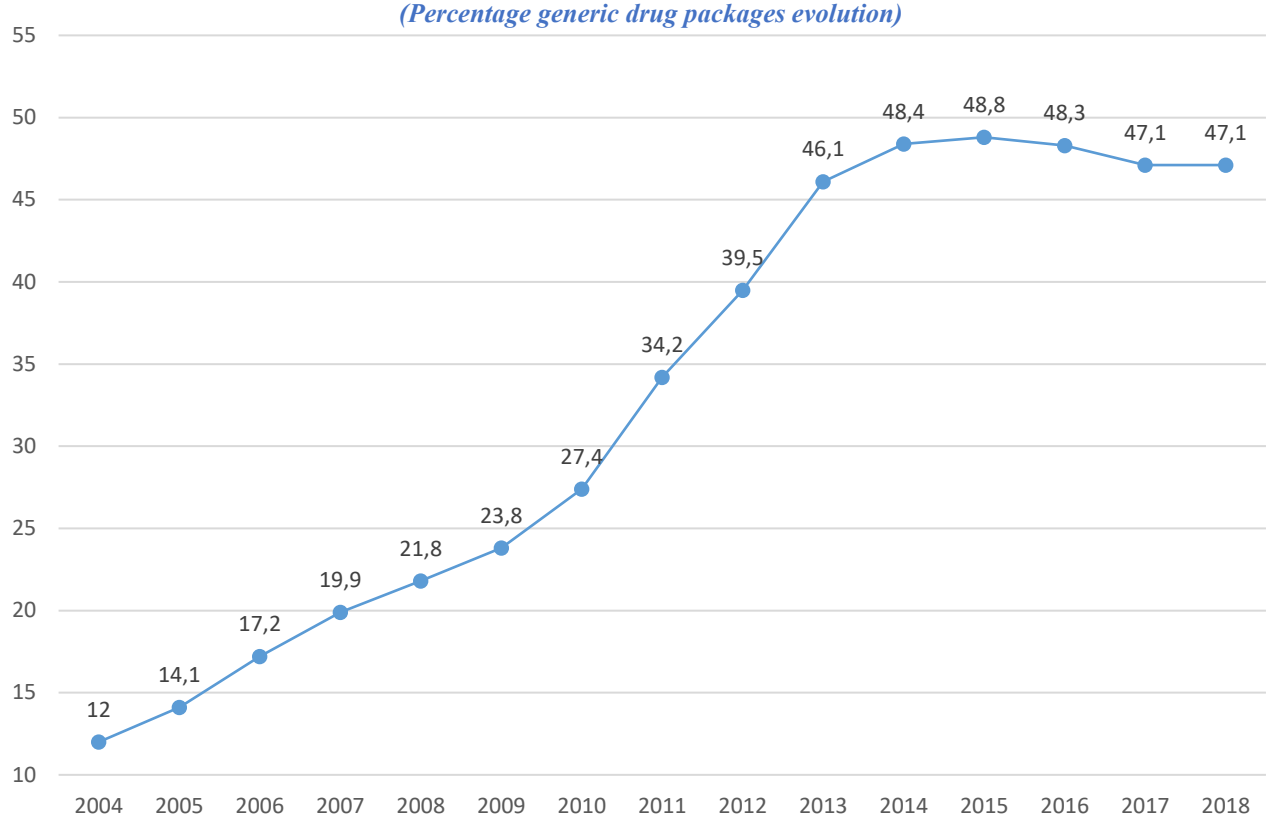


Annual rate of change (%)

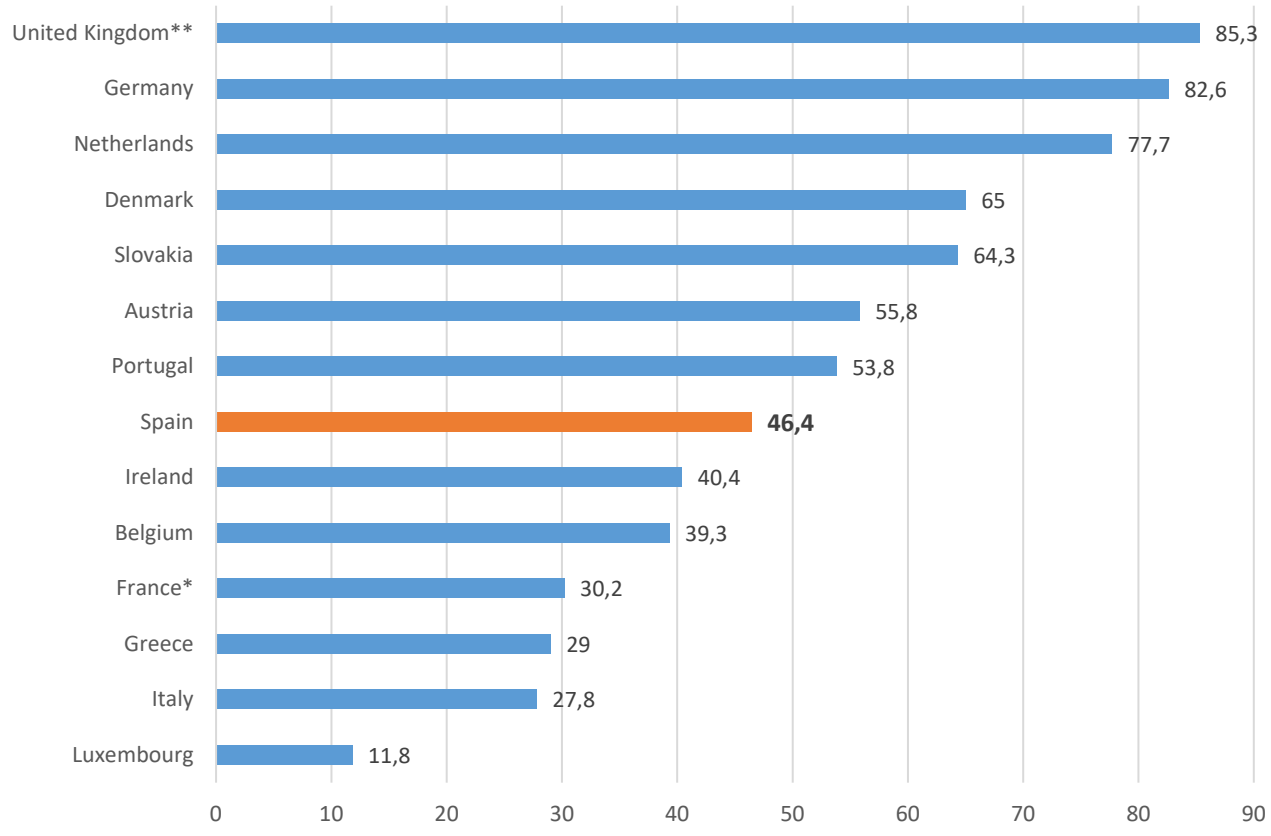


Source: Authors' own work based on the Ministry of Finance. Retrieved from: https://www.hacienda.gob.es/CDI/Gasto%20Sanitario/SERIE%20Gasto%20Farmac%C3%A9utico%20y%20Sanitario.xlsx

Chart 18. Generics consumption in Spain and some EU Member States
(Percentage generic drug packages evolution)

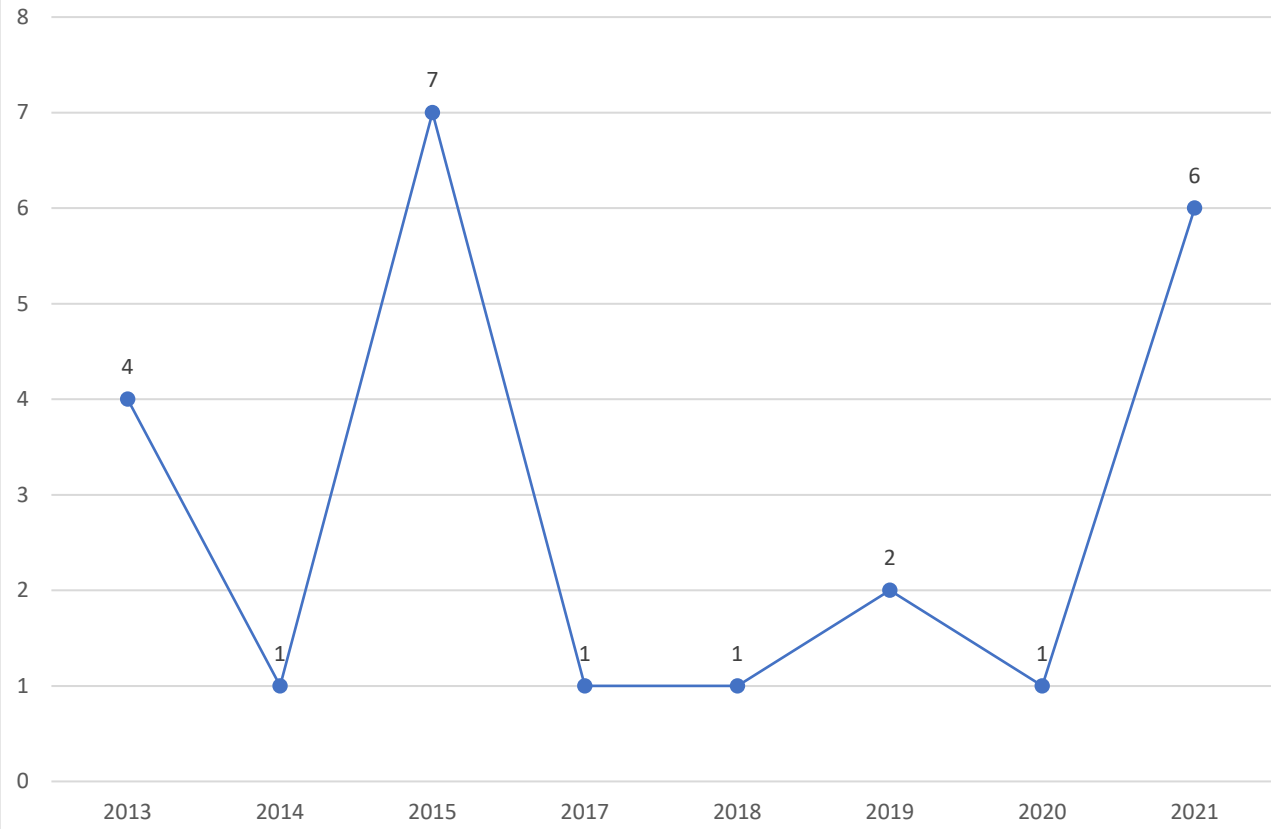


(Percentage generic drug packages in 2018)



Source: Authors' own work based on the Ministry of Health. Retrieved from:
https://www.mscbs.gob.es/profesionales/farmacia/pdf/PlanAccionSNSmedicamentosReguladoresMercado.pdf
https://www.mscbs.gob.es/estadEstudios/estadisticas/sisInfSanSNS/tablasEstadisticas/InfAnualSNS2019/Informe_PrestacionFarmaceutica_2019.pdf.
*2013; **2017.

Chart 19. Number of framework agreements between public institutions at the national and regional levels for centralised procurment of medicines and medical devices

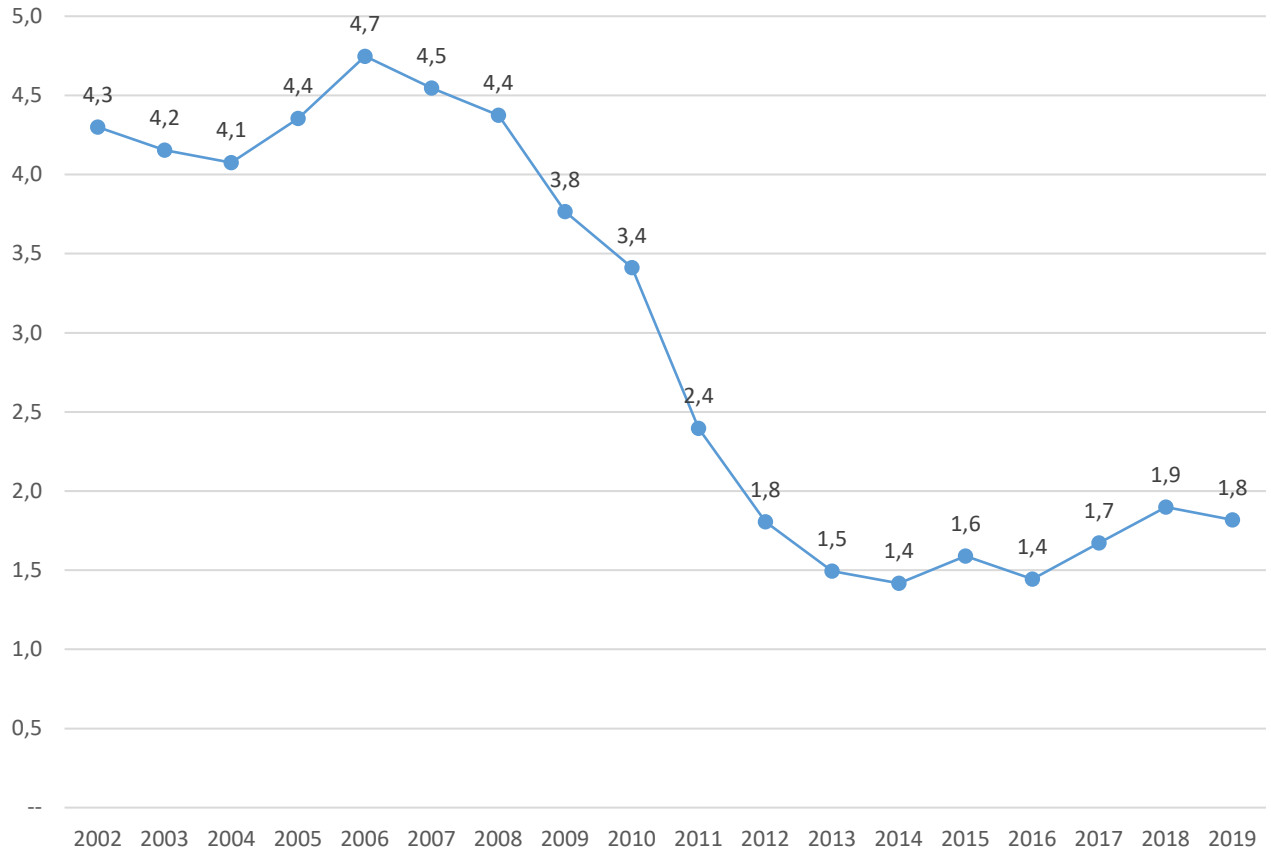


Source: Authors' own work based on the Ministry of Health. INGESA. Retrieved from: https://comprassns.ingesa.sanidad.gob.es/acuerdos-marco?field_estado_value=All

12. Annex VI: Capital investment data

Capital investment in the NHS has decreased in Spain at an average annual rate of -1.2% between 2002 and 2019. Currently, it is 1.8% of total health expenditure, while before the financial crisis of 2008 it used to be around 4.5% of total health expenditure. Chart 20.

Chart 20. Capital investment in the NHS (% of total spending)



Source: Authors' own work based on the Ministry of Health. Retrieved from: https://www.mscbs.gob.es/estadEstudios/estadisticas/sisInfSanSNS/pdf/egspGastoReal.xls

Regional disparities are notable in a given year, but due to the high volatility of this sort of spending there is no regular pattern showing which regions invest systematically more, less or around the national average; depending on the year the same region might be on a top or bottom position.

13. Annex VII: Health expenditure profiles by age and sex

13.1 NHS health expenditure profiles by age and sex

The projections of public expenditure on health rely on the profiles by age and sex, which, according to the available information in Spain, need to be estimated through a top-down approach. It is outlined in Annex VII. Table 1.

Annex VII. Table 1. NHS total health expenditure excluding long-term care by functions with identified criteria to allocate it by age and sex

	NHS-2019 *Thousand euros*
TOTAL NHS	**72,359,325**
Current expenditure	***71,282,075***
Specialised services	**43,108,574**
Inpatient specialised services	*25,401,410*
Outpatient specialised services	*17,707,164*
Outpatient curative and rehabilitative services	*13,495,305*
Ancillary services except patient transportation	*4,211,858*
Primary health care	**11,094,292**
Pharmacy (medical prescriptions)	**11,787,697**
Patient transportation, prostheses and therapeutic appliances	**1,421,524**
Patient transportation	*1,212,387*
Prostheses and therapeutic appliances	*209,137*
Rest of current expenditure	**3,869,988**
Capital Expenditure	**1,077,250**

Source: Authors' own work based on Eurostat and the Ministry of Health of Spain. Retrieved from: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Healthcare_expenditure_statistics . https://www.mscbs.gob.es/estadEstudios/estadisticas/inforRecopilaciones/gastoSanitario2005/home.htm.

Notes:

Criteria for breaking down public spending in health by age and		
Inpatient specialised services	DRG - inpatient	**(1)**
Outpatient specialised services	DRG - outpatient	**(2)**
Ancillary services except patient transportation	DRG - outpatient	**(2)**
Primary health care	Primary care consultations	**(3)**
Pharmacy (medical prescriptions)	Prescription medicines consumption publicly financed	**(4)**
Patient transportation	DRG - inpatient	**(1)**
Prostheses and therapeutic appliances	DRG - outpatient	**(2)**
Rest of current expenditure and capital expenditure	Same structure as for the aggregate expenditure for which there is recognised distribution criteria	

(1) ***Inpatient specialised services***. We distribute expenditure on inpatient care by age and sex based on the corresponding structure of the expense on inpatient care estimated from the *Registry of Activity of Specialised Health care. RAE-CMBD (*https://www.mscbs.gob.es/estadEstudios/estadisticas/cmbdhome.htm*)*.
In the RAE-CMBD, each case that receives inpatient care in the public system is registered using a minimum and basic set of data (CMBD). Such information allows classifying cases based on the complexity of the care received. Complexity is determined by both clinical and intensity parameters of resource consumption. The casuistry of the cases is very high and must be simplified. To do this, cases are grouped into diagnoses related groups (DRG). Thus, each case has an associated DRG. In turn, each DRG is associated with a cost that is estimated using the statistic *Hospital Costs - Analytical Accounting (*https://www.mscbs.gob.es/estadEstudios/estadisticas/inforRecopilaciones/anaDesarrolloGDR.htm*)*.
Total expenditure on inpatient care estimated from the CMBD and the DRG does not coincide with the expense registered in the EGSP and SHA accounting systems, because the cost of the DRG is accounted for with a different logic. However, its distribution by age and sex is structural in nature and allows us to approximate the breakdown of spending on inpatient care from the EGSP or the SHA. The estimated structure refers to cases of acute centres of the NHS. The structure of expenditure on inpatient care is also applied to distribute the expenditure on patient transportation by age and sex.

(2) ***Outpatient specialised services.*** We distribute expenditure on specialised outpatient care based on the age and sex structure of such type of expenditure estimated from the *Register of Activity of Specialised Health Care. RAE-CMBD*. In this case, the outpatient CMBD is used. The MH has only recently published data on cost per process for specialised outpatient cases. This new data enables us to improve previous estimates based on the number of consultations from the ENSE. As for inpatient services, the estimated structure refers to cases of acute centres of the NHS. The structure of expenditure on specialised outpatient care is also applied to distribute the expenditure on prostheses and therapeutic appliances by age and sex.

(3) ***Primary health care***. We distribute the expenditure on primary health care by age and sex according to the age structure of publicly funded consultations with general or family doctors. We estimate the consultations based on the closest published ENSE –previous or subsequent– to the period analysed.

(4) ***Pharmacy (medical prescriptions)***. We distribute the expenditure on pharmacy (medical prescriptions) by age and sex based on the consumption of publicly financed prescription drugs. Said consumption is estimated by age from the published ENSE closest to the period analysed. Furthermore, considering the current pharmaceutical co-payment system, the distribution by age and sex of this consumption has been corrected based on the higher cost per prescription of pensioners for the public treasury, estimated to be 37% higher than that of the active population (Simó, J., 2015). Thus, the number of medicines consumed estimated through the ENSE is corrected using a ratio of 1.37 for pensioners.

Annex VII. Table 2. NHS health expenditure profiles by five-year age groups and function

2019		*Inpatient specialised services*	*Outpatient specialised services*	*Primary health care*	*Pharmacy (medical prescriptions)*	*Patient transportation*	*Prostheses and therapeutic appliances*	*Rest of expenditure*	*TOTAL*
Both sexes									
Percentage Health Expenditure by function		**0.3510**	**0.2447**	**0.1533**	**0.1629**	**0.0168**	**0.0029**	**0.0684**	**1.0000**
NHS health expenditure profiles by five-year age groups and function	***Al ages***	540	377	236	251	26	4	105	1,539
	0-4	530	120	415	118	25	1	89	1,298
	5-9	113	109	196	68	5	1	36	529
	10-14	118	92	157	58	6	1	32	464
	15-19	152	131	145	57	7	2	36	531
	20-24	187	154	155	95	9	2	44	645
	25-29	238	166	172	81	11	2	49	720
	30-34	309	193	178	84	15	2	57	839
	35-39	295	232	166	100	14	3	59	868
	40-44	259	260	171	112	12	3	60	878
	45-49	305	309	210	166	15	4	74	1,082
	50-54	408	389	225	191	19	5	91	1,327
	55-59	556	487	262	301	27	6	120	1,758
	60-64	742	601	273	372	35	7	149	2,179
	65-69	947	742	306	523	45	9	189	2,761
	70-74	1,201	918	346	670	57	11	235	3,438
	75-79	1,549	1,057	376	765	74	12	281	4,115
	80-84	1,711	908	409	816	82	11	289	4,227
	85 +	2,093	597	395	817	100	7	294	4,304

Source: Authors' own work based on Annex VII. Table 1.

13.2 RHS health expenditure profiles by age and sex

Annex VII. Table 3. RHS total health expenditure excluding long-term care by functions with identified criteria to allocate it by age and sex

	RHS-2019 *Thousand euros*
TOTAL RHS*	**68,149,830**
Current expenditure	**66,945,150**
Specialised services	**42,328,065**
Inpatient specialised services	24,941,501
Outpatient specialised services	17,386,564
Outpatient curative and rehabilitative services	13,250,964
Ancillary services except patient transportation	4,135,600
Primary health care	**9,906,904**
Pharmacy (medical prescriptions)	**11,297,270**
Patient transportation, prostheses and therapeutic appliances	**1,142,630**
Patient transportation	974.524
Prostheses and therapeutic appliances	168,106
Rest of current expenditure	**2,270,282**
Capital Expenditure	**1,204,680**

Source: Authors' own work based on Eurostat and the Ministry of Health of Spain. Retrieved from: https://www.mscbs.gob.es/estadEstudios/estadisticas/inforRecopilaciones/gastoSanitario2005/home.htm.

* The RHS exclude health expenditure which is under the responsibility of the Central Government: Social Security health services: Occupational health, students health insurance; Civil servant special regimes; military health; Ceuta and Melilla regional health services; prison health.

Annex VII. Table 4. Regional Health Services (RHS) health expenditure profiles by five-year age groups

	Andalucía	Aragón	Asturias	Baleares	Canarias	Cantabria	Castilla y León	Castilla-La Mancha	Cataluña	Valencia	Extremadura	Galicia	Madrid	Murcia	Navarra	País Vasco	La Rioja
TOTAL	**1,289**	**1,658**	**1,713**	**1,551**	**1,594**	**1,625**	**1,659**	**1,539**	**1,555**	**1,539**	**1,674**	**1,555**	**1,334**	**1,659**	**1,693**	**1,809**	**1,517**
0-4	*1,163*	*1,350*	*1,276*	*1,443*	*1,462*	*1,304*	*1,251*	*1,311*	*1,328*	*1,314*	*1,381*	*1,180*	*1,194*	*1,555*	*1,431*	*1,446*	*1,246*
5-9	*457*	*530*	*501*	*567*	*574*	*512*	*491*	*515*	*521*	*516*	*542*	*464*	*469*	*611*	*562*	*568*	*490*
10-14	*401*	*465*	*440*	*498*	*504*	*450*	*431*	*452*	*458*	*453*	*476*	*407*	*412*	*536*	*493*	*499*	*430*
15-19	*458*	*532*	*503*	*569*	*576*	*514*	*493*	*517*	*523*	*518*	*544*	*465*	*471*	*613*	*564*	*570*	*491*
20-24	*563*	*654*	*618*	*699*	*708*	*632*	*606*	*635*	*643*	*637*	*669*	*572*	*579*	*753*	*693*	*701*	*604*
25-29	*631*	*732*	*692*	*783*	*793*	*708*	*679*	*712*	*721*	*713*	*750*	*641*	*648*	*844*	*776*	*785*	*676*
30-34	*737*	*855*	*808*	*914*	*926*	*826*	*792*	*831*	*841*	*832*	*875*	*748*	*757*	*985*	*906*	*916*	*790*
35-39	*766*	*890*	*841*	*951*	*963*	*860*	*824*	*864*	*875*	*866*	*910*	*778*	*787*	*1,025*	*943*	*953*	*822*
40-44	*773*	*898*	*848*	*960*	*972*	*867*	*832*	*872*	*883*	*874*	*919*	*785*	*794*	*1,034*	*952*	*962*	*829*
45-49	*944*	*1,096*	*1,036*	*1,172*	*1,187*	*1,059*	*1,016*	*1,065*	*1,078*	*1,067*	*1,122*	*959*	*970*	*1,263*	*1,162*	*1,175*	*1,012*
50-54	*1,164*	*1,351*	*1,277*	*1,445*	*1,463*	*1,305*	*1,252*	*1,312*	*1,329*	*1,315*	*1,383*	*1,182*	*1,196*	*1,557*	*1,432*	*1,448*	*1,248*
55-59	*1,575*	*1,828*	*1,728*	*1,955*	*1,980*	*1,767*	*1,694*	*1,776*	*1,799*	*1,780*	*1,871*	*1,599*	*1,618*	*2,107*	*1,938*	*1,959*	*1,689*
60-64	*1,952*	*2,265*	*2,141*	*2,422*	*2,453*	*2,189*	*2,099*	*2,201*	*2,228*	*2,206*	*2,318*	*1,981*	*2,005*	*2,611*	*2,401*	*2,427*	*2,092*
65-69	*2,491*	*2,891*	*2,733*	*3,091*	*3,131*	*2,794*	*2,679*	*2,809*	*2,844*	*2,815*	*2,959*	*2,529*	*2,559*	*3,332*	*3,065*	*3,098*	*2,670*
70-74	*3,103*	*3,601*	*3,404*	*3,851*	*3,900*	*3,480*	*3,337*	*3,499*	*3,543*	*3,507*	*3,685*	*3,150*	*3,187*	*4,151*	*3,818*	*3,859*	*3,326*
75-79	*3,650*	*4,236*	*4,005*	*4,530*	*4,588*	*4,094*	*3,926*	*4,116*	*4,168*	*4,125*	*4,336*	*3,706*	*3,749*	*4,883*	*4,491*	*4,540*	*3,913*
80-84	*3,743*	*4,344*	*4,107*	*4,646*	*4,705*	*4,198*	*4,026*	*4,221*	*4,274*	*4,230*	*4,446*	*3,800*	*3,845*	*5,007*	*4,606*	*4,656*	*4,012*
85 +	*3,779*	*4,385*	*4,146*	*4,689*	*4,750*	*4,238*	*4,064*	*4,260*	*4,314*	*4,270*	*4,488*	*3,836*	*3,881*	*5,054*	*4,649*	*4,700*	*4,050*

Source: Authors' own work based on Annex VII. Table 2, the EGSP and the population covered by each region.

Note: For each region, we calculate the average per capita acute health expenditure based on the regional breakdown of data from Annex VII. Table 3, calculated with EGSP data, and on the population covered by each region. Then we apply the coefficients calculated in Annex VII. Table 2 to the average per capita acute health expenditure. Finally, we calibrate the profiles in order to make them coherent with the regional total acute health expenditure.

14. Annex VIII. Health expenditure projections excluding the COVID-19 effect

Annex VIII .Table 1. Health expenditure sustainability indicator over the periods 2019-2069 and 2019-2030. Reference scenario: compression of morbidity by half-life expectancy gains and elasticity 1.1 in 2019 decreasing to 1 in 2070

	Health expenditure as a percentage of GDP in 2019 (%)	Authors' estimates		AWG's estimates	
		Change 2019-2069 (pp)	Change 2019-2030 (pp)	Change 2019-2070 (pp)	Change 2019-1930 (pp)
Spain	**5.81**(*)	**1.5739**	**0.9831**	**1.3332**	**0.4841**
Andalucía	6.25		1.1477		
Aragón	5.68		0.8130		
Asturias	7.33		1.3124		
Baleares	5.12		0.8368		
Canarias	6.81		1.4229		
Cantabria	6.46		1.2622		
Castilla y León	6.46		1.0878		
Castilla-La Mancha	6.96		1.2317		
Cataluña	4.74		0.7296		
Valencia	6.20		1.0762		
Extremadura	8.42		1.4813		
Galicia	6.35		1.0020		
Madrid	3.63		0.5884		
Murcia	7.42		1.2368		
Navarra	5.14		0.8351		
País Vasco	5.34		0.8850		
La Rioja	5.29		0.8811		

Source: Authors' own work based on Annex VII. Table 1 to Annex VII. Table 4. INE's population projections. AWG macroeconomic projections.
(*) The starting point of the AWG projections in the AR 2021 was 5.69.

Annex VIII .Table 2. Alternative scenarios excluding the COVID-19 effect

	Health expenditure as a percentage of GDP in 2019 (%)	Reference scenario	Constant health with elasticity 1 over the projection period	Constant health with elasticity 1.1 in 2019 converging to 1 in 2070	Constant health with elasticity 0.9671 in 2019 converging to 1 in 2070	Compression of morbidity by half-life expectancy gains with elasticity 1 over the projection period	Compression of morbidity by half-life expectancy gains with elasticity 0.9671 in 2019 converging to 1 in 2070
Change 2069-2019 (only at the national level)							
Spain	**5.81**	**1.5739**	**1.5653**	**1.8268**	**1.4811**	**1.3210**	**1.2397**
Change 2030-2019							
Spain	**5.81**	**0.9831**	**0.9614**	**1.0587**	**0.9296**	**0.8869**	**0.8555**
Andalucía	6.25	1.1477	1.1593	1.2656	1.1246	1.0430	1.0088
Aragón	5.68	0.8130	0.8035	0.8966	0.7731	0.7211	0.6911
Asturias	7.33	1.3124	1.2924	1.4162	1.2520	1.1901	1.1502
Baleares	5.12	0.8368	0.8723	0.9583	0.8443	0.7526	0.7251
Canarias	6.81	1.4229	1.4483	1.5668	1.4097	1.3064	1.2684
Cantabria	6.46	1.2622	1.2489	1.3596	1.2128	1.1529	1.1172
Castilla y León	6.46	1.0878	1.0323	1.1399	0.9972	0.9809	0.9460
Castilla-La Mancha	6.96	1.2317	1.1181	1.2341	1.0803	1.1157	1.0779
Cataluña	4.74	0.7296	0.7104	0.7887	0.6849	0.6521	0.6269
Valencia	6.2	1.0762	1.0722	1.1766	1.0382	0.9732	0.9397
Extremadura	8.42	1.4813	1.4706	1.6127	1.4243	1.3411	1.2953
Galicia	6.35	1.0020	1.0071	1.1127	0.9727	0.8980	0.8641
Madrid	3.63	0.5884	0.5519	0.6119	0.5323	0.5287	0.5092
Murcia	7.42	1.2368	1.2791	1.4040	1.2383	1.1143	1.0743
Navarra	5.14	0.8351	0.7751	0.8600	0.7474	0.7505	0.7229
País Vasco	5.34	0.8850	0.8802	0.9696	0.8511	0.7969	0.7681
La Rioja	5.29	0.8811	0.8789	0.9674	0.8500	0.7938	0.7653

Source: Authors' own work based on Annex VII. Table 1 to Annex VII. Table 4. INE's population projections. AWG macroeconomic projections.

15. Annex IX: Health expenditure projections including the COVID-19 effect

Chart 21. Projections of public expenditure in health including the effect the COVID-19 pandemic. Compression of morbidity by half life expectancy gains with elasticity 1.1 in 2019 converging to 1 in 2070 & Scenarios 0 to 7 for HWF

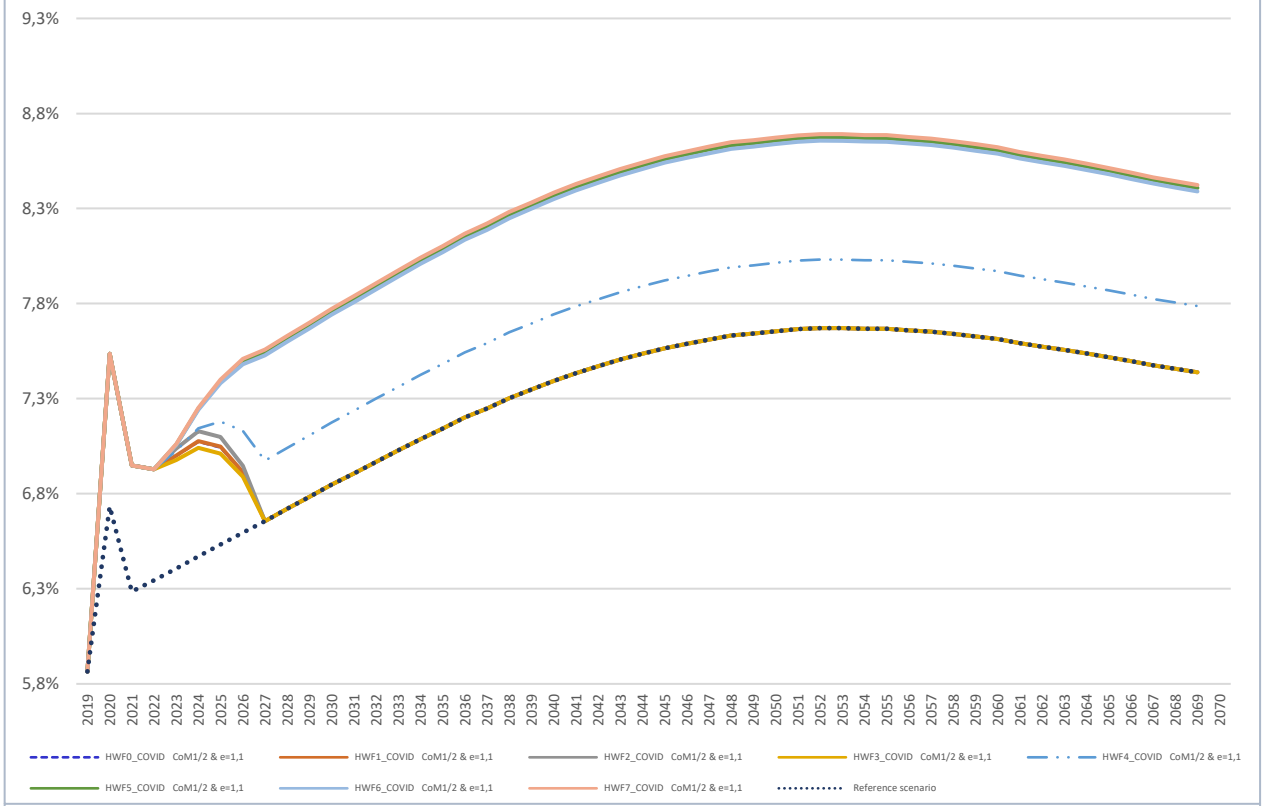
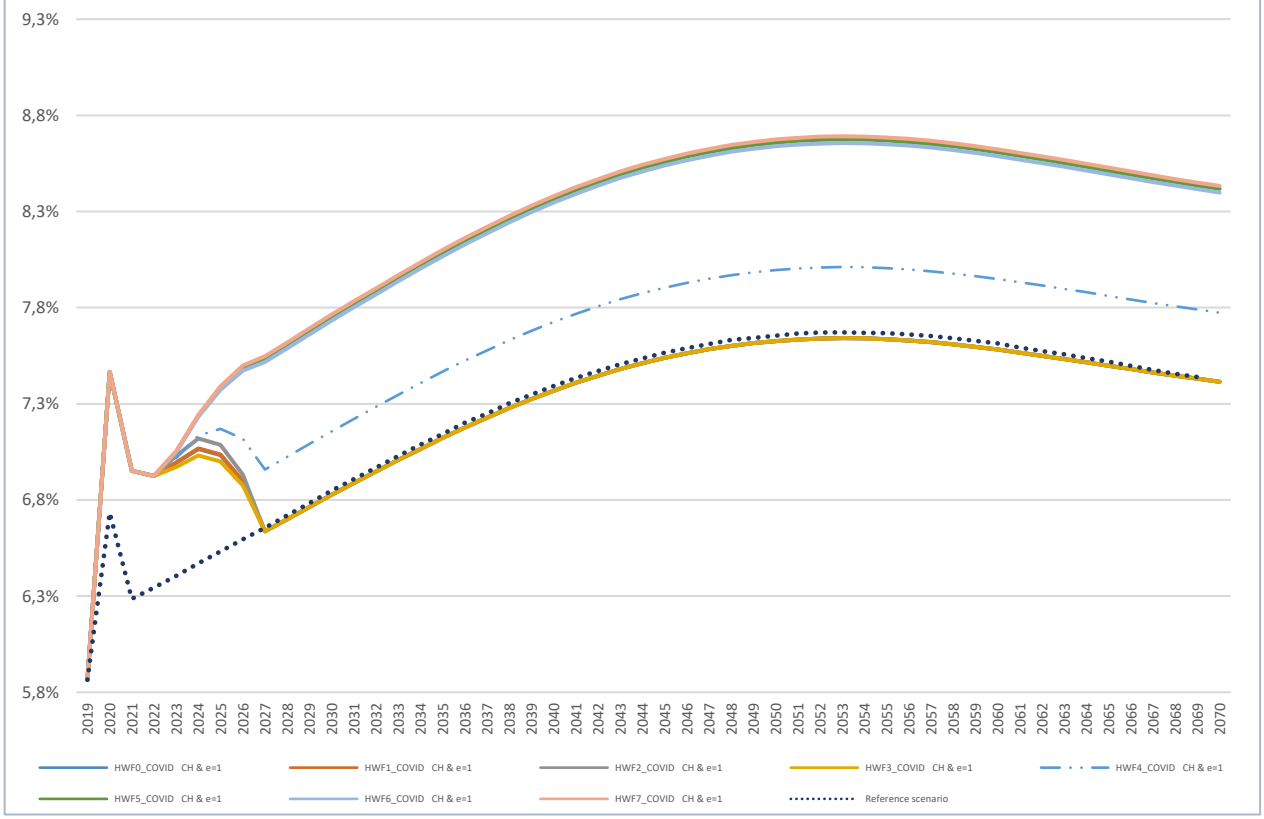


Chart 22. Projections of public expenditure in health including the effect the COVID-19 pandemic. Constant health scenario with elasticity 1 over the projection period & Scenarios 0 to 7 for HWF



Source: Authors' own work.

Chart 23. Projections of public expenditure in health including the effect the COVID-19 pandemic. Constant health scenario with elasticity 1.1 in 2019 converging to 1 in 2070 & Scenarios 0 to 7 for HWF

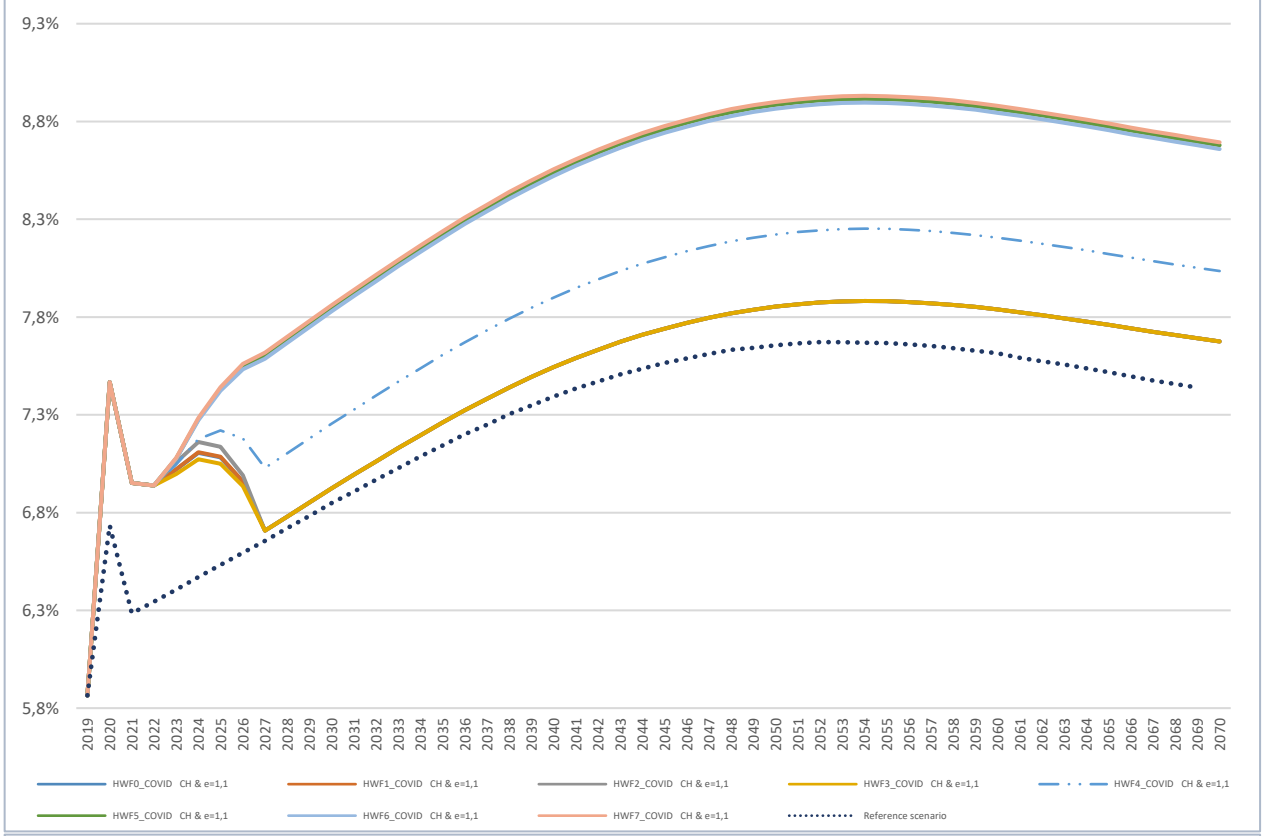
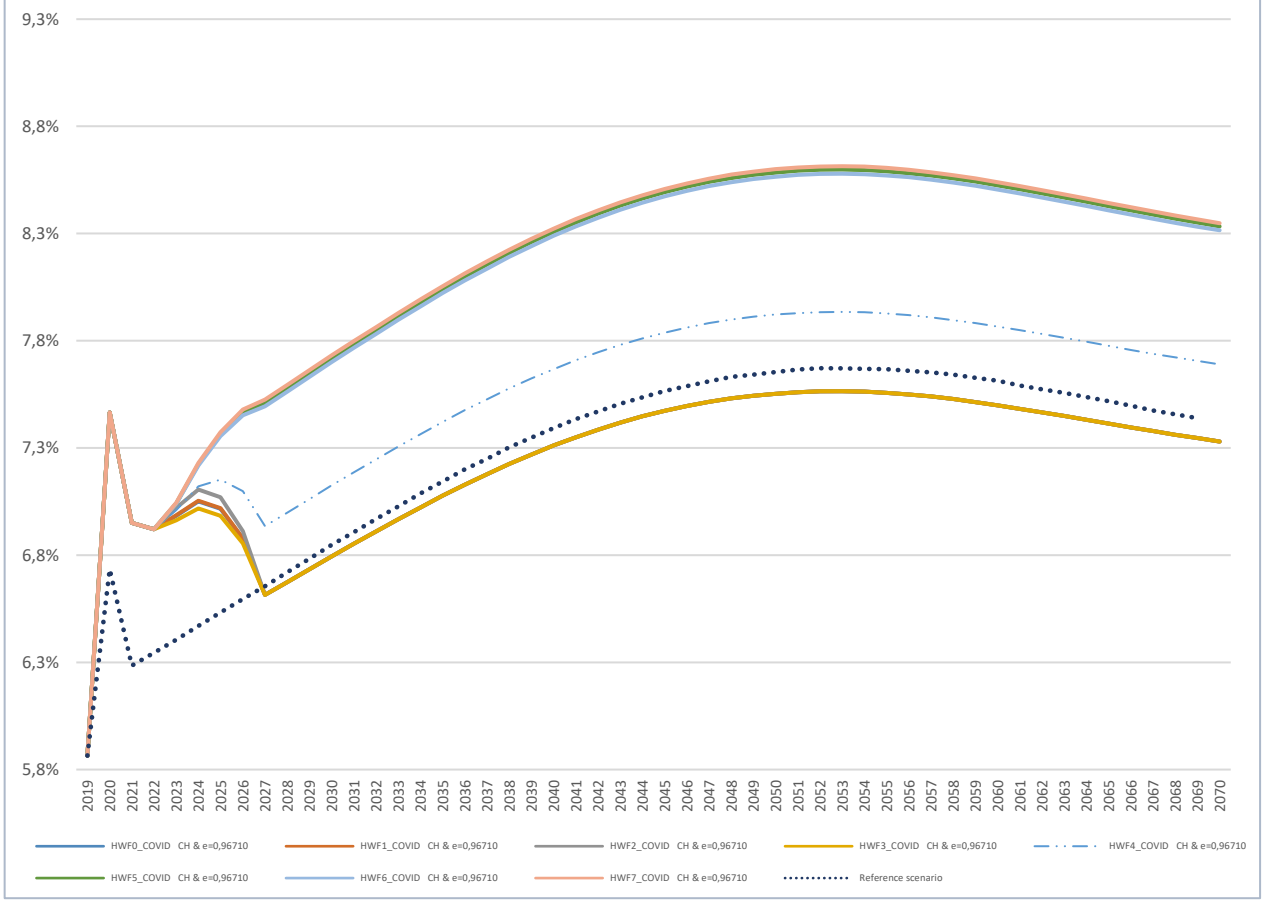


Chart 24. Projections of public expenditure in health including the effect the COVID-19 pandemic. Constant health scenario with elasticity 0.9671 in 2019 converging to 1 in 2070 & Scenarios 0 to 7 for HWF



Source: Authors' own work.

Chart 25. Projections of public expenditure in health including the effect the COVID-19 pandemic. Compression of morbidity by half life expectancy gains with elasticity 1 over the projection period & Scenarios 0 to 7 for HWF

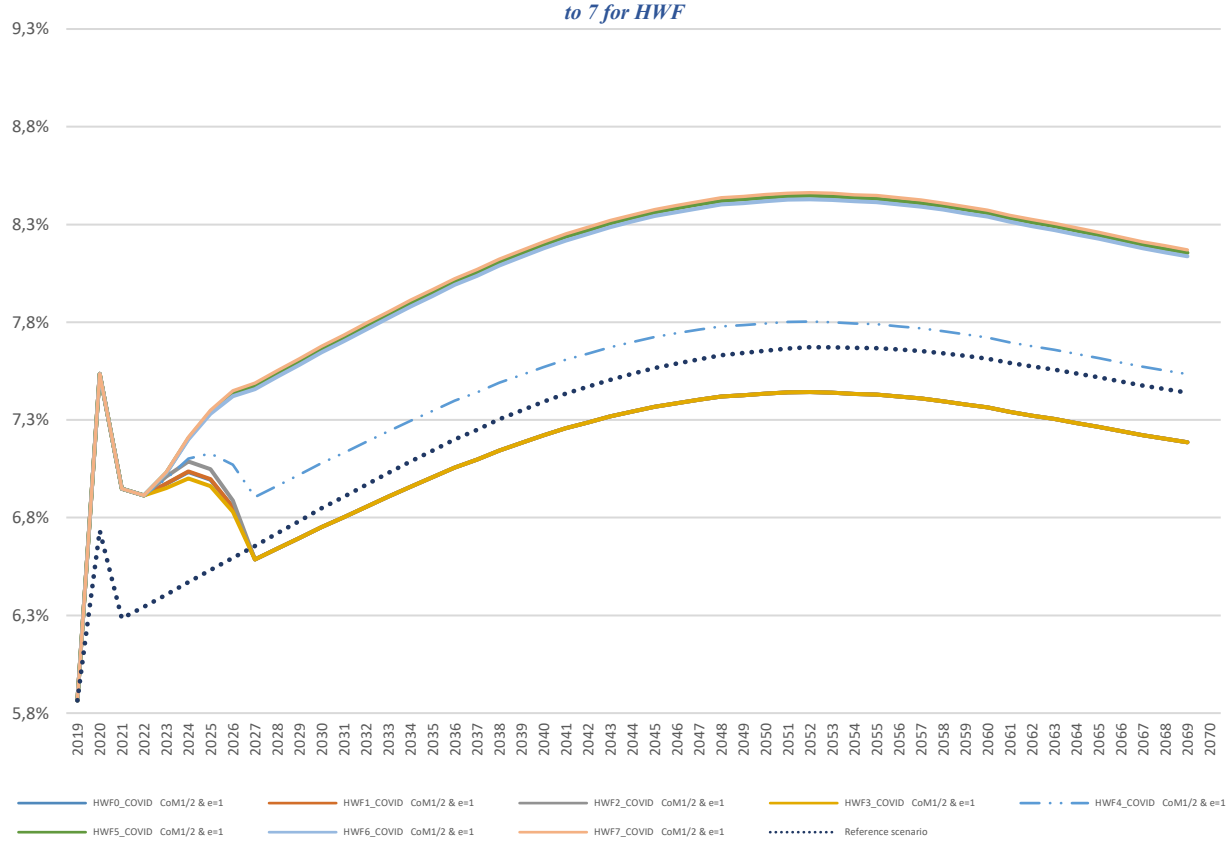
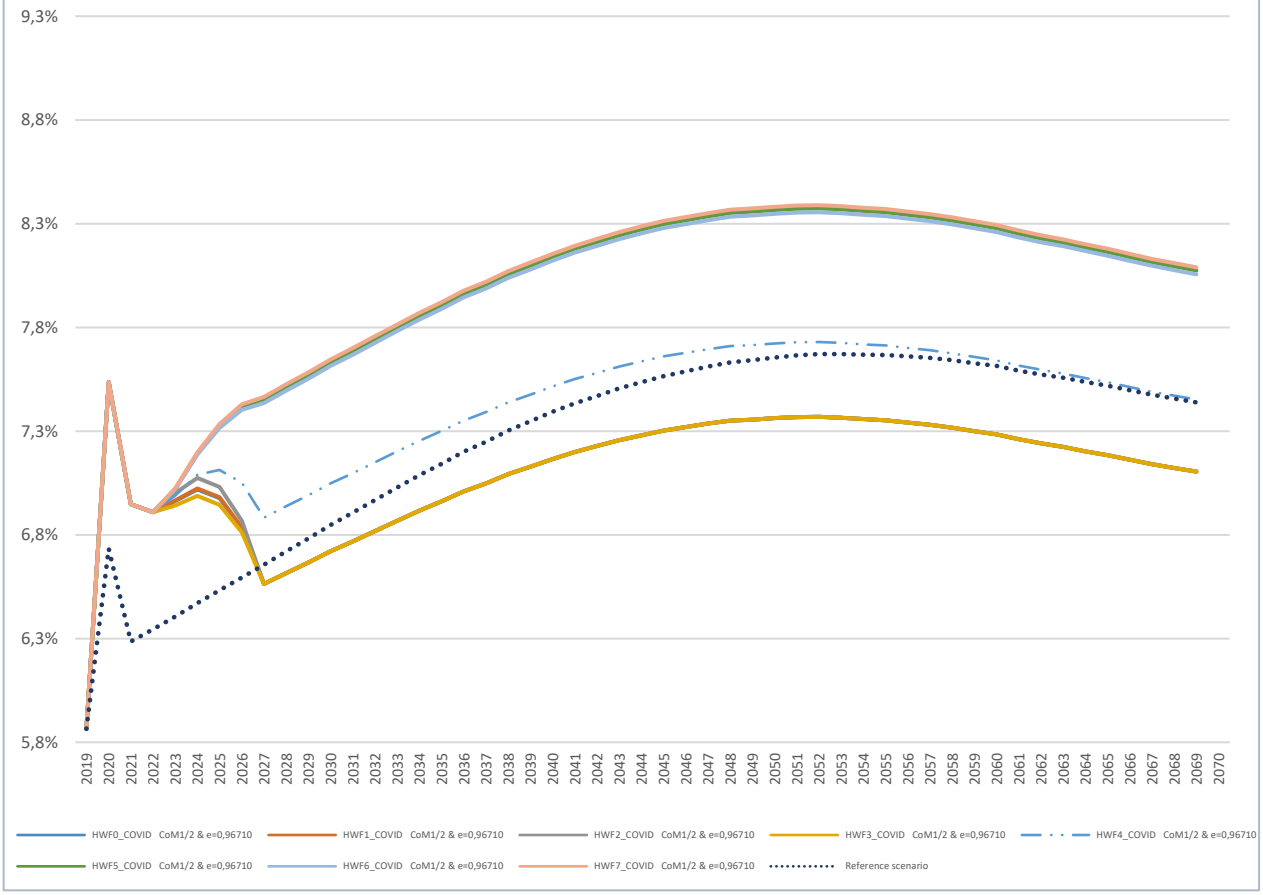


Chart 26. Projections of public expenditure in health including the effect the COVID-19 pandemic. Compression of morbidity by half life expectancy gains with elasticity 0.9671 in 2019 converging to 1 in 2070 & Scenarios 0 to 7 for HWF



Source: Authors' own work.

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