Measuring Universality in Social Protection

A pilot study for Spain

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Contents

Abstract

The aim of this report is to contribute to measure the universality of social protection in a European Union Member State using an approach set forth by Muñoz de Bustillo et al. (2020) based on metrics of coverage and adequacy. Based on the indications provided by the authors of the type of indicators that would be necessary for measuring coverage and adequacy of social protection programmes, we develop the operationalisation of the framework using relevant data and indicators for Spain with the idea that it can be extended to other Member States. The social protection dimensions covered are the following: unemployment benefits, pensions, social assistance and family benefits, health, education, and housing. We rely primarily on data coming from Eurostat, the OECD, and the WHO. We provide the structure of the system of indicators of universality, measure them in each dimension, and aggregate the indicators into a synthetic index. The report concludes with a set of considerations and recommendations arising from the measurement process carried out. It also includes reflections and proposals related to the concept of universality, the role of public provision of social protection, and data sources used, as well as regarding other potential data series, which would be useful for measuring universality.

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Executive Summary

This report takes as a basis the study by Muñoz de Bustillo et al. (2020), in which they develop a conceptual framework to define and measure universality and a draft proposal for the development of an analytical framework to quantify it. Our aim is to test this proposal on a pilot basis for one EU Member State (Spain). Based on the indications provided by the authors of the type of indicators that would be necessary for measuring coverage and adequacy of social protection programmes, we develop the operationalisation of the framework using relevant data and indicators for Spain with the idea that it can be extended to other Member States. The social protection branches covered are the following: unemployment benefits, pensions, social assistance and family benefits, health, education, and housing. We rely primarily on data coming from Eurostat, the OECD, and the WHO.

To carry out the operationalisation of the framework, firstly, we do a thorough revision of existing indicators and propose the construction of potential ones that might be used to measure coverage and adequacy of social protection separately, discussing their respective pros and cons. For that, we rely primarily on data coming from international databases, with the objective of finding a way of measuring the universality of social protection for one country but making it comparable with the rest of the EU Member States. Then, we provide the structure of the system of indicators of universality, measure them in each branch, and aggregate the indicators into a synthetic index. A 0-100 metric is used for the measurement of both effective coverage and adequacy, simplifying the aggregation process and interpretation of results. Moreover, we use two calculation methods (geometric and arithmetic mean) to measure the aggregate indicators of each area and the overall universality index. Results suggest that the degree of universality of social protection in Spain would have been at a level near 50 out of 100 (geometric mean) or around 62 out of 100 (arithmetic mean) in the middle of the 2010s, with a very slight upward trend at the end of the decade.

The report concludes with a set of considerations and recommendations arising from the measurement process carried out. It also includes reflections and proposals related to the concept of universality, the role of public provision of social protection, and data sources used and which other potential data series would be useful for measuring universality.

1. Introduction

The aim of this report is to contribute to measure the universality of social protection in a European Union Member State using an approach set forth by Muñoz de Bustillo et al. (2020) based on metrics of coverage and adequacy. After reviewing the literature on universality, they show that there is a significant consensus on the elements that need to be taken into consideration when discussing what universality of a given social programme or Welfare State is. These are the social needs addressed, the degree to which it covers the entire population (or demographic groups), and the degree to which it is adequate to the needs covered in each case. These authors propose a way to operationalise the approach for several branches (health, unemployment benefits, sickness benefits, old-age pensions, social assistance, housing, and education) in order to construct an index of universal social protection based on two dimensions: effective coverage and adequacy. Regarding coverage, the notion is that the higher the share of the population protected, the higher the degree of universality of the programme. As for adequacy, it is a subtler aspect of a programme, due to its more normative nature, so the general criterion should be to define the level (of income, health, education) that each social programme tries to protect and then use measures of actual levels achieved for defining a standard 0-100 measure of adequacy. In sum, the authors have developed not only a conceptual framework to define and measure universality but also an initial proposal for the development of an analytical framework to quantify it, providing general indications of the type of indicators that would be necessary to measure both elements of social protection programmes.

Thus, the purpose of this report is to take the proposal made by Muñoz de Bustillo et al. (2020), operationalize it and test it on a pilot basis for one EU Member State, Spain. The country-specific approach will serve to provide an overall picture of the framework, its strengths and its weaknesses. In this analysis, we carry out the operationalisation of the framework using relevant data and indicators for this country. The branches covered are the ones identified in the general framework commented on above (1). We rely primarily on EU-level data coming from Eurostat, since one of the backbone elements of the study is that the indicators can be calculated in a homogeneous and comparable way for all the Member States of the European Union, but also from other international databases when needed. Indicators published or constructed from published data are used rather than indicators calculated using microdata from surveys or administrative sources.

The report is organized as follows. Section 2 presents the result of the search for indicators to measure the coverage and adequacy of the various social protection programmes, the alternative indicators found, as well as their characteristics, advantages and disadvantages. Section 3 presents the operational measurement proposal, selecting the most appropriate indicators from the discussion in the previous section and proposing composite indicators in those branches that by their amplitude or complexity require going beyond a simple indicator. From this set of indicators, we discuss how to reach an aggregate index of universality in social protection. Finally, section 4 provides the conclusions of the study.

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(1) Although education is traditionally not considered a branch of social protection, the proposal to measure the universality level of social protection systems designed by Muñoz de Bustillo et al. (2020) includes it, as education is a human right and getting more and better education is a desirable goal to achieve the development of children and young people. Conversely, long-term care is not considered a social protection branch on its own by these authors. Theoretically, it could be included as part of the health branch. As we will see below, the problem is the lack of indicators on coverage and adequacy in this area of social protection.

2. Measuring universality in social protection for Spain

This section is aimed to present how the measurement of the universality in social protection can be made in the case of an EU Member State. Building upon the proposal developed by Muñoz de Bustillo et al. (2020), we carry out the operationalisation of the draft analytical framework using data and indicators for Spain ([2]). The branches of social protection we focus on are as follows: unemployment benefits; pensions; social assistance and family benefits; health; education; and housing. For each programme, we present the indicators that can be used to measure coverage and adequacy separately, discussing their respective advantages and disadvantages. The calculations have been performed at the individual level (as opposed to the household level) as far as possible, for the sake of consistency across indicators. Although this is obvious for certain benefits (unemployment insurance, pensions), it is less so for others (family benefits and others conditional on households' income, such as minimum income) ([3]).

2.1 Unemployment benefits

Unemployment benefits (UB) were designed to replace workers' earnings when they have lost their job and are looking for another. According to the European Pillar of Social Rights (EPSR), the unemployed should have the right to adequate activation support from public employment services to (re)integrate in the labour market and adequate UB of reasonable duration, in line with their contributions and national eligibility rules.

In Spain, like many other European and OECD countries, the UB system comprises two schemes: unemployment insurance (UI) and unemployment assistance (UA):

— On the one hand, UI are paid to employees who have lost their job (or whose temporary contract has come to an end) and who have paid a minimum number of contributions (at least 12 months during the past 72 months). The length of UI entitlement varies between 4 and 24 months, depending on the number of months that contributions were made. The maximum is 24 months if the individual has worked for the whole reference period of the last six years. The entitlement UI duration is equal to twice the modulus function of the number of contribution months divided by six (i.e. four, six, eight, etc. until 24 months). The amount of UI paid is equal to a fraction of the average of the gross wage used to calculate UI contributions in the last 6 months prior to unemployment. UI payments decline with the duration of the claim: the gross replacement rate is 60% during months 1–6 of UI receipt and 50% thereafter. Payments also vary with the number of children the unemployed person has ([4]).

— On the other hand, UA is received when workers are not eligible for UI because they have not achieved the minimum contribution period or have exhausted their UI benefits. UA is means tested (income and wealth of the household is taken into consideration to determine eligibility) and flat rate (its level is 80% of the Public Indicator of Multiple Effect Income – *Indicador Público de Renta de Efectos Múltiples*, IPREM, i.e. EUR 451.92 in 2021, which amounts to about 50% of the average UI benefit). The entitlement duration of UA varies from at least six months up to 36 and depends on the number of family dependents and the age of recipient ([5]).

This explanation of the Spanish system serves to highlight a problem that any EU-level system of indicators of UB will have. The specific details of how the benefits are calculated and provided are all necessary to account for the universality level of the system and yet they are pieces of information which are of a qualitative nature or at least very difficult to parametrise in order to do quantitative comparisons.

([2]) Data availability was last checked in February 2022, when the authors finished writing and reviewing this report.

([3]) This approach has important policy implications. If the measures of coverage and adequacy are always calculated at the individual level, and if those measures are used for policy purposes (monitoring and design of social protection, for instance), then they will tend to reduce the importance of the household/family as a unit of redistribution and effective social protection. The individual approach would imply that social protection systems should protect individual citizens rather than households or any other type of social group.

([4]) The amount of UI benefits is subject to ceilings and floors: in 2021 the amount varied from EUR 527.40 for an unemployed without children (EUR 705.18 with at least one child) to a maximum of EUR 1,153.33 (EUR 1,318.10 if they have one children and EUR 1,482.86 if they have two or more).

([5]) See Arranz and García-Serrano (2014) for more information on the Spanish UB system.

Coverage

The level of UB coverage can be calculated as the percentage of unemployed receiving UB. In combination with details on adequacy measures (the information supplied by the replacement rates, as explained below), one should be able to produce an indicator susceptible of interpretation in terms of the degree of universality of the UB system. However, periodical statistics regarding the coverage rate of UB are not available in international databases, although coverage data can be estimated combining the available information of UB recipients and unemployment levels. Furthermore, coverage indicators are also available from national sources.

In the Spanish case, the Ministry of Labour and Social Economy offers online monthly information on the number of UI and UA recipients, as provided by the Public Employment Service (PES) [6]. This information is available by sex, age, reason for termination of employment in the last job, current UI or UA duration, UI and UA entitlement duration, economic activity, province, etc. The PES also calculates the UB coverage rate using the administrative data on recipients and registered unemployed. The formula is as follows:

$$Coverage\ rate = \frac{Total\ UB}{RUPWE + RUCAW}$$

Where 'Total UB' is the total number of UB recipients, 'RUPWE' is the number of registered unemployed with previous work experience and 'RUCAW' is the number of recipients of the subsidy for casual agricultural workers. This is the indicator (a) shown in Table 2.1 (see p.11), which has replaced the so-called "gross" coverage rate since 2008 [7]. The "gross" coverage rate, as calculated since 1982, considered that the relevant group of unemployed was that of the registered unemployed in addition to the group of the benefits' recipients (excluding those of partial unemployment and of the special subsidy for temporary agricultural workers).

The main drawbacks of the UB coverage rates calculated using national sources (based on administrative data) are those of homogeneity over time and comparability among countries. Therefore, whenever possible, it is better to use indicators based on international databases.

On the one hand, Eurostat publishes information from the EU-LFS on the number of unemployed people (based on the ILO definition) and their (self-declared) situation with respect to registration with employment services and recipiency of UB under the label "*Unemployment by sex, age, duration of unemployment and distinction registration/benefits (%)*" (variable lfsa_ugadra). It contains information on the share of the following categories among the unemployed:

— Registered unemployed receiving benefits/assistance.
— Registered unemployed not receiving benefits/assistance.
— Not registered unemployed but receiving benefits/assistance.
— Not registered unemployed and not receiving benefits/assistance.

This information is available for each category of unemployment duration: not started; less than 1 month; 1-2 months; 3-5 months; 6-11 months; 12-17 months; 18-23 months; 24-47 months; 48 months or over. At the same time, the number of unemployed people by duration is available in the Eurostat database under the label "*Unemployment by sex, age and duration of unemployment (1,000)*" (lfsa_ugad).

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[6]   See the link: https://www.sepe.es/HomeSepe/que-es-el-sepe/estadisticas/estadisticas-prestaciones/informe-prestaciones.html
[7]   The "gross" coverage rate, as calculated since 1982, considered that the group of unemployed of interest was that of the registered unemployed in addition to the group of the benefits' recipients (excluding those of partial unemployment and of the special subsidy for temporary agricultural workers). This indicator was replaced because its calculation was subject to the variations suffered by the measurement in practice of registered unemployment in parallel to the improvements in the administrative information crossing systems, giving rise to coverage rates that at times exceeded 100% in several provinces, highlighting the inconsistency of the calculations.

These data, once combined, allow one to calculate a UB coverage rate as the weighted average of the proportion of unemployed receiving UB over the number of unemployed workers in each duration category (see the indicator (b) in Table 2.1, p.11). For this indicator, it is worth noting the following:

— Available by sex and age groups.

— It can be calculated for all EU Member States, United Kingdom, Iceland, Norway, Switzerland, Montenegro, North Macedonia, Serbia, and Turkey.

— Reference period is the calendar year, updated annually, calculated since the 1990s for most European countries.

On the other hand, the Organisation for Economic Cooperation and Development (OECD) Social Benefit Recipients Database (SOCR) supplies information on the number of UB recipients, among other social protection programmes. Figures presented in this database are collected through the SOCR questionnaire by official sources from each country.

In the SOCR database, UB recipients for Spain refer to the number of registered unemployed in employment services receiving benefits and coincides with the information provided by the Spanish PES. In particular, the database offers disaggregated information by types of benefit (mean tested and non-means tested): contributory full UB; non-contributory full UB; assistance subsidy casual agricultural workers; agricultural rent; active insertion rent; and activation programme for employment. This database also provides information on total (registered) unemployment, useful for the calculation of an indicator of UB coverage. In fact, it offers data on the share of benefits paid by type of income replacement programme. Although the data are available for all OECD Member States, the main drawback is that it is updated with some delay such that the current time coverage is from 2007 to 2018.

However, large, up-to-date series of data on UB recipients can be found in the OECD Employment database under "Labour Market Policies and Institutions" indicators. The database provides information on participants in active and passive labour market programmes (LMP) under the heading of "*Number of participants as a percentage of labour force*". In particular, category 8 refers to "Out-of-work income maintenance and support", which makes up the sub-categories of "Full unemployment benefits (insurance and assistance)", "Partial unemployment benefits", "Part-time unemployment benefits", "Redundancy compensation", and "Bankruptcy compensation". The first sub-category includes almost all UB recipients. Selecting "Participant stocks" as measure, one obtains the total volume of recipients. Data characteristics are as follows:

— Based on PES administrative data.

— Available for all OECD Member States ([8]).

— Reference period is the calendar year, the indicator is updated annually, and time series start in 1998 for most countries.

The same sort of information can be obtained from EU databases. Data on expenditure and number of participants in labour market policies is available from the EU Labour Market Policy Database ([9]). In particular, category 8 ('Out-of-work income maintenance and support') within "LMP participants by type of action" offers the total number of UB recipients, which is identical to the numbers supplied by the OECD database. The advantage in this case is that information is available for all EU Member States.

Dividing the UB recipients by the number of unemployed people, one could calculate an UB coverage indicator. This is the indicator (c) shown in Table 2.1. For consistency, information on the level of unemployment should

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[8]   By December 2021, only 22 OECD Member States belong to the European Union (i.e. Austria, Belgium, Czechia, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Netherlands, Poland, Portugal, Slovakia, Slovenia, Spain and Sweden).

[9]   Available at https://webgate.ec.europa.eu/empl/redisstat/databrowser/explore/all/lmp?lang=en&display=card&sort=category.

come from administrative data, i.e. registered unemployment in employment services. This can be found in the OECD database ([10]):

— Available for all OECD Member States.

— Time series start for some countries in the 1960s.

One can calculate a coverage rate using other type of information supplied in the OECD database. As it contains information on participants in active and passive labour market programmes as a percentage of labour force, the database gives us the proportion of labour market participants who are in "Out-of-work income maintenance and support" programmes, therefore receiving UB. As these figures are calculated over the numbers of the labour force, it is necessary to adjust the data in order to arrive at a *UB coverage rate* calculated over the volume of unemployment. This can be easily done using the following formula:

$$\frac{UB}{U} = \frac{UB}{L} * \frac{L}{U}$$

Where U is the number of unemployed and L the labour force. As the OECD database give us the recipients of UB as a share of the labour force (UB/L), we have to multiply it by the inverse of the unemployment rate (L/U) in order to get the coverage rate (UB/U). Information on the ILO-defined unemployment rate can be found in either the OECD Labour Force Statistics database or Eurostat (une_rt_a). This is the indicator (d) in Table 2.1.

The estimates of all different UB coverage rates explained beforehand are shown in Table 2.1. The yearly coverage rate calculated with the Spanish PES monthly data offers the highest figures of all indicators, decreasing between 2013 and 2016 (from 62.3% to 55.1%) and increasing from then on until 2019 (to 62.4%). The other indicators show the same trend, decreasing first and increasing later, but at somewhat lower levels (if calculated with OECD data) or substantially lower (with Eurostat data). In the latter, the difference can be mainly attributed to the different methodologies used when calculating unemployment (registered unemployment in the PES versus statistical unemployment in the LFS) and when designating an unemployed worker as a recipient of benefits (being registered in the PES versus self-declaring it in the LFS). On the one hand, some unemployed according to the ILO-definition might not be registered in the administrative data (if they are not receiving any benefits, because they are not entitled to them). At the same time, some recipients of UB according to the administrative data might not be considered as unemployed as from the ILO definition (if they are not available for a job within the next two weeks, for instance). Therefore, comparability between data from different sources (survey and administrative data) is somehow limited. On the other hand, in the EU-LFS the benefit which the unemployed report as receiving or not receiving is not defined but left to individual respondents to interpret. Consequently, it may be the case that some people receiving benefits do not report on it because it is not labelled as UB. It could also happen that people who are receiving other types of monetary aid not exclusively aimed at the unemployed interpret that these are UB. These differences between sources also vary across countries as some have more registered unemployed persons than statistically unemployed persons, and others, the opposite.

There is one aspect that is worth commenting regarding the population measure included in the denominator of the coverage rate. One might think that UB coverage must be measured in relation only to those who are registered unemployed persons (or statistical unemployed persons), since these are the ones who have suffered the risk of losing a job. However, this approach implies a very strong conditionality, which is transferred to the measure itself. Therefore, one might think that it could be preferable to expand the denominator to a broader measure of the workforce *at risk of unemployment*. This would imply considering not only the officially unemployed, but also other groups that can be considered unemployed even though they are usually defined as

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([10]) Available at https://stats.oecd.org/Index.aspx?DataSetCode=LAB_REG_VAC.

part of the inactive population (e.g. discouraged people). At the limit, the unemployed working-age population could compose the coverage indicator denominator.

In order to understand how this exercise would affect the coverage rate, indicator (b) below was calculated using LFS data to include in the denominator both the officially unemployed and inactive groups close to unemployment (which can be considered "potential actives", because they are either actively searching but not available or not searching but available to work). With this adjusted definition, the coverage rate would be about 6 p.p. lower comparatively to that calculated using official unemployed only. If the denominator was broader and covered the entire workforce, the coverage rate would be substantially lower (see the ratio UB/L measured with OECD data within indicator (d)).

Table 2.1. Potential indicators of unemployment benefit coverage

	2013	2014	2015	2016	2017	2018	2019
(a) Coverage rate (Spanish PES: administrative recipients over all registered unemployed)							
	62.3	58.9	55.8	55.1	56.2	58.2	62.4
(b) Coverage rate (UB_{LFS}/U_{LFS}) (EU-LFS: unemployed self-classified as receiving benefits over all statistically unemployed)							
Spain	34.1	31.4	28.3	27.6	28.8	29.3	31.6
Spain (U + all potential actives)	27.6	25.3	23.1	22.3	23.0	22.9	24.7
(c) Coverage rate (UB/U) (OECD, EU data: administrative recipients over all registered unemployed)							
Spain	59.2	55.6	51.8	51.5	52.1	54.0	-
UB	2,868,150	2,542,977	2,190,392	1,994,089	1,828,383	1,770,690	-
U	4,845,302	4,575,937	4,232,132	3,868,898	3,507,743	3,279,079	3,148,752
(d) Coverage rate ((UB/L) * (L/ULFS)) (OECD, Eurostat: administrative recipients over all statistically unemployed)							
Spain	47.2	45.0	43.1	44.4	46.5	50.4	-
(UB/L)	12.36	11.08	9.56	8.74	8.04	7.76	-
(U_{LFS}/L)	26.2	24.6	22.2	19.7	17.3	15.4	14.2
OECD	72.6	72.6	75.1	78.0	79.5	82.7	-
(UB/L)	5.95	5.52	5.33	5.15	4.85	4.63	-
(U_{LFS}/L)	8.2	7.6	7.1	6.6	6.1	5.6	5.6

Note: (c) Number of unemployment benefits and unemployed people expressed in units.

2.1.2. Adequacy

UB provide insurance against the loss of income that results from unemployment, and thus it tries to replace the labour income to an *adequate* level. Measurement of adequacy in this domain is, therefore, straightforward. In the case of UB, adequacy can be expressed as the proportion of pre-unemployment income provided. In addition, the standardisation of adequacy measures is also quite direct. After establishing the level of income that the UB system aims to protect, one can use indicators of actual levels of UB for defining a standard 0-100 measure of adequacy.

One of the most complete set of information on replacement rates in unemployment is provided by the OECD Social and Welfare Statistics database ([11]). The dataset contains information on two indicators of UB adequacy for UB: "Gross replacement rate of unemployment benefits (GRR)" and "Net replacement rates in unemployment (NRR)". On the one hand, the GRR measures the level of UB received *after* 1, 2, …, T months of unemployment in proportion to the employment income earned *before* losing the job. All values are calculated before taxes and social security contribution payments, excluding family benefits, social assistance, housing benefits as well as in-

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([11]) OECD (2021), "Benefits, taxes and wages: Net replacement rates in unemployment and historical gross replacement rates of unemployment", https://stats.oecd.org/ (accessed on 21 September 2021).

work benefits. On the other hand, the NRR measures the proportion of income that is maintained *after* 1, 2, …, T months of unemployment. The indicator is the ratio of net household income during a selected month of the unemployment spell to the net household income before the job loss. The data characteristics are as follows:

GRRs are calculated for the following types of individuals:

⸺ Two types of previous in-work earnings: average wage (AW) and 67% of the AW.

⸺ Six family types: single person without children; single person with two children; couple without children (partner is out of work; and partner's earnings: 67% of the AW); and couple with two children (partner is out of work; and partner's earnings: 67% of the AW).

⸺ Unemployment duration (months): from 1 to 60 months.

NRRs are calculated for the following types of individuals:

⸺ Three types of previous in-work earnings: AW, 67% of the AW, and minimum wage.

⸺ Ten family types: single person without children; single person with two children; couple without children (partner is out of work; partner's earnings: minimum wage; partner's earnings: 67% of the AW; and partner's earnings: AW); and couple with two children (partner is out of work; partner's earnings: minimum wage; partner's earnings: 67% of the AW; and partner's earnings: AW).

⸺ Social assistance benefits: yes/no.

⸺ Housing benefits: yes/no.

⸺ Unemployment duration (months): from 1 to 60 months.

Data on both GRR and NRR have the following characteristics:

⸺ Calculations refer to a jobseeker aged 40 with an uninterrupted employment record since age of 19 until the job loss ([12]).

⸺ If benefit receipt is subject to activity tests or other behavioural requirements, e.g. active job-search and being available for work, it is assumed that these requirements are met.

⸺ Calculations are made before considering income tax and social security contribution payments. Social assistance, housing and family benefits are not included. Entitlements refer to a selected month of unemployment and are expressed in annualised terms (i.e. monthly values multiplied by 12), even if the maximum benefit duration is shorter than 12 months.

⸺ For married couples, if the second adult member is out of work, it is assumed that they are not claiming UB because, e.g. these have expired or the person does not have the minimum required contribution period in employment (in the case of NRR, this feature is similar, but it is assumed that they are not claiming contributory benefits, e.g. they do meet any behavioural requirements needed for eligibility to other non-contributory benefits).

⸺ Calculations for families with children assume that children are 4 and 6 years old. Neither childcare benefits nor childcare costs are considered. Adults are both aged 40 and are assumed to have full work capacity.

Data on NRR have the following, additional characteristics:

([12]) This assumption is made because, to use the tax and wages model, some age and work experience of the unemployed must be set. Although it would be interesting to consider other cases of shorter or interrupted careers, they are not modelled in the database, as far as we know. This would add another dimension to the types of individual already considered. Nevertheless, it can be said that the chosen age adequately reflects the average age of the workforce and the unemployed population in European countries, considering that both participation and unemployment by age are distributed as a normal function. In the case of Spain, for example, the age group 40 to 44 is the most numerous among the labour force and the unemployed (15.4% and 12.5%, respectively, in 2019).

— Income taxes payable on benefit entitlements are determined in relation to annualised benefit amounts (i.e. monthly values multiplied by 12), even if the maximum benefit duration is shorter than 12 months.

— Family benefits and in-work benefits are always included in the calculations subject to relevant income and eligibility conditions.

— If housing benefits are included in the calculations, these are calculated assuming that the household is renting a private accommodation with a rent equal to 20% of the average wage. Rent levels are the same for all family types.

Additionally, data on both NRR and GRR have the following characteristics:

— Available for OECD Member States.

— Reference period is the calendar year, the indicator is updated annually, and its time series start in 2001 for most countries. Indicators calculated before 2018 (from 2018 onwards) are based on the policy rules and parameters that were in place on the 1st of July (1st of January) of the selected year.

Other several indicators of adequacy can be found in the OECD database for "Benefits in unemployment, share of previous income" ([13]). Specifically, this piece of information focuses on selected types of NRRs in unemployment: the indicator measures the proportion of previous in-work household income maintained after 2, 6, 12, 24 and 60 months of unemployment for a single person without children whose previous in-work earnings were 67% of AW. Similar to other indicators, data are available for OECD countries from 2001 onwards.

Another complete set of information on replacement rates in unemployment is provided by the 'Tax and Benefits Indicators' database of the European Commission, compiled by the Directorate-General for Economic and Financial Affairs (ECFIN) ([14]). This dataset contains information on the NRR defined as the net income of an unemployed person receiving unemployment and possibly other benefits, expressed as a share of the income earned previously in the job before becoming unemployed. This variable provides a measure of the generosity of the UB system, taking into account the effects of other benefits, taxes and social security contributions.

The characteristics of the NRR data in this database are as follows:

— NRRs are calculated for various types of individuals:

- Four types of previous in work earnings: 50%, 67%, 80% and 100% of the AW and minimum wage;

- Four family types: one earner couple, without children; one earner couple, with two children; single person; and single parent with two children;

- Social assistance benefits: yes/no;

- Housing benefits: yes/no;

— Unemployment duration (months): 7, 13, 25 and 60 months.

— Data are available for all EU Member States.

— The reference period is the calendar year, the indicator is updated annually, and its time series started in 2001.

Given the large number of replacement rate indicators available in the OECD and EC databases, we use both databases to focus our attention on the NRRs for typical workers with certain characteristics. The selection of categories within each database is provided in Diagram 2.1. The type of household is the same (couple with two children; partner is out of work), but there are some differences regarding the choice of the three points in time of the duration of the unemployment spell and the three types of previous in-work earnings of the jobseeker.

([13]) See OECD (2021), Benefits in unemployment, share of previous income (indicator). doi: 10.1787/0cc0d0e5-en, https://data.oecd.org/benwage/benefits-in-unemployment-share-of-previous-income.htm (Accessed on 21 September 2021).

([14]) Available at https://ec.europa.eu/info/business-economy-euro/indicators-statistics/economic-databases/tax-and-benefits-indicators-database_en.

Diagram 2.2. Selection of categories for Net Replacement Rates (Spain)

Variable	Categories (OECD database)	Categories (EC database)
Previous in-work earnings	Minimum wage 67% of average wage Average wage	50% of average wage 67% of average wage Average wage
Family type	Couple with two children; partner is out of work	Couple with two children; partner is out of work
Unemployment duration	2 months 6 months 12 months 36 months	2 months 7 months 13 months 25 months

On the one hand, the unemployment durations are 2, 6, 12 and 36 months for the OECD database, and 2, 7, 13 and 25 months for the EC database. These points in time have been selected to provide information on the degree of replacement of employment earnings by UB for short-, long- and very long-term unemployed. They differ a bit between databases for two reasons. First, if the same months had been chosen, the NRRs would be exactly the same, since the two databases are based on same tax and wage model. Second, it is intended to examine whether considering shorter or longer moments in time alters the result of the NRRs, and this can only be done by choosing different durations with the OECD database compared to the EU one. On the other hand, the previous in-work income levels are AW, 67% of the AW, and minimum wage, in the case of the OECD dataset, and AW, 67% of the AW, and 50% of the AW, in the case of the EC dataset. These income levels are supposed to provide an adequate overview of UB adequacy for workers with different types of jobs. Again, the choice is due to the existing data limitation and the desire to compare the resulting NRRs between both databases.

Table 2.2 provides the estimated NRRs for the selected categories. Panel (A) shows the data from the OECD dataset, while panel (B) from the EC dataset. As can be seen, the information from both datasets is identical if one takes NRRs at 2/6, 12 and 36 months of unemployment duration from the OECD database and at 2, 7/13 and 25 months from the EC database, when the comparison is made for a worker with the same level of previous earnings. In any case, and regardless of the dataset used, the higher the wage of the recipients in their previous job, the lower the NRR for any duration of unemployment. At the same time, the NRR is reduced as the permanence in unemployment is prolonged independently of which wage level is considered, although the reduction is more significant in the case of those who earned higher wages. The above must be qualified considering that workers with higher previous wages generally have shorter spells of unemployment and those in more unstable jobs (generally with lower wages) are less likely to fulfil the eligibility criteria to be entitled to receive benefits. Nevertheless, all of this suggests that UB protection is more *adequate*, at least in relative terms, for people in positions with lower wage levels.

Table 2.2. Potential indicators of unemployment benefits adequacy, selected unemployment durations (Spain)

Panel (A): OECD "Benefits, taxes and wages" database

	2013	2014	2015	2016	2017	2018	2019
(a) NRR: minimum wage in previous work							
2 months	95.0	95.0	90.0	93.0	87.0	84.0	71.0
6 months	95.0	95.0	90.0	93.0	87.0	84.0	71.0
12 months	95.0	95.0	90.0	93.0	87.0	84.0	69.0
36 months	77.0	77.0	77.0	92.0	87.0	83.0	69.0
(b) NRR: 67% of the AW in previous work							
2 months	74.0	74.0	74.0	73.0	73.0	74.0	74.0
6 months	74.0	74.0	74.0	73.0	73.0	74.0	74.0
12 months	52.0	52.0	52.0	52.0	52.0	52.0	53.0
36 months	43.0	43.0	42.0	51.0	51.0	51.0	51.0
(c) NRR: AW in previous work							

2 months	70.0	70.0	68.0	68.0	69.0	68.0	67.0
6 months	70.0	70.0	68.0	68.0	69.0	68.0	67.0
12 months	56.0	56.0	55.0	55.0	55.0	55.0	56.0
36 months	32.0	31.0	31.0	37.0	37.0	37.0	37.0

Panel (B): European Commission "Tax and benefits indicators" database

	2013	2014	2015	2016	2017	2018	2019
(d) NRR: 50% of the AW in previous work							
2 months	71.1	71.1	71.1	71.1	71.1	71.1	71.3
7 months	62.2	61.8	61.2	65.1	65.6	64.7	64.2
13 months	62.2	61.8	61.2	65.1	65.6	64.7	64.2
25 months	54.6	54.3	53.7	65.1	65.6	64.7	64.2
(e) NRR: 67% of the AW in previous work							
2 months	74.0	74.1	73.7	73.5	73.5	73.5	74.1
7 months	52.4	52.5	52.2	52.0	52.0	52.1	52.7
13 months	52.4	52.5	52.2	52.0	52.0	52.1	52.7
25 months	43.1	42.9	42.2	51.0	51.4	50.8	50.7
(f) NRR: AW in previous work							
2 months	70.3	69.9	68.2	68.2	68.7	67.8	67.0
7 months	56.1	56.2	55.2	55.1	55.2	55.2	55.8
13 months	56.1	56.2	55.2	55.1	55.2	55.2	55.8
25 months	31.6	31.5	30.6	37.1	37.3	36.9	36.9

Note: NRRs calculated for a family consisting of two adults with two children and one partner out of work.

Source: OECD (panel (A)) and European Commission (panel (B)).

In summary, at least three aspects should be considered when selecting or constructing an indicator of UB adequacy. First, as NRRs take account of other benefits when compared to GRRs (i.e. family benefits and in-work benefits), the former may be a more appropriate measure of income maintenance than the latter. Second, adequacy may vary throughout the duration of unemployment spells. Third, the risk of unemployment differs according to the characteristics of workers and jobs, and wage level can be an approximate indicator of that risk. Therefore, the proposed adequacy indicator should be composed of a set of replacement rates that incorporate the aforementioned aspects as far as possible.

2.2. Pensions

Pensions may differ in scope and targeted population. There are old-age pensions, whose beneficiaries receive periodic payments intended to maintain their income after retirement from gainful employment at the reference age. These pensions may include anticipated old-age pension of people who receive periodic payments intended to maintain the income of beneficiaries who retire before the reference age as established in the relevant scheme (this may occur with or without a reduction of the normal pension). Another type is the survivors' pensions, whose beneficiaries receive periodic payments from an entitlement deriving from their relationship with a deceased person protected by the scheme (widows, widowers, orphans and similar). Finally, there are old-age pensions directed to support elderly people income, and disability (incapacity) pensions for those who cannot work [15].

On the one hand, retirement pensions are *de jure* non-universal programmes in Spain because retirement pensions require a certain number of previous contributions to the pensions system during the working life. On the other hand, they can be *de facto* universal since contributory pension systems are complemented by non-contributory pensions for those with a short or no working life and without other sources of income in old age.

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[15] This report focuses on statutory pensions. There are also supplementary pensions, which are those that are accrued for employees by an employer or sector. In the case of the EU, as the social security coordination does not apply to most supplementary schemes, the EU has agreed upon special rules to protect the supplementary pension rights of mobile workers. These rules apply to pension schemes linked to employment ('occupational pensions'). For more information on supplementary pensions, see European Commission, Directorate-General for Employment, Social Affairs and Inclusion (2021).

This fact poses the challenge of how to measure pensions coverage. The other question is how to arrive at an indicator that measures the adequacy of pension income.

2.2.1. Coverage

As with UB, international statistics do not provide direct information on a coverage rate for pensions either. After a thorough search, we have been unable to find any coverage indicators for pensions, so we will build one by dividing the number of beneficiaries of pensions by the potential population covered (in principle, the population aged 65+ and potentially people with disabilities). An important aspect to bear in mind is that, unlike other areas of social protection, a person may receive more than one pension simultaneously. In fact, since there can be a certain degree of overlapping between programmes, individuals can be in receipt of multiple benefit programmes simultaneously, and totals of pensions do not coincide with the number of recipients. In international statistics, aggregates usually correspond to the number of pensions paid, which exceeds the volume of pensioners. We begin by reviewing the databases that offer information on the volume of pensions and/or pensioners: the Spanish Ministry of Labour and Social Economy, OECD's SOCR database and Eurostat.

First, the Spanish Ministry of Labour and Social Economy supplies data on the total number of pensions, pensioners, and average amount by types of pension in Spain (old age, survivors and permanent incapacity). This information is provided annually by gender, region, and province. Data comes from the National Institute of Social Security (*Instituto Nacional de la Seguridad Social*, INSS) based on pensions' management files. In addition, the Ministry of Health provides information on the non-contributory pensioners of the Social Security, distinguishing between old age and incapacity, and other assistance pensioners. This information is supplied by gender, age, region, and province. These data are obtained by the Institute of Older People and Social Services (*Instituto de Mayores y Servicios Sociales*, IMSERSO) using administrative data. Summing up all pension types from the Spanish Ministry of Labour and the Ministry of Health, we arrive at the total number of pensions and/or pensioners. This information is accessible via the Spanish Yearbook of Labour Statistics (*Anuario de Estadísticas Laborales, AEL*)[16], the national source that supplies information to the European System of integrated Social PROtection Statistics (ESSPROS) ([17]).

Second, the OECD's SOCR database provides information on old-age and survivors pensions. Specifically, it includes the following types of pensions: old-age pensions (social security, general scheme); old-age pensions (other schemes); non-contributory old-age pensions; survivors' pensions (social security, general scheme); and survivors' pensions (other schemes). The total number of pensions included in these branches is smaller than the one provided by the Spanish data source. This is because the contributory and non-contributory incapacity pensions appear in the branch of "incapacity" (disability benefits). Therefore, these types of pensions need to be added up to reach figures similar to those offered by the national source. Nevertheless, as mentioned previously, the drawback of the SOCR database is that the time coverage currently ranges from 2007 to 2018.

Finally, Eurostat also publishes data on pensions for ESSPROS data as "Pension Beneficiaries on December 31st of each year" (spr_pns_ben) ([18]). It includes the number of recipients of one or more periodic cash benefits under a social protection scheme falling within seven pension categories (disability, early retirement benefits due to reduced capacity to work, old age, anticipated old age; partial pension, survivor's and early retirement benefit due to labour market reasons).

In fact, ESSPROS data on pension beneficiaries may represent aggregates of multiple types of pensions granted for various purposes under different conditions to various groups with sorted levels of entitlement.

([16]) See   http://www.mites.gob.es/ficheros/ministerio/estadisticas/anuarios/2019/PEN/PEN.pdf   and https://www.mites.gob.es/ficheros/ministerio/estadisticas/anuarios/2019/PNC/PNC.pdf.

([17]) ESSPROS is an instrument of statistical observation which enables international comparison of the administrative national data on social protection in the EU Member States. The scope of ESSPROS is limited to social protection provided to households and individuals affected by a specific set of recognised social risks and needs (i.e. disability, sickness/health care, old-age, survivors, family/children, unemployment, housing and social exclusion). ESSPROS data is annual and corresponds to calendar year. In principle, the ESSPROS database accounts for potential issues of double counting of recipients in case they receive more than one pension simultaneously.

([18]) See https://ec.europa.eu/eurostat/web/products-datasets/-/spr_pns_ben.

— Available by gender for all Member States.

— Time series start in 2006 but have some delay in publication, such that not all MSs have data available until 2019 at the time of conclusion of this report.

The information provided by these three sources is quite similar. For instance, if we compare the numbers referring to the volume of old-age pensions, the figures provided by Eurostat virtually coincide with the ones supplied by the OECD database ([19]) and by the Spanish Ministry of Labour ([20]).

The next step to build a coverage indicator of pensions is to obtain data on population distribution by age. This is readily available at Eurostat as "Population on 1 January by age group and sex" (demo_pjangroup) ([21]) and has the following characteristics:

— Available by sex for all Member States.

— Time series start in the 1960s for most countries.

Using Eurostat data only, two coverage rates are measured. First, the ratio of the sum of retirement and survivor pensions to the volume of people aged 65 and over. Second, the ratio of the total number of pensions to the volume of people aged 60 and over. To calculate these indicators, the population is used as of January 1 of the following year in relation to the number of pensions as of December 31 of the previous year. For instance, the 2018 indicator uses pensions information from 2018 (as of December 31) and population information from 2019 (as of January 1). Results are provided in Table 2.3.

Both coverage rates have advantages and disadvantages. The first coverage rate is around 95% and does not surpass 100% because it excludes some types of pensions, not summing up to the totality of pensions paid. Although the second rate uses data for all pension types it does not surpass 85% and it relates categories to a population category that includes working age people who may be employed or looking for a job ([22]).

Table 2.3. Potential indicators of pensions coverage rate (Spain)

	2013	2014	2015	2016	2017	2018	2019
Old-age + survivors / population 65+	96.3	96.0	95.7	95.4	95.1	94.9	-
All pensions / population 60+	84.6	84.5	83.9	83.4	82.8	82.1	-

Source: Eurostat

2.2.2. Adequacy

Old-age pensions provide insurance against the loss of in-work income after retirement while other types of pensions insure against risks that can reduce the income of individuals and households (e.g., the death of a person protected by the pension system or the incapacity to work). Thus, adequacy in this domain must take account of *labour income replacement* to an adequate level.

Two international databases contain information that can be used to measure pensions adequacy, Eurostat and OECD. Eurostat dataset on "Aggregate replacement ratio for pensions (excluding other social benefits) by sex" (tespn070) ([23]) is obtained as the ratio of median individual gross pension for the 65-74 age category relative to the median individual gross earnings of the 50-59 age category. This *aggregate* replacement ratio for pensions relates in a cross-section way the income (from pensions) of one group of people who is retired and out of the labour force with the income (earnings) of another group who is still active but relatively close to retirement

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[19] Sum of "old-age pensions - social security system, general scheme", "old-age pensions: other social protection schemes" and "non-contributory old-age pensions of the social security".

[20] Sum of "non-contributory old-age pensions of the social security" to the total number of contributory pensions, including permanent incapacity pensions.

[21] See https://ec.europa.eu/eurostat/web/products-datasets/-/demo_pjangroup.

[22] Thus, the denominator is dependent on working status. Ideally, the indicator should refer to the number of people aged 60 or over who do not work. This would have the advantage of better comparability over time, since it would not depend on changes in the employment rate of the elderly. In this case, data from the Labour Force Survey (LFS) should be used.

[23] See https://ec.europa.eu/eurostat/databrowser/view/tespn070/default/table?lang=en.

('older active' or late-career persons). Therefore, it is methodologically different from *individual* replacement rates calculated by linking pensions and pre-retirement earnings for the same people. This replacement rate is used in the EU Pensions Adequacy Report [24].

— Based on information from EU Statistics on Income and Living Conditions (EU-SILC).

— Available by sex for all Member States.

— Time series start in 2005.

The OECD provides a wide array of information in the Pensions at a Glance Database[25], developed to serve a growing need for pensions indicators for OECD. It includes reliable and internationally comparable statistics on public and mandatory pensions and voluntary ones and reviews and analyses pension measures enacted or legislated in OECD countries. It provides an in-depth review of the first layer of protection of the elderly, first-tier pensions across countries.

Two types of replacement rate for pensions are included in the OECD database. The gross pension replacement rate (GPRR) is defined as gross pension entitlement divided by gross pre-retirement earnings. It is a measure of how effectively a pension system provides income during retirement to replace earnings, the main source of income prior to retirement. The net pension replacement rate (NPRR) is defined as the individual net pension entitlement divided by net pre-retirement earnings, taking account of personal income taxes and social security contributions paid by workers and pensioners. The following disaggregated rates are supplied:

— GPRR and NPRR for men and women separately and three levels of previous in-work earnings (50%, 100% and 150% of AW);

— GPRR and NPRR, mandatory and voluntary, only for men, distinguishing three levels of previous earnings (50%, 100% and 150% of AW).

The characteristics of these indicators are as following:

— Available for all OECD Member States and EU-27 aggregate;

— Provided only every four years starting in 2010.

Table 2.4 provides estimated aggregate PRRs from the Eurostat database and NPRRs for two levels of previous in-work earnings (50% and 150% of AW) from the OECD database. Both types of indicators provide very different information. First, the Eurostat aggregate indicator offers replacement rates that are substantially lower than OECD ones. Second, the change over time differs, i.e. while the first shows a flat/mildly increasing trend in replacement rates, the second suggests a decreasing trend although there are only two time points of observation. Third, the Eurostat indicator captures differences between men and women (with male replacement rates well above female rates), while the OECD does not. This aspect is important, since it is well known that the average pensions of women are lower than those of men, partly as a consequence of the breaks in female work trajectories throughout life due to motherhood and family care.

All these differences may be related to the more "theoretical" nature of such OECD indicators. Although the Eurostat indicator is also theoretical as it links the pension of one age cohort with the earnings of another one in the labour market close to retirement, but it is closer to a *de facto* than a *de jure* indicator.

Table 2.4. Potential indicators of pensions adequacy

	2013	2014	2015	2016	2017	2018	2019
(a) Aggregate replacement ratio for pensions							

[24] The 'Pension Adequacy Report' is prepared by the Social Protection Committee and the European Commission, and released ever three years. The report aims to present a comparative analysis of the degree to which pension systems in the EU Member States enable older people to retire with an adequate income today and in the future, reflecting pension reforms. For its latest edition, see European Commission, Directorate-General for Employment, Social Affairs and Inclusion (2021).

[25] See https://stats.oecd.org/Index.aspx?DataSetCode=PAG.

Spain - Total	60.0	60.0	66.0	66.0	69.0	70.0	70.0
Men	62.0	65.0	71.0	69.0	74.0	75.0	74.0
Women	50.0	50.0	50.0	51.0	50.0	50.0	55.0
EU-27 - Total	56.0	57.0	58.0	58.0	59.0	58.0	57.0
Men	59.0	59.0	60.0	61.0	62.0	61.0	59.0
Women	54.0	55.0	55.0	55.0	56.0	55.0	54.0
(b) Net pension replacement rate, 50% AW							
Spain - Men	-	89.1	-	-	-	78.6	-
Spain - Women	-	89.1	-	-	-	78.6	-
EU-28 - Men	-	80.7	-	-	-	69.8	-
EU-28 - Women	-	80.4	-	-	-	69.7	-
(c) Net pension replacement rate, 150% AW							
Spain - Men	-	89.3	-	-	-	82.8	-
Spain - Women	-	89.3	-	-	-	82.8	-
EU-28 - Men	-	66.4	-	-	-	60.4	-
EU-28 - Women	-	66.2	-	-	-	59.9	-

Source: (a) Eurostat, (b), (c) OECD.

2.3. Social assistance and family benefits

The term *social assistance* is very general, but the EPSR acknowledges that everyone lacking sufficient resources has the right to adequate minimum income benefits ensuring a life in dignity at all stages of life and effective access to enabling goods and services. For those who can work, minimum income benefits should be combined with incentives to reintegrate into the labour market. Moreover, children also have the right to protection from poverty, and children from disadvantaged backgrounds have the right to specific measures to enhance equal opportunities.

A wide variety of non-contributory benefits can be included within social assistance. In this sense, the system of guaranteeing minimum income is composed of non-contributory benefits, monetary or not, that seek to ensure a basic level of economic adequacy and respond to different problems of income insufficiency of households and individuals. Their objective is to ensure a basic level of income and to contribute to alleviate poverty and social exclusion.

In the specific case of Spain, this system of non-contributory benefits is complex because different levels of public administration are involved in management, design, regulation and financing, with a great diversity of amounts, access requirements and duration of benefits. An overview of this system is offered next, bearing in mind that some of its constituent elements (such as certain types of UB and pensions) are part of other branches of social protection previously considered.

On the one hand, there are several public non-contributory economic benefits, i.e. benefits from the General Administration of State involving institutions such as the State PES (*Servicio Público de Empleo Estatal*, SEPE), the National Institute of Social Security (*Instituto Nacional de la Seguridad Social*, INSS) and the Institute of Older People and Social Services (*Instituto de Mayores y Servicios Sociales*, IMSERSO). These benefits are as follows:

— **Family benefits** are economic benefits in a non-contributory form granted by the INSS and financed by State contributions to Social Security, including:

- Financial allowance per child or minor in charge;

- Non-contributory subsidy for birth and childcare;

- Financial benefit by birth or adoption of children in cases of large, single-parent families and of mothers with disabilities;

- One-off payment for multiple birth or adoption.

— **Inability to work benefits** protect people from a permanent or temporary incapacity situation to work and is managed by Social Security, including:

- Non-contributory pensions for retirement and invalidity from Social Security;

- Social benefits for people with disabilities;

— **Supplements to minimum (contributory) pensions** are managed by the INSS and financed by State contributions to Social Security, in parallel to supplementary benefits granted by some Autonomous Communities.

— **UB (non-contributory level)** are transitional in nature to protect persons who exhaust or have not reached the minimum contribution levels necessary to access UI benefits. The managing body is the SEPE and include:

- Subsidy for contributions insufficient to receive the UI benefit.

- Subsidy for exhaustion of UI benefit (with and without family responsibilities).

- Subsidies from specific groups (for invalidity review, for ex-prisons, return migrants and for workers aged 52+).

- Agricultural income allowance (for residents of Extremadura and Andalusia).

- Active Insertion Income (*Renta Activa de Inserción*, RAI).

- Extraordinary Unemployment Grant (*Subsidio Extraordinario por Desempleo*, SED).

- Employment Activation Programme (*Programa de Activación para el Empleo*, PAE).

On the other hand, there are also minimum income schemes (MIS) by region, autonomous community and city level ([26]). These schemes offer income support in a similar way to those in other European countries at the state level. However, while some play a subsidiary role to certain benefits, others complement the portfolio of state-owned benefits. The different characteristics, access requirements and protective intensity (in terms of eligibility criteria, activation conditions, benefit level, etc.) depend on a variety of factors, including the model of inclusion designed by the regions in terms of development of inclusion plans, institutional commitment and/or engagement and participation of different administrative levels, departments and programme managers (public and/or private). Therefore, the benefit map is characterized by territorial diversity because regulatory development and funding vary across regions and autonomous communities ([27]).

Some elements that compose the MIS guarantee system are analysed in other parts of this report and separately considered in the proposal to measure the universality of social protection (e.g., UA benefits and old-age and invalidity pensions within the unemployment and pensions branches, respectively). Therefore, the social assistance dimension analysed next will focus on family benefits and those provided by MI programmes, which are specifically aimed to ensure a basic level of income, fighting the most severe forms of poverty and social exclusion.

2.3.1. Coverage

A coverage indicator for social assistance and family benefits should have the number of beneficiaries in the numerator, but the population choice for the denominator is not trivial. Should it be the specific group that each

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([26]) Including the autonomous cities of Ceuta and Melilla.

([27]) This fragmented landscape has recently been altered because a new national scheme, the Minimum Living Income (*Ingreso Mínimo Vital*, IMV), was rolled out in June 2020. The IMV is a benefit aimed at preventing the risk of poverty and social exclusion of people who live alone or in a cohabitation unit and lack the basic economic resources to cover their basic needs. It is configured as a subjective right to a monetary benefit, which is part of the protective action of Social Security, guaranteeing a minimum level of income to those who are in a situation of economic vulnerability.

program targets? The population at risk of poverty (measured by the AROP indicator, for instance) ([28])? Total population? If we choose to quantify a more specific denominator, the coverage indicator will measure more the conditionality of this social protection branch rather than its universality. On the contrary, the broader the group considered in the denominator, the less effective will be universality, while the broader the distance with respect to an "unconditional system". In this sense, a coverage indicator valued at 100 (full unconditional universality) would only be achieved, in principle, with a universal basic income scheme.

This discussion implies that a good approximation could be to measure coverage by balancing the number of beneficiaries with the population with insufficient income at risk of poverty or social exclusion. This would be an intermediate approach between the extreme situations of relying on very strong conditionality versus universality. Therefore, the coverage denominator will be conditional on the risk of poverty the same way that the UB coverage indicator is conditional to the risk of unemployment ([29]).

We begin by getting hold of the benchmarking framework for MIS of the EPSR and its adequacy, coverage and activation components. It focuses on MIS benefits for the working age population not in employment and not entitled nor eligible to social insurance benefits. It includes:

— **Outcome indicators:** relative at-risk-of-poverty gap for working age population (16-64); material and social deprivation rate of the working age population (18-64); at-risk-of-poverty rate of population living in quasi-jobless households (18-59) ([30]).

— **Performance indicators:** the most relevant are the impact of social transfers on the at-risk-of-poverty rate, poverty rate, and benefit recipient rate; other indicators concern self-reported unmet needs for medical examination, housing cost overburden rate, and non-participation in training related to professional activity ([31]).

— **Policy levers indicators:** the main areas identified are the adequacy of the benefit level, eligibility rules and take-up, as well as activation and access to services. As for *adequacy of benefits,* two indicators were agreed: the income of a MI beneficiary as a share of poverty threshold (smoothed over three years); and the income of a MI beneficiary as a share of the income of a low wage earner (a person earnings 50% of the AW). No indicators were agreed for eligibility and take-up, nor for activation and access to services in the benchmarking framework.

This brief description shows that the MIS benchmarking framework does not contain an indicator of coverage. Thus, the indicator must be found in other sources. One possibility is to resort to the OECD's SOCR database, which is nourished by national sources. This database provides information on "old-age pensions", "survivors pensions", "in-work benefits", "incapacity", "family", "unemployment compensations", and "other social". In the case of Spain, the "family" branch includes maternity and parental leaves – but lacks information on other social protection programmes aimed at families or poor households, while "other social" refers to the MI insertion schemes, which are income support programmes run by regions (autonomous communities and cities), as mentioned above. In addition to MISs, the main schemes in Spain are family benefits per child or minor in charge and supplements to minimum pensions. Both programmes collect most of the social assistance beneficiaries (see Ayala et al., 2017). The information in this regard is supplied by the Spanish Ministry of Social Rights and Agenda 2030, whose Directorate General of Family and Social Services compiles data (either national or regional) on

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([28]) The at-risk-of-poverty (AROP) rate is the share of people with an equivalised disposable income (after social transfer) below the at-risk-of-poverty threshold, which is set at 60% of the national median equivalised disposable income after social transfers.

([29]) One aspect that it is not taken into consideration here is that the take up of benefits (measured as coverage) also depends on the adequacy of benefits. That means that, if the benefit level is low, the number of eligible households/individuals will also be lower, thus the coverage rate will be lower by definition.

([30]) These indicators are complemented by considering only persons (in the working age population) in households with very low work intensity.

([31]) In fact, although the minimum income benchmarking framework has not identified an indicator for coverage at policy level, it was agreed to use a performance indicator of benefit recipient rate. This indicator calculates the number of people receiving any social assistance from the population at risk of poverty (AROP) that live in a low work intensity household (definition revised to a (quasi-)jobless household in the latest MI benchmarking update; SPC-ISG, 2021). This group was considered as the closest proxy for the MI beneficiary population.

beneficiaries of all social programmes (^{32}). Therefore, the number of MI recipients must be added to the number of beneficiaries of the other two programmes at least to measure coverage.

An advantage of the SOCR database is that it provides reference series for the volume of individuals belonging to population groups close to the target population of social benefits. For example, the 65+ population is provided as reference series for old-age pensions; the unemployed population is offered in reference to UB; and a quantification of "poor people" is given for income support schemes, i.e. individuals living in households whose equivalised disposable income is below 50% of the median disposable income of the country. This should be, in principle, the target group of MI schemes.

The abovementioned information allows calculating a coverage indicator as the proportion of poor individuals receiving social assistance (income support) benefits (^{33}). The results are provided in row (a) of Table 2.5, with coverage rate being around 54% between 2014 and 2016.

The problem with the SOCR database is that time coverage only goes through 2016 right now. This means that, if we want to have a longer time span, we should have to use an alternative source of information. The Eurostat database provides the "*At-risk-of-poverty rate by poverty threshold, age and sex - EU-SILC and ECHP surveys*" (ilc_li02) based on EU-SILC. One can select thousand persons instead of percentage as unit of measure and various cut-off points of the poverty rate (40%, 50%, 60% or 70% of median equivalised income or 40%, 50% or 60% of mean equivalised income), thus obtaining the number of poor people (whose income lies below the corresponding threshold). We have chosen two of those cut-off points (50% and 60% of the median income) to calculate the coverage rate. As can be seen in rows (b) and (c) of Table 2.5, the figures obtained with the former threshold (around 51-55% for most years) are like those obtained with the OECD reference series on poor people, but they are lower and slightly below 40% with the latter.

Table 2.5. Potential indicators of social assistance/family benefits coverage (Spain)

	2013	2014	2015	2016	2017	2018	2019
Coverage indicator: poor individuals receiving income support (OECD)							
MI recipients (1)	258	264	323	315	313	293	297
NC benefits per child (2)	913	976	1,009	1,050	1,055	1,034	1,018
Supplements for minimums (3)	2,493	2,500	2,489	2,467	2,437	2,383	2,345
Poor (OECD) (4)	7,278	6,956	6,978	7,069	-	-	-
Poor (Eurostat-50%) (5)	6,422	7,311	7,324	7,114	7,233	6,757	6,316
Poor (Eurostat-60%) (6)	9,425	10,218	10,178	10,269	9,950	9,950	9,610
Indicators:							
(a) Spain (OECD) ((1+2+3)/(4))	50.4	53.8	54.8	54.2	-	-	-
(b) Spain (Eurostat-50%) ((1+2+3)/(5))	57.1	51.2	52.2	53.9	52.6	54.9	57.9
(c) Spain (Eurostat-60%) ((1+2+3)/(6))	38.9	36.6	37.5	37.3	38.2	37.3	38.1

Note: Numbers of MI recipients, NC benefits per child, and supplements for minimums come from the Spanish Ministry of Social Rights and Agenda 2030 (MI recipients are also provided by the OECD's SOCR database). NC benefits per child refer to non-contributory family benefits per child or minor in charge. All variables on number of recipients and individuals at risk of poverty are expressed in thousands.

(^{32}) See https://www.mscbs.gob.es/ssi/familiasInfancia/ServiciosSociales/RentasMinimas.htm.

(^{33}) It should be noted that the numerator refers to the number of "individual beneficiaries" while the denominator contains "all the potential recipients". This means that not all the members of each recipient household are counted in the former, but they are potentially counted in the latter. Moreover, the same person can benefit from more than one of the income support benefits considered.

2.3.2. Adequacy

Considering that the aim of social assistance programmes is to fight poverty risk, adequacy could be defined in terms of the impact of these benefits to eliminate or reduce the poverty gap (the difference between earnings before transfers and the risk of poverty threshold). Something similar could be said of financial support for families (including child-related cash transfers) and childcare support, i.e., the adequacy of such transfers could be measured in relation to their contribution to the reduction of child poverty rates (or childcare costs).

As part of the EPSR, Eurostat publishes a scoreboard of the indicators supporting the Pillar for all EU Member States. The set of indicators is structured around three main dimensions: (1) Equal opportunities and access to the labour market; (2) Dynamic labour markets and fair working conditions; and (3) Public support/ Social protection and inclusion. One of the indicators of the third dimension measures the adequacy (or the combination of coverage and adequacy) of social benefits: "*Impact of social transfers (other than pensions) on poverty reduction (% of AROP - At risk of poverty rate - cut-off point: 60% of median equivalised income)*" (tespm050). The indicator measures the reduction in percentage of the risk of poverty rate, due to social transfers, calculated comparing at-risk-of poverty rates before social transfers with those after transfers (pensions are not considered as social transfers in these calculations). The indicator is based on the EU-SILC (Statistics on Income, Social Inclusion and Living Conditions).

However, this indicator is not broken down by different types of programmes or transfers that households receive (unemployment, family, social assistance, and housing benefits). The solution would be to use the EU-SILC microdata files and calculate the impact of each of these benefits on poverty reduction for recipients. The indicator would have the following characteristics:

— Can be broken down by gender and other socio-economic variables.

— Available for all EU Member States.

— Reference period is the calendar year, updated annually.

Thus, one could use the reduction of poverty before and after social assistance/family transfers as a proxy variable of the combined effect of coverage and, above all, adequacy. The problem with this approach is that what it really measures is the effectiveness of social assistance programmes. Therefore, for the measurement of universality it would be better to use measures defined at the individual level, such as the distance between the value received and the reference (adequate) amount.

Following this reflection, an alternative to the previous indicator can be found in the "*Adequacy of guaranteed minimum income benefits*" dataset from OECD ([34]). It measures jobless families' income relying on minimum-income safety-net benefits ([35]). Values are expressed both in national currency and as a percentage of the median disposable income in the respective country. When the country's poverty line is defined as a fixed percentage of the median disposable income, the normalization of guaranteed benefits amounts in terms of the median income allows measuring the gap between benefit entitlements and the poverty line. For instance, if the poverty threshold is 50% of the median disposable income, a value of 30% of the indicator means that benefit entitlements are 20 p.p. below the poverty line. Data characteristics are as follows:

— Calculated for 4 family structures: jobless person without children, jobless person with two children, jobless couple without children, and jobless couple with two children.

— Values are adjusted for family size ("equivalised") using the square root of family size.

— Median disposable incomes are calculated for the whole country before housing costs (or other forms of "committed" expenditure). Values are from national surveys in or close to the reference year.

([34]) Available at https://data.oecd.org/benwage/adequacy-of-minimum-income-benefits.htm.
([35]) There are two similar indicators categorized as policy levers in the EU benchmarking framework on MIS: 'net income of minimum income recipients as percent of at risk-of-poverty threshold' (smoothed over three years) and 'net income of minimum income recipients as percent of the income of a low wage earner (50% of AW)'. Both are computed from EU-SILC microdata. For more information, see European Commission (2021).

- The net household income of the family claiming GMI benefits includes only cash benefit entitlements and no other income sources. No entitlement to UB is assumed.

- Where GMI benefit entitlements change over time, calculations refer to the second month of benefit receipt. Where receipt of GMI benefits is subject to activity tests, such as active job-search or being available for work, these requirements are assumed to be met by all household members.

- Family benefits are included in the calculations subject to relevant income and eligibility conditions. Calculations for families with children are for families with two children aged 4 and 6. Neither childcare benefits nor childcare costs are considered. Adults are aged 40, both are out of work and assumed to have full work capacity.

- The indicator can be calculated with or without housing benefits. If housing benefits are included in the calculations, these are calculated assuming a household renting in the private market paying rent equal to 20% of the average wage. Rent levels are the same for all family types.

- Available for most OECD countries.

- Reference period is the calendar year, updated annually, starting from 2001.

Table 2.6 provides figures for guaranteed MI benefits in relation to median income for the four types of households included in the database. In the case of Spain, adequacy is highest for jobless singles without children and lowest for jobless couples with two children, although in recent years there seems to be a certain convergence between the two types, with a worsening of the adequacy of the former and an improvement in the latter.

Finally, a relevant element in the branch of support for families is the existence and duration of maternity/paternity and parental leaves. In this case, an indicator of adequacy could be based on measures of the duration and replacement rates of the programme. The OECD database contains a "Family database" that was developed to provide cross-national indicators on family outcomes and family policies across the OECD countries, its partners and EU member states ([36]). It brings together information from various national and international databases, both from within the OECD and external organisations. The database classifies indicators into four main dimensions: (i) structure of families, (ii) labour market position of families, (iii) public policies for families and children, and (iv) child outcomes. Within dimension (iii), it contains information on "Length of paid maternity and parental leave available to mothers in weeks" and "Length of paid maternity and parental leave reserved for fathers in weeks". The characteristics of the data are the following:

- Available for OECD countries.

- The time coverage starts in 1990.

Table 2.6. Potential indicators of social assistance/family benefits adequacy (Spain)

	2013	2014	2015	2016	2017	2018	2019
Adequacy of guaranteed minimum income benefits (as % of median disposable income)							
Single, no child	30	30	30	30	29	28	28
Single, two children	27	27	26	28	27	26	26
Couple, no child	28	28	27	27	26	26	25
Couple, two children	23	23	23	27	27	26	26
Length of paid parental leaves (weeks)							
Mothers	16	16	16	16	16	16	16
Fathers	2.1	2.1	2.1	2.1	4.3	4.3	2.1

Source: OECD.

In Spain, parental leave has remained stable in 16 weeks for women in the period 2013-2019, while it has doubled (from a fortnight to a month) for men.

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[36] Available at https://www.oecd.org/els/family/database.htm.

2.4. Health

The Sustainable Development Goals (SDGs), also known as the Global Goals, were adopted by the United Nations in 2015 as a universal call to action to end poverty, protect the planet, and ensure that by 2030 all people enjoy peace and prosperity. The target 3.8 is defined as "achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all." Along the same lines, the Principle 16 of the EPSR acknowledges that everyone has the right to timely access to affordable, preventive and curative health care of good quality. Moreover, Principle 18 also establishes that everyone has the right to affordable long-term care services of good quality, in particular home-care and community-based services [37].

Therefore, concerns on this branch of social protection have to do with both coverage and adequacy issues. On the one hand, the concern is with all people and communities receiving the quality health services they need (including medicines and other health products), without financial hardship. Thus, universal health accessibility and coverage not only depends on the share of a population that is covered for a set of health services but also on the range of services covered and the degree of cost sharing for these services. On the other hand, these services must be of sufficient quality, something that has to do with the outcomes of care and, therefore, adequacy.

2.4.1. Coverage

As discussed in the proposal of indicators, when the case of health is considered, it is necessary to combine, if possible, indicators of *de iure* and *de facto* coverage.

On the one hand, it is necessary to take into account whether a person is entitled to health provision in the case of need or not, adjusting the existing nominal coverage by the legal exceptions in the corresponding country that might pose restrictions in the access to health care for irregularly staying immigrants. Note that this is not necessary for Spain, because all immigrants are *de iure* entitled to health services, whatever their residence status [38].

On the other hand, *de facto* coverage can be measured by different indicators while considering two issues. First, the availability of health services to all individuals is the most essential element to measure health coverage properly. Second, one needs to consider whether availability is indeed effective, i.e. whether no individuals nor households forgo health care for suffering any sort of financial hardship (e.g., limited accessibility or affordability of services). Although the latter is also relevant for coverage, it will be considered as a factor that influences health adequacy.

Focusing on coverage, we present below the indicators currently available to researchers, mostly on sparse years, since health data are not collected or supplied annually in most existing databases.

Population coverage for health care provided by the OECD's *Health at a Glance* (OECD, 2019a). The indicator refers to the share of total population eligible for a country-specific core set of health care service, including consultations with doctors, tests, examinations and hospital care. The entitlement can be through either public programmes or primary private health insurance. Accordingly, there are countries with a coverage by either national health systems or social health insurance systems and others with private health insurance, usually

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[37] Long-term care (LTC) could be considered as part of the health branch in this study. However, there are no available measurement indicators on the coverage and/or adequacy of these types of care. For example, in the case of the "Employment and social protection indicators" of the European Commission, the health and long-term care strand of the Open Method of Coordination focuses on indicators related to social protection. Although it is structured along three objectives of the health and long-term care strand (access to care and inequalities in outcomes; quality of care; and long-term sustainability of systems) and contains 38 indicators (many of them under preparation or without data), only one refers to total LTC expenditure as percentage of GDP.

[38] Article 3 of Law 16/2003, of May 28, on cohesion and quality of the National Health System, in the wording given by Royal Decree-Law 7/2018 of July 28 on universal access to the National Health System, it establishes that foreigners not registered or authorized as residents in Spain have the right to health protection and health care under the same conditions as people with Spanish nationality.

mandatory by law (Spain would be among the first group of countries). The characteristics of the data are the following:

— The database provides mostly yearly data for many countries since 1960, but data for Spain is only provided every three years;

— Most OECD countries have achieved universal (or near-universal) coverage.

Extent of health care coverage as defined by the range of services included in a publicly defined benefit package and proportion of costs covered, also provided by the OECD Health Statistics. Coverage provided by voluntary health insurance and other voluntary schemes such as charities or employers is not considered. The indicator is measured as the percentage of total expenditure paid by public and compulsory private insurance. The range of core health care services are defined based on definitions from the System of Health Accounts 2011 (SHA-2011), including hospital care, outpatient medical care, dental care and pharmaceuticals ([39]). This information allows to consider the relevance of out-of-pocket expenditures due to cost-sharing, co-payments, or the limited coverage of specific services, which must be necessarily provided by the market.

— Data are only available in sparse years.

Service Coverage Index (SCI) built by the WHO to operationalize their concept of Universal Health Coverage, referring to both aspects of availability of health services and financial protection. Two indicators have been chosen to monitor target 3.8 within the SDG framework: indicator 3.8.1 is for health service coverage and indicator 3.8.2 focuses on health expenditures in relation to a household's budget to identify financial hardship caused by direct health care payments. As a measure of SDG indicator 3.8.1, coverage of essential health services is defined as the average coverage of essential services based on tracer interventions that include reproductive, maternal, new-born and child health, infectious diseases, non-communicable diseases and service capacity and access. The indicator is an index reported on a scale of 0 to 100, computed as the geometric mean of 14 tracer indicators of health service coverage. The tracer indicators are sub-organized by four components of service coverage: (a) reproductive, maternal, new-born and child health; (b) infectious diseases; (c) non-communicable diseases; and (d) service capacity and access. The characteristics of the data are the following:

— Full disaggregation of the index is not currently possible due to the lack of data at tracer indicators level.

— The expected frequency of data dissemination is 2-3 years, and the expected frequency of data collection is 1-5 years.

— The proposal made by the ILO to measure health coverage (belonging to the World Social Protection Report to monitor progress towards universal social protection in five different areas) is similar to the one of the WHO but using a more limited number of variables. Nevertheless, these variables take account of the main aspects that should be considered: legal coverage; out-of-pocket expenditure; coverage gap due to financial reasons; coverage gap due to staff deficit; and maternal mortality ratio.

Table 2.7 provides information for Spain on the coverage measures previously examined. Firstly, the OECD indicator on the share of the total population that is eligible for a core set of health care services (row (a)) gives full coverage figures at 99.9% in 2017 and 100% in 2018 and 2019. This outcome seems to imply that the OECD indicator is closer to being a *de jure* coverage measure than a *de facto* measure. The results of this indicator contrast with those obtained with the one designed by the WHO. According to the WHO indicator on coverage of essential services (SCI index, row (c)), *de facto* health coverage would be lower in Spain, at 80.8% in 2015 and 82.7% in 2017. At the same time, 71% of Spanish total health spending is covered by government and compulsory insurance spending, while the OECD average is at 73% (row (b)).

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[39] Hospital care refers to inpatient curative and rehabilitative care in hospitals; outpatient medical care to all outpatient curative and rehabilitative care excluding dental care; and pharmaceuticals to prescribed and over-the-counter medicines including medical non-durables.

Table 2.7. Potential indicators of health coverage (Spain)

	2013	2014	2015	2016	2017	2018
(a) Coverage (availability): share of the total population eligible for a core set of health care services	-	99.8	-	-	99.9	100.0
(b) Coverage (extent): percentage of total expenditure paid by public and compulsory private insurance (hospital care, outpatient medical care, dental care and pharmaceuticals)	71.0	70.3	71.3	71.6	70.7	70.4
(c) Coverage (extent): Service Coverage Index	-	-	80.8	-	82.7	-

Source: (a), (b) OECD; (c) WHO.

Finally, it is worth considering that the WHO index has been designed with the clear aim of measuring the availability of essential health services and that data dissemination is expected to take place periodically, while the OECD indicator takes a spending perspective. Taking all factors into consideration, the WHO indicator of extent and availability would be the most appropriate to measure health coverage.

2.4.2. Adequacy

Measuring the adequacy of health systems is a difficult task. First, it is necessary to evaluate the quality and outcome of care; second, there are many types of health interventions. Despite these factors, probably the most complete system of indicators on quality and health care outcomes is the one developed by the OECD. Overall, the set of indicators consists of several dimensions fed by more than 30 indexes (see OECD, 2019a, pp. 119-147). Moreover, as said in the previous sub-section devoted to coverage, the availability of health services must be effective. Thus, a measure of health adequacy should also take account of the existence of limited accessibility or affordability of services, since achieving universal health should include financial risk protection.

Here we adopt OECD indicators and adapted them according to two criteria. First, we will only consider indicators that have a clear and close relationship with the improvement of health service. Second, those for which data are available for more countries or for a longer period will be principled with a view to obtaining greater comparability of the results. Let us consider each of the dimensions in turn.

Safe primary care prescription. This dimension consists of two indicators: overall volume of opioids and antibiotics prescribed. Both are measured using daily doses (DDDs) per 1,000 population/day, which is the assumed to be the average maintenance dose per day for a drug mainly used in adults.

— *Caveats.* These indicators pose some problems to be included in the aggregate index. On the one hand, although prescribing can be used as an indicator of health care quality, the overuse, underuse, or misuse of prescription medicines can cause significant hazards to health and lead to wasteful expenditure. Particularly, opioids are often used to treat acute pain and pain associated with cancer, and increasingly to treat chronic pain. However, this may increase the risk of dependence, dose increase, shortness of breath and death. In the case of antibiotics, they should be prescribed only where there is a need that is clearly supported by evidence to reduce the risk of resistant strains of bacteria. In both cases, the indicator may reflect the conditions of the supply (differences in clinical practice in pain management, regulation, legal frameworks, prescribing policies and treatment guidelines) but also of the demand (differences in attitudes and expectations regarding optimal treatment of infectious illness, for instance). On the other hand, although data comes from OECD Health Statistics, it is not available for all OECD countries (especially the case for opioids data) and not totally comparable across countries (they may differ due to differences in data sources and coverage).

— Figures in 2017 (or nearest year; three-year average): 17.0 and 12.6, respectively, for Spain; 16.5 and 18.3, respectively, for OECD (OECD-18 and OECD-31).

— *Source*: OECD Health Statistics.

Safe acute care. This dimension consists of two sub-dimensions (surgical complications and health care-associated infections, and obstetric trauma) and three indicators (foreign body left in during a procedure,

percentage of hospital inpatients with healthcare associated infections, and rates of obstetric trauma with instrument).

(a) Surgical complications and health care-associated infections.

— *Rationale.* Patient safety is a pressing health issue for policy action (15% of hospital expenditure and activity in OECD countries can be attributed to treating patients who experience a safety event, many of which are preventable). Achieving increased patient safety is an objective linked to improving quality of health systems and increasing spending efficiency. Patient safety problems are categorised as "never" events (events that should never or very rarely occur) and "adverse" events (events that cannot be fully avoided, but whose incidence could be considerably reduced).

— The indicator for "never" events is the number of foreign bodies left in during a procedure per 100,000 hospital discharges (for patients aged 15 and older). Here, linked or unlinked data may be used. Indicators using unlinked data rely on information from a patient's admission to the hospital where surgery occurred to calculate rates; the linked data approach expands beyond the surgical admission to include all subsequent related readmissions to any hospital within 30 days after surgery. Therefore, linked data are preferable whenever possible.

- Yearly data for several countries since 2009; for most countries since 2013. Figures in 2017 (or nearest year): 3.5/4.4 (linked/unlinked data) for Spain; 3.8/5.2 (linked/unlinked data) for OECD (OECD-12/OECD-19).

- Source: OECD Health Statistics.

— The best indicator for "adverse" events is the percentage of hospital inpatients with at least one health care-associated infection (HAI). Variations in definitions and medical recording practices between countries can affect calculation of rates and limit data comparability in some cases. Higher adverse event rates may signal more developed patient safety monitoring systems and a stronger patient safety culture rather than worse care. Due to data limitations, we suggest this indicator is substituted by the crude rate of post-operative sepsis after abdominal surgery per 100,000 hospital discharges (for patients aged 15 and older). As before, linked or unlinked data may be used.

- Percentage of hospital inpatients with at least one health care-associated infection (HAI).

  o Figures in 2015: 6.5% for Spain; 4.9% for OECD-24.

  o Source: HAI data are based on results of point prevalence studies conducted by the Centres for Disease Control and Prevention (CDC) in 2015 and the European Centre for Disease Prevention and Control (ECDC) 2016-2017.

- Crude rate of post-operative sepsis after abdominal surgery per 100,000 hospital discharges.

  o Yearly data (for several countries, since 2009; for most countries, since 2013). Figures in 2017 (or nearest year): 1,919/2,224 (linked/unlinked data) for Spain (2017/2015).

  o Source: OECD Health Statistics.

(b) Obstetric trauma.

— *Rationale.* Safety of women during childbirth is a relevant health issue. Although preventing tears of the perineum during vaginal delivery in all cases is not possible, they can be reduced by appropriate labour management and high-quality obstetric care. In this sense, the proportion of deliveries involving higher-degree lacerations is considered a useful indicator of the quality of obstetric care.

— The indicator used is the crude rate of obstetric trauma per 100 vaginal deliveries with instrument. In particular, the proportion of instrument-assisted vaginal deliveries with third- and fourth-degree obstetric trauma codes (ICD-10 codes O70.2-O70.3) in any diagnosis and procedure field.

- Yearly data (since 2009). Figures in 2017 (or nearest year): 4.9% for Spain; 5.5% for OECD-23.

- Source: OECD Health Statistics.

Avoidable hospital admissions. This dimension consists of three indicators: number of hospital admissions with asthma and chronic obstructive pulmonary disease (COPD), number of hospital admissions with congestive heart failure (CHF), and number of hospital admissions with a primary diagnosis of diabetes. Both indicators are measured among people aged 15+ years per 100,000 population.

— *Rationale.* Common to all asthma, COPD and CHF that the first two indicators measure is that the evidence base for effective treatment is well established, and much of it can be delivered by primary care. Thus, a high-performing primary care system, where accessible and high-quality services are provided, can reduce acute deterioration in people living with asthma, COPD or CHF. This can avoid the need for hospital admissions to treat these conditions, which are used as a marker of quality and access in primary care. Something similar can be said with respect to diabetes. Although ongoing management of diabetes usually involves a considerable amount of self-care (with advice and education being central to the primary care of people with diabetes), effective control of blood glucose levels through routine monitoring, dietary modification and regular exercise can reduce the onset of serious complications and the need for hospitalisation.

— *Caveats.* Disease prevalence and availability of hospital care may explain some, but not all, variations in cross-country rates. Differences in coding practices among countries may also affect the comparability of data. For example, admissions resulting from a transfer from another hospital and where the patient dies during admission are excluded from the calculation, as these are considered unlikely to be avoidable. However, the exclusion of "transfers" cannot be fully complied with by some countries. Differences in data coverage of the national hospital sector across countries may also influence rates.

— Figures in 2017 (or nearest year; three-year average) for asthma, COPD and CHF: 210, 143 and 45 for Spain; 225, 233 and 129 for OECD, respectively (OECD-35/OECD-34/OECD-33).

— Rates are age-sex standardised to the 2010 OECD population aged 15+.

— *Source:* OECD Health Statistics.

Mortality following ischaemic stroke/coronary heart disease. This dimension consists of two indicators: the case-fatality rates within 30 days of hospital admission following ischaemic stroke and acute myocardial infarction (AMI). The case-fatality rate measures the percentage of people aged 45+ who die within 30 days following admission to hospital for a specific acute condition.

— *Rationale.* The 30-day case-fatality rate is a good indicator of acute care quality. The measure reflects the processes of care, including timely transport of patients and effective medical interventions.

— *Caveats.* Rates can be calculated using either linked or unlinked data. Rates based on unlinked data only consider deaths occurring in the same hospital as the initial admission. Rates based on linked data consider deaths that are recorded regardless of where they occurred, including after transfer to another hospital or after discharge. The indicator using linked data is more robust because it captures fatalities more comprehensively than the same hospital indicator, but it requires a unique patient identifier and linked data, which are not available in all countries.

— National rates are age-sex standardised to the 2010 OECD population aged 45+ admitted to hospital for ischaemic stroke (ICD-10 codes I63-I64) and AMI (ICD-10 codes I21-I22).

— Yearly data for several countries since 2000; for most countries at least since 2009. Figures in 2017 (or nearest year; three-year average): in the case of ischaemic stroke, 9.0%/10.3% (unlinked/linked data) for Spain and 7.7%/12.3% for OECD (OECD-33/OECD-23); in the case of AMI, 6.5%/7.2% (unlinked/linked data) for Spain and 6.9%/9.1% for OECD (OECD-32/OECD-25).

— *Source:* OECD Health Statistics.

Hip and knee surgery. This dimension consists of one indicator on hip fracture defined as the proportion of patients aged 65+ years admitted to hospital in a specified year with a diagnosis of upper femur fracture, who had surgery initiated within two calendar days of their admission to hospital. Other indicators based on pre- and post-operative patient-reported outcome measures (PROMs), using the Oxford Hip/Knee Score and KOOS questionnaire, are not used due to the limited number of countries with available data.

— *Rationale.* Hip fracture repair is usually an emergency procedure. This contrasts to a hip replacement for osteoarthritis that is an elective procedure. Evidence suggests that early surgical intervention improves patient outcomes and minimises the risk of complication. There is general agreement that surgery should occur within two days (48 hours) of hospital admission. Time-to-surgery (TTS) is considered a clinically meaningful process indicator of the quality of acute care for patients with hip fracture.

— *Caveats.* TTS is influenced by many factors, including hospitals' surgical theatre capacity, flow and access, and targeted policy interventions, including public reporting and monitoring of performance. Moreover, the capacity to capture time of admission and surgery in hospital administrative data varies across countries, resulting in the inability to precisely record surgery within 48 hours in some countries.

— Yearly data for several countries since 2000; for most countries at least since 2009. Figures in 2017 (or nearest year): 51.9% for Spain; 80.9% for OECD-23.

— *Source:* OECD Health Statistics.

Cancer survival rates. This dimension consists of three indicators regarding different types of cancer: breast cancer, colorectal cancer, and childhood acute lymphoblastic leukaemia (ALL). They are measured using five-year net survival rates. These rates refer to the cumulative probability that cancer patients would have lived five years after diagnosis if cancer was the only possible cause of death.

— *Rationale.* Breast cancer is the cancer with the highest incidence among women in all OECD countries, such that an average of 51.5% of women with breast cancer were diagnosed at an early stage of disease in OECD countries, while 8.6% of women were diagnosed at an advanced stage. Since the 1980s, most OECD countries have adopted breast cancer screening programmes as an effective way of detecting the disease early. Despite that, it seems appropriate to use the five-year net survival rate at all stages of diagnosis to gauge the adequacy of breast cancer care. Colorectal cancer is the third most diagnosed cancer in OECD countries. A growing number of OECD countries have introduced free population-based screening, targeting men and women in their 50s and 60s at either national or regional levels. Advances in the diagnosis and treatment of colorectal cancer have contributed to higher survival over the last decade in OECD countries. Finally, Leukaemia is the most common cancer among children aged 0-14; it accounts for over 30% of all cancers diagnosed in children worldwide. There are different types of leukaemia but about three-quarters of cases among children are acute lymphoblastic leukaemia (ALL).

— *Caveats.* More types of cancer can be considered for the measurement of this sub-dimension (for instance, lung or stomach cancer). The above-mentioned types of cancer have been chosen because they concentrate on specific groups of the population: women, older people, and children.

— 5-year period data (2000-2004, 2005-2009 and 2010-2014). Figures in 2010-2014. Breast cancer five-year net survival at all stages of diagnosis: 85.3% for Spain and 85.0% for OECD-26. Colon/rectum cancer five-year net survival: 63.3%/59.5% for Spain and 62.1%/60.6% for OECD-32. Childhood ALL cancer five-year net survival: 84.7% for Spain and 83.7% for OECD-32.

— The period approach is used to allow estimation of five-year survival where five years of follow-up are not available. Cancer survival estimates are age-standardised with the International Cancer Survival Standard weights.

— *Source:* CONCORD programme, London School of Hygiene and Tropical Medicine.

Vaccinations. This dimension consists of two indicators: the vaccination coverage for diphtheria, tetanus, and pertussis (DTP), and measles. This is calculated as the percentage of children at one year of age vaccinated for those infectious diseases. Hepatitis B is not used because data availability is low among OECD countries. The age of complete immunisation differs across countries due to different immunisation schedules. For those countries recommending the first dose of a vaccine after one year of age, the indicator is calculated as the proportion of children less than two years of age who have received that vaccine. Thus, these indicators are based on the actual policy in each country.

— *Rationale.* Vaccines are an effective and cost-effective tool for protecting against infectious diseases. The WHO estimates that vaccines prevent between 2 and 3 million deaths each year worldwide.

— *Caveats.* Some countries administer combination vaccines (e.g. DTP), while others administer the vaccinations separately. Some countries ascertain whether a vaccination has been received based on surveys and others based on encounter data, which may influence the results.

— Yearly data (for most countries, at least since 1980). Figures in 2018 (or nearest year): in the case of DTP, 93.4% for Spain and 95.0% for OECD-36; in the case of measles, 97.0% for Spain and 95.0% for OECD-36.

— *Source:* OECD Health Statistics.

Care for people with mental health disorders. This dimension consists of one indicator: the inpatient suicide rate among patients with psychiatric disorder. This indicator is composed of a denominator of patients discharged with a principal diagnosis or first two secondary diagnosis code of mental health and behavioural disorders (ICD-10 codes F10-F69 and F90-99) and a numerator of these patients with a discharge code of suicide (ICD-10 codes X60-X84).

— *Rationale.* The burden of mental illness is substantial. High-quality, timely care has the potential to improve outcomes and may help reduce suicide and excess mortality for individuals with mental disorders. High-quality care for mental disorders in inpatient settings is vital, and inpatient suicide is a "never" event, which should be closely monitored as an indication of how well inpatient settings are able to keep patients safe from harm.

— Yearly data for a small number of countries since 2000; for most countries at least since 2010. Figures in 2015-2017 (or nearest year; three-year average to give more stability to the indicator): 1.9 for Spain and 3.5 for OECD-20.

— Rates are age-sex standardised per 10,000 patients.

— *Source:* OECD Health Statistics.

Patient experiences of ambulatory care. It is important to incorporate people's voices into the development of health systems and to improve quality of care. Thus, to monitor general patient experiences in the health system, the OECD recommends collecting data on patient experiences with any doctor in ambulatory settings. This dimension would consist of three indicators: percentage of patients reporting that doctors spend enough time during consultation, provide easy-to-understand explanations and involve patient in decisions about care and treatment.

— *Caveats.* Measures of patient-reported experiences and health outcomes are still limited across countries. The OECD's PaRIS (Patient-Reported Indicator Surveys) initiative aims to collect key people-reported outcomes and experiences to improve the performance of health care providers and to drive changes in health systems based on people's voices. The Commonwealth Fund International Health Policy Surveys 2010 and 2016 can be used as a data source for 11 countries, even though there are limitations relating to the small sample size and low response rates. Data from this survey refer to patient experiences with a GP rather than any doctor, including both GPs and specialists.

— Available for a limited number of countries and years. For Spain, availability is restricted to information on patients having been involved in decisions about care or treatment by their regular doctor since 2013. Figures in 2016 (latest year available): 78.0%.

— *Source:* Commonwealth Fund International Health Policy Surveys (11 countries). For other countries, national sources.

Table 2.8 shows the data regarding the previous indicators for the period 2013-2018. As explained above, these measures refer to a wide variety of health-related interventions with the aim of evaluation the quality and outcome of care. We have not considered some of the original OECD indicators (such as those included in the safe primary care prescription – overall volume of opioids prescribed, and overall volume of antibiotics prescribed – or some related to surgical complications and health care-associated infections – percentage of hospital inpatients with at least one HAI). The reasons have to do with their lack of either a clear relationship with the improvement of the quality of the health service or sufficient information over time or among countries.

The indicators in this table are expressed in a 0-100 metric. For instance, within the safe acute care dimension (row (a)), the "never" events indicator measured as the number of a foreign body left in during a procedure per 100,000 hospital discharges was 3.5/4.4 (linked/unlinked data) for Spain and 3.8/5.2 (linked/unlinked data) for average OECD in 2017. This would translate into a figure of 0.004 for Spain and 0.005 for average OECD. Some indicators are already supplied as percentages in the databases, but others are measured for either 100,000 or 10,000 people, so they have to be divided by either 1,000 or 100.

This way of expressing the indicators facilitates the calculation of an overall indicator of health adequacy. Obviously, the latter should not be based only on one or a few of the previous sub-indicators but on the set of all sub-indicators referring to all the dimensions analysed.

Table 2.8. Potential indicators of health adequacy: quality of health services (Spain), 0-100 metric

	2013	2014	2015	2016	2017	2018
(a) Safe acute care						
Foreign body (per 100; unlinked)	0.005	0.005	0.004	0.004	0.004	-
Inpatients with infections (post-operative sepsis after abdominal surgery; per 100; unlinked)	2.4	2.2	2.2	-	-	-
Obstetric trauma (%)	4.4	5.0	5.2	5.0	4.9	-
(b) Avoidable hospitals admissions (per 100 patients)						
With COPD	0.225	0.224	0.234	0.200	0.210	-
With CHF	0.188	0.192	0.196	0.133	0.143	-
With diabetes	0.051	0.048	0.047	0.044	0.045	-
(c) Mortality following ischaemic stroke/coronary heart disease (%; unlinked data)						
Ischaemic stroke	10.2	10.3	10.4	10.2	9.0	-
AMI	7.9	7.7	7.7	7.2	6.5	-
(d) Hip and knee surgery (%)						
% surgery initiated within two days	43.3	47.3	48.4	50.4	51.9	-
(e) Cancer survival rates (%)						
Breast	-	85.3	-	-	-	-
Childhood leukaemia	-	84.7	-	-	-	-
Colon	-	63.3	-	-	-	-
(rectum)		(59.5)				
(f) Vaccinations (per 100 children less than two years of age)						
DTP	95.6	96.6	96.6	97.1	94.8	93.4
Measles	95.0	96.0	96.0	97.0	98.0	97.0
(g) Care for people with mental health disorders (per 100 patients)						
% Inpatient suicide	0.02	0.02	0.02	0.02	0.02	-

Source: (a) – (d), (f), (g) OECD Health Statistics; (e) CONCORD programme, London School of Hygiene and Tropical Medicine.

Regarding the adequacy element related to the affordability and financial risk protection in the access to health services, there are two main indicators currently available.

The indicator most widely used to measure financial hardship associated with out-of-pocket payments for households is the **incidence of catastrophic spending on health** (Cylus et al., 2018). According to the WHO, it is an indicator of financial protection used to monitor progress towards universal health coverage. This is the above-mentioned SDG indicator 3.8.2. It is defined as out-of-pocket payments that exceed a predefined percentage of the resources available to a household to pay for health care. Household resources available (or capacity to pay) is what is left of a household's budget after deducing a standard amount representing the cost of meeting basic goods (food, housing, and utilities – water, electricity, gas and other fuels). The thresholds used by the WHO to define households with catastrophic spending are 10% and 25%. The WHO uses global and regional metrics to monitor financial protection in the European Region. Global metrics allow countries in Europe to be compared with countries in the rest of the world. The WHO Regional Office for Europe has developed new metrics to monitor financial protection to meet demand from Member States for performance measures that are more suited to middle- and high-income countries and have a stronger focus on pro-poor policies. Accordingly, the WHO Regional Office for Europe (2019) has adopted the threshold of 40% to measure the incidence of catastrophic expenditure. Microdata from national household budget surveys typically collect data on household characteristics, or at least on the characteristics of the head of the household. As a result, it is possible to identify the distribution of catastrophic health spending across different types of households, in addition to the distribution across consumption quintiles and by risk of poverty.

Another indicator is the **share of population that has foregone or postponed health care for various reasons**, related to limited availability, accessibility, or affordability of services. This indicator would be able to detect the population that delayed or did not seek needed care because of waiting times, transportation difficulties or costs too high for them. This information is published by Eurostat and comes from the second wave of the European Health Interview Survey (EHIS), which took place between 2013 and 2015 in all EU Member States, Iceland and Norway (variable hlth_ehis_un1e). The health care module of this survey and of national surveys allows respondents to report on their utilisation of health care services, as well as potential barriers experienced when trying to access these services. Excluding those respondents who reported not having a health care need in the past 12 months, it is possible to calculate the shares of the population reporting forgone or delayed care, among individuals that have reported a need, satisfied or not (rather than the total population surveyed). Firstly, the proportion of the population reporting an unmet need due to availability issues is based on information on people in need of health care reporting to have experienced delay in getting health care in the previous 12 months due to long waiting lists. Secondly, the proportion of the population reporting an unmet need due to accessibility issues is based on information on people in need of health care reporting to have experienced delay in getting health care in the previous 12 months due to physical difficulties (distance or transportation). Finally, the proportion of the population reporting an unmet need due to affordability aggregates unmet need for different types of service (medical, dental health services, mental health services, and prescription drugs) due to financial barriers (could not afford the care in the previous 12 months). The characteristics of the data are the following:

— This indicator can be broken down by sex, age, education attainment level (three categories) and degree of urbanisation.

— Available for all EU Member States, the United Kingdom, Iceland, Norway, and Turkey.

— The EHIS is run every five years. The first wave (EHIS 1 or EHIS round 2008) was conducted between years 2006 and 2009 without any binding legal basis. The 17 participating EU Member States strived towards comparability via a standard questionnaire, guidelines, and translation recommendations. Member States had implemented the EHIS modules at the national level either as a specific survey or had embedded the EHIS modules in an existing national survey. The second wave (EHIS 2 or EHIS round 2014) took place between 2013 and 2015 in all EU Member States, Iceland and Norway.

— *Relevance.* The EHIS aims at measuring on a harmonised basis and with a high degree of comparability among EU Member States the health status (including disability), health determinants, and health care services (use and unmet needs) of the EU citizens. The topics included in the questionnaire both answer to policy driven needs and to scientific purposes. Within this framework, the EHIS concentrates on the main elements needed at EU level and does not intend to cover all detailed health aspects which can better be carried out via specific surveys or survey modules at national level, or at EU level when necessary.

— Indicators on unmet needs for medical and dental examination are also collected from the European Survey on Income and Living Conditions (EU-SILC). The differences between the indicators compiled from EHIS and EU-SILC are mainly three: (a) the EHIS survey includes individual questions corresponding to the reasons behind unmet needs in health care are in place, while the EU-SILC survey only asks for the main reason behind unmet needs for medical care are in place; (b) the percentages disseminated from EU-SILC are calculated over the entire population aged 16+, while the percentages from the EHIS are calculated over the population aged 15+ that were in need of health care in the previous 12 months prior to the survey; and (c) the sequence of questions is not the same between the EHIS and EU-SILC and the two surveys differ in terms of their concept and context. Although the yearly availability of the EU-SILC is an advantage, aspects (a) and (b) make it more advisable to use the indicators based on the EHIS survey.

Information of the previous two indicators is shown in Table 2.9. According to the Eurostat-EHIS indicator, in the Spanish case, 15.5% of population who report a health need pointed out foregoing/postponing care because of limited availability, 1.4% due to limited accessibility and 17.2% because of affordability; the EU-27 averages are 19.2%, 3.9% and 16.0%, respectively. Overall, the share of the population reporting unmet needs for health care is 25.7% in Spain and 27.4% in EU-27 (see row (b)).

However, the incidence of financial hardship is lower when one uses the WHO index of catastrophic expenditure (see row (a)): for Spain it was 7.0% (10% threshold) and 1.8% (25% threshold) with data from 2010 (WHO data: WHO and World Bank, Global monitoring report on financial protection in health, 2019) and 3.9% (40% threshold) with data from 2015 (WHO European Region indicators: WHO Regional Office for Europe, 2019).

Table 2.9. Potential indicators of health adequacy: affordability and financial risk protection

	2013	2014	2015	2016	2017	2018
(a) Financial hardship: share of households with catastrophic spending on health (at least 40% of the resources available to a household to pay for health care)						
Spain	-	-	3.9	-	-	-
OECD-25	-	-	5.8	-	-	-
(b) Availability/accessibility/affordability hardship: % of population that has foregone/ postponed health care for financial or non-financial reasons						
Spain	-	25.7	-	-	-	-
EU-27	-	27.4	-	-	-	-

Source: (a) WHO; (b) Eurostat-EHIS.

If one thinks that this element of affordability (or financial risk protection) is relevant to measure health adequacy properly, it could be combined with another one (or with a set of indicators) on the quality of health services, as proposed above. Accordingly, it seems that the one designed by the WHO would be the best choice in this case, given its overall characteristics.

2.5. Education

Education is an area excluded from the existing institutional and academic proposals to measure universality due to its traditional consideration as out of the scope of social protection. However, education is a universal aspiration and a human right, and achieving (quality) education is a desirable goal if we are to advance progress for children and youth around the world. For that, it is critical that learning is recognized as essential for human development. The Education for All (EFA) movement was launched at the World Conference on Education for All

in 1990, with UNESCO as the lead agency, with a global commitment to provide quality basic education for all children, youth and adults. Its Goal 6 called for "improving every aspect of the quality of education and ensuring their excellence so that recognized and measurable learning outcomes are achieved by all, especially in literacy, numeracy and essential life skills."

Moreover, the SDG 4, adopted by the 70th General Assembly of the United Nations in 2015 (the 2030 Agenda for Sustainable Development), is to "ensure inclusive and equitable quality education and promote lifelong learning opportunities for all", thus putting the quality of education and learning outcomes front and centre. Similarly, the first principle of the European Pillar for Social Rights foresees that "everyone has the right to quality and inclusive education, training and life-long learning in order to maintain and acquire skills that enable them to participate fully in society and manage successfully transitions in the labour market". In addition, its principle 11 also defends the right to affordable early childhood education.

Access, participation, and enrolment, which were the focus of the Millennium Development Goals (MDGs) agenda on education, are important, and the world is still far from providing equitable access to high-quality education for all. But participation in education is not an end in itself; what matters for people and for development are the skills acquired through education. It is mainly the competencies that are developed through schooling, rather than the credentials gained, that contribute to people's success in their professional and personal lives, support individual well-being, and strengthen the prosperity of societies. In sum, access and quality, coverage and adequacy, are key elements when it comes to measure universality of learning and education.

Measuring universal learning (especially quality) may be a difficult task. An account of the potential indicators can be found in LMTF (2013). In this sense, PISA data can be used to measure education quality and monitor progress towards the SDG for education. In fact, the United Nations has included PISA data in its global indicator framework (UNESCO Institute for Statistics, 2019; United Nations Statistics Division, 2019). PISA data are used for monitoring progress in the proportion of children and young people who, at the end of lower secondary education, have achieved at least minimum proficiency in reading and mathematics (SDG global indicator 4.1.1c). PISA-based indicators are also used to measure how close countries are to meeting other targets, particularly those related to equity and education for sustainable development.

2.5.1. Coverage

There are several indicators of universality that could potentially address coverage in terms of the share of children and youngsters attending school and getting corresponding degrees. In this domain, a first element that must be considered is that this set of indicators would have to refer to different stages of the educational system and, consequently, to different population groups defined according to their age.

Following this line of reasoning, one would think of the following measures as potential coverage indicators. On the one hand, the share of children attending early childhood education from 3 to the age for starting compulsory primary education, something that would give an idea of access to the education system just before the beginning of the compulsory levels of education ([40]). On the other hand, early school leaving rates may shed light on access to different levels but also on their developing outcomes. Finally, the share of people (of certain age) with tertiary education may serve to measure access to post-compulsory levels of education which for many countries already represent the majority levels of younger age groups.

Additionally, there is another aspect of coverage measurement that should be considered beforehand. This is the issue of public versus private provision. This element was explicit both in the case of pensions but also in the case of health. Throughout the entire study that is being carried out, as well as in the proposal by Muñoz de

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([40]) A previous question is whether childcare from 0-3 belongs to education or to in-kind benefits provided to families as part of social protection accessible to families (to allow parents to work and to reduce poverty). Although the report presents potential indicators for the 0-3 age group in this sub-section, the coverage indicator proposed in chapter 3 does not incorporate any specific sub-indicator for this age group.

Bustillo et al. (2020), the concept of universality of social protection has a focus on public services (services provided by the State either directly or financing private provision by companies).

In the case of education, the measure of universality should also focus as far as possible on public provision (through either public schools or charter schools – State-financed but privately managed schools). Here the problem is what to do with the cases in which the need is provided, fully or partially, by the market. How should we treat those cases? How should we operationalize them into the coverage indicator? The ideal situation would be for the indicators to measure the education that is publicly provided. This would be equivalent to the analysis carried out for pensions (only public pensions and those that are offered privately but are mandatory have been considered) and for health (which include only health services offered either publicly or privately but financed with public money). If that were not the case, the indicators would be measuring the portion of the population that has the need covered irrespective of the system of provision.

Once these two general aspects have been mentioned, we proceed to examine the available data and indicators. Eurostat publishes information based on education administrative data from 2013 onwards. This domain covers statistics and indicators on key aspects of the education systems across Europe. The data show entrants and enrolments in education levels, education personnel, and the cost and type of resources dedicated to education. The standards on international statistics on education and training systems are set by the three international organisations jointly administering the annual UOE data collection: the United Nations Educational, Scientific, and Cultural Organisation Institute for Statistics (UNESCO-UIS), OECD and Eurostat. The main source of data is the joint UIS/OECD/Eurostat (UOE) questionnaires on education statistics, which constitute the core database on education. The following topics are covered: pupils and students – enrolments and entrants; learning mobility; education personnel; education finance; graduates; and language learning.

Data and indicators disseminated include participation rates at different levels of education, shares of pupils and students by programme orientation (general/academic and vocational/professional) and in combined school and work-based programmes, enrolments in public and private institutions, tertiary education graduates, degree mobile students enrolled and graduates, pupil-teacher ratios, foreign language learning, expenditure on education per student and relative GDP.

The statistics refer to education in the school and university system, as defined in the International Standard Classification of Education (ISCED-2011). The basic unit of classification in ISCED 2011 is the educational programme. The UOE data collection covers all organised and sustained learning opportunities for children, youth, and adults, including those with special educational needs, irrespective of the institutions or organisations providing them or the form in which they are delivered. They cover school-based general education and vocational education/training (including combined school- and work-based programmes such as dual system apprenticeship). Exclusively (initial and continuing) work-based training is not included in the statistics. Programmes or studies designated as 'adult education' or 'continuing education' are included only if the content is similar to regular educational programmes or lead to similar potential qualifications. The data collection covers all country's domestic educational activity (i.e. within its own territory). Non-finance education data up to reference year 2012 are based on ISCED-1997, as from the reference year 2013 ISCED-2011 is applied. Education expenditure data use respectively ISCED-1997 until 2011 data, and ISCED-2011 from the reference year 2012. The characteristics of the data are the following:

— It covers EU Member States, United Kingdom, EFTA/EEA countries (Iceland, Liechtenstein, Norway and Switzerland), candidate countries (Albania, North Macedonia, Serbia, and Turkey), as well as OECD Member States situated outside Europe (Australia, Canada, Japan, Korea, Mexico, New Zealand, United States) and other countries (e.g. Israel).

— Data covers mainly the period 1998 onwards.

— Relevance: statistics on education systems based on UOE data collection support monitoring the education participation and outcomes. They provide at EU level detailed results on the pupil/student population, new entrants, graduates, learning mobility, education personnel, language learning and education finance. Numbers of students enrolled, entrants and graduates are collected by age, sex, education level,

programme orientation and completion, type of institution, intensity of participation, field of study, and country of origin. Education finance data are important for monitoring investment in education. UOE data is also used to measure one of the benchmarks which have been set for education in EU 2020 Strategy: at least 95% of children (from 4 to compulsory primary school age) should participate in early childhood education.

Based on this information, the Eurostat database contains a set of indicators included under the label "Education and training (educ)" à "Participation in education and training (educ_part)" à "Pupils and students – enrolments (educ_uoe_enr)". Here, one can find information on "Early childhood education and primary education (educ_uoe_enrp)", "Lower secondary, upper secondary and post-secondary non-tertiary education (educ_uoe_enrs)", "Tertiary education (educ_uoe_enrt)", and "All education levels (educ_uoe_enra)". Among the available indicators, we highlight the following as potential indicators of coverage regarding the initial stage of the education system:

⎯ Students' participation at the end of compulsory education – as % of the corresponding age population (educ_uoe_enra09).

⎯ Pupils from age 3 to the starting age of compulsory education at primary level – as % of the corresponding age population, by sex (educ_uoe_enra21), also available by NUTS2 regions (variable educ_uoe_enra22).

⎯ Pupils from age 4 to the starting age of compulsory education at primary level – as % of the corresponding age population, by sex (educ_uoe_enra10), also available by NUTS2 regions (variable educ_uoe_enra17).

⎯ Pupils from age 5 to the starting age of compulsory education at primary level – as % of the corresponding age population, by sex (educ_uoe_enra18).

For these indicators, it is worth noting the following:

⎯ Available for all EU Member States, the United Kingdom, Iceland, Liechtenstein, Norway, and Switzerland.

⎯ The reference period is the calendar year, the indicator is updated annually, and time series start in 1998 (indicator on pupils from age 4 onwards by sex) or 2013 (rest of indicators).

Table 2.10. Potential indicators of early childhood education coverage, as % of corresponding age population (at moment t) (Spain)

	2013	2014	2015	2016	2017	2018
Students' participation at the end of compulsory education						
Spain	95.5	96.7	95.4	95.8	96.0	95.7
EU-27	-	-	-	-	94.3	94.4
Pupils from age 3 to the starting age of compulsory education at primary level						
Spain	96.6	96.7	96.8	96.9	97.1	97.5
EU-27	91.8	91.2	91.8	92.4	92.5	92.2
Pupils from age 4 to the starting age of compulsory education at primary level						
Spain	97.1	97.1	97.7	97.3	97.4	98.0
EU-27	93.9	93.9	94.5	94.9	94.9	94.8
Pupils from age 5 to the starting age of compulsory education at primary level						
Spain	97.5	97.1	97.9	98.1	97.1	98.4
EU-27	96.2	96.0	96.1	96.3	96.2	96.4

Source: Eurostat.

Table 2.10 provides information of these potential indicators of coverage at early childhood education from age 3 to 5 in Spain and the EU-27 for the period 2013-2018. In the Spanish case, 97-98% of total children of the corresponding age attend education from age 3/4/5 to the starting age of compulsory education at primary level. This translates into a figure of around 96% of the corresponding age population (computed at moment t) participating in education at the end of compulsory education. The figures for Spain are somewhat higher than the EU average.

On the other hand, Eurostat publishes a scoreboard of the indicators supporting the EPSR for all EU Member States and three of them could be used as coverage indicators.

Children aged less than 3 years in formal childcare – as % of the corresponding age population (tepsr_sp210). This indicator shows the percentage of children (under 3 years old) cared for by formal arrangements other than by the family, calculated from EU-SILC data.

— Available for all EU Member States plus United Kingdom, Iceland, Norway, Switzerland, North Macedonia, and Serbia.

— Reference period is the calendar year, the indicator is updated annually, and time series start in 2005.

— Additional breakdowns are available in EU monitoring frameworks, including one based on intensity of care (part-time/full-time) in the Joint Assessment Framework, and the gap between children from 1st and 5th income quintile attending early childcare education and care (less than 3 years) in the new benchmarking framework for children and support to children.

Early leavers from education and training – as % of population 18-24 (sdg_04_10). The indicator measures the share of the population aged 18-24 with lower secondary education at most who were not involved in any education or training during the four weeks preceding the survey. Lower secondary education refers to ISCED-2011 level 0-2 for data from 2014 onwards and to ISCED-1997 level 0-3C short for data up to 2013 (i.e. early childhood education, primary education or lower secondary education). Data stem from EU-LFS.

— This indicator can be broken down by gender, is accessible by region (NUTS2 level) and degree of urbanisation.

— Available for all EU Member States, the United Kingdom, Iceland, Norway, Switzerland, Montenegro, North Macedonia, Serbia, and Turkey.

— The reference period is the calendar year, the indicator is updated annually in April, and time series start in 2000.

— The indicator is linked to other datasets, such as:

  • EU Sustainable Development Goals (SDG), used to monitor progress towards SDG 4 on ensuring inclusive and quality education for all and SDG 5 on gender equality. SDG 4 seeks to ensure people have access to equitable and quality education through all stages of life, from early childhood education and care, through primary and secondary schooling, to technical, vocational training and tertiary education. SDG 5 aims at achieving gender equality by, among other things, ending all forms of discrimination, violence, and any harmful practices against women and girls in the public and private spheres.

  • EU 2020 Strategy, used to monitor progress towards the EU's target of 'reducing the share of early leavers of education and training to less than 10%' by 2020.

  • Impact indicators for Strategic Plan 2016-2020, referring to the 10 Commission priorities and included as main indicator in the Social Scoreboard for the EPSR.

— *Relevance*. Education and training lie at the heart of the Europe 2020 Strategy and are seen as key drivers for growth and jobs. The EU has defined upper secondary education as the minimum desirable educational attainment level for EU citizens. The skills and competences gained in upper secondary education are considered essential for successful entry into the labour market and as the foundation for lifelong learning. All girls and boys should therefore have not only access to primary and secondary education but also to be able to complete their schooling, because leaving school early has a big impact on people's lives. People with a low level of education may not only face greater difficulties in the labour market but also have a higher risk of poverty and social exclusion. At the same time, education and training help boost productivity, innovation, and competitiveness.

Tertiary education attainment – as % of population 30-34 (sdg_04_20). The indicator measures the share of the population aged 30-34 who have successfully completed tertiary studies (e.g. university, higher technical

institution, etc.). This educational attainment refers to ISCED-2011 level 5-8 for data from 2014 onwards and to ISCED-1997 level 5-6 for data up to 2013 (i.e. short-cycle tertiary education; Bachelor's or equivalent level; Master's or equivalent level; or Doctoral or equivalent level). The indicator is based on EU-LFS data.

— This indicator can be broken down by gender and is also accessible by region (NUTS2 level) and degree of urbanisation.

— Available for all EU Member States, the United Kingdom, Iceland, Norway, Switzerland, Montenegro, North Macedonia, Serbia, and Turkey.

— The reference period is the calendar year, the indicator is updated annually in April, and time series start in 2000.

— The indicator is linked to other datasets, such as:

- EU Sustainable Development Goals (SDG), used to monitor progress towards SDG 4 on ensuring inclusive and quality education for all and SDG 5 on gender equality.

- EU 2020 Strategy, used to monitor progress towards the EU's target of 'increasing the share of the population aged 30 to 34 having completed tertiary or equivalent education to at least 40%' by 2020.

- Impact indicators for Strategic Plan 2016-2020, included in the Social Scoreboard for the European Pillar of Social Rights.

— *Relevance*. The same as the previous indicator ('Early leavers from education and training as % of population 18-24').

Table 2.11 offers information on the above-mentioned potential indicators of education coverage. In Spain, more than half of children up to 3 years of age were in formal childcare in 2019. This share has increased over the years, from 35% in 2013. At the same time, the proportion of early leavers from education and training in the population aged 18-24 has decreased from nearly 24% in 2013 to 17.3% in 2019. Finally, the share of young adults aged 30-34 years of age who have attained a tertiary education degree remained at figures above 40%, with a slight reduction in 2013-2016 and an increase thereafter.

Table 2.11. Other potential indicators of education coverage at various educational stages

	2013	2014	2015	2016	2017	2018	2019
(a) Children in formal childcare (% of population 0-3)							
Spain	35.0	36.9	39.7	39.3	45.8	50.5	57.4
EU-27	27.2	28.3	30.2	33.7	34.5	34.7	35.2
(b) Early leavers from education and training (% of population 18-24)							
Spain	23.6	21.9	20.0	19.0	18.3	17.9	17.3
EU-27	11.8	11.1	11.0	10.6	10.5	10.5	10.2
(c) Tertiary education attainment (% of population 30-34)							
Spain	42.3	42.3	40.9	40.1	41.2	42.4	44.7
EU-27	35.6	36.5	37.3	37.8	38.6	39.4	40.3

Source: (a) EU-SILC, (b)-(c) EU-LFS.

These variables could be used to create a consistent indicator of coverage that takes account of the various educational stages. The first one has several disadvantages though. The most obvious one is that parents may use other ways of caring children different from those provided publicly by the market or families themselves. The institutional framework matters a lot in this area. In order to use this variable as a coverage indicator, there should be a mandate establishing compulsory schooling for children under the age of three.

On the other hand, the second variable can be used to construct an indicator of coverage measured as "100 - % early leavers from education and training in population 18-24", indicating the proportion of young people who have remained in the formal system of education at least until they have reached the secondary level.

Finally, the third variable can also be used as a complementary indicator of coverage, if one considers that, at least in Western countries, access to primary and lower secondary education is almost universal and that allowing the access to tertiary education to as many people as possible and attaining a large share of population with tertiary education are desirable goals to be reached.

2.5.2. Adequacy

Adequacy in terms of universality of education should be understood as the acquisitions of the required knowledge. Measuring learning outcomes is a crucial step in ensuring that every child is able to realize their right to good-quality education and become a productive global citizen, so that education means learning, not just schooling, i.e. education should be understood not only as access but access *plus* learning, as stated by LMTF (2013). The recommendations of this group under the heading of "a global framework for measuring learning" established six areas of measurement to fill the data gap on learning. Four of them tried to capture demonstrable learning outcomes, and two of these were related to "the ability to read a variety of texts" and "the ability to use numbers and apply this knowledge to real-life situations". The report recommended the use of internationally comparable assessments on these areas.

In this domain, qualitative indicators would have to be used combining results in terms of literacy, mathematics, etc., and their distribution among students, to address the issue of homogeneity of the service provided. This would be in line with the notion that a focus on learning must include a concomitant focus on equality, with particular attention to inequality within countries. Thus, measures of access and learning at any level should reveal information about aggregate measures of overall conditions (enrolment, achievement), as well as disparities between student sub-populations (LMTF, 2013).

In this context, the global indicator for the SDG target 4.1 is a measure of the "proportion of children and young people [at different stages of their education career] achieving at least a minimum proficiency level in (i) reading and (ii) mathematics, by sex". PISA provides both a way of defining what "minimum proficiency level" means, through its described scale of proficiency, and a way of measuring this proportion, in an internationally comparable manner, amongst students who are close to the end of lower secondary education (or have recently completed lower secondary education). The UNESCO-led Technical Co-operation Group (TCG) on the Indicators for SDG 4 has officially recognised PISA as a source of data for this global indicator.

Thus, based on the information on the percentage of low achievers in reading and mathematics provided by the PISA survey, it is possible to construct an indicator on education adequacy as the share of 15-year-old students achieving at level 2 or above in reading and mathematics (and maybe science). That would translate as the proportion of children who reach minimum levels of proficiency in core subjects by the end of lower secondary education. Therefore, PISA measures the **underachieving of 15-year-old students by sex and field (% of population aged 15)** (educ_outc_pisa) ([41]). The indicators are based on the PISA Survey carried out by the OECD.

— These indicators can be broken down by gender.

— Available for all EU Member States, the United Kingdom, Iceland, Norway, Switzerland, Montenegro, North Macedonia, Albania, Serbia, Turkey, Russia, the United States, Japan and South Korea.

— The reference period is the calendar year. The indicators are available from 2000 ('Reading'), 2003 ('Mathematics') and 2006 ('Science') onwards, every three years.

— Relevance. Achieving a minimum in reading and mathematics, at least, is essential. As established by the EFA Goal 6, the quality of education should ensure learning outcomes for all, especially in literacy, numeracy and essential life skills.

([41]) There are three indicators measuring the share of students who are low achievers in 'Reading' (below Level 2: less than 407.47 score points), 'Mathematics' (below Level 2: less than 420.07 score points) and 'Science' (below Level 2: less than 409.54 score points).

Regarding the issue of the homogeneity of the provided education, SDG target 4.5 is dedicated to equity: "By 2030, eliminate gender disparities in education and ensure equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous peoples and children in vulnerable situations". This target is crosscutting by nature and encompasses all types of inequality across all education outcomes. The TCG on indicators for SDG 4 identifies "parity indices" as the main measure to be used in monitoring inequalities. Amongst the many dimensions of inequality and vulnerability identified for Indicator 4.5.1, PISA can help monitor gender disparities and inequalities related to family resources, through statistics based on the PISA index of economic, social and cultural status. The OECD provides a wide set of indicators on within-country inequalities in learning outcomes, and on the fairness and inclusiveness of education systems (see OECD, 2019b) ([42]).

As a matter of illustration, one may use an indicator of socio-economic inequality in minimum proficiency. This indicator, called the parity index, compares the share of 15-year-old students who reached at least 'Level 2' performance across two groups of students that differ in some background characteristic. In this case, the attribute are the socio-economic resources of the family they belong to: "socio-economically advantaged students" are students in the top quarter of the PISA index of economic, social and cultural status (ESCS) in their own country/economy, while "socio-economically disadvantaged students" are students in the bottom quarter of the PISA index of economic, social and cultural status (ESCS) in their own country/economy.

The calculated parity index varies between 0 and 2. It is equal to 1 if the share of 15-year-old students scoring above minimum levels is the same for both groups (no disparity). For example, if the share of disadvantaged students scoring above 'Level 2' is 30%, and the share of advantaged students is 60%, the socio-economic parity index is 0.5 (30%/60%). Values close to 1 indicate either a small percentage-point difference between the two shares or, for a given percentage-point difference, a higher average share. In other words, the parity index is sensitive both to differences in performance and to overall levels of performance. The indicator is as follows.

Socio-economic disparities in minimum achievement: parity index for disadvantaged students, compared to advantaged students (OECD, PISA 2018 Database, Table I.B1.50). The indicator compares the share of 15-year-old students who reached at least 'Level 2' performance across two groups of students that differ in the socio-economic background of the families they belong to. The indicator is based on the PISA Survey carried out by the OECD. Its characteristics are the following:

— Available for all OECD countries States plus partner countries.

— Reference period is the calendar year.

— Only available for 2018 so far.

Table 2.12 offers information on PISA measures. On the one hand, the proportion of underachievers is higher (about 4-6 percentage points in most years) in mathematics than in reading and science. This happens for Spain and the OECD average. Furthermore, this share has decreased for reading (in 2009-2015), mathematics (in 2009-2015) and science (in 2006-2012) but has subsequently increased, similar to what happened for the OECD average.

Table 2.12. Potential indicators of education adequacy

	2003	2006	2009	2012	2015	2018
% of low achievers						
Spain - Reading	-	-	19.6	18.3	16.2	-
Spain - Mathematics	23.0	24.7	23.7	23.6	22.2	24.7
Spain - Science	-	19.6	18.2	15.7	18.3	21.3
OECD-35 - Reading	-	-	19.4	18.9	20.9	22.6

([42]) An additional source of information on education and equity is the report "Equity in School Education in Europe: Structures, Policies and Student Performance" published by European Commission/EACEA/Eurydice. Available at https://eacea.ec.europa.eu/national-policies/eurydice/sites/default/files/equity_2020_0.pdf.

OECD-36 - Mathematics	-	23.9	23.5	24.5	24.7	24.1
OECD-36 - Science	-	21.0	18.8	18.7	22.1	22.0
Parity index: socio-economic disparities in minimum achievement (parity index for disadvantaged students. compared to advantaged students)						
Spain - Reading	-	-	-	-	-	0.73
Spain - Mathematics	-	-	-	-	-	0.68
OECD - Reading	-	-	-	-	-	0.72
OECD - Mathematics	-	-	-	-	-	0.68

Source: OECD–PISA Survey.

On the other hand, the parity index for reading and mathematics is below the value 1, which means that the share of low achievers among socio-economic disadvantaged students is higher compared to socio-economic advantaged students. Moreover, this index is lower for mathematics than for reading, suggesting that the effect of socio-economic disparities is greater in the first domain than in the second.

2.6. Housing

Though widely recognized throughout international human rights law, few universal rights are enjoyed less universality than housing rights (Leckie, 1999, 2000). Despite this, international organizations call the governments for an effective housing policy to ensure access to decent, adequate, affordable and healthy housing for all, as demanded by the UN Sustainable Development Goals by 2030, the Geneva UN Charter for Sustainable Housing (2015) and the Urban Agenda for the EU Housing Partnership. In this sense, the UN demands to increase affordable housing and make settlements inclusive, safe and sustainable, and the European Commission has also reinforced a call to action for policy makers and housing providers in early 2020 to improve the building stock quality particularly for social housing as part of its European Green Deal. In addition, the European Union has proclaimed the right to housing and assistance to the homeless as a key social right in the EPRS. As announced in the Action Plan for the EPRS, EU institutions and bodies, Member States, social partners and civil society organisation jointly launched in June 2021 the 'European Platform on Combatting Homelessness', to strengthen the collaboration of actors active in the fight against this form of social exclusion (43).

These demands have been amplified by COVID-19. These policy goals and guidance, in the context of the pandemic, highlight not only our global connections but also the vital importance of urban and housing policy in promoting decent housing and liveable cities. The pandemic has impacted differently on people's lives and well-being and shown that not everyone has access to a safe, secure and affordable home or is able to live, work, learn and play in a well-resourced neighbourhood. For this reason, housing and urban policy should remain firmly on all governments' agenda throughout and beyond the next decade.

2.6.1. Coverage

As pointed out by Doyal and Gough (1991) and Gough (2003), a *protective* housing is one of the intermediate needs required for a person to be physically healthy and autonomous, in addition to access to nutritional food and clean water, a non-hazardous work and physical environment, and appropriate health care. Furthermore, the EPSR acknowledges the right to social protection, including some principles in relation to the housing branch and the need of assistance for the homeless. In particular, the EPSR clearly establishes that access to social housing or housing assistance of good quality shall be provided for those in need; vulnerable people have the right to appropriate assistance and protection against forced eviction; and adequate shelter and services shall be provided to the homeless to promote their social inclusion. Thus, the EPSR sets a high level of ambition in

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(43) National ministers as well as representatives of EU institutions, civil society organisations, social partners and cities signed the Lisbon Declaration launching the platform (European platform to combat homelessness launched - Employment, Social Affairs & Inclusion - European Commission (europa.eu). One of the work strands of these platform will be to develop monitoring tools and indicators on homelessness.

requiring the universality of protection, especially in the housing dimension, but it lacks specificity about the way the existing welfare systems can make these rights effective.

In this context, housing coverage would refer to housing as a basic need, not so much about the universality of the policy per se. In this sense, it would be necessary to have an indicator of housing policy coverage that could restrict itself to public provision or combines public and private provision. The latter would amount to the opposite of homelessness, i.e. how many people have access to a home. Furthermore, another important issue is to define housing provision. Implicit in using homelessness as negative proxy is the idea that we are measuring the provision of housing in the broadest term. But one can also think about specific housing support policies (such as access to public or subsidised houses – bought or rented – or tax benefits for buying or renting houses) that facilitate the availability of housing services to individuals and households.

Despite the relevance of having a house or apartment for individual wellbeing, housing is probably the area of social policy more devoid of indicators of coverage. An intensive search for proposals or actual indicators addressed to measure to what extent housing is subject to universal interventions in Welfare States has yielded limited results. As said before, potential indicators of universality for this area of intervention could include not only data on homelessness but also measures of public/private provision and housing support policies.

Following this line of reasoning, one indicator of housing coverage could be based on the information about **homelessness**. As pointed out previously, homelessness has moved up on the policy agenda over the past decade, as highlighted by the adoption of the EPSR (European Commission, 2017; OECD, 2020a) and the launch of the 'European Platform on Combatting Homelessness'. It would capture the notion that everyone with access to a home has their housing needs covered, regardless of housing being provided by the state or privately, or of accessing conditions. It can be calculated as follows: '100 – homeless as % of total population', the latter being available in the OECD database. The characteristics of the data are the following:

— Available for all OECD countries.

— Reference period is the calendar year, but the indicator is not updated periodically as time series do not exist.

— *Caveats*. Homelessness is difficult to measure and even harder to compare across countries. There is no common definition of homelessness, and countries' data collection efforts differ in their method, scope, and frequency. Most surveys do not capture homelessness by definition, because they tend to sample explicitly people living in private households. Moreover, there may be situations of hidden homelessness ([44]). However, other tools have been developed in recent years to count homelessness at local level (for instance, point-in-time city counts). It should also be noted that many stakeholders have already been using the ETHOS (European Typology of Homelessness and housing exclusion) typology developed by FEANTSA (the European Federation of National Organisations Working with the Homeless). ETHOS categories intend to cover all living situations which amount to forms of homelessness across Europe:

- Rooflessness (without a shelter of any kind, sleeping rough).

- Houselessness (with a place to sleep but temporarily in institutions or shelter).

- Living in insecure housing (threatened with severe exclusion due to insecure tenancies, eviction, domestic violence).

- Living in inadequate housing (in caravans on illegal campsites, in unfit housing, in extreme overcrowding).

([44]) These situations could be measured for some countries (the ones that implemented the optional variables) using the EU-SILC 'Optional module on housing difficulties' in 2018 (variable PHD01T − Past experience of housing difficulties). The data indicates that in Spain 98.4% of the population did not experience those difficulties (which would have implied staying with friends and relatives temporarily, staying in emergence or other temporary accommodation, staying in place as not intended as a permanent home, or 'sleeping rough' or sleeping in public space).

Another approach is to consider that in this domain the aim of public programmes is to help individuals and households access a house (without financial hardship) and/or fight poverty risk. In this context, one possibility consists of computing the public provision of dwellings. The OECD provides information on social housing. It is defined as residential rental accommodation provided at sub-market prices that is targeted and allocated according to specific rules, such as identified need or waiting lists (OECD, 2020b). Depending on the countries, it may be referred to as social or subsidised housing, public housing, council housing or general housing, among others. In some countries, social housing comes in multiple forms: provided alongside municipal housing; with council housing coexisting with social housing; etc. According to the OECD, social housing represents more than 28 million dwellings and accounts on average for around 6.9% of the total housing stock in the OECD countries. Therefore, the indicator would be the **share of social rental dwellings in relation to the total housing stock** (indicator PH4.2.1) with the following characteristics:

⸺ Available for all OECD countries.

⸺ Reference period is the calendar year, but available only every several years.

⸺ *Caveats*. The delimitation of what is social housing is difficult. Most, but not all, countries have a social housing sector, though the definition of social housing, as well as the size of the sector, varies considerably across countries. Several OECD and EU countries do not have a social rental housing stock according to the definition of this indicator. Furthermore, it can be difficult to distinguish between social housing and other types of housing tenure in some countries. Such variation in systems and definitions render cross-national comparison of social housing a challenge. In addition, data limitations in the measurement of social housing across countries result in limited country coverage for some dimensions of the sector.

⸺ *Data source*. OECD Questionnaire on Social and Affordable Housing (QuASH), various years (40 countries responded to all or part of the QuASH-2019, while 35 countries responded to all or part of the QuASH-2016).

Social housing can be distinguished from the more encompassing term, affordable housing, which refers to rental and owner-occupied dwellings that are made more affordable to households through a broad range of supply- and demand-side supports (including housing allowances or vouchers, subsidies or tax relief to first-time homeowners). The range of measures at governments' disposal to make housing more affordable is analysed in OECD (2020a). In this regard, housing allowances (the housing function of social policy) refers to interventions by public authorities to help households meet the cost of housing, being geared towards low-income households in nearly all countries. The OECD calculates the **share of households receiving housing allowance by quintiles of the disposable income distribution** (indicator PH3.3.1). For most countries, those households concentrate on the bottom and second quintile of the earnings distribution, although there are some exceptions. Nevertheless, although this measure is calculated for other points of the income distribution, it seems reasonable to think on the share of households in the bottom quintile of the earnings distribution that receive a housing allowance as a potential housing coverage indicator. The characteristics of this data is the following:

⸺ The indicator measures the coverage and generosity of housing allowances based on survey data and OECD tax-benefit microsimulation models (OECD, 2021a). Survey data show which households benefit from housing allowances (by income quintile and by tenure). Results from OECD tax-benefit microsimulation models, by contrast, show how the payment rates of housing allowances vary with household income, averaging across different family types.

⸺ The first part of the indicator is calculated using the European Survey on Income and Living Conditions (EU-SILC) for European countries. Housing allowances include rent benefits and benefits to owner-occupiers. Only means-tested housing allowances that help covering the cost of housing are considered.

⸺ The second part uses the OECD tax-benefit models. They calculate tax burdens, benefit entitlements and net incomes for a range of labour market and household situations. Also, they simulate assessments of different households' tax liabilities and benefit entitlements using a detailed representation of relevant policy rules and parameters (including tax rates, benefit eligibility criteria, and rules determining the

interaction of relevant policy areas, such as whether some benefits are taxable or not) ([45]). Regarding rent allowances, OECD tax-benefit models assume that rental costs amount to 20% of gross earnings ([46]).

— The results in this indicator show benefit generosity for four common family types that are more likely to be eligible for a rent allowance than dual-earner households: (1) single person; (2) single parent with two children (aged 4 and 6); (3) one-earner couple; and (4) one-earner couple with two children (aged 4 and 6).

— Available for all EU Member States.

— Reference period is the calendar year, updated annually, starting from 2005.

— *Data source*. OECD calculations based on the EU-SILC.

Table 2.13 provides information on the potential indicators of housing coverage presented above. Firstly, according to the measure on homelessness, since 0.05% of the population suffers from it (data from 2012), housing coverage in Spain would be 99.95. This figure is likely to be overestimated, due to the limitations in counting homelessness discussed above. For nearly all OECD countries, the share of total population who is homeless (in 2019 or latest year available) is below 0.50%. Secondly, Spain is among the countries where the social housing stock is smallest, accounting for less than 2% of the total housing stock (1.1% with data from 2019). Accounting for over 20% of the total housing stock, the sector is largest in Austria, Denmark, and the Netherlands. The EU average is 7.5%. Thirdly, less than 3% of households in the bottom quintile of the income distribution report receiving a housing allowance in Spain. By contrast, this share is above 40% in Denmark, Finland, Ireland, France, and the Netherlands.

Table 2.13. Potential indicators of housing coverage (Spain)

	2013	2014	2015	2016	2017	2018	2019
Homeless people (% of total population)	0.05	-	-	-	-	-	-
Social rental dwellings (% of total number of dwellings)	-	-	-	-	-	-	1.13
Share of households receiving housing allowance (%, bottom quintile of the disposable income distribution)	1.9	1.8	1.5	1.0	3.5	3.0	2.8

Source: OECD.

Unfortunately, these figures do not give a full picture of what is the coverage of housing services from the point of view of social protection. On the one hand, the indicator of homelessness only considers the fact that almost the entire population has a home, but not if people have required public provision or public aid (allowances, tax benefits) to gain access to housing (bought or rented). On the other hand, what is the best denominator for the coverage rate of public housing provision? An unconditional approach would require taking the total population, but very low figures of this rate may not necessarily be reflecting low coverage if it turns out that the population does not require social housing because, for example, the market is able to cover the need for housing services adequately.

Perhaps it would be more appropriate for the denominator to include only those people or households that need housing support policies to access decent housing. However, this approach introduces an element of conditionality in the coverage rate. If one follows this line of action, the most appropriate indicator could be the one that relates housing allowance to the 20% of the population that has fewer resources (bottom quintile). However, this indicator also has limitations since it only incorporates one of the possible public interventions (the recipiency of housing allowance) in the field of housing. It would therefore have to incorporate other interventions, such as the provision of social housing, to be a more complete indicator.

([45])   On the tax side, simulated payments include income taxes and mandatory contributions to public or private social insurance schemes. On the benefit side, calculations account for all cash transfers that are typically available to able-bodied working-age individuals and their families: unemployment benefits, social assistance, rent allowances, other minimum-income benefits, family benefits and in-work transfers.

([46])   For more details on the various assumptions made in the OECD Tax-Benefit models, see https://www.oecd.org/els/soc/methodology.pdf.

2.6.2. Adequacy

Potential indicators on housing adequacy should take account of the problems associated with the quality of dwellings or the financial difficulties in accessing them. In fact, these appear to be important aspects when it comes to measuring the universality of social protection and, in particular, housing adequacy, especially if one views housing policy as a service, in the same way as of health or education. This is so because the quality and cost of housing are generally understood as key determinants of living standards and wellbeing, especially for the disadvantaged people. Therefore, affordability indexes, overcrowding, under-housing indicators (related to having inadequate or poor housing) and the like should be considered in this domain.

Different factors influence the quality of housing, and some households face a multiple set of shortcomings in their dwelling. Too little space may coincide with lack of basic sanitary facilities, a leaking roof, darkness in the dwelling, and/or other housing quality issues. In its extreme form, housing deprivation becomes homelessness. Potential areas of housing quality to be considered are, thus, overcrowding, deprivation and affordability. Let us consider each of them below.

One of the key dimensions in assessing the quality of housing is the availability of sufficient space in a dwelling. The **overcrowding rate** describes the proportion of people living in an overcrowded dwelling, as defined by the number of rooms available to the household, the household's size, as well as its members' ages and their family (Eurostat, 2016a). The OECD's overcrowding rate adopts the EU-agreed definition, which considers different needs for living space according to the age and gender composition of the household (OECD, 2021b). A household is considered as living in overcrowded conditions if less than one room is available in each household for each couple in the household, for each single person aged 18+, for each pair of people of the same gender aged 12-17, for each single person aged 12-17 not included in the previous category, and for each pair of children under 12. Data comes from the EU-SILC survey and have the following characteristics:

— Can be broken down by sex, age and poverty status.

— Available for all EU Member States, the United Kingdom, Iceland, Norway, Switzerland, Montenegro, North Macedonia, Serbia, and Turkey.

— Reference period is the calendar year, updated annually, starting from 2005.

Housing deprivation in one or more dimensions is more likely to occur among the poor population and is associated with poorer labour market, health, and wellbeing outcomes (see Eurofound, 2016, Tunstall et al., 2013). No agreed definition of (severe) housing deprivation exists across countries. In the United Kingdom, barriers to housing, including housing affordability and homelessness are part of the "Index of Multiple Deprivation" (Department of Communities and Local Governments, 2015). Meanwhile, Eurostat defines **severe housing deprivation** as the simultaneous occurrence of overcrowding together with leaking roof, no bath/shower and/or no indoor toilet, and/or a dwelling considered too dark (Eurostat, 2016b). The severe housing deprivation *rate* is defined as the percentage of population deprived of:

— Leaking roof, damp walls/floors/foundation, or rot window frames or floor;

— Or lack of bath or shower;

— Or lack of indoor flushing toilet for sole use of the household;

— Or problems with the dwelling: too dark, not enough light;

— Combined with the percentage of population living in overcrowded dwellings.

These measures are based on the EU-SILC survey with the following characteristics:

— Can be broken down by sex, age, and poverty status.

— Available for all EU Member States, the United Kingdom, Iceland, Norway, Switzerland, Montenegro, North Macedonia, Serbia, and Turkey.

— Reference period is the calendar year, updated annually, starting from 2005.

Housing affordability is also relevant when considering the access of households to adequate accommodation. In this respect, we can consider two possible indicators. According to the OECD, *affordability refers to the housing expenditure as share of final consumption expenditure of households.* Housing costs include rent (including imputed rentals from owner-occupiers, i.e. the rent a house owner or tenant would be willing to pay to live in their own house) and maintenance (expenditure on the repair of the dwelling, including miscellaneous services, water supply, electricity, gas and other fuels, as well as expenditure on furniture, furnishings, household equipment, and goods and services for routine home maintenance). Data comes from a breakdown of OECD's "final consumption expenditure of households" series. The characteristics of the data are the following:

— Available for all OECD countries.

— Reference period is the calendar year, updated annually, starting from 1995.

As measured by Eurostat's EU-SILC, housing cost overburden refers to the share of households in the bottom 40% of the income distribution devoting more than 40% of their disposable income to housing costs. Housing costs include actual rents and mortgage costs (both principal repayment and mortgage interest). In contrast to the housing affordability measure sourced from National Accounts, no imputed rentals for owner-occupied homes are included. The characteristics of the data are as follows:

— Can be broken down by tenure status.

— Available for all EU Member States, the United Kingdom, Iceland, Norway, Switzerland, Montenegro, North Macedonia, Serbia, and Turkey.

— Reference period is the calendar year, updated annually, starting from 2005.

Table 2.14 provides information on the previous indicators of housing adequacy. The overcrowding rate (row (a)) is quite low in Spain when compared to the European Union average: it has fluctuated around 5.5% in Spain in recent years, compared to figures of 17-18% in the EU. The same happens with the severe deprivation rate (row (b)): it has moved around 1.5% in Spain (1.7% in 2019), while the EU average has been falling from 5.5% in 2013 to 4% in 2019. Finally, the affordability indicators offer more similar figures for Spain and the EU average, although in the case of the Eurostat rate (row (d)) Spain is below the EU average (8.5% versus 9.4% in 2019), while in the case of the OECD rate (row (c)) the opposite is the case for most of the period examined. Nevertheless, both affordability indicators show a decreasing trend throughout the 2013-2019 period.

Table 2.14. Potential indicators of housing adequacy

	2013	2014	2015	2016	2017	2018	2019
(a) Overcrowding rate							
Spain	5.2	5.3	5.5	5.4	5.1	4.7	5.9
EU-27	16.8	18.1	18.1	17.9	17.5	17.1	17.2
(b) Severe deprivation rate							
Spain	1.8	1.7	1.5	1.7	1.0	1.5	1.7
EU-27	5.5	5.4	5.3	5.1	4.5	4.3	4.0
(c) Affordability							
Spain	24.4	24.0	23.2	22.6	22.0	21.9	22.0
EU-27	22.9	22.6	22.5	22.3	22.2	21.9	22.0
(d) Housing cost overburden rate							
Spain	10.3	10.9	10.3	10.2	9.8	8.9	8.5
EU-27	11.6	11.5	11.2	10.9	10.1	9.6	9.4

Source: (a), (b), (d) Eurostat; (c) OECD.

3. A synthetic index of universal social protection

In the previous section, we have reviewed the indicators that can be used to measure the coverage and adequacy of social programmes. In some areas, no proper indicators are available, so these must be calculated either using various statistics near at hand or as a composite of several other variables. In this section, we take a step further. Firstly, we provide the complete structure and contents of the system of indicators of universality of social protection, proposing one (or more) indicators for coverage and adequacy in each domain and measuring them for Spain. Secondly, we aggregate the measures of universality of the different dimensions of social protection into a single, synthetic index.

3.1. System of indicators

Table 3.1 provides a summary of the set of indicators we propose to measure universality in social protection using Spain as a pilot case. They all are derived from the data provided in the previous section. It is worth mentioning that we have followed a process of standardisation of measures. The concept of coverage itself facilitates standardisation because it is similar across different areas of social protection: coverage refers to the portion of the potentially coverable population that receives the benefit or service. However, the standardisation of adequacy indicators is problematic because it is a qualitative concept depending on the specific area of social protection being measured. Although easier to implement for cash benefits (pensions, UB), for which the "minimum" (or reference) level they want to protect can be more or less easily assigned (in relation to previous earnings, for instance), the standardization process is more difficult when it comes to measuring the adequacy of the provision of services (health, education, housing). Nevertheless, we have tried to follow the same criterion for standardising all measures of adequacy: the use of measures of actual levels achieved in comparison to the level (of income or service) that each social programme tries to protect in order to define a standard 0-100 measure. In the following sub-sections, we explain the proposal for measurement and each of the indicators in detail.

Table 3.1. Indicators for the measurement of the degree of universal social protection

Area	Universe	Coverage		Adequacy	
		Indicators	**Sub-indicators**	**Indicators**	**Sub-indicators**
1. Unempl. benefits (UB)	Unemployed population	1.1. UB recipients as percentage of statistical unemployment (Eurostat)		2.1. Net replacement rate, average of durations (short-, long- and very long-term) for an individual with 67% of AW in previous work (OECD/EU databases)	
2. Old-age pensions	People over retirement age	1.2. Beneficiaries of old-age and survivors' pensions as % population aged 65+ (Eurostat)		2.2. Aggregate replacement ratio for pensions (Eurostat)	
3. Social assistance/ Family benefits	Population at risk of poverty before social assistance	1.3. Recipients as % of population at risk of poverty (OECD/Eurostat)		2.3. Adequacy of guaranteed minimum income benefits (OECD)	
4. Health	Total population	1.4. Service coverage index (WHO)		2.4. Aggregate adequacy rate, based on a set of 8 sub-indicators: 7 on health interventions (OECD) and 1 on financial hardship (WHO)	2.4.1. Safe acute care 2.4.2. Avoidable hospitals admissions 2.4.3. Mortality after stroke/heart disease 2.4.4. Hip and knee surgery 2.4.5. Cancer survival rates 2.4.6. Vaccinations 2.4.7. Care for people with mental health disorders 2.4.8. Lack of financial hardship (100 - % of population with catastrophic spending on health)
5. Education	Total population segmented by age	1.5: Aggregate index of coverage (average of 1.5.1, 1.5.2, 1.5.3)	1.5.1: % of population aged 4 at school (Eurostat) 1.5.2. % of population 18-24 with complete secondary education (Eurostat) 1.5.3. % of population 30-34 with tertiary education (Eurostat)	2.5a. Aggregate index (average of 2.5.1a/b/c) 2.5b. Adjusted aggregate index (2.5a*2.5.2)	2.5.1a/b/c. % of students in secondary education above minimum achievement in reading/maths/science (OECD) 2.5.2. Parity index by socio-economic background (OECD)
6. Housing	Total population	1.6. Adjusted coverage rate ((100 - 1.6.1)* ((1.6.2+1.6.3)/100)))	1.6.1. % homelessness (OECD) 1.6.2. % social rental dwellings (OECD) 1.6.3. % households receiving housing allowance, bottom quintile (OECD)	2.6. Adjusted adequacy rate (100 - 2.6.1 - 2.6.2)	2.6.1. Severe deprivation rate (Eurostat) 2.6.2. Housing cost overburden (Eurostat)

Source: Authors' own elaboration based on the proposal by Muñoz de Bustillo et al. (2020).

3.1.1. Unemployment benefits

Coverage

After reviewing the Eurostat, OECD, and Spanish PES databases, one may think that there are several UB coverage indicators that can be constructed. They all share the same spirit but differ in the type of data they use.

First, the coverage indicator calculated by dividing the UB recipients and the registered unemployed (coming from the OECD dataset). The information conveyed by this indicator is similar to the one supplied by the national sources (54.0% and 58.2%, respectively, in 2018) and is based on administrative data, something that ensures that data on recipiency is correct.

Second, the indicator obtained by combination of the UB recipients as proportion of the labour force (OECD data) and the number of statistical unemployed (as estimated by the LFS / Eurostat dataset) gives us a lower coverage rate. Moreover, this indicator is based on the use of two different types of data sources, which is an important drawback.

Finally, the coverage rate calculated with Eurostat data based on the LFS is even lower (at least for Spain). This may point to problems associated with interviewees' answers to the survey questionnaire about their relationship with employment services, recipiency of benefits or misinterpretation of the benefit(s) received due to a lack of clear classification of benefit to its recipient. The advantages of the coverage indicator built with LFS data are: the precise estimation of the total number of unemployed; it can be easily calculated for different population groups; it can be modified to take account of a broader denominator than that of the officially unemployed; and it is available for all EU Member States.

In view of all these aspects, **our proposal is to use the coverage based on survey (EU-LFS) data**.

Adequacy

The OECD database supplies information on gross and net replacement rates (GRRs and NRRs). The EU database also provides information on NRRs. GRR values are calculated before taxes and social security contribution payments. It also excludes family benefits, social assistance, housing benefits and in-work benefits. Furthermore, given that there are many possible profiles of the unemployed that can be considered, it is necessary to decide on the ratio to be used as an indicator of adequacy, taking account of different characteristics of the UB recipients.

In order not to overcomplicate the calculation of the indicator, **our proposal of adequacy indicator consists of using the unweighted arithmetic mean of the NRR in three different durations** (related to short-, long- and very long-term unemployment) **for an individual who meets several characteristics** (67% of the AW in previous work; family consisting of two adults with two children; the partner is out of work; social assistance and housing benefits -if applicable- are included). The chose durations could be, for instance, six months, one year and three years (in the case of the OECD database) and two months, 13 months and 25 months (in the case of the EU database). The resulting indicators calculated with both datasets are shown in Table 3.2. As can be seen, they are virtually the same ([47]).

The reason of our choice is twofold. First, due to the exclusions, the NRR may provide a more complete measure of income maintenance than the GRR, especially when considering longer periods of unemployment and/or families with children. For this reason, we consider that NRRs are preferable over GRRs as indicators of UB adequacy. Second, the chosen profile is based on the notion that it represents a relevant portion of the unemployed population, especially with regard to the wage level. Existing empirical evidence suggests that lower-wage jobs are more unstable and last less than higher-wage jobs, and those who occupy them have a lower

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([47])   There are hardly any differences if, instead of using the arithmetic mean of the NRRs, the geometric mean is used.

level of qualification, therefore facing a higher likelihood of job loss, longer unemployment duration and greater long-term loss of income when compared to occupants of higher-wage jobs (Da Silva and Turrini, 2015).

One important caveat is that the specific choice parameters (wage levels, family composition, unemployment duration) is largely arbitrary. While this is to a large extent unavoidable, the selected types are intended to be representative of the unemployed population. One possible solution for the future would be to compute weighted averages of many different categories defined by different parameters. Although this solution requires the handling of a large amount of information, it would be possible through the use of an 'online calculator', which would allow to generate more tailor-made results.

Table 3.2. Proposed indicators of unemployment benefits coverage and adequacy (Spain)

	2013	2014	2015	2016	2017	2018	2019
Coverage rate: UB_{LFS} / U_{LFS}	34.1	31.4	28.3	27.6	28.8	29.3	31.6
Adequacy indicator: Unweighted average of three NRRs (OECD)	56.3	56.3	56.0	58.7	58.7	59.0	59.3
6 months	74.0	74.0	74.0	73.0	73.0	74.0	74.0
12 months	52.0	52.0	52.0	52.0	52.0	52.0	53.0
36 months	43.0	43.0	42.0	51.0	51.0	51.0	51.0
Adequacy indicator: Unweighted average of three NRRs (European Commission)	56.5	56.5	56.0	58.8	59.0	58.8	59.2
2 months	74.0	74.1	73.7	73.5	73.5	73.5	74.1
13 months	52.4	52.5	52.2	52.0	52.0	52.1	52.7
25 months	43.1	42.9	42.2	51.0	51.4	50.8	50.7

Note: The NRRs are calculated for an individual who earned 67% of the AW in previous work; family consisting of two adults with two children; and the partner is out of work.

3.1.2. Pensions

Coverage

One may calculate a coverage rate of pensions by dividing the number of covered individuals by the number of potential people to be covered. There are two problems though. The first one has to do with the numerator and was commented on in the previous section: the statistics refer in many cases to the volume of pensions not pensioners, and the numbers of the former are larger than the latter. However, efforts in this area have been made to eliminate double counting (such as ESSPROS data on "pension beneficiaries"). The second problem has to do with the denominator: it is not obvious what the age range should be used to approximate the eligible population. The age range may be clearer when only retirement pensions are considered, but it begins to blur as early retirement pensions, survivors' pensions, permanent disability pensions, etc., are also considered ([48]).

Two possible coverage indicators have been proposed to overcome these limitations. On the one hand, the ratio between the sum of the number of retirement and survivor pensions and the volume of people aged 65+. On the other hand, the ratio between the total number of pensions and the volume of people aged 60+. These indicators have been calculated using information from Eurostat.

Considering the advantages and disadvantages of the two indicators, **our proposal is to use the ratio between the sum of the number of retirement and survivor pensions and the volume of people aged 65+ as the pension coverage rate**. It is true that this indicator does not use all pensions in the numerator, but at least it uses in the denominator the volume of the population that receives the vast majority of pensions and to which the two main types of pension are directed (old-age and survivors). In any case, the previous warnings also have to be taken

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([48]) Another factor to take into account is where people live. Some countries can have a ratio of pensioners over people 65+ above 100% due to the fact that pensions can be paid to people living outside the corresponding country. This is less of a factor in larger countries, but still there is an impact that should be considered.

into account when using this indicator regarding the measurement of pensions/pensioners, age and place of residency.

Adequacy

With regards to the measurement of adequacy, the aggregate replacement ratio for pensions calculated by Eurostat is not a *true* indicator of pensions adequacy, in the sense that it links pensions and pre-retirement earnings for the same people, since it relates in a cross-section way the income of one group of people (the median individual gross pensions of the 65-74 age category) with the income of another group (the median individual gross earnings of the 50-59 age category). However, it is closer to a *de facto* adequacy indicator than the mostly theoretical (gross and net) replacement rates calculated by the OECD.

In the latter case, the differences between the replacement rates of men and women are practically non-existent and hardly reflect variations according to previous in-work income (50%, 100% or 150% of the AW), which suggests the difficulty of the indicator to capture the impact of unstable or irregular work trajectories. In this sense, the Eurostat indicator can reflect the actual differences in labour income and the work trajectories of different population groups. This aspect is relevant when it comes to calculating pensions or their replacement rate. In addition, in the case of the OECD data, it would be necessary to choose among a set of existing replacement rates supplied for various categories of individuals.

Therefore, in view of the alternatives and the advantages and disadvantages of each of the available indicators, **the adequacy indicator that we propose to use is the aggregate replacement ratio for pensions offered by Eurostat**.

Table 3.3. Proposed indicators of pensions (Spain)

	2013	2014	2015	2016	2017	2018	2019
Coverage rate: Old-age + survivors pensions / population 65+	96.3	96.0	95.7	95.4	95.1	94.9	-
Adequacy indicator: Aggregate replacement ratio for pensions	60	60	66	66	69	70	70

Source: Eurostat.

3.1.3. Social assistance and family benefits

Coverage

Building a coverage indicator in the domain of social assistance and family benefits is a difficult task, because there are quite many different programmes with different (although similar) objectives and aimed at various population groups, some of which may overlap. Acknowledging this problem, **we propose to use as far as possible data from national sources to supplement existing information in the OECD's SOCR database to relate the total number of benefit recipients to the volume of people in relative poverty** (understood as 60% of median equivalised income, for instance).

Therefore, one should add data regarding the beneficiaries of other programmes (such as family benefits per child or minor in charge, coming from national databases) to the information on "Other social" (MIS) included in the OECD database to arrive at the total volume of people receiving social assistance transfers. Then, we obtain a coverage indicator by dividing this total by the number of people living in poor households. Such indicator is equivalent to the one calculated for UB or pensions, since the number of people who receive a certain transfer is related to the volume of the population that faces a certain risk (which may be unemployment, lack of resources in old age, disability or insufficient income).

Adequacy

Here the problem is similar to the previous one, since the types of programmes are very different. Leaving aside the indicator that measures the impact of social assistance benefits to reduce the poverty gap (because what it

really measures is the effectiveness of those programmes), **the most appropriate indicator of adequacy must be one measuring the level of social assistance benefits in relation to some measure of average income.**

In fact, this is the indicator of adequacy of guaranteed MI benefits in relation to the overall median income constructed by the OECD. As the OECD database supplies this indicator for four family structures (jobless person without children; jobless person with two children; jobless couple without children; and jobless couple with two children), our overall index of adequacy is calculated as the unweighted average of the indicator for the four categories. Alternatively, one may use a similar indicator which conveys the same sort of information, such as the net income of minimum income recipients as percent of either at risk-of-poverty threshold or the income of a low-wage earner calculated with the EU-SILC. As signalled before, both are policy lever indicators of the MIS benchmarking framework.

Table 3.4. Proposed indicators of social assistance/family benefits (Spain)

	2013	2014	2015	2016	2017	2018	2019
Coverage rate: Poor individuals (60% income threshold) receiving income support ([1])	38.9	36.6	37.5	37.3	38.2	37.3	38.1
Adequacy indicator: Adequacy of guaranteed minimum income benefits, % median disposable income ([2])	27.0	27.0	26.5	28.0	27.3	26.5	26.3

Sources: (1) OECD + national sources/Eurostat; (2) OECD.

It is true that it would be more appropriate to use some type of weighting (the most obvious is the weight that each group has within the household population) to calculate the aggregate indicator, but it must be considered that the database does not provide information on all the different possible categories of households (defined by their composition and the number of adults and children) but only four. Therefore, it is perhaps more convenient to keep things simple and not use weights in the calculation of the aggregate indicator. Nevertheless, as the indicator is measured in a range of 0-100, the interpretation of the social assistance adequacy index is straightforward.

3.1.4. Health

Coverage

When thinking on the measurement of the universality of health coverage, the main aspect that must be considered is that health services must be available to all individuals, but not from a *de jure* point of view but a *de facto* point of view. A second aspect is that of people's accessibility to a wide range of services as well as the fact that these services are affordable and do not exclude individuals due to their cost, i.e. that health services are accessible and such availability does not cause foregone health care or even financial hardship.

The first element is essential, while the second has more to do with adequacy than coverage. Thus, we propose to use an indicator of coverage that uses only information on extent and availability. **The most convenient coverage indicator is the Service Coverage Index (WHO)**. This is an indicator of *de facto* coverage understood as extent and availability of essential health services. This index was built to operationalize the concept of universal health coverage and measures the average coverage of essential services based on tracer interventions that include reproductive, maternal, new-born and child health, infectious diseases, non-communicable diseases and service capacity and access. In addition, the data dissemination of this indicator is expected to take place periodically (every two-three years). This indicator is preferable to that of the OECD, which takes a spending perspective (it is calculated as the financial coverage of public and mandatory health insurance over total health expenditure, taking account of four health categories).

Given the fact that this indicator is only available for specific years (see Table 3.5), the aggregate indicator for health will have to be calculated as if this sub-indicator on coverage provided information for a period of several years in order to calculate the aggregate index of universality of social protection.

Adequacy

In the health domain, it is not only important to know the proportion of the population that is covered with respect to a more or less extensive set of health services, but also if these services are offered with sufficient quality. Moreover, accessibility and affordability, including financial risk protection, is something that must be taken into account when it comes to measure universality in the access to quality health-care services.

Table 3.5. Proposed health indicators (Spain)

	2013	2014	2015	2016	2017	2018
Coverage extent indicator (WHO)	-	80.8	-	-	82.7	-
Adequacy indicator	87.0	87.6	87.7	88.1	88.4	-
Safe acute care	93.2	92.8	92.6	92.8	92.9	-
Avoidable hospitals admissions	99.5	99.5	99.5	99.6	99.6	-
Mortality following ischaemic stroke/coronary heart disease	91.0	91.0	91.0	91.3	92.3	-
Hip and knee surgery (% surgery initiated within two days)	43.3	47.3	48.4	50.4	51.9	-
Cancer survival rates	77.8	77.8	77.8	77.8	77.8	-
Vaccinations (per 100 children less than 2 years of age)	95.3	96.3	96.3	97.1	96.4	-
Care for people with mental health disorders	100.0	100.0	100.0	100.0	100.0	-
Lack of financial hardship	96.1	96.1	96.1	96.1	96.1	-

Note: The figure of the sub-indicator "inpatients with infections" within the dimension of "safe acute care" referring to the year 2015 has been repeated for 2016 and 2017. The same has been done with the dimension of "cancer survival rates", whose figure for 2014 has been applied to the rest of the years, and "lack of financial hardship", whose figure for 2015 has been applied to the rest of the years.

Within this area, the proposal of the system of indicators developed by the OECD (perhaps the most complete that has been designed so far) has been discussed. This system allows to measure the quality and outcomes of care for many health interventions. Thus, **we propose to calculate an aggregate index on health adequacy based on the OECD's set of indicators, which contains seven dimensions, complemented by another one on affordability** (see Table 3.5) ([49]). Four steps must be followed. First, all sub-indicators must be expressed on a 0-100 metric. This was carried out previously: some sub-indicators are already supplied as percentages in the corresponding databases, while others must be divided by either 1,000 or 100 because they are measured for either 100,000 or 10,000 people. Second, some sub-indicators must be recalculated to be expressed so that higher values (closer to 100) indicate higher adequacy rates. Third, there are several dimensions in which more than one sub-indicator exists. In some areas (safe acute care; avoidable hospitals admissions), the indicator has been calculated as 100 – values of all three sub-indicators. In other areas (mortality following stroke/heart disease; cancer survival rates; vaccinations), the average of the available sub-indicators has been used to calculate the corresponding indicator of adequacy (in the case of cancer, breast, colon, and childhood leukaemia). Finally, the aggregate adequacy index is the simple arithmetic mean of all eight dimensions' indicators, since there is no *a priori* reason to assign a different weight (greater or lesser) to the different indicators that make up the aggregate index ([50]).

3.1.5. Education

Coverage

In the domain of education and learning, a key aspect of the potential indicators is that they should refer to different stages of the educational system and, thus, to different age population groups. Since, in the case of European countries, access to the compulsory education system is virtually universal, **the proposed coverage indicator in education would be an unweighted average of three sub-indicators relating to groups of the**

([49]) One could argue about the possibility of including avoidable mortality indicators into the set of adequacy indicators. However, this would render the exercise much more complex considering the extensive OECD/Eurostat list of preventable and treatable causes of death (see OECD and European Commission, DG Eurostat, 2022).

([50]) The results hardly vary if the geometric mean of the sub-indicators is used instead of arithmetic mean.

population at various stages of three levels of education: entry into primary education, completion of compulsory secondary education, and higher education ([51]).

The sub-indicators would be as follows:

— Pupils from age 4 to the starting age of compulsory education at primary level (5 years): share of the corresponding age population.

— 100 - Early leavers from education and training (compulsory school age: from 5 to 16): share of population 18-24.

— Tertiary education attainment: share of population 30-34.

The reason for using all three is that they are linked to objectives set by the EU:

— One of the benchmarks which have been set for education in EU 2020 Strategy is that at least 95% of children (from 4 to compulsory primary school age) should participate in early childhood education.

— The EU's target of reducing the share of early leavers of education and training to less than 10% by 2020 implies that at least 90% of students should be "non-early leavers".

— The EU's target of increasing the share of the population aged 30 to 34 having completed tertiary or equivalent education to at least 40% by 2020.

Since there are some countries that have already exceeded these thresholds, our proposal for indicators goes further and sets more ambitious targets (100% for the first one, 95% for the second one, and 50% for the third one), in such a way that these targets act as benchmarks. Consequently, the indicators are transformed considering that the established objectives equal a value of 100 in a metric 0-100 (see Table 3.6) ([52]).

Adequacy

Measuring universal education and learning quality is difficult. Qualitative indicators would have to be used combining outcomes in different learning domains and their distribution among students. However, there are not many indicators to choose from. The United Nations has included PISA data in its global indicator framework for monitoring progress in the share of children and young people who achieved minimum proficiency in reading and mathematics by lower secondary education.

Therefore, **we propose two alternative aggregate indicators of education adequacy** (see Table 3.6). The first one tries to measure education quality based on outcomes using the information on the share of low achievers provided by the PISA survey. The aggregate index would be the unweighted average of three sub-indicators:

— 100 - % of 15-year-old students achieving less than level 2 in *reading*.

— 100 - % of 15-year-old students achieving less than level 2 in *maths*.

— 100 - % of 15-year-old students achieving less than level 2 in *science*.

The second aggregate adequacy indicator is similar to the first, but accounts for socio-economic disparities among students. It would be measured as the product of the previous aggregate index and the average parity index for reading and mathematics (not yet available for science). As explained above, the parity index below 1 implies that the share of low achievers among socio-economic disadvantaged students is higher when compared with socio-economic advantaged students. In this way, the lack of parity in the results of the groups considered would penalize the aggregate achievement of the corresponding country. Thus, the result obtained by Spain with indicator 1 (79.3) would be worse with indicator 2 (55.9).

([51]) Note that there is variation across EU countries regarding the upper threshold for compulsory education and its changes in recent years. This implies that trends and cross-country patterns should be taken into account when comparing data across Member States.

([52]) We have used the arithmetic mean. The results are similar if instead we use the geometric mean.

Table 3.6. Proposed indicators of education (Spain)

	2013	2014	2015	2016	2017	2018	2019
COVERAGE							
Average aggregate index	87.4	88.0	87.9	87.6	88.6	89.7	-
(a) Pupils from age 4 to the starting age of compulsory education at primary level							
(as % of the corresponding age population) – in relation to benchmark 100% (0-100)							
	97.1	97.1	97.7	97.3	97.4	98.0	-
(b) 100 - Early leavers from education and training (% of population 18-24) – in relation to benchmark 95% (0-100)							
	80.4	82.2	84.2	85.3	86.0	86.4	87.1
(c) Tertiary education attainment							
(% of population 30-34) – in relation to benchmark 50% (0-100)							
	84.6	84.6	81.8	80.2	82.4	84.8	89.4
ADEQUACY (*)							
Indicator 1: Aggregate index of adequacy							
(average of indicators of adequacy on reading and mathematics: 100 - % of low achievers)							
Spain	80.8	-	81.1	-	-	79.3	-
Reading	81.7	-	83.8	-	-	(83.8)**	-
Maths	76.4	-	77.8	-	-	75.3	-
Science	84.3	-	81.7	-	-	78.7	-
Indicator 2: Adjusted aggregate index of adequacy							
(indicator 1 * average parity index)							
Spain	-	-	-	-	-	55.9	-
Indicator 1	80.8	-	81.1	-	-	79.3	-
Parity index	-	-	-	-	-	0.71	-

(*) Adequacy: data for 2013 refers to 2012.
(**) Figure not available for Spain in 2018: we repeat the figure from year 2015 to calculate the aggregate index.

Source: (a)-(c) Eurostat; adequacy indicators: OECD.

3.1.6. Housing

Coverage

Measuring housing coverage is perhaps the most challenging test when it comes to operationalizing the notion of measuring the universality of social protection. First, the question arises as to what one is trying to measure. Second, there is a lack of proper coverage indicators for housing policies. Therefore, with the information currently available, **the tentative proposal for measuring housing coverage would consist of using the limited data on homelessness and other indicators on housing policy**. The first shows that almost the entire population has access to some type of housing, while the other measure access to social housing or private housing (purchase or rental) of people who may have difficulties to meet their accommodation needs. In this sense, the coverage housing indicator is calculated as:

$$(100 - \% \, homeless \, people) * \frac{\% \, social \, rental \, dwellings \, + \, \% \, HH \, receiving \, housing \, allowance, bottom \, quintile}{100}$$

In the absence of better indicators, the proposed one tries to measure, after adjusting for the extremely low level of measured homelessness, the degree to which public programmes help individuals access a house and fight social exclusion. However, this indicator has at least two clear limitations. First, the difficulty to define and measure what is counted as homelessness (sleeping in the streets, shelters or any alternative forms of accommodation for the homeless, etc.). In this sense, shelters or similar accommodation for the homeless are not adequate housing, so that this should be included in the rate of homelessness. Second, the potential overlap

between the other two sub-indicators, as in many systems social housing is limited or prioritized for households receiving housing benefits.

Adequacy

Many households face a set of shortcomings affecting their housing quality due to a wide variety of factors. We have proposed several indicators for the measurement of various domains of housing adequacy: overcrowding rates to measure the availability of sufficient space in a dwelling (Eurostat); severe deprivation rates accounting for overcrowding in parallel to deprivation (Eurostat); and affordability indicators referring to housing costs overburden caused by "excessive" housing expenditure in relation to total consumption/income of households (OECD and Eurostat).

We propose a tentative aggregate index focusing on two housing-related dimensions: dwelling quality and financial difficulties in access to housing. In this regard, the Eurostat severe deprivation indicator is appropriate to measure housing quality as it simultaneously takes account of various problems associated with the lack of space and the material quality of dwellings. Eurostat affordability indicator is also convenient as it focuses on the potential financial problems that housing expenses can cause for households with fewer resources.

Thus, the aggregate index of housing adequacy is calculated as:

$$100 - (Severe\ deprivation\ rate\ +\ Housing\ cost\ overburden\ rate)$$

As these rates are calculated as shares, the aggregate index is also expressed in a 0-100 metric. As before with the coverage indicator, this adequacy index is not without its problems, as a potential overlap between severe deprivation rate and housing cost overburdened may exist. In this sense, there may be a correlation for both rental and owner-occupied housing, such that households cannot afford repairs or change tenancy due to being overburdened, and end up living in deprivation.

Table 3.7. Proposed indicators of housing (Spain)

	2013	2014	2015	2016	2017	2018	2019
Coverage indicator	3.1	2.9	2.7	2.1	4.6	4.1	3.9
Adequacy indicator	87.9	87.4	88.2	88.1	89.2	89.6	89.8

3.2. The aggregate index

After choosing the set of indicators to measure the universality of social protection, two additional steps are necessary to obtain a synthetic index. First, aggregate the adequacy and coverage dimensions of universality *for each social protection branch*. After constructing standardised measures of coverage and adequacy ranging from 0 to 100, they can be combined in a single indicator of universality by taking their average. Second, aggregate measures of universality *for different areas of social protection* into a single index.

Although Muñoz de Bustillo Llorente et al. (2020) refer both to the aggregate indicators of each programme and the overall universality index calculated by arithmetic mean, they recommend using a geometric mean instead. This approach would penalize unbalanced combinations of coverage and adequacy, and outcomes of different social protection branches. Thus, we calculated aggregate indicators of coverage and adequacy and, then, the overall index for Spain using both the geometric and arithmetic mean, and results are shown in Tables 3.8 and 3.9, respectively.

Some caveats are necessary before proceeding into the analysis. First, as many time series are not available for all years from 2013 to 2019, data for some series in the branches of health, education, and housing had to be repeated for subsequent years. In general, these programmes belong to areas of social protection related more to the provision of services and less with the payment of monetary transfers from public administrations. This makes it more difficult to find coverage and adequacy indicators that are suited to measuring universality and

that are systematically measured and offered in a continuous way. This periodicity issue must be taken into account when designing and updating a set of indicators that seeks to measure the universality of social protection systems.

Second, regarding the results obtained, the figures for the aggregate indicators for each of the branches are very similar when either the arithmetic mean or the geometric mean is used, apart from housing. In this case, due to the data limitations mentioned above, results differ greatly between one approach and another, such that the index obtained using geometric mean are much lower than those obtained with the arithmetic mean. The consequence is that this outcome is transferred to the overall synthetic index, so that the aggregate figures differ in the level of universality of social protection.

In conclusion, the degree of universality of social protection in Spain in late 2010s would be close to 50 out of 100 using the geometric mean approach, and around 62 using arithmetic mean. Regardless of the calculation method, this universality level remained relatively stable in the 2013-2018 period, with a slight upward trend in 2016-2018 mostly due to improvements in the coverage of housing and unemployment benefits, but also due to more adequate pensions.

The difference between the two approaches is also visible in the aggregate coverage and adequacy indicators. Due to the limitations of the housing coverage index, figures obtained for the aggregate coverage index with geometric mean (between 34 and 39 out of 100) differ greatly from those obtained with arithmetic mean (around 56 out of 100). However, this is not the case for the aggregate adequacy index (62-64 out of 100 with the geometric mean and 67-69 out of 100 with the arithmetic mean).

Table 3.8. Aggregate index of universality and sub-indicators (Spain), geometric mean

	2013	2014	2015	2016	2017	2018
Spain (all branches)	48.2	47.4	47.0	46.4	50.0	49.5
Coverage	37.4	36.3	35.2	33.8	39.1	38.3
Adequacy	62.0	62.0	62.8	63.7	64.0	64.0
Unemployment	43.8	42.1	39.8	40.3	41.1	41.5
Coverage	34.1	31.4	28.3	27.6	28.8	29.3
Adequacy	56.3	56.3	56.0	58.7	58.7	59.0
Pensions	76.0	75.9	79.5	79.4	81.0	81.5
Coverage	96.3	96.0	95.7	95.4	95.1	94.9
Adequacy	60.0	60.0	66.0	66.0	69.0	70.0
Social assistance	32.4	31.4	31.5	32.3	32.3	31.4
Coverage	38.9	36.6	37.5	37.3	38.2	37.3
Adequacy	27.0	27.0	26.5	28.0	27.3	26.5
Health	83.9	84.1	84.2	85.4	85.5	85.5
Coverage (^{1})	80.8	80.8	80.8	82.7	82.7	82.7
Adequacy (^{2})	87.0	87.6	87.7	88.1	88.4	88.4
Education	84.2	84.5	84.4	83.3	83.8	84.3
Coverage	87.4	88.0	87.9	87.6	88.6	89.7
Adequacy (^{3})	81.1	81.1	81.1	79.3	79.3	79.3
Housing	16.4	16.0	15.3	13.6	20.3	19.1
Coverage (^{4})	3.1	2.9	2.7	2.1	4.6	4.1
Adequacy	87.9	87.4	88.2	88.1	89.2	89.6

(^{1}) 2015 data is repeated for 2013 and 2014, and 2017 for 2016 and 2018.
(^{2}) 2017 data is repeated for 2018.
(^{3}) Indicator 1 is used. 2015 data is repeated in 2013 and 2014, and 2018 data for 2016 and 2017.
(^{4}) Data from homelessness in 2013 and social housing in 2019 is repeated in subsequent years.

Table 3.9. Aggregate index of universality and sub-indicators (Spain), arithmetic mean

	2013	2014	2015	2016	2017	2018
Spain	61.7	61.3	61.5	61.7	62.5	62.6

Coverage	56.7	56.0	55.5	55.5	56.3	56.3
Adequacy	66.6	66.6	67.6	68.0	68.6	68.8
Unemployment	45.2	43.9	42.1	43.2	43.7	44.1
Coverage	34.1	31.4	28.3	27.6	28.8	29.3
Adequacy	56.3	56.3	56.0	58.7	58.7	59.0
Pensions	78.2	78.0	80.8	80.7	82.1	82.4
Coverage	96.3	96.0	95.7	95.4	95.1	94.9
Adequacy	60.0	60.0	66.0	66.0	69.0	70.0
Social assistance	32.9	31.8	32.0	32.7	32.7	31.9
Coverage	38.9	36.6	37.5	37.3	38.2	37.3
Adequacy	27.0	27.0	26.5	28.0	27.3	26.5
Health	83.9	84.2	84.3	85.4	85.5	85.5
Coverage (^{1})	80.8	80.8	80.8	82.7	82.7	82.7
Adequacy (^{2})	87.0	87.6	87.7	88.1	88.4	88.4
Education	84.2	84.5	84.5	83.4	83.9	84.5
Coverage	87.4	88.0	87.9	87.6	88.6	89.7
Adequacy (^{3})	81.1	81.1	81.1	79.3	79.3	79.3
Housing	45.5	45.2	45.4	45.1	46.9	46.8
Coverage (^{4})	3.1	2.9	2.7	2.1	4.6	4.1
Adequacy	87.9	87.4	88.2	88.1	89.2	89.6

(^{1}) 2015 data is repeated for 2013 and 2014, and 2017 in 2016 and 2018.
(^{2}) 2017 data is repeated in 2018.
(^{3}) Indicator 1 is used. 2015 data is repeated in 2013 and 2014, and 2018 data for 2016 and 2017.
(^{4}) Data from homelessness in 2013 and social housing in 2019 is repeated in subsequent years.

4. Discussion and Conclusions

This report has taken as a basis the study by Muñoz de Bustillo et al. (2020), in which they develop a conceptual and analytical framework to define and measure universality of social protection. Our aim was to test this proposal on a pilot basis for one EU Member State (Spain). Based on authors' indications on the type of appropriate indicators for measuring coverage and adequacy of social protection programmes, we have operationalised the framework using relevant data for Spain. The social protection branches covered are unemployment benefits, pensions, social assistance and family benefits, health, education, and housing. Note that education and housing are considered parts of social protection in that framework, although these choice are debatable, and that long-term care would be included in the health domain. We relied primarily on datasets such as Eurostat, OECD and WHO, to guarantee the comparability of data across EU Member States.

To carry out the framework operationalisation, firstly, we have shown and reviewed the existing indicators (if any) and proposed the construction of potential ones that might be used to measure coverage and adequacy of social protection separately, discussing their respective pros and cons. Then, we provided the structure of the system of indicators of universality, measured them in each branch and aggregated indicators into a synthetic index. A 0-100 metric has been used for the measurement of both coverage and adequacy, making it easier the process of aggregation and the interpretation of the results. Moreover, we have used two calculation methods (geometric and arithmetic mean) to measure the aggregate indicators of coverage and adequacy and the overall universality index. The geometric mean approach has been used because it serves to qualify the results obtained with the arithmetic mean, since it penalizes unbalanced combinations of coverage and adequacy across social protection branches. The results suggest that the degree of universality of social protection in Spain would have been at a level of nearly 50 out of 100 (geometric mean) or 62 out of 100 (arithmetic mean) in the middle of the 2010s, with a very slight upward trend due to improvements in the coverage of housing and unemployment benefits and the adequacy of pensions.

Based on the measurement process that has been carried out and the results obtained, it is worth highlighting some considerations.

Firstly, measuring universality of social protection is a difficult and complex task. A first aspect to bear in mind is that, although the aim is to cover the whole system, in practice this is virtually impossible. We have tried to cover benefits and services that are provided primarily at a national (and, in some cases, regional) level, but it is clear that there are many others, which have not been considered here, that are provided at a regional level (e.g. for instance, local housing benefits). Having said this, there are some indicators that can be used to measure coverage and adequacy in a more or less satisfactory way in some domains of social protection, but in others, these indicators either do not exist or only serve as imperfect approximations to what it is intended to measure. While the domains of UB and pensions have a certain number of indicators related to both coverage and adequacy, the same does not happen in the case of social assistance and family benefits and, above all, in the areas that have to do with services provision (education, health and housing). The case of housing is particularly complicated, so it would be very useful to dedicate a monographic analysis to its study.

Secondly, there is no single source that allows the coverage and adequacy of all social protection programmes to be examined simultaneously. Although we concentrated our efforts in using data from OECD, Eurostat and WHO, this diversity makes the process of measuring the universality of social protection more difficult, since the databases are designed to serve other objectives, among which such measurement is not found. This implies that if one wishes to advance on the path of measuring universality, adequate mechanisms should be established to, on the one hand, define the very concept of universality of social protection, and, on the other hand, adapt, expand and/or redesign the databases (in this case European) that allow establishing coverage and adequacy indicators.

Thirdly, many of the indicators and sub-indicators of the different branches that have been used to measure universality can be extracted annually, but others are only calculated every certain number of years. Although not ideal, in principle this fact should not pose a problem since social protection systems are not continually

changing. Therefore, updating the set of indicators and the aggregate index every five years, for example, seems reasonable.

Fourthly, the relevant units of measurement seem to be the countries. Although some indicators either are accessible or can be calculated by region, most of them refer exclusively to national social protection systems. On the other hand, it would be possible to build an index at EU level once they have been measured for all Member States. Indeed, once the different programmes of social protection and the aggregate index for all countries had been measured, it would be feasible not only to compare the results between Member States but also to apply frontier methods to examine the extent to which countries are most efficient in terms of achieving universality based on the resources devoted to social protection in each country. Here again a more thorough and deep analysis is needed.

Fifthly, the differentiation of subgroups in the population is, at this stage, impossible, since the necessary data is not currently available in the existing international databases. It is true that some indicators (especially those based on surveys) are provided with some sort of disaggregation (by sex or age, for instance), but most of them are not. The same limitation holds for data disaggregation per types of work contract, which was not exploited in this study due to the lack of data availability and uniformity across datasets.

Finally, there are three general reflections that we want to raise in relation to the measurement exercise that has been carried out in this report. The first has to do with the concept of universality that has been tried to measure, the second is linked to the role of public provision of social protection and the third is about data needed to measure universality versus data actually used.

The first reflection reveals an important caveat to the analysis we have carried out. It has to do with the very concept of universality, as one should acknowledge that the available indicators (those we have used to measure coverage and adequacy of social protection) fit a concept of "conditional" universality such as the one Muñoz de Bustillo et al. (2020) discuss and we operationalize. However, further research could go a step further in the theoretical discussion, proposing to measure indicators of coverage and adequacy based on a concept of "unconditional" universality.

Since (most) social protection systems are designed according to conditionality rather than universality, social policies tend to be conditional and the existing statistics of coverage and adequacy have an inherent notion of conditionality of their respective programmes. The notion of "unconditional" universality implies that the denominator of any measure of coverage would have to be as broad as possible, avoiding any conditionality. For instance, if the coverage in the domain of social assistance is to be measured by dividing recipients by the population at risk of poverty, this would mean that social assistance is conditional to poverty, and thus not universal. In this case, family assistance should be measured against the overall population of relevance (households with children, for instance, independently of their income, although there are cases of countries where family allowances are unconditional on income). Similarly, in the case of unemployment benefits, coverage is currently measured relative to those who are registered as unemployed instead of working age population not being in paid employment (or any definition of unemployment as broad as possible). Therefore, if the main idea behind the concept of universality is to remove conditionality for the access to social protection, the coverage indicators should incorporate this notion as well.

Analogously, something similar occurs to what is considered an appropriate level of adequacy indicators. The most frequent calculation approach is to use previous income as reference, which directly reflects how unemployment or pension systems are designed. However, this concept also implies conditionality, as the chosen adequate level is conditional to the pre-unemployment/retirement level rather than universal. The alternative would be to use a common unconditional and universal threshold for all, maybe a flat rate, based on a more general definition of "adequate level of income". This, for instance, could vary by household composition, but should remain unrelated to pre-unemployment/retirement income.

In summary, this reflection on the conditionality of universality can help us raise a proposal for measuring true "unconditional" universality that takes account of previous elements related to coverage and adequacy. The

integration of all domains of social protection that involve monetary transfers, considering each area as sub-components (UB, pensions and social assistance), should be feasible. More difficulties would exist in the case of those areas that have to do with the provision of services (education, health and housing), to which the application of previous principles (especially adequacy) can be much more complicated. In any case, the system of indicators should be measured using a nested structure, with each of the main components (monetary transfers, on the one hand, and services/in-kind transfers, on the other hand) broken down into domains and then sub-components, which are to be measured individually in terms of coverage and adequacy. This proposal is an avenue of analysis worth developing in the future.

The second reflection has to do with the role of the public provision in our measurement exercise, as the State is usually perceived as the main source of social protection. This is an approximation taken when measuring the coverage and adequacy of programmes such as UB, pensions, and social assistance. However, it is no longer clear what and how to measure these indicators for social protection branches related to services provision (e.g., education, health, and housing). For example, would a social protection system that offers social housing to all households be more universal than a system that offers it only to those who cannot be met by the market?

Ideally, the focus of universality indicators should be on social protection policies provided by the State even if subcontracted at times, thus excluding the provision of whatever need via the market. Then, one could add as a kind of "shadow" indicator a separate measure of private (market) provision for the same need. This would allow to have an overall measure of coverage of a given need (say, health), while being able to differentiate between the universality of public services and the market coverage. This proposal would solve many measurement problems that arise in the domains of education, health, and housing. However, it would be very difficult to carry out at the moment due to the lack of adequate data.

The third and final reflection is related to the data we have used to build coverage and adequacy indicators. Firstly, we have detected data gaps to be able to measure the coverage or adequacy of some domains, especially in the case of education, family benefits and social assistance, and housing. Secondly, we have used databases that provide pre-compiled indicators which, however, already have some assumptions with respect to how coverage and adequacy should be measured, which might be less consistent with the universality notion in social protection rather than a conditionality one.

Accordingly, it might be better to try to rely on data that can be processed with new assumptions rather than relying on data which has been already processed into indicators, unless those indicators are already compatible with the notion of universality. A promising database for most of these purposes is EU-SILC. Although we have used this database to measure coverage and/or adequacy in certain areas of social protection (in particular education, health, and housing), we have done so using aggregate indicators already processed, constructed, and published by Eurostat, with the limitations imposed by the survey characteristics and its set of variables.

As an alternative, the use of EU-SILC microdata could be considered with a triple objective to use a single database to carry out the entire process of measuring the universality of social protection, expand this process to try to operationalize the concept of "unconditional" universality, and to be able to measure universality for groups or sub-groups of the total population. This is a line of work that will have to be exploited in the future.

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