

Consolidated Quality Report on the ESSPROS Module on
Net Social Protection Benefits

(Restricted approach)

2020 data

pursuant to COMMISSION REGULATION (EU) No 110/2011 of 8 February 2011 implementing Regulation (EC) No 458/2007 of the European Parliament and of the Council on the European system of integrated social protection statistics (ESSPROS) as regards the appropriate formats for the transmission of data, the results to be transmitted and the criteria for measuring quality for the ESSPROS module on net social protection benefits

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Introduction

The regulation on the collection of data for the ESSPROS module on net social protection benefits¹ requires all Member States to transmit a quality report providing information on the data provided for the module. Based on the information within these reports this document summarises the results of the data collection for all countries and provides an overall assessment of the quality of the data collected.

This quality report focuses on the 2020 data on net social protection benefits for 27 EU Member States, several of the EFTA countries (IS, NO and CH) and candidate countries (BA, ME, RS and TR) collected during 2022. However, some chapters address revisions to historical data for the years 2007 to 2019.

The European System of Integrated Social Protection Statistics

The European System of Integrated Social Protection Statistics (ESSPROS) was developed in the late 1970s by Eurostat, jointly with representatives of Member States, in response to the need for a specific instrument for the statistical observation of social protection.

ESSPROS is a common framework which enables international comparison of national data on social protection. It provides a coherent comparison between European countries of the provision of social benefits to households and the financing of those benefits.

ESSPROS comprises of a **Core System** and two **modules** (on pension beneficiaries and on net benefits). Each contains a different set of data collected annually by Eurostat.

The **Core System** includes quantitative data (QD) on social protection **receipts** and **expenditure** by social protection scheme and qualitative information (QI) providing metadata for each social protection scheme and detailed benefit reported in the former.

The quantitative data follows a detailed classification system. Social protection **receipts** are classified by type and origin. The type refers to the nature of, or reason for, a payment (i.e. social contributions, general government contributions, transfers from other schemes or other receipts) while the 'origin' refers to the institutional sector from which the payment is received (i.e. corporations, general government, households, non-profit institutions serving households or the rest of the world). Social protection **expenditure** is classified by type, indicating the nature of, or the reason for, the expenditure (i.e. social protection benefits, administration costs, transfers to other schemes or other expenditure).

¹ <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2011:071:0004:0008:EN:PDF> and <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2011:034:0029:0032:EN:PDF>

Expenditure on social protection benefits, which are transfers to households, in cash or in kind, intended to relieve them of the financial burden of a number of risks or needs, is further broken down and classified by function of social protection and then by detailed benefit types. ESSPROS defines the following functions, each relating to a specific risk or need that may give rise to social protection: **disability, sickness/health care, old age, survivors, family/children, unemployment, housing and social exclusion not classified elsewhere.**

The two **modules** contain additional statistical information on specific aspects of social protection which complements the data of the ESSPROS **Core System**. The **Pension beneficiaries (PB) module** includes quantitative data on the number of beneficiaries of pensions reported in the data of the **Core System** while the **Net social protection benefits (Net SPB) module** includes quantitative data on the taxes and social contributions deducted from the benefits reported in the data of the **Core System**, enabling gross social protection expenditure to be converted into net social protection expenditure.

Net social protection benefits module

The ESSPROS Core System records gross expenditure on social protection, i.e. the value of the benefits paid out by the state, without any deduction of social contributions, taxes and other obligatory levies that might be payable by their recipients. There is little question that such gross expenditure figures are important in themselves. However, gross figures have an important limitation. As they do not provide information on the deduction of taxes, social contributions or other charges levied on benefits or on tax concessions and allowances granted for social protection purposes², the gross data do not provide a full illustration of the impact of social transfers on the income of beneficiaries and the actual cost for the public budget, i.e. the actual effort made to protect citizens against social risks and needs. This is precisely the main objective of the ESSPROS Net SPB module - to show the real impact of social transfers on the income of beneficiaries.

In 2005 the ESSPROS Task Force established the calculation of net social benefits (from gross to net)³, the definition of fiscal benefits⁴ and the concepts of average itemised tax rate (AITR) and of average itemised social contribution rate (AISCR) which could be applied to gross benefits in order to derive net values. In the meantime, a legal basis governing the collection of data for ESSPROS was proposed to and discussed by the ESSPROS Working Group in April

² With the exception of payable tax credit. See also chapter 4.

³ Net social protection benefits are defined as the value of social protection benefits excluding taxes and social contributions paid by the benefits recipients complemented by the value of residual "Fiscal benefits".

⁴ "Fiscal benefits" are defined as social protection provided in the form of tax breaks that would be defined as social protection benefits, if they were provided in cash. Tax breaks promoting the provision of social protection on promoting private insurance plans are excluded.

2005⁵. The legal basis stated that a pilot data collection on net expenditure should be carried out for the reference year 2005 in all Member States by the end of 2008. Further, based on the synthesis of the results of the pilot, a decision would be taken whether (or not) to formally adopt the net module and to launch a full data collection from 2010.

A pilot data collection was launched in April 2008 for all EU-27 countries plus Iceland and Norway. It followed the so-called “restricted approach” and therefore maintained a scope identical to the gross data collection. The restricted approach to measuring net expenditure measures only the effect of income taxes and social contributions that are levied on cash social protection benefits reported in the gross collection. As a result, it does not cover fiscal benefits, except for the part that results in a relief to taxes or social contributions due on income from benefits⁶. This also means that the scope of the restricted approach is the same in terms of beneficiaries – as the restricted approach measures only taxes paid on cash social protection benefits it cannot take into account the value of fiscal benefits provided to people who receive no such cash benefits.

Interim results from the pilot were presented to the ESSPROS Working Group on net benefits in April 2009, which voted in favour of progressing work towards the implementation of the module on net social protection benefits as a routine data collection. By the end of 2009, the pilot data collection had been concluded and the final results, a synthesis report, methodological recommendations and draft Commission regulation on net SPB⁷, were presented to the ESSPROS Task Force on Net Social Benefits on 26th November 2009. After the Task Force the first results of the pilot collection were published by Eurostat as a Statistics in Focus paper⁸.

The Commission regulation on net SPB proposed that the collection of data on net social benefits become compulsory for the transmission of data for reference year 2010 to Eurostat in 2013. This was formally adopted in 2011. In addition, the ESSPROS Task Force proposed that data for reference years 2007, 2008 and 2009 should be collected on a voluntary basis via a gentlemen’s agreement⁹.

⁵ The presented Council and European Parliament regulation included the ESSPROS core system and its modules.

⁶ Presently, as agreed at the 2015 Working Group and formally adopted in the 2016 edition of the ESSPROS manual, there is one exception: following the inclusion of payable tax credits in the gross collection, their impact on taxes and social contributions due on income from benefits should not be taken into account, in order to avoid double counting. See also below, section 4.

⁷ <https://circabc.europa.eu/w/browse/b49b328d-7897-432f-ab9c-1d19eec83dcb>

⁸ <http://ec.europa.eu/eurostat/product?code=KS-SF-09-102>

⁹ <https://circabc.europa.eu/w/browse/9bc9e371-c8ed-4768-8dd5-9f98433258ba>

Regulations

Prior to 2007, countries delivered statistics for the ESSPROS Core System to Eurostat on the basis of a gentlemen's agreement and the reference manual for the collection was the ESSPROS Manual - 1996 edition¹⁰.

In 2007 and 2008, three new pieces of legislation were introduced in the field of social protection statistics to regulate the ESSPROS Core System and PB module:

- **Regulation (EC) No 458/2007¹¹**: This is the main regulation for ESSPROS. It defines the methodological framework to be used for compiling ESSPROS statistics on a comparable basis and the timetable for data transmission.
- **Commission Regulation (EC) No 1322/2007¹²**: This supplements regulation (EC) No 458/2007 by providing further specifications of the results to be transmitted, the appropriate formats for transmission, the criteria for measuring quality and the timetable for the transmission of national quality reports.
- **Commission Regulation (EC) No 10/2008¹³**: This supplements regulation (EC) No 458/2007 by further specifying definitions, classifications and dissemination rules.

When the above regulations came into force, the reference manual for data collection was replaced by the ESSPROS manual - 2008 edition¹⁴, produced by the European Commission in collaboration with the Member States.

In 2011 two further pieces of legislation were introduced to regulate the net SPB module:

- **Commission Regulation (EU) No 110/2011¹⁵**: This specifies, for the net SPB module, the results to be transmitted, the appropriate formats for transmission and the criteria to be followed in order to measure quality.
- **Commission Regulation (EU) No 263/2011¹⁶**: This specifies, for the net SPB module, the definitions, detailed classifications, dissemination rules and the timetable for data transmission.

During this same year, the reference manual for data collection was replaced by the ESSPROS manual – 2011 edition¹⁷. This included, for the first time, the newly developed methodology for the net SPB module (following the restricted approach). Shortly after this, the ESSPROS

¹⁰ <http://ec.europa.eu/eurostat/product?code=CA-99-96-641>

¹¹ <http://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1417170413043&uri=CELEX:32007R0458>

¹² <http://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1417170612936&uri=CELEX:32007R1322>

¹³ <http://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1417171123098&uri=CELEX:32008R0010>

¹⁴ <http://ec.europa.eu/eurostat/product?code=KS-RA-07-027>

¹⁵ <http://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1417171290110&uri=CELEX:32011R0110>

¹⁶ <http://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1417171443241&uri=CELEX:32011R0263>

¹⁷ <http://ec.europa.eu/eurostat/product?code=KS-RA-11-014>

manual and user guidelines – 2012 edition¹⁸ was released. This included additional guidelines and examples but the underlying methodological specification remained unchanged.

Since, the manual has been further updated and replaced by the ESSPROS manual and user guidelines – 2022 edition¹⁹. This includes a number of revisions to clarify, among others, the following topics: payable tax credits, withheld taxes and social contributions, collective services, the definition of means-testing, capital transfers, standard retirement age, re-routed social contributions. The first two of these topics are particularly pertinent to the net SPB module.

Note also that as per Decision No 130/2007 of the EEA Joint Committee regarding Regulation No 458/2007, amending Annex XXI (Statistics) to the EEA Agreement, which entered into force on 28 September 2007²⁰, EEA-EFTA countries (except Liechtenstein) are required to submit ESSPROS data (including that for the net SPB module) by the deadlines laid down in the ESSPROS Regulations.

Structure of the net SPB module

In the ESSPROS Core System, each social protection scheme within a country is allocated a specific number by which it can be identified (i.e. scheme 1 or scheme 7). Further, the data for each scheme are broken down using a detailed set of classifications. For example, each social benefit is classified under a specific function and detailed benefit type. Such detailed classifications are identified using a seven-digit reference number (i.e. 1111111 or 1121111). These are used throughout this document to identify data for specific benefits of specific schemes.

The ESSPROS net SPB module complements the ESSPROS Core System with data that can be used to convert data on social protection benefit expenditure from gross to net. To achieve this, it collects data on average itemised tax rates (AITRs) and average itemised social contribution rates (AISCRs) for each cash benefit reported in the ESSPROS Core System following the same structure used for the social benefit expenditure data, with the exception that it excludes benefits in kind. In addition to this, it collects data on residual fiscal benefits which are only reported in cases where the impact of fiscal benefits on income from benefits cannot be directly accounted for in the AITR and/or AISCR. The net SPB module therefore uses the social protection scheme as a statistical unit and makes use of many of the classifications used in the ESSPROS Core System. Details of these are provided in the ESSPROS manual and any additional concepts used by the net SPB module are provided in Appendix 4¹⁸.

¹⁸ <http://ec.europa.eu/eurostat/product?code=KS-RA-12-014>

¹⁹ <https://ec.europa.eu/eurostat/web/products-manuals-and-guidelines/-/ks-gq-22-013>

²⁰ <http://www.efta.int/media/documents/legal-texts/eea/the-eea-agreement/Annexes%20to%20the%20Agreement/annex21a.pdf>

Structure of the quality report

The aim of this quality report, as required by the Commission Regulation (EU) No 110/2011 on net social benefits¹⁵, is to review and evaluate the statistical data collected during 2022 for the net SPB module according to the quality criteria set out by the European Statistical System (ESS):

- **Relevance** refers to the extent to which the statistical data satisfy the needs of the users.
- **Accessibility and clarity.** Accessibility refers to the physical condition under which users can obtain the statistical data whilst clarity refers to the availability of appropriate documentation linked to the statistical data and to additional assistance supplied by producers to users in relation to it.
- **Timeliness and punctuality.** Timeliness of statistical data is the length of the time between their availability and the moment at which the phenomena they describe occurred whilst punctuality refers to the time lag between the release and the target date by which the data should have been delivered.
- **Coherence** aims to measure the reliability of the statistical data when combined with other statistics in different ways and for other uses.
- **Comparability** aims to measure the effect of the differences in applied statistical concepts and measurement procedures when the statistical data are compared between geographical areas, over time or between different domains.
- **Accuracy** refers to the closeness of the statistical data to the (generally) unknown true or exact value of the measured phenomena.

In this report, all the criteria defined will be applied where possible. However, as the data used for net data collection are based on a wide range of different types of data sources, the standard measures of accuracy are not applicable. Accuracy is therefore assessed by reporting non-sampling errors in data sources, such as limitations in coverage and measurement problems, and by evaluating the estimation methods used.

A comprehensive validation of the ESSPROS net SPB module data has been carried out to evaluate the reliability of the data and seek out inconsistencies in order to resolve them before publishing the data. Nevertheless, there sometimes exist gaps and issues which remain unresolved. By providing an in-depth assessment of the fulfilment of the quality criteria given above, this report will identify the impact of such issues on the data.

It is important to bear in mind that the ESSPROS net SPB module builds on the data of the ESSPROS core collection. The quality of the latter is linked with the quality of the former. This analysis is limited to the quality of the data collected to convert the gross data of the core

collection to net data. To fully assess the quality of the final net data both this consolidated quality report and that of the core collection should be consulted²¹.

1. Relevance

Relevance refers to the extent to which the statistical data satisfy the needs of the users.

The ESSPROS statistics are extensively used and are consulted by a wide range of users. The ESSPROS net social benefits data is an important extension of the Core System. It further enhances the comparability of the data between countries and therefore its usefulness as a tool for comparing situations between countries. In addition to this, the data also provides valuable insight into how fiscal systems affect social protection in different countries.

Currently five of the countries that submitted quality reports for the ESSPROS net SPB module noted that data on net social protection benefits was also published nationally:

- DK: published 10 months after the reference period but only on aggregated level
- LT: published 16 months after the reference period
- MT: published 24 months after the reference period but not in ESSPROS format
- AT: published 25 months after the reference period
- TR: published 12 months after the reference period

The data of the module therefore represent a significant contribution to statistical data in the field of social protection.

2. Accessibility and clarity

The accessibility and clarity of the statistical data refer to the actual availability to users of both the figures themselves and appropriate documentation.

ESSPROS net SPB data and metadata can be found in the dedicated section on “Social protection”, which is available on the Eurostat website at the following address:

<http://ec.europa.eu/eurostat/web/social-protection/>

²¹ See: <https://ec.europa.eu/eurostat/web/social-protection/quality>

Data covering reference years 2007-2020 are disseminated through the Eurostat database. The data for the latest reference year 2020 as well as revised historical data for previous years were disseminated between 30th January and 22nd March 2023.

2.1 Eurostat dissemination policy

According to annex III of Commission Regulation (EU) No 263/2011¹⁶ Eurostat shall publish information by Member State only after aggregation across schemes, at least on:

- total net social protection benefits
- the proportion of social protection benefits liable to taxes and/or social contributions
- net social protection benefits by function
- net social protection benefits by use of means-testing

The Commission (Eurostat) shall, on demand, disseminate detailed country data broken down by scheme to specific users (national authorities compiling ESSPROS data, Commission departments and international institutions). If the country concerned agrees to full dissemination of the data then the specific users shall be authorised to publish data by scheme. Otherwise, the specific users shall only be authorised to publish data aggregated across schemes in compliance with the rules laid down by the country concerned.

2.2 Metadata


2.2.1 Qualitative information

Under the terms of Regulation No 458/2007¹³, each transmission of ESSPROS quantitative data has to be accompanied by the release of updated qualitative information, which acts as a comprehensive set of metadata for the quantitative data by providing, for each country, a description of each social protection scheme and each detailed benefit as well as information on any recent changes and reforms to the national social protection system. While the qualitative information is part of the Core System, it is an important source of background information for the data of the net SPB module.

The qualitative information at scheme level has been disseminated by Eurostat in the ESSPROS dedicated section on the Eurostat web site:

<http://ec.europa.eu/eurostat/web/social-protection/data/qualitative-information>

2.2.2 Metadata

Additional metadata is also provided in the ESMS file attached to ESSPROS tables in the Eurostat database. It can be accessed by clicking the  icon associated to the Social protection data tree at the following address:

3. Timeliness and punctuality

3.1 Timeliness

Timeliness of statistical data is the length of the time between their availability and the moment at which the phenomena they describe occurred. In the case of the net SPB module timeliness is dependent on both the timeliness of the ESSPROS core data, which are required before the net SPB module data collection can be launched, and the time it takes to complete the collection itself. Data for the reference years 2020 were made available on Eurostat public database within March 2023 for all countries. This represents a time lag of about 27 months. Timeliness has therefore improved since the previous data collection.

3.2 Punctuality

Punctuality refers to the time lag between the release and the target date by which the data should have been delivered. In the case of the net SPB module the deadlines are set by the Commission Regulation (EU) No 263/2011 on the collection of ESSPROS net social protection benefits so it is with reference to this that the punctuality of the data collection is evaluated.

Quantitative net SPB data by scheme for the reference year 2020 were transmitted to Eurostat by thirty-four countries (BE, BG, CZ, DK, DE, EE, IE, EL, ES, FR, HR, IT, CY, LV, LT, LU, HU, MT, NL, AT, PL, PT, RO, SI, SK, FI, SE, IS, NO, CH, BA ME, RS and TR). The deadline defined by the regulation was the 31st of December 2022, corresponding to a time lag of 24 months, and was met by all but one country, which showed a delay of a few days.

Quality reports referring to the 2020 data were transmitted to Eurostat by all the countries who provided quantitative data. The deadline defined by the regulation was the 31st of January 2023, corresponding to a time lag of 25 months. Many countries provided national quality reports at the same time as the quantitative data, and all countries within the legal deadline.

4. Coherence

In this section, an assessment of the degree to which the underlying statistical processes use the same concepts (classification, definition and target population) and harmonised methods as other relevant data collections is provided.

As far as possible, the ESSPROS net SPB module needs to be coherent with the ESSPROS Core System. Indeed, the latter shares the classifications, definitions and target population of the ESSPROS core collection and should not enlarge the scope of the core collection. Ensuring coherence between the two therefore relies on making sure that the scope is maintained and that no double counting occurs. During the validation of data for the net SPB module checks are made to identify and, where possible, address two issues which can cause these problems.

The first of these concerns payable tax credits. The current methodology requires the value of such tax credits to be reported in full in the ESSPROS core system as cash benefits and excluded from the calculation of the AITRs in the net SPB module. However, there is potential for double counting if any part of the value of a payable tax credit is taken into account in both the ESSPROS core system and the net SPB module. There are currently only two known cases, in Italy and Austria, where minor payable tax credits that are reported in the core system could not be excluded from the calculation of the AITRs. However, the full value of these tax credits is <1% of total taxation so the impact on the data is negligible.

A second potential issue concerns the treatment of fiscal benefits in general. Fiscal benefits may be granted through reduced direct taxation of a range of different types of income, including non-benefit income, or reduced indirect taxation. These may therefore be granted to non-benefit recipients. Under the restricted approach followed by the net SPB module, fiscal benefits granted to benefit recipients should be taken into account in the calculation of the AITRs and AISCRs. However, this is not always possible due to various limitations in the source data available. To compensate for any omissions, the impact of fiscal benefits on the taxation of benefit income can be included as residual fiscal benefits. In this case the values reported should only cover part of the full value of fiscal benefits – i.e. the part which derives from reduced taxation of benefit income. The value of fiscal benefits provided through reduced taxation of non-benefit income or reduced indirect taxation should not be taken into account at all as it would expand the scope of the module beyond that of the core system.

In Estonia some of the value included under residual fiscal benefits appears to be outside the scope of the data collection. However, in this case the total value of the fiscal benefits concerned represent no more than 1% of total net social protection benefits so the bias caused is negligible.

On the whole, the validation process shows that the coherence between the net SPB module data and the ESSPROS core data is generally very good. In cases where issues are identified their impact is negligible.

5. Comparability

Comparability aims to measure the effect of the differences in applied statistical concepts and measurement procedures when the statistical data are compared between geographical areas and over time.

5.1 Comparability between countries

In order to analyse geographical comparability, this report explores the coverage of the final figures from three different perspectives:

1. Coverage of the fiscal system: Methods used to derive AITRs and AISCRs should take into account the effect of all fiscal rules that impact the amount of taxes or social contribution due on income from social benefits. However, this is not always possible. Certain rules may be unaccounted for in the methods used to estimate AITRs and AISCRs such that they may deviate from the true rates.

Six countries – Belgium, Croatia, Latvia, Lithuania, Luxembourg and Austria – reported that particular aspects of the fiscal system could not be taken into account in the calculation of their AITRs and AISCRs (see

Table 1). In most of these cases the impact is expected to be negligible.

Table 1 - Cases of incomplete coverage of the fiscal system

Country	
BE	<ul style="list-style-type: none"> • Not all data that needed to be included in the taxable income concept was available. Among other things, there is a lack of information on real estate income and income from movable property. • Taxes levied by communities or other regional entities are not taken into account. Only those of levied by the federal state are covered.
HR	<ul style="list-style-type: none"> • Data on taxes and social contributions paid by beneficiaries of early retirement benefit for labour market reasons (scheme 2 – 1161113) are not available and cannot be estimated. • Data on the exact amount of tax refund to beneficiaries of subsidy for stay-at-home parent (scheme 9 – 1151114) are not available and therefore are not considered in NET module.
LV	<ul style="list-style-type: none"> • No available data to distinguish old age pension beneficiaries from persons who together with non-taxable minimum for pensions also received tax relief to disabled persons.
LT	<ul style="list-style-type: none"> • The data sources recording the amount of the benefit that falls within the social contribution and income-tax base at the individual level are not available for scheme 28 – 1111121 and for schemes 5, 28 – 1161122.
LU	<ul style="list-style-type: none"> • Tax abatements are fixed by the model on minimum legal applicable amounts, supplementary income for cross border households is not considered for fixing the applicable tax rate. • Capital incomes, rent incomes and miscellaneous incomes which are part of the tax basis have not been included in the tax base because they are not available – these incomes represent a low share of the tax basis.
AT	<ul style="list-style-type: none"> • The calculation of the AITRs does not take into account gross income from agriculture and forestry, self-employment, business, capital, rent and lease, and/or other income nor tax deducted from these. It is assumed that the effect on AITRs is small as there are few ESSPROS beneficiaries receiving these types of income.

2. Coverage of the taxation of benefits: All benefits from which taxes or social contributions are deducted should have non-zero AITRs or AISCRs. In some cases, there simply isn't data available to provide any estimate of an AITR or AISCR for a particular benefit. In these cases, the net expenditure for that benefit will be overestimated.

Greece, Croatia, Italy and Montenegro reported incomplete coverage of taxable benefits. For Greece when the beneficiary's total taxable income is over 12,000 euros, the amount of several benefits is included in the total taxable income, where a special solidarity levy (ΕΕΑ- Ειδική Εισφορά Αλληλεγγύης) is applied. There were no data to estimate those AITRs for 2020. For HR data on taxes and social contributions paid by beneficiaries of early retirement benefit for labour market reasons are not available to the reporting unit; for the time being this item doesn't represent a significant amount. For Italy social contributions paid on items 1161111 and 1161112 are already included in rerouted SC, so they are not covered in order to avoid duplications. For Montenegro an incomplete coverage is indicated for items 1131121, 1161123 and 1181121 of scheme 19.

3. Coverage of the population: Some data sources may not provide representative coverage of the population of benefit recipients concerned. For instance, particular groups of recipients may not be included. This can mean that the estimated AITRs and AISCRs may deviate from the true rates.

Switzerland reported a case of source data that did not provide a complete coverage of the population of benefit recipients concerned (see Table 2). However, in this case it is unlikely to have a significant impact on the overall data.

Table 2 - Cases of incomplete coverage of the population

Country	
CH	<ul style="list-style-type: none"> • The Household Budget Survey (HBS) used as a source to calculate AITR and AISCR is only conducted in Switzerland. A considerable part of the social benefits are paid to people living abroad and the individuals concerned are not covered in the survey. It has to be assumed that the benefits they receive are taxed as within Switzerland.

5.2 Comparability over time

Data collected for 2020 can be compared with that provided for previous reference years (2007 to 2019). Typically, we do not expect significant changes in the AITR and AISCR applied over time as the taxability of benefits and the fiscal rules applied to derive tax and social contributions are not anticipated to change dramatically over time, except when specific tax reforms are introduced. For this reason, changes in data over time are systematically reviewed as part of the validation process to identify cases of benefits where there is either a difference in whether an AITR or AISCR is applied between years or where there are significant changes in the value of these rates. These are then discussed with delegates to verify that they are not

caused by errors in the data. There should therefore be no significant issues affecting the comparability of data over time.

6. Accuracy

This final section of the quality report deals with the accuracy of the data by evaluating how close the figures in the data collection are to the truth.

Most of the figures in the collection are obtained using administrative data and survey data, with only a small percentage of the figures coming from other means. Accordingly, the discussion about accuracy focuses on problems of coverage and methodology as the most likely sources of error.

6.1 Data sources

The most common type of data used by member states to generate the AITRs and AISCRs for the net SPB module data collection was administrative data. In fact, twenty-three out of the thirty-four countries that provided a quality report relied on this rather than other types of source data (see Table 3). Only four countries relied on micro-simulation models – BE, HU, FI and NO. In these cases, the models generate data on the basis of other data which may not be covered here.

Table 3 - Types of data sources used

Country	Admin data	Register based data	Survey data	Micro-simulation	Other data	Total
BE	1			1		2
BG					1	1
CZ	1		1			2
DK		1				1
DE	7		1		1	9
EE	5					5
IE	3	1				4
EL			1			1
ES	5				1	6
FR	1					1
HR	3		1		2	6
IT	1		1			3
CY			1			1

Country	Admin data	Register based data	Survey data	Micro-simulation	Other data	Total
LV	5		1			6
LT	5				1	6
LU		1				1
HU	1			2		3
MT	3					3
NL	6					6
AT	3				2	5
PL					7	7
PT			1			1
RO	3					3
SI	6		1			7
SK	2				1	3
FI				2		2
SE		1				1
IS		1				1
NO		2		1		3
CH	3	1	1			5
BA	7				1	8
ME	5					5
RS	4					4
TR	1					1
Total	81	8	10	6	17	122

The frequency of the data sources used to generate AITRs and AISCRs for the data collection is typically no more than 12 months (see Table 4). In fact, there were only three countries where the frequency of the data sources used exceeded 12 months – Germany, Poland and Slovenia (frequency from 2 to 4 years).

Table 4 - The frequency of data provided by the data sources

Country	<12 months	12 months	> 12 months	Not specified	Total
BE		2			2
BG				1	1
CZ	1	1			2
DK		1			1
DE		7	2		9
EE		5			5
IE				4	4
EL		1			1
ES		6			6
FR		1			1
HR	2	4			6
IT		2			2
CY		1			1
LV		6			6
LT		5		1	6
LU		1			1
HU		3			3
MT		3			3
NL	5	1			6
AT		4		1	5
PL		5	1	1	7
PT		1			1
RO	3				3
SI		6	1		7
SK		2		1	3
FI		2			2
SE		1			1
IS		1			1
NO		3			3
CH		5			5
BA		6		2	8
ME		5			5
RS		4			4
TR		1			1
Total	11	96	4	11	122

The majority of the sources used to generate the net SPB module data become available no more than one year after the reference period they describe (see Table 5). However, more than half of the countries used at least one source with a time lag exceeding 12 months.

Table 5 - Time lag of data sources

Country	<12 months	12 months	> 12 months	Not specified	Total
BE	1		1		2
BG	1				1
CZ	2				2
DK			1		1
DE		6	3		9
EE	5				5
IE	2	1	1		4
EL			1		1
ES		6			6
FR			1		1
HR	5		1		6
IT			2		2
CY			1		1
LV	6				6
LT	3		3		6
LU			1		1
HU		1	2		3
MT	2	1			3
NL	6				6
AT	3		2		5
PL	3	2	1	1	7
PT			1		1
RO		3			3
SI	5	1		1	7
SK	3				3
FI	1		1		2
SE			1		1
IS	1				1
NO	2	1			3
CH			5		5
BA			8		8
ME	5				5
RS	4				4

Country	<12 months	12 months	> 12 months	Not specified	Total
TR	1				1
Total	61	22	37	2	122

6.2. Methods used to estimate statistics

The methods employed by each country to evaluate the effects of the fiscal system on social protection benefits are directly linked to the fiscal rules in place and to the types of data that are available and are practical to use. Inevitably, different types of data allow different levels of detail and may, therefore, result in different levels of precision in the estimates of net social protection benefits.

In most cases, the analysis of data sources and methods used by countries to compile data for the ESSPROS net social benefits data collection relies on information given in the national quality reports delivered along with the questionnaires or additional information provided in response to queries raised during the validation of the net data for each country. The majority of countries provided enough detail to give a clear picture of how their AITRs and AISCRs were estimated and the issues that they were faced with. The methods used by each country are summarised in Table 6.

Table 6 - Methods used to calculate AITR and AISCR

Country	
BE	<p>The data are processed using a micro-simulation model to obtain estimates of the itemised tax and contribution rates. All benefit types should be covered by the sample but the data set remains a sample that covers about 3% of the whole population.</p> <p>The tax rates per tax unit have been computed as the taxes paid by the whole unit in the numerator and the amount of gross income received by the tax unit members that are subject to taxation in the denominator. These rates, computed at the tax unit level, have then been aggregated into an aggregate figure by weighting them with the replacement income share.</p>
BG	<p>In Bulgaria, no social protection benefits are liable to taxation and only two particular benefits provided under a single scheme (scheme 18) are subject to social contributions. Social contributions are deducted from these benefits at a flat rate which is set explicitly in the Social Security Code.</p>
CZ	<p>Two different methods were used to calculate AITRs/AISCRs for two separate sets of benefits reported in ESSPROS:</p> <ul style="list-style-type: none"> • For salary compensation benefits paid under schemes 4 and 5 the data available only provides information on the gross amounts of expenditure. As a result, the average tax and social contribution rate applied to wages are used as AITR and AISCR. • For benefits disbursed under schemes 13 and 14 there's no need to estimate the AISCR and AITR as the exact amount of premium and tax paid is available.

Country	
DK	<p>No AISCRs are applied. AITRs are calculated using register data from the Danish law model (from the Danish Ministry of Economic Affairs and Interior). This involves four steps:</p> <ol style="list-style-type: none"> 1. For each individual in the sample (taken from the tax registers) total taxes are “allocated” proportionately to all types of taxable incomes, including the various types of taxable transfers. 2. The sums of each type of transfer as well as the sums of the amount of taxes “allocated” to them are derived. 3. The tax ratios (on the taxable part of defined types of transfer) are then calculated as the (sum of) allocated taxes on a transfer divided by the sum of the (taxable) transfers. 4. Transfers reported in each of the ESSPROS detailed classifications by scheme are divided into two types: non-taxable and taxable. In the latter case, there are several possibilities. Where all the transfers reported for a specific classification are taxable then the relevant tax ratio to be applied may be one of the tax ratios calculated in step 3 or a tax ratio calculated by weighting together two or more of the tax ratios calculated in step 3. Where only part is taxable, the relevant tax ratio is calculated by weighting together one or more tax ratios calculated in step 3 and a tax ratio of 0 for the non-taxable transfers.
DE	<p>AITR are estimated based on income tax statistics, using information from the German Socio-Economic Panel, or on data taken from national accounts. For AISCR estimations are based on administrative data or on average contribution rates.</p>
EE	<p>The AITRs are calculated using data on gross amounts of benefits and data on amounts of taxes (income tax) which have been deducted from these benefits. The latter is divided by the former to derive the rate applied.</p> <p>Social contributions only apply to unemployment benefits (1161122 and 1161123). The AISCRs for these are calculated by dividing data on amounts of social taxes which are deducted from unemployment benefits by data on gross amounts of unemployment benefits.</p> <p>There is one residual fiscal benefit which relates to an increased tax exemption for individuals with two or more dependant minors. The value of the residual fiscal benefit is calculated on a revenue forgone basis by multiplying the value of the increase in the basic tax exemption by the tax rate.</p>
IE	<p>Calculation of AITRs and AISCRs are based on Social Protection Payments files and Revenue Tax files containing anonymised micro-level data on social benefits payments, income, tax and social contributions paid. In some cases multiple data source are used, by matching social protection payments with revenue files. To allocate the pensions to scheme 24 and scheme 27 respectively, it is necessary to match the employer paying the pension to the CSO’s Business Register; AITR and AISCR is only calculated on the subset of pensioners who can be matched.</p> <p>As no micro data tax file was available from the Revenue Commissioners for 2020 at the time of compilation, it was not possible to estimate the AITR for the Pandemic Unemployment Payment.</p>

Country	
EL	<p>All AITRs and AISCRs are derived using data from the Statistics on Income and Living Conditions (EU-SILC) survey.</p> <p>AITRs: Using data on the gross personal income a relevant amount of payable tax is calculated for each beneficiary according to the tax rules in place for the reference year. Each individual's tax rate is then calculated using this data. This rate is then multiplied with the amount of the benefit the individual receives. All these products are then summed and are divided with the total amount of the benefit reported in the EU-SILC survey.</p> <p>AISCRs: These are calculated in the same way as the AITRs except that instead of calculating the tax for each beneficiary, the total social contributions that they have paid in the reference year is used.</p> <p>Both AITRs and AISCRs are applied at function level across all schemes.</p>
ES	<p>AITRs are mostly derived using micro-data on the amount of different taxable and non-taxable incomes and on the final income tax liability. In cases where taxable benefit income is accumulated with other sources of income, liabilities are distributed proportionally across the different components of the tax base. This data has been used to derive the tax and then the tax rates applicable to taxable benefits. However, there are several cases where further estimations are required.</p> <p>AISCRs for all benefits subject to contributions except for 1161111 and 1161112 of Schemes 12 and 34 are derived by applying the contributions rates laid down every year in the legislation to the contribution bases. In the case of 1161111 and 1161112 of Schemes 12 and 34 data on contributions paid is used to derive the AISCR directly.</p>
FR	<ul style="list-style-type: none"> • For 2020, the AITR and AISCR rates could not be calculated by the end of 2022. Thus, the 2020 net benefits were only calculated using the 2018 net benefits and the rate of change in gross benefits between 2018 and 2020. A major methodological project on Net benefits is still planned for France but the completion of work is delayed.
HR	<p>Scheme 2 – 1121111, 1131111, 1131112, 1141111, Scheme 9 - 1151114 and Scheme 10 – 1111111, 1131121, 11621122 are subject to both taxes and social contributions while scheme 11 – 1121111, 1131111, 1131112, 1131121, 1141111 is only subject to taxes.</p> <ul style="list-style-type: none"> • Scheme 2 (Pension insurance): Only data on social contributions and taxes paid in respect to all pensions as a whole is available. Data broken down by pension type is available only for December and not for the entire reference year. This is used to generate estimates of the proportion of taxes or social contributions paid in respect to each type of pension. These estimates are then used to weight the annual data to derive taxes and social contributions paid on each pension type during the year. This data is then used in combination with gross data for the pensions to calculate AITR and AISCR. • Scheme 9 (subsidy for stay-at-home parent): the actual amount of taxes and social contributions paid is available and this could be used to derive the AITR and AISCR directly. • Scheme 10 (Paid sick leave): Data on gross and net aggregates for sick leave were estimated by applying the reduction rates for paid sick leave and tax/contribution rules defined in the national legislation to data on the average gross and net salary. In the calculation of net sick leave the total amount of tax/surtax and contributions paid in respect to the average salary compensation are derived and this is used to derive the AITR and AISCR. • Scheme 11 (II Pillar pensions): The actual amount of tax/surtax paid on the II pillar pensions is available and this could be used to derive the AITR directly.

Country	
IT	<p>AITRs are applied to a number of benefits but there is only one benefit with a non-zero AISC (scheme 18 - 111111). Contributions due on other benefits are already accounted for among "Social contributions rerouted to other schemes" in ESSPROS gross data.</p> <p>AITRs are generated using data from the Statistics on Income and Living Conditions (EU-SILC) survey. For each benefit subject to the income tax, relevant gross and net amounts for each individual from the EU-SILC survey have been aggregated in order to calculate the implicit tax rate (AITR), derived as $[1 - \text{Net/Gross}] * 100$. In order to also factor in the impact of tax withheld at source, which is embodied in ESSPROS gross data, the value of "repayments/ receipts for tax adjustment" (weighted by the share of gross benefit on total gross income) has been used to correct the estimates of the AITRs. Finally, for pension benefits and benefits for which the AITR on employee income is used as a proxy, the estimates have been grossed up to the levels estimated from aggregate data on income tax returns. There are a couple of exceptions where other methods are used:</p> <ul style="list-style-type: none"> • Benefits 111111, 113111, 113112, 115111, 116115: The AITR applied to wages is used as an estimate for these benefits because more specific information is not available. • Benefits 113121, 114122, 116122: Since these benefits are subject to separate taxation, but in the data source the detailed breakdown available for net is not available for gross, only beneficiaries without other benefits lumped together in the gross EU-SILC variable have been selected for the estimation of AITR.
CY	<p>Only old age and survivors' pensions are subject to taxes in Cyprus and no benefits are subject to social contributions.</p> <p>The AITRs are generated using the European Union Statistics on Income and Living Conditions (EU-SILC) data. This provides information for old age and survivors' benefits on net benefit income and gross benefit income. The ratio between the two is used to calculate the AITRs applied to taxable old age pensions. More specifically, the formulae used are $\text{AITR} = 1 - (\text{PY100N}/\text{PY100G})$ and $\text{AITR} = 1 - (\text{PY110N}/\text{PY110G})$, for the old age and survivors' functions respectively.</p>
LV	<p>A range of different sources providing information on the total amount of taxes and social contributions paid by individuals were used. For benefits which are only subject to taxation, AITRs were calculated by dividing the total amount of tax paid (in this case withheld at source) on a benefit/pension by recipients by the total taxable benefit/pension income received by recipients.</p> <p>There are only three cases of benefits subject to both taxes and social contributions and where both AITRs and AISCs are applied (under scheme 15 and scheme 10). The source data only gives the total amount of both taxes and social contributions paid so in order to separate the AITR and the AISC the typical employee's social contributions rate of 11% was applied whilst the remaining value was recorded as an AITR.</p>
LT	<p>The majority of AITRs applied in the Lithuanian data are calculated using micro-data on amounts of taxable income, non-taxable income and income tax paid from the State Tax Inspectorate database accompanied by data on the amounts of individual benefits received from the State Social Insurance Fund database. This data covers all individuals who pay income tax. First of all, the appropriate benefit recipients are selected in the database. Then for each of these individuals the total amount of tax paid is divided by total taxable income. These are added together for the whole group of individuals of a particular benefit and then divided by the total number of individuals of that benefit.</p> <p>For AISCs the contribution rates set in legislation can be applied directly as no reductions are applied to the base on which social contributions are calculated. Therefore, the social contribution rate for the benefit concerned is considered to be equal to the social contribution rate applied to the total social contribution base.</p>

Country	
LU	<p>AITRs and AISCRs are computed using a micro-simulation model. The model is based on data from the Social security institutions on the social benefits they pay out. The module applies the applicable fiscal rules to income received by individual to derive the tax and social contributions they are required to pay and then distributes these taxes and contributions proportionally across components of the tax base to obtain those deducted from specific social protection benefits. These are then used to generate the AITRs and AISCRs.</p>
HU	<p>AITRs are calculated using a simplified tax-system simulation model. All calculations were based on the data from the Hungarian Statistics on Income and Living Conditions (HU-SILC). The only exception is the unemployment benefit of scheme 7, for which administrative data from the Ministry of Finance have been used. The steps involved in this simulation are as follows. First, the tax base is calculated for each individual by summing up all its constituents. Second, the tax liability for each individual is derived according to the Hungarian tax rules. Third, this is then used to derive a tax ratio (tax liability divided by the tax base) and the amount of tax paid on each taxable benefit (tax ratio multiplied by taxable benefit) for each individual. Lastly, these are then used to calculate the AITR on each taxable benefit (total tax paid on a benefit by all individuals divided by the total amount of benefit).</p> <p>The AISCR is calculated separately for every kind of contributions. For each of them the calculation has the same principles as that of the AITR. The total AISCR is the sum of the AISCRs calculated for each types of contributions.</p>
MT	<p>The AITRs applied to benefits are based on data from Malta's Department of Social Security (DSS), the Office of the Commissioner for Revenue (CfR) and Malta Enterprise. By matching the individual identification number in each of those databases, taxes paid and taxable income as well as its breakdown between specific benefits can be identified for each individual. This is used to calculate the AITRs as follows:</p> <p>For each item, the following steps are carried out:</p> <ol style="list-style-type: none"> 1. For each beneficiary a relative tax rate is calculated by dividing taxes paid by taxable income and multiplying by 100. 2. For each beneficiary and benefit a benefit weight is calculated by dividing the amount of a specific benefit they receive by the total amount of that benefit received by all recipients. 3. The AITR for a benefit is calculated as the sum of the product of the relative tax rate and relevant benefit weight across all individuals. <p>In Malta, only one unemployment benefit is subject to social security contributions. The steps to calculate the AISCR are similar to those used for the calculation of the AITR.</p>
NL	<p>AISCRs and AITRs are estimated using Tax office data as well as data from primary social security institutions such as Zorginstituut Nederland (ZiN), Sociale Verzekeringsbank (SVB), Uitvoeringsinstituut Werknemersverzekeringen (UWV) which provide information on standard amounts of gross and net social protection benefits.</p> <p>AISCRs of households with regard to scheme 14 (ZVW) are a fixed amount for every person. This contribution has to be paid by every scheme which is liable to contribution (Health Insurance Act). Since the number of persons for every scheme or combination of schemes is unknown, the contribution is converted to a percentage contribution on the basis of its relationship with the employers' contribution rate.</p>

Country	
AT	Wage tax, annual insurance and pension data from the Federation of Social Insurances (database for the General Income Report) is supplemented with wage tax assessment data and additional wage tax data. This allows for gross income, social insurance contributions made and tax paid by persons receiving benefits to be calculated. From this the AITRs and AISCRs can be derived for each benefit by weighting each beneficiary's tax rate or contribution rate by the amount of benefit they receive.
PL	As there is no information on the payment of taxes and social contributions for each schemes, one general structure has been taken for calculating AITR and AISCR. Data about taxes due by individual persons is not available for analysis. The calculation of AITR is based on the average allowance amount paid in 2020, as if no tax credits applied. The health care contribution rate is 9%, however 7,75% is deducted from personal income tax due, and 1,25% is not deductible.
PT	Average tax and social contribution rates are calculated using gross and net EU-SILC 2021 personnel income series (that refers to 2021 data). These rates are applied to ESSPROS gross values 2020.
RO	No social contributions are levied on benefits in Romania. Only taxes are applied. More specifically, only pensions are subject to taxation. The exact amount of taxes deducted from gross pensions is available directly from administrative data sources for each type of pension paid out by each pension scheme. AITRs have been calculated from this data by calculating the share of the relevant gross social benefit to which the taxes correspond.
SI	<p>No social contributions are levied on benefits in Slovenia.</p> <p>A range of different sources were used providing information on the total amount of taxes paid by individuals. For the majority of taxable benefits data from the Pension and Disability Insurance Institute (PDII) is linked with data from either the Financial Administration of the Republic of Slovenia (FARS), the Ministry of Labour, Family and Social Affairs (MLFSA) or the Employment Service of Slovenia (ESS) using a PIN (personal identification number). This information is then used to calculate the AITRs for each category of benefits as follows:</p> <ol style="list-style-type: none"> (1) Gross and net amounts of benefits are derived for each recipient. (2) Total gross and total net benefits are derived by aggregating Gross and net amounts of benefits across all recipients. (3) AITR is calculated from total net benefits and total gross benefits. <p>For some benefits of schemes 18 only aggregated data were available from the source, then estimations based on the same rate as for other benefits were applied.</p> <p>For some benefits of schemes 1, 24 and 28 only aggregated/estimated data were available from the source, then estimations based on the official (published) average annual rate of taxes paid on wages in Slovenia for the year 2020 were applied.</p>
SK	AITRs and AISCRs applied to taxable benefits are calculated directly from data on the gross amount of benefits liable to taxation and social contributions and the amount of taxes and social contributions paid on those benefits. For benefits of scheme 11 only interest on benefit is subject to taxation.

Country	
FI	<p>AITRs and AISCRs are calculated using a micro-simulation model of the Finnish Ministry of Finance. The model calculates these through the following steps:</p> <ol style="list-style-type: none"> (1) A personal tax rate and social contribution rate is calculated for each person (2) The rates are applied to the income from a particular benefit to derive the taxes and social contributions due in respect to that benefit. (3) The taxes due in in respect of a particular benefit are aggregated across recipients and then used to derive the AITR. (4) The social contributions due in in respect of a particular benefit are aggregated across recipients and then used to derive the AISCR. <p>Two residual fiscal benefits concerning deduction for disability (“invalidivähennys” in Finnish) are included in the data. The values for these come directly from the source data.</p>
SE	<p>Social contributions are not levied on social benefits. The AITRs are calculated using data from the FASIT micro-simulation model. This model is used to derive the total taxable income and the total tax paid for each individual receiving a benefit. This is then used to derive a tax rate for each individual receiving that benefit. The AITR is then estimated as an average of the individual tax rates weighted according to the amount of benefit each individual receives.</p>
IS	<p>AITRs and AISCRs are computed using personal tax register data. The calculation of the AITRs is grounded on isolating groups of individuals in the personal tax register receiving definite social protection cash benefits and calculating their average tax ratio. Total taxable income and income tax total are calculated for each group of benefit recipients. The average tax ratio is then found by dividing the tax with the taxable income.</p>
NO	<p>All AITR/AISCR are computed using the LOTTE micro-simulation model which incorporates tax return data for all residents of Norway. In Norway, it is not possible to separately define an AISCR therefore the AITRs incorporates the impact of social contributions.</p> <p>The LOTTE model splits a person’s income into four different types:</p> <ul style="list-style-type: none"> – employed labour income – self-employed labour income – transfers – capital income <p>Each of these types of income is taxed differently in Norway so the amount of the personal tax burden has to be split across each type. A personal tax rate for each type of income can be then derived by dividing tax by income.</p> <p>A taxable benefit is classified as one of the above-mentioned income categories. For each individual, the tax paid on a benefit is derived using the personal tax rate for the corresponding income category.</p> <p>For a specific benefit, the taxes paid on the benefits and the gross amounts of benefit are aggregated across all resident citizens. A general tax ratio can then be calculated by dividing the aggregate tax by the aggregate amount of the benefit.</p>

Country	
CH	<p>The following procedure was used to estimate the AITRs and AISCRs using data from the national Household Budget Survey (HBS):</p> <p>AITRs: For each household, a tax rate is calculated by dividing the entire amount of taxes paid on income and wealth by the entire amount of income which is subjected to income taxes. The amount of tax paid by each household in relation to income from a particular benefit is then derived by multiplying this rate by the gross amount of benefit received. The AITR for a benefit is calculated as the sum of taxes paid on the benefit across all recipients divided by the sum social benefits received across all recipients.</p> <p>AISCRs: Only the sum of social contributions paid by each household is known. Therefore, these have to be split proportionally across the different income components (earned income, social benefits...etc.) that are subject to social contributions. For each social benefit the AISCR is calculated as the sum of the social contributions paid on the benefit across all recipients divided by the sum of the benefits disbursed across all recipients.</p>
BA	<p>Scheme 3 – 1121111, 1131111, 1141111: the total amount of social contributions paid on total gross pension is available while the breakdown by detail pension items is missing. The breakdown of the total social contributions between the 3 types of pensions (disability pension, old age pension, and survivors’ pension) is estimated using the proportion of the total gross pension expenditure between the 3 types of pensions.</p> <p>Scheme 8 – 1111111, 1151111: data on taxes paid by recipients are estimated using administrative data on average gross and net salaries; data on social contributions paid by employers, on behalf of the employees, are not available and consequently it is applied the same rate of social contributions paid on wages.</p>
ME	<p>Scheme 2 – item 1111111, scheme 7 - item 1151111 and Scheme 11 – items 1151112, 1161115: aggregate gross data were available from data source. To calculate the AITRs and AISCR the rates were derived from average net/gross salary in Montenegro in 2020.</p> <p>Scheme 11 - item 1111111: total gross and total net benefits were derived by aggregating gross and net amounts of benefits (salary compensations) across all recipients.</p> <p>Scheme 19 – items 1131121, 1161123, 1181121: as amounts under a threshold for tax obligation are not reported in the database of Tax Authority of Montenegro, the net amount is calculated by subtracting to the gross amount (which includes an estimation for the part below the threshold) the taxes amounted above tax obligation.</p>
RS	<p>Scheme 1 – 1121115, scheme 5 – 1151111, 1151112, scheme 6 - 1111111, scheme 14 – 1111111 and scheme 15 – 1161112 are subject to both taxes and social contributions while scheme 2 – 1111111 is only subject to taxes and scheme 13 – 1161115 is only subject to social contributions.</p> <ul style="list-style-type: none"> • Schemes 1 (Pension and disability insurance), 5 (Financial support to families with children), 14 (Paid sick leave) and 15 (Other social benefits): these benefits are considered part of wages and are subject to taxes and social contributions accordingly. The tax rate is calculated based on information available from the national accounts on wages and on the taxes paid on these wages/salaries. The AISCR is set according to the rate of social contributions paid on wages. • Schemes 2 (Health insurance) and 13 (Solidarity fund): no specific method of calculation is necessary for AITR and AISCR because the exact amount of taxes and social contributions paid respectively on these benefits is provided in the source data. • Scheme 6 (Insurance for military personnel): for the AITR and AISCR no specific method of calculation was necessary because the exact amounts of tax and social contributions (employer and employees) paid on the benefit is provided in the source data.

Country	
TR	Only one benefit is subject to taxes and social contributions (Scheme 31 - 1161115). For this case, administrative data include the actual taxes and social contributions paid in relation to these benefits. These are used to directly calculate the AITR and AISCR.

On the whole the methods used, though varying in extent that may provide reliable estimates, can be deemed adequate. However, there is nevertheless room for improvement in some cases.

6.2.1 Problems leading to estimation of data

The information submitted by Member States highlights that many countries faced problems which lead to having to make use of estimates. Typically, such problems result from the fact that the data or methods used could not provide the coverage and detail required to calculate the actual rates for taxable social protection benefit according to the detailed classification system used in the net SPB module. The problems which lead to estimation are outlined for each country in Table 7.

Table 7 - Problems leading to estimations

Country	
BE	<ul style="list-style-type: none"> A limitation of the current exercise is that all the data that need to be included in the taxable income concept are not available. Among other things, there's a lack information on real estate income and income from movable property. The computation of the final tax bill is limited to computations necessary to estimate the taxes levied by the federal state. Therefore taxes levied by communities or other regional entities are not included. For second pillar pensions (recorded under periodic cash benefits in the old age and survivors functions) some types of pensions are taxed at a separate flat rate while others are included in the common income concept to which a progressive taxation system is applied. Information to separately identify these was not available therefore the progressive tax scheme was applied to all of them.
BG	None
CZ	<ul style="list-style-type: none"> To calculate the AITRs and AISCRs applied to benefits under scheme 4 (Social Contributions of Employers resulting from Collective Agreements) and scheme 5 (Employer's Contributions and Additional Payments) only information on the gross amount of benefits received was available. Thus, the average tax rate and the average social contribution rate for wages were applied to all the relevant benefits of these schemes. These benefits are reported in several functions.
DK	<ul style="list-style-type: none"> The sample data, which comes from the tax register data from the Danish Ministry of Finance, is not organised in a way that is fully compatible with the ESSPROS classification system. In cases where the data (and tax rate) is more detailed than the ESSPROS system requires, the data has been grouped together and a weighted tax rate has been calculated. In the cases where the data is not detailed enough, an estimation based on the available rates is used for all relevant benefits. This means that in a minority of cases the same rate is applied across schemes and across benefits in different functions.
DE	<ul style="list-style-type: none"> Income tax paid on pensions is known. However, the amount cannot be distinguished

Country	
	<p>separately between schemes 1 and 4, 9, 10 and 28 so an aggregate AITR is applied to these schemes across all benefit types.</p> <ul style="list-style-type: none"> • Income tax paid on benefits of schemes 3, 5, 8, one part of scheme 14 and 30 is known. However, the amount cannot be distinguished separately across these schemes so an aggregate AITR is applied to these schemes across all benefit types. • The tax rates of scheme 15 were assumed to be valid in scheme 16. • Income tax paid on benefits of schemes 12/17 and one part of scheme 14 was not available therefore the AITR applied was estimated based on the gross and net wage rate from national accounts. • For schemes 1 and 3 the value of contributions paid on benefits were available and could be used to derive contribution rates. However, for the other schemes (9, 10, 11, 12, 14, 15, 16 and 17) such data was not available therefore average contribution rates for different types of social insurance are used instead and are applied across all benefit types for these schemes. In some cases only half the average contribution rate is applied.
EE	<ul style="list-style-type: none"> • Items 111111 and 115111 of scheme 1 cannot be distinguished in the source data. As a result, a single average AITR is applied to both (20%). • The value of the residual fiscal benefit reported in the family/child function includes revenue forgone from the reduced taxation of non-benefit income which is outside the scope of net benefits module.
IE	<ul style="list-style-type: none"> • It is not possible to distinguish sick pay from compensation of employees in the source data from the Revenue Commissioners. But AITR s and AISCRs for these would be the same as average tax and average social contributions paid to public servants • Pensioners (in schemes 24 and 27) can be identified in the Revenue data file and their AITRs and AISCRs calculated. However, to allocate the pensions to scheme 24 and scheme 27 respectively, it is necessary to match the employer paying the pension to the CSO's Business Register and thereby allocate the pension payment to the correct scheme.
EL	<ul style="list-style-type: none"> • The source data (EU-SILC) do not provide enough detail to distinguish between different benefits which fall within a specific ESSPROS function or between benefits of the same type provided by different schemes.
ES	<ul style="list-style-type: none"> • Data on the final amount of taxes paid on pension benefits are not broken down by the different ESSPROS pension classifications. This breakdown is estimated using annual data about tax withholdings on income from pensioners of scheme 19 and scheme 34, broken down by type of pension: disability, old-age and survivors. • The average tax rate on labour income is applied to paid sick leave (111111) and benefits paid by the companies (various codes). • The tax rate applied to unemployment benefits (116111, 116112) is the tax rate resulting from the amount of taxes paid by unemployed people (withheld at source).
FR	<ul style="list-style-type: none"> • For 2020, the AITR and AISCR rates could not be calculated by the end of 2022. Thus, the 2020 net benefits were only calculated using the 2018 net benefits and the rate of change in gross benefits between 2018 and 2020.
HR	<ul style="list-style-type: none"> • The amount of taxes paid on sick leave benefits depends on the tax reliefs to which each beneficiary is entitled. Such detailed data are not available at the moment, therefore an estimation was necessary. • Scheme 10 (Redundancy compensation): a Report on Income, Income Tax and Surtax as well as Contributions for Mandatory Insurances, collected by Ministry of Finance, contains tax and social contributions paid from redundancy compensation that is

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	recorded in scheme 10. As two or sometimes more social benefits are recorded in just one item in the report, the estimation of breakdown between benefits corresponding to different ESSPROS items was necessary.
IT	<ul style="list-style-type: none"> • Source data (EU-SILC) does not allow gross and net benefit data to be separately identified between schemes. Therefore, an overall AITR is applied across schemes for each particular benefit type, excluding schemes whose benefits are tax exempt. • The tax rate calculated for wages in general is used as an estimate for the AITR applied to benefits 1111111 and 1151111 (all schemes), to benefit 1161115 schemes 8 and 18 and to benefits 1131111 and 1131112 scheme 25 because more specific information is not available. • The social contribution rate calculated for wages in general is used as an estimate for the AISCR applied to benefit 1111111 because more specific information is not available.
CY	<ul style="list-style-type: none"> • Source data (EU-SILC) does not allow gross and net benefit data to be separately identified between schemes. Therefore, an overall AITR is applied across schemes for each particular benefit type.
LV	<ul style="list-style-type: none"> • For particular benefits (Scheme 15 – 1111121 and Scheme 10 – 1161122 and 1161123) there was insufficient information to calculate separate AISCRs from AITRs so the set employee contribution rate of 11% was used.
LT	<ul style="list-style-type: none"> • Amounts of sickness benefits (1111111) are not distinguished between schemes 3 and 24 in the source data (The micro-data of the State Social Insurance Fund Board) therefore a single AITR is applied to these benefits. • Amounts of other lump sum benefits (1111121) for scheme 28 and severance pay (1161122) for schemes 5 and 28 are not distinguished in the source data (the micro-data of the State Tax Inspectorate), therefore the effective income tax rate for all taxpayers was applied.
LU	<ul style="list-style-type: none"> • AITRs and AISCRs for schemes 2 and 4 – 1111111 are computed for the aggregation of both schemes. • AITRs and AISCRs for scheme 26 – 1111111 are taken to be equal to taxes and social contributions on income from work. • AITRs and AISCRs for scheme 5 – 1161115 are taken to be equal to taxes and social contributions on unemployment benefit (scheme 5 - 1161111). • AITRs and AISCRs for scheme 2 – 1151114 are taken to be equal to taxes and social contributions on allowances for maternity leave (scheme 2 - 1151111). • AITRs and AISCRs for scheme 3 – 1121115 are taken to be equal to taxes and social contributions on old age pensions (scheme 3 - 1131111).
HU	<ul style="list-style-type: none"> • AITR for scheme 12 – 1111112, accident and indemnity allowances, cannot be separately identified based on the source data. The AITR on this benefit was recorded by estimation, using the AITR for Sick pay in the scheme 12 and Paid sick leave in the scheme 13.
MT	None
NL	<ul style="list-style-type: none"> • Similar schemes with similar characteristics are used to estimate the AISCRs and AITRs for the schemes for which no information or only partial information is available. For example, schemes 25, 26, 27 and 32 have the same AITR as the Executive fund of the government (scheme 11). • AISCRs of households with regard to scheme 14 are a fixed amount for every person. This (Health Insurance Act) contribution has to be paid by every scheme which is liable to contribution. Since the number of persons for every scheme or combination of schemes is unknown, the contribution is converted to a percentage contribution on the

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	basis of its relationship with the employers' contribution rate.
AT	<ul style="list-style-type: none"> • Individuals receiving two pensions under schemes 1 and 2 cannot be identified from those who are only receiving one as the pay slip only shows the aggregate amount. As a result, the distribution between those receiving double pensions and those receiving a single pension from either scheme 1 or scheme 2 is based on assumption for each type of pension. • For both items scheme 5 – 111111 and scheme 11 – 1161112 it is assumed that wages and salaries in enterprises paying this benefit are lower than the average and are therefore taxed less because of the progressive taxation. The AITR is therefore set as 5 percentage points below the typical tax rates. • For scheme 28 benefits 111112 about half of expenses covered are for sickness pay which is liable to tax. The AITR for benefit as 111111 in scheme 7 is used but divided by 2. • The AISCR applied to scheme 3 – 114111 and scheme 11 – 1161113 correspond to the flat rate set in legislation even though some of the benefits covered are not subject to social contributions. • No AITRs are applied to means-tested equalisation supplements related to pensions of scheme 1 (1122111, 1132111, 1132112, 1142111) which are not subject to taxation and the taxation is taken into account in the AITR applied to the main pensions (1121111, 1131111, 1131112, 1141111) as both are reported on the pay slip together. • Payable tax credits are added to the tax payable before calculation of the relevant AITRs/AISCRs of five benefits (scheme 5 – 111111, scheme 11 – 1161112 and 1161115, scheme 12 - 1161115 and scheme 19 – 111111). It is assumed that other AITRs are not affected by these payable tax credits. This approach may slightly underestimate AITRs for benefits without correction of tax paid.
PL	<ul style="list-style-type: none"> • There is no information on the structure of benefits by payment for each scheme, therefore one general structure has been taken for calculating AITR and AISCR.
PT	<ul style="list-style-type: none"> • Source data (EU-SILC) does not allow gross and net benefit data to be separately identified between schemes. Therefore, an overall AITR or AISCR is applied across schemes for each particular benefit type. Similarly, some benefits within the same function cannot be distinguished and therefore share the same rate.
RO	None
SI	<ul style="list-style-type: none"> • In many cases the source data do not distinguish between detailed benefits. For this reason, the same AITR is often applied to benefits belonging to different schemes and functions. • The source data do not provide information on the taxation of benefits of Scheme 18 (1121111, 1131111 and 1141111). Furthermore, it was not possible to apply the official average tax rate paid on wages in Slovenia for given reference year as different taxation rules are applied to pensions. For this reason, the AITR applied to other pensions is used as a proxy. • Due to a lack of data for taxes paid in relation to certain benefits (Scheme 1 – 111111, Scheme 24 – 1161112 and Scheme 28 – 111111, 1141112), the official average tax rate paid on wages in Slovenia for given reference year is applied as a proxy for the AITR.
SK	<ul style="list-style-type: none"> • For AITRs/AISCRs applied to redundancy compensation provided by schemes 7 and 8 (under 1161122) the maximum tax rate and maximum social contributions rate set in legislation are applied as a proxy.

Country	
FI	<ul style="list-style-type: none"> There are several groups of benefits which all share the same AITR or AISCR. This is because the micro-simulation model is not capable of distinguishing all groups of benefits and related schemes.
SE	<ul style="list-style-type: none"> Some benefits share the same AITR. This is because they cannot be separately identified in the data source. This is the case for the following four groups of benefits: <ul style="list-style-type: none"> - Group 1: scheme 6 and 9 - 1111111 - Group 2: scheme 6 - 1121111, 1131111 and 1141111 - Group 3: scheme 7 - 1161111, scheme 8 - 1161111, 1161114, 1161123, scheme 14 - 1161111 - Group 4: scheme 13 - 1111111, scheme 18 – 1161122
IS	<ul style="list-style-type: none"> The methodology used to calculate the AITRs and AISCRs implicitly derives an aggregate rate for recipients of a benefit by weighting the tax and contribution rates of each individual recipient by their taxable income rather than the amount of taxable benefit received. The AISCR for Scheme 22-1181111 (Wage Guarantee Fund) is calculated as the share of contributions to pension fund premiums out of the total contributions the Fund needs to cover in a given year. Recipients of benefits 1111111 and 1141121 of scheme 18 cannot be distinguished in the source data and therefore share the same aggregate AITR.
NO	<ul style="list-style-type: none"> For the AITR applied to 1111111 under scheme 1 the tax rate is estimated only on the basis of persons who were on sick leave benefits for more than 16 days. It is assumed that this is also valid for those with sick leave benefits for 16 days or less. For scheme 7 –1132111 the AITR of 2014 was used as an estimate for the AITR of 2015-2020, as the model did not produce a reliable estimate for 2015-2020. For scheme 7 – 1161113 it is assumed that the level of taxation on this benefit is the same throughout 2011-2020, which is 21%.
CH	<ul style="list-style-type: none"> Certain transfers are not covered by the source data. In these cases, the AITR or AISCR of similar transfers (with a similar group of beneficiaries) or the average tax/contribution rates for the whole population have to be used as a proxy. For certain transfers, there are not enough observations available (<50) in a single reference period to produce reliable estimates of AITR or AISCR. For these cases observations for either 3 or 6 years are pooled together to provide a sufficient sample. We therefore assume that the rate is constant over the pooled years. The source survey is only conducted in Switzerland. However, for certain transfers a considerable part of the social benefits is paid to people living abroad (e.g. in the case of scheme 01 about one third of the pension beneficiaries are living abroad). It is not possible to estimate the taxation of the respective countries with the source data. It has to be assumed that these benefits are taxed in the same way as in Switzerland. The source dataset for lump sum benefits of Scheme 03 – 1121123, 1131121, 1141122 includes also lump sums from the third pillar (i.e. private pension plans). These benefits do not fall in the scope of ESSPROS but they cannot be separated. By calculating the AITR, it is implicitly assumed a similar statistical distribution between these two kinds of lumps sum benefits.
BA	<ul style="list-style-type: none"> For scheme 3 – 1121111, 1131111, 1141111 the total amount of social contributions paid on total gross pension is available while the breakdown by detail pension items is missing. The breakdown between the 3 types of pensions is estimated using the proportion of the total gross pension expenditure between the 3 type of pensions. Data on social contributions paid by employers, on behalf of the employees, on paid sick

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	leave and income maintenance in the event of childbirth (scheme 8) are not available. They are treated as wages (income from employment) and consequently it is applied the same rate of social contributions paid on wages. As regards taxes paid on these benefits, it is assumed that the effective tax rate calculated on wages for all employees can be applied on social benefits provided by employers.
ME	<ul style="list-style-type: none"> For scheme 2 – 1111111, scheme 7 – 1151111 and Scheme 11 – items 1151112, 1161115 only aggregate gross data were available from data source. To calculate the AITRs and AISCR the rates were derived from average net/gross salary in Montenegro in 2020. For scheme 19 - 1131121,1161123,1181121 the amounts under tax obligation are not reported in the data source, then they are estimated from the amounts above threshold amount for tax obligation, which are available instead.
RS	<ul style="list-style-type: none"> For the AITR and the AISCR applied to 1121115 under scheme 1 both tax and social contribution rates are weighted according the proportion of the benefits that is taxable. In the case of benefits of scheme 1 (1121115), 5 (1151111, 1151112) and 6 (111111) the gross expenditure reported in the ESSPROS core system includes employer contributions. The net module therefore takes these into account in the calculation of the AISCR.
TR	None

There were two relatively common types of cases where limitations meant that estimations had to be made and which should be important focal points for improvement in future data collections. The first is the use of proxy based estimates and the second is the limited provision of data at the detailed level (e.g. separate AITRs and AISCRs for each benefit in each scheme).

6.2.2 Use of proxy based estimates

In cases where there is a lack of source data for particular benefits some countries have made use of proxy based estimates for AITRs and AISCRs. This is to say that the rates they have applied to a particular benefit are derived on the basis of information which is not directly linked to the benefit itself. For example, the average tax rate of wage earners is applied to redundancy benefits because there is no information concerning the taxation of redundancy benefits. Such estimates are typically based on informed assumptions but they can be considerably less accurate than actual estimates and therefore represent cases where there is room for improvement.

There was evidence of the use of proxies to provide AITRs or AISCRs in the data for seventeen different countries (BE, CZ, DE, IE, ES, FR, IT, LV, LT, LU, HU, NL, AT, SI, SK, NO and CH).

Generally, the use of these is limited to a small selection of benefits so the overall effect these have on net social protection benefit expenditure is expected to be limited.

Proxies are used as estimates for AITRs in the data for sixteen countries (BE, CZ, DE, IE, ES, IT, LT, LU, HU, NL, AT, SI, SK, NO, CH and BA) but their nature varies significantly between countries. In the data for eleven of these (CZ, DE, IE, ES, IT, LU, SI, SK, CH and BA) there are cases where the average tax rate on personal income for the population as a whole or for a specific group of tax payers is applied to particular benefits. In most cases it is expected that these will overestimate the effect of the taxation on the benefits concerned because benefit recipients are likely to have below average income. In the Austrian data, a similar approach is taken but the AITRs are adjusted downwards (by 5 percentage points) to counteract such overestimation. In Belgium, there is a case where progressive taxation is applied in the estimation of the AITR even though the benefits are actually subject to flat rate taxation because they cannot be distinguished from those to which progressive taxation is applied. In Luxembourg, Hungary, the Netherlands, Slovenia and Switzerland AITRs cannot be estimated for particular benefits so the rates of other similar benefits are applied.

Proxies were used as estimates for AISCRs in the data for eleven countries (CZ, DE, IE, FR, IT, LV, LU, NL, SK, CH and BA). In seven of these (CZ, DE, IE, IT, LU, CH and BA) the average social contribution rate on personal income for the population as a whole or for a specific group of tax payers has been applied to particular benefits. For some cases in the German data, these same types of rates were applied but only after downwards adjustment to counteract potential overestimation. In the data for Luxembourg, the Netherlands and Switzerland there are cases where the rates applied correspond to those of other similar benefits. Meanwhile, in the data for Latvia and Slovakia the social contribution rates set in the national legislation are applied directly to particular benefits. This approach is not always considered a proxy, for example when a single flat social contribution rate is set in legislation, as is the case in Lithuania.

6.2.3. Level of detail in the breakdown of AITRs and AISCRs

Almost all countries where benefits are liable to taxation and social contributions were able to provide separate estimates for AITRs and AISCRs. The only country which was unable to do so was Norway, which included the impact of social contributions in calculation of the AITRs. There were five countries where benefits are not liable to social contributions (DK, CY, RO, SI and SE) and one where they are not liable to taxation (BG) but no cases where all benefits are completely exempt of both taxes or social contributions.

The net benefits questionnaire allows for distinct AITRs and AISCRs to be applied to each detailed benefit type within each scheme and it is generally anticipated that the same AITR or AISCR will not be applied to multiple benefits. The reason for this is that the amount of taxes or social contributions payable usually depends to some extent on other income of the fiscal

unit because, for example, it impacts on the amount of income that is actually taxable (i.e. the amount of income above a tax-free threshold) or the tax or social contribution rate that is applied (progressive system). The actual tax or social contribution rates applicable to each benefit depend on the income characteristics of the population of recipients. As the population of recipients or, more specifically, the income characteristics of recipients are likely to vary between benefits, the AITRs and AISCRs applied can be expected to differ. However, there is one exception. If several benefits are liable to a flat rate levy independent of any other form of income, they may share the same AITR or AISCR. This is the case, for example, in Lithuania, where social contributions are deducted at a flat rate set in legislation.

The completed questionnaires for the majority of countries include at least one and often more groups of benefits to which the same AITRs or AISCRs have been applied in cases where the groups of benefits concerned are not all liable to the same flat rate levies.

In several countries limitations of the available source data prevent distinct tax and/or social contribution rates from being calculated for each different (liable) benefit. In these cases, benefits cannot be separately identified in the source data so a single aggregate rate has to be calculated and applied to each of the benefits concerned.

In theory, this should not cause a problem to the final results at the most aggregate level, but it may lead to inaccuracies in the results at the intermediate levels of aggregation and the detailed level. Take, for example, the case where data do not allow two different unemployment benefits to be distinguished and a single tax rate is determined for all recipients of these benefits. Both benefits are potentially liable to taxes on income but, in practice, one is means-tested and paid only to persons on a very low income who are unlikely to pay any taxes so that the real AITR for that benefit ought to be zero or close to it. The second is a wage-related benefit and many of the recipients will have some income from employment during the year and be liable to pay taxes, part of which will then be attributed to the amount of unemployment benefit received. Calculating a single tax rate on the total amount of benefits paid out will result in a rate that is correct for the total of unemployment benefits but too high for the means-tested benefit and too low for the wage-related benefit. In this case, the net benefits and effective tax rates at the function level will not be affected as benefits both belong within the same function. However, the values for means tested and non-means tested benefits at the function level and the same aggregates across all types of benefit will be impacted.

The issue becomes more problematic when aggregate rates are applied to benefits from different functions. In this case, the inaccuracies in values at detailed level will impact on results at function level. The extent to which the function-level results are affected depends on the proportion of liable benefits within a function that are affected by this aggregation, their share of the total size of the aggregate (both of which can be seen from the gross data) and the difference in the aggregate rate applied and the real rate for each benefit in the affected functions (which cannot be determined). Nevertheless, it is thought that in the majority of

cases the impact of calculating levy rates for groups of benefits which span functions will be limited. Moreover, the number of cases where data are calculated by scheme or by groups of schemes which include benefits from multiple functions are limited because benefits tend to be grouped by a particular purpose and therefore mostly apply to just one function.

Table 8 lists the cases where groups of benefits spanning several functions share the same AITR or AISCR due to the inability to provide distinct rates for particular benefits. Twelve countries apply aggregate AITRs to groups of benefits that cross functions. Meanwhile, the potential problem of cross-function groupings exists to a lesser extent in the case of social contribution rates with only five countries applying aggregate AISCRs to such groups of benefits.

Table 8 - Application of aggregate rates to sets of benefits across schemes and functions

	Countries
Aggregates applied across schemes	
AITRs	BE, DK, DE, EL, ES, IT, CY, LT, LU, NL, AT, PL, PT, SI, FI, SE, IS
AISCRs	BE, DK, EL, ES, LU, NL, AT, PL, PT, FI
Aggregates applied across functions	
AITRs	BE, CZ, DK, DE, EE, IE, ES, LT, SI, SE, IS, CH
AISCRs	BE, CZ, DK, DE, AT

In some cases, a single rate (either AITR or AISCR) was applied to groups of benefits spanning multiple schemes and/or functions due to the use of proxy based estimate rather than an inability to distinguish them. Table 9 provides a list of countries where such cases exist.

Table 9 - Apparent grouping due to use of common proxies

	Countries
Aggregates applied across schemes	
AITRs	CZ, DE, ES, LT, NL, AT, SK, CH, BA
AISCRs	CZ, DE, NL, SK, CH, BA
Aggregates applied across functions	
AITRs	CZ, DE, ES, IT, LT, LU, AT, SI, CH, BA
AISCRs	CZ, DE, LV, LU, CH, BA

As already alluded to above, the application of aggregate rate to groups of benefits can also be a potential source of inaccuracies in the final results when the group concerned combines

means-tested and non-means-tested benefits. Often, means-tested benefits are not taxed and even when they are potentially liable to taxation, the effective tax rates are low because the benefits, by definition, are paid to those with low incomes.

Grouping of benefits is liable to overestimate the taxation of means-tested benefits and underestimate the taxation of non-means-tested benefits.

7. Revision of statistics

During the data collection for the reference year 2020, revised data for 2007-2019 have also been provided by participating countries.

A total of twenty-one countries revised their figures. The revisions applied fall into three main categories:

- Changes to the gross expenditure data on which the net data is based
- Changes to the methods used for estimating data
- Other revisions of data (e.g. due to quality review, revised source data)

Table 10 provides a description of the revisions made to the data for 2007-2019 for each country. The most common revisions were due to update of the gross data used in the net SPB module.

Table 10 - Revisions to data for 2007-2019

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Revisions
BE									X	X	X	X	X	Revised gross data
BG														None
CZ														None
DK												X	X	Revised gross data
DE		X	X	X	X	X	X	X	X	X	X	X	X	Revised gross data Revised AITR/AISCR
EE														None
IE	X	X	X	X	X	X	X	X	X	X	X	X	X	Revised gross data Revised AITR/AISCR
EL				X	X	X	X	X	X	X	X	X	X	Revised gross data Revised AISCR
ES	X	X	X	X	X	X	X	X	X	X	X	X	X	Revised gross data Revised AITR
FR				X	X	X	X	X	X	X	X	X	X	Revised gross data
HR												X	X	Revised gross data
IT												X	X	Revised gross data Revised AITR/AISCR
CY														None
LV													X	Revised gross data Revised AITR/AISCR
LT														None
LU	X	X	X	X	X	X	X	X	X	X	X	X	X	Revised gross data Revised AITR/AISCR
HU														None
MT	X	X	X	X	X	X	X	X	X	X	X	X	X	Revised gross data
NL	X	X	X	X	X	X	X	X	X	X	X	X	X	Revised gross data Revised AITR/AISCR
AT	X	X	X	X	X	X	X	X	X	X	X	X	X	Revised gross data Revised AISCR
PL														None
PT														None
RO														None
SI														None
SK														None
FI												X		Revised AITR/AISCR
SE													X	Revised gross data
IS														None
NO			X	X	X	X	X	X	X	X	X	X	X	Revised gross data Revised AITR
CH						X	X	X	X	X	X	X	X	Revised gross data Revised AITR/AISCR
BA											X	X	X	Revised gross data
ME													X	Revised gross data
RS														None
TR													X	Revised gross data

8. Conclusions and recommendations

A total of thirty-four countries provided quantitative data for the ESSPROS net SPB module data collection for the reference year 2020 (BE, BG, CZ, DK, DE, EE, IE, EL, ES, FR, HR, IT, CY, LV, LT, LU, HU, MT, NL, AT, PL, PT, RO, SI, SK, FI, SE, IS, NO, CH, BA, ME, RS and TR). Based on the information available through the quality reports submitted and the validation conducted it can be concluded the data that has been provided are generally complete and plausible. However, there remains room for improvement.

The results of the evaluation of the data according to the quality criteria set out by the Commission regulation on net social benefits²² can be summarized as follows:

- **Relevance:** The data collected as part of the ESSPROS net SPB module are extremely relevant. They provide a significant contribution to data of ESSPROS as well as the body of statistical data in the field of social protection statistics.
- **Accessibility and Clarity:** There exists clear and comprehensive documentation concerning the methods of the ESSPROS net SPB module. The quantitative data are available on the Eurostat database and an article illustrating the data is available on Statistics explained.
- **Timeliness and punctuality:** The release of the 2020 data took place around 27 months after the time periods they describe. This represents an improvement compared to the dissemination of data for reference year 2019 in 2022.
- **Coherence:** The net SPB module builds on the gross data of the ESSPROS core collection. The coherence between the two is essential and a review of this has found little evidence of any significant incoherence. There are a few cases where there may exist potential problems but these are negligible.
- **Comparability:** Information provided by countries that submitted quality reports and responded to the validation of the data they provided has shown that the data provided are not perfect. However, the majority of issues that have been documented and for which an assessment has been possible are expected, in the majority of cases, to have a minor effect on the comparability of the net social protection benefits data.
- **Accuracy:** Participating countries have made use of a wide variety of data sources and methods to complete the data collection and each have faced constraints which have led them to take a variety of different approaches to overcoming them. Two particular issues were common. First of all, many countries make use of proxy based estimates to prevent gaps in the coverage of benefits to which levies are applied. The use of these is

²² See <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2011:071:0004:0008:EN:PDF>

undoubtedly better than omitting a levy rate altogether and as these often apply to only a small proportion of benefits the inaccuracies caused by these are likely to be small. Secondly, lack of detail in source data in some countries meant that aggregate AITRs or AISCRs are applied to groups of benefits. In these cases, the lack of detail in the AITRs and AISCRs introduce inaccuracies only at the very detailed level and at secondary levels (i.e. function level) the extent of which is expected to be small in most cases.

In order to ensure that the quality of the data collection improves in future a number of general, as well as country specific, recommendations are proposed.

8.1. General recommendations

On the basis of the ESSPROS net SPB module data collection for reference year 2020 the following recommendations are proposed for future data collections:

- Completed quantitative questionnaires accompanied by quality reports should be submitted in time for the proposed deadline or as soon afterwards as is possible. In case of delays delegates should inform Eurostat of the situation and where possible provide an expected delivery date.
- Quality reports are central to ensuring that the data collected is of good quality. These should therefore be clear and provide a suitable amount of detail. These should include the following:
 - A clear description of the source data used to provide the results for the net SPB module (i.e. the types of variables it provides, limitations of the source data...etc.).
 - A clear description of the methodology used. This should provide enough information about how the source data is used to derive the final AITRs and AISCRs to confirm that the approach adheres to the methodology. In cases where there are deviations these should be clearly illustrated and justified.
 - A clear description of any issues which may cause the AITRs and AISCRs to deviate from their real values (i.e. gaps in the data, use of aggregates, use proxies) and details of which levy rates are affected by them.
 - A clear description of any revisions made to data provided during previous data collections.
- An attempt should be made to improve the parts of the data where issues have been identified. For example, this can include providing more detailed breakdowns, replacing proxies with improved estimations, improving the coverage of the fiscal system or improving the coverage of the population of benefit recipients.
- Ensure that residual fiscal benefits, if reported, are not outside the scope of the net social protection benefit collection under the restricted approach.

- Provide a timely response to the queries raised during the validation.

8.2. Country specific recommendations

On the basis of the ESSPROS net SPB module data collection for reference years 2020 the following country specific recommendations are proposed. These recommendations should be considered as a guide to where improvements could be made in the future. It is evident that in some cases such improvements cannot be made at present due to limitations imposed by the source data which is currently available.

Table 11 – Country specific recommendations

Country	
BE	<ul style="list-style-type: none"> • Improve coverage of the fiscal system by providing coverage of the whole taxable income concept and including the effect of communal and regional taxes. • Distinguish between second pillar pensions which are subject to flat rate taxation and progressive taxation. • Replace proxy estimates
BG	None
CZ	<ul style="list-style-type: none"> • Replace proxy estimates
DK	<ul style="list-style-type: none"> • Improve detail in breakdown of AITRs
DE	<ul style="list-style-type: none"> • Improve detail in breakdown of AITRs/AISCRs • Replace proxy estimates
EE	<ul style="list-style-type: none"> • Improve detail in breakdown of AITRs • Improve data on residual fiscal benefits to exclude amounts that are outside of the scope of the data collection.
IE	<ul style="list-style-type: none"> • Replace proxy estimates
EL	<ul style="list-style-type: none"> • Improve detail in breakdown of AITRs/AISCRs
ES	<ul style="list-style-type: none"> • Improve detail in breakdown of AITRs/AISCRs • Replace proxy estimates
FR	<ul style="list-style-type: none"> • Improve the estimation method of AITRs/AISCRs
HR	None
IT	<ul style="list-style-type: none"> • Improve detail in breakdown of AITRs • Replace proxy estimates
CY	<ul style="list-style-type: none"> • Improve detail in breakdown of AITRs
LV	<ul style="list-style-type: none"> • Replace proxy estimates
LT	<ul style="list-style-type: none"> • Replace proxy estimates
LU	<ul style="list-style-type: none"> • Replace proxy estimates
HU	<ul style="list-style-type: none"> • Replace proxy estimates
MT	<ul style="list-style-type: none"> • None
NL	<ul style="list-style-type: none"> • Replace proxy estimates
AT	<ul style="list-style-type: none"> • Improve coverage of the fiscal system by taking into account of income from agriculture and forestry, self-employment, business, capital, rent and lease, and/or other income as well as the relevant tax deducted as a result. • Replace proxy estimates.
PL	<ul style="list-style-type: none"> • Improve detail in breakdown of AITRs/AISCRs by scheme.

Country	
PT	<ul style="list-style-type: none"> • Improve detail in breakdown of AITRs/AISCRs.
RO	None
SI	<ul style="list-style-type: none"> • Improve detail in breakdown of AITRs • Replace proxy estimates
SK	<ul style="list-style-type: none"> • Replace proxy estimates
FI	<ul style="list-style-type: none"> • Improve detail in breakdown of AITRs/AISCRs
SE	<ul style="list-style-type: none"> • Improve detail in breakdown of AITRs.
IS	<ul style="list-style-type: none"> • Improve detail in breakdown of AITRs • Adjust methodology for the calculation of AITR/AISCR so that it derives an aggregate rate for recipients of a benefit by weighting the tax and contribution rates of each individual recipient by the amount of taxable benefit they received rather than by their taxable income.
NO	<ul style="list-style-type: none"> • Replace proxy estimates
CH	<ul style="list-style-type: none"> • Improve calculation of AITR for lump sum benefits • Replace proxy estimates
BA	<ul style="list-style-type: none"> • Replace proxy estimates
ME	None
RS	None
TR	None

9. National quality reports

All national quality reports for 2020 data on the ESSPROS net social protection benefits data collection are available at the following links:

Member States

 Belgium	 Bulgaria	 Czechia	 Denmark
 Germany	 Estonia	 Ireland	 Greece
 Spain	 France	 Croatia	 Italy
 Cyprus	 Latvia	 Lithuania	 Luxembourg
 Hungary	 Malta	 Netherlands	 Austria
 Poland	 Portugal	 Romania	 Slovenia
 Slovakia	 Finland	 Sweden	

EFTA countries

 Iceland	 Norway	 Switzerland
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Candidate countries

 Bosnia and Herzegovina	 Montenegro	 Serbia
 Türkiye		

10. Abbreviations

Below the **list of abbreviations** used in the document:

- AISCR = Average Itemised Social Contribution Rates
- AITR = Average Itemised Tax Rates
- CS = Core System
- ESSPROS = European System of Integrated Social Protection Statistics
- NQR = National Quality Report
- QD = Quantitative data
- QI = Qualitative information
- QR = Quality Report
- PB = Pension beneficiaries
- SPB = Social Protection Benefits

Countries abbreviations:

- BE = Belgium
- BG = Bulgaria
- CZ = Czechia
- DK = Denmark
- DE = Germany
- EE = Estonia
- IE = Ireland
- EL = Greece
- ES = Spain
- FR = France
- HR = Croatia
- IT = Italy
- CY = Cyprus
- LV = Latvia
- LT = Lithuania
- LU = Luxembourg
- HU = Hungary
- MT = Malta
- NL = Netherlands
- AT = Austria
- PL = Poland
- PT = Portugal
- RO = Romania
- SI = Slovenia
- SK = Slovakia
- FI = Finland
- SE = Sweden
- IS = Iceland
- NO = Norway
- CH = Switzerland
- BA = Bosnia and Herzegovina
- ME = Montenegro
- RS = Serbia
- TR = Türkiye

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