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New estimates of the phenomenon of under-reporting of accidents at work in Europe



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The French language version “*Estimations actualisées du phénomène de sous-déclaration des accidents du travail en Europe*” (<https://eurogip.fr/wp-content/uploads/2023/12/EUROGIP-2023-Sous-declaration-des-AT-en-Europe.pdf>) shall prevail.

Abstract

The aim of this study is to provide updated estimates (2019-2021) of the phenomenon of under-reporting of accidents at work (AW) resulting in more than three days' absence from work in Europe. The analysis is based on a comparison of European Statistics on Accidents at Work (ESAW) and data from the European Union Labour Force Survey (EU-LFS) carried out by Eurostat and the ad-hoc module entitled "Accidents at work and other work-related health problems" carried out in the year 2020, as well as the two methods developed in the previous study¹ by EUROGIP (2017).

The results confirm previous findings, i.e. heterogeneous reporting levels between countries with long-established compulsory AW insurance systems, whether monopolistic or mixed (assumed to have high reporting levels), and other systems. Although most of these are insurance-based systems, the latter are more diversified. They include: the Nordic countries, whose accident insurance is part of a universal social protection system; most of the Eastern European countries that joined the EU during the latest enlargements; and countries without insurance specifically dedicated to covering occupational risks (which are managed by other schemes and/or competent authorities, such as health insurance). These systems are assumed to have lower reporting levels.

The two methods used for this analysis are, on the one hand, the ratio method (based on calculating the theoretical number of non-fatal accidents from the number of fatal accidents, which is assumed to be stable as an annual average and not very prone to under-reporting) and, on the other hand, the survey method (based on estimating the incidence rates² experienced by respondents to the 2020 EU Labour Force Survey). To be able to compare the two databases, the scope of the covered populations, the accident concepts and the covered periods have been aligned.

In 2020, according to the ratio method, the reporting level of accidents at work had fallen in most countries, with fatal accidents declining in smaller proportion than non-fatal ones, except in some countries which have opened the possibility of recognizing Covid-19 as an accident at work. In 2021, the number of accidents has increased, but has not returned to its pre-crisis level. For the year under review, the number of fatal accidents in France has been restated to cover only those deaths for which the occupational origin was indicated (thus excluding a proportion of faintness's and suicides), but not in the other countries concerned (e.g. Italy).

Between 2012-2013 and 2019-2020, according to the survey method, the estimated reporting level decreased in most insurance systems in the EU-15 countries and increased in the countries that joined the European Union during the latest enlargements.

The two methods do not always produce convergent results (the survey method generally produces higher reporting levels). They also have certain limitations and uncertainties, which suggest that the results should be considered with caution (see conclusion).

1 Study of the phenomenon of under-reporting of accidents at work in Europe, EUROGIP, [2017](https://eurogip.fr/wp-content/uploads/2017/05/Eurogip_Sous-declaration-accidents-du-travail-en-Europe.pdf), https://eurogip.fr/wp-content/uploads/2017/05/Eurogip_Sous-declaration-accidents-du-travail-en-Europe.pdf

2 The incidence rate indicates the number of accidents at work per 100,000 employees.

1. Introduction

The European Framework Directive (89/391/EEC)³ on health and safety at work stipulates that employers in EU member states must notify all accidents at work occurring within their companies. Incomplete or partial reporting can therefore pose challenges for the competent authorities: in terms of monitoring and assessing the impact of occupational health and safety policies, implementing prevention policies, meeting the financial costs of compensating accidents at work or allocating public funding.

In France, for example, the accident insurance of the Social Security system makes an annual payment to the health insurance fund to offset the latter's expenditure on occupational claims not covered by the former⁴. This payment is usually updated every three years by a commission chaired by a magistrate from the *Cour des Comptes* (Court of Auditors), which submits a report assessing the amount of under-reporting of accidents at work and occupational diseases. Meeting in 2021, the most recent commission assessed the amount of under-reporting at between €1.2 and €2.1 billion per year (Commission d'évaluation de la sous-déclaration des AT-MP, 2021).

In 2020 and 2021, the Covid-19 crisis significantly affected European economies. Reported at the end of 2019 in China and recognized as a pandemic on March 11, 2020, by the World Health Organization, it quickly imposed itself on European states. To contain its spread, countries have adopted containment measures, restricted travel, closed workspaces and facilitated the use of partial activity schemes. The proportion of employees teleworking also increased significantly during the pandemic (OECD, 2021).

According to Oxford University, a large majority of European workers experienced one or more periods of total workplace closure, and all countries implemented at least partial closure measures (see Table 1). During this period, we observed a fall in accidents at work recorded by the authorities in almost all EU member states. Only Denmark, Hungary, Italy and Slovenia reported an increase in the number of accidents.

Incidence rates also fell (except in the above-mentioned countries, as well as Latvia, Norway and Romania), but to a lesser extent. Data on exposed populations thus show downward trends in line with the economic slowdown observed, but do not necessarily reflect the drop in occupational risk exposure that may have been associated with temporary closures and telecommuting (although the new working patterns that have emerged have been associated with other forms of occupational risk).

According to statistical recommendations, the data on exposed populations transmitted by countries to Eurostat must be expressed in terms of the number of physical persons (and not in full-time equivalents), which would make it impossible to consider periods of limited activity⁵ (such as short time working schemes). This is why the observed drop in incidence does not necessarily reflect, *all other things being equal*, and for a given working time, a reduction in exposure to accidents at work in that year.

3 Council Directive of June 12, 1989, on the introduction of measures to encourage improvements in the safety and health of workers at work (89/391/EEC) - <https://eur-lex.europa.eu/legal-content/FR/TXT/PDF/?uri=CELEX:31989L0391>

4 In accordance with article L. 176-1 of the French Social Security Code.

5 In France, for example, employees compensated under short-time working schemes are counted as part of the workforce and hours worked. (Assurance Maladie, 2021).

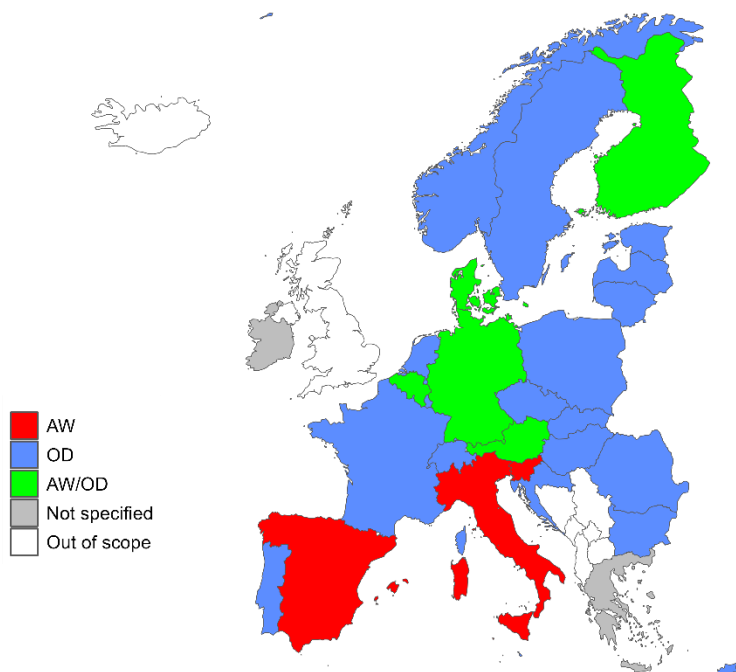
Table 1: Share of closure periods (no action, total, partial or recommended closure) in 2020 by country

Country	No measures	Recommending closing	Partial closure	Total closure
Germany	22 %	0%	73%	4%
Belgium	20 %	0 %	57 %	23 %
Bulgaria	20 %	63 %	16 %	2 %
Cyprus	39 %	2 %	53 %	5 %
Denmark	19 %	15 %	66 %	0 %
Spain	19 %	11 %	55 %	14 %
Estonia	23 %	53 %	11 %	12 %
Finland	19 %	47 %	34 %	0 %
France	21 %	14 %	42 %	23 %
Greece	19 %	44 %	37 %	0 %
Ireland	19 %	16 %	25 %	40 %
Iceland	39 %	22 %	39 %	0 %
Italy	14 %	9 %	43 %	34 %
Latvia	20 %	9 %	67 %	4 %
Liechtenstein	20 %	33 %	35 %	12 %
Lithuania	34 %	17 %	33 %	16 %
Luxembourg	19 %	55 %	10 %	15 %
Malta	57 %	9 %	34 %	0 %
Norway	19 %	44 %	37 %	0 %
Poland	30 %	0 %	70 %	0 %
Portugal	19 %	0 %	68 %	13 %
Czech Republic	20 %	45 %	25 %	10 %
Romania	19 %	31 %	50 %	0 %
United Kingdom	20 %	1 %	55 %	23 %
Sweden	20 %	69 %	10 %	0 %
Switzerland	21 %	15 %	48 %	16 %

Source: Oxford Covid-19 Government Response Tracker (OxCGRT)

Finally, Covid-19 also affected occupational claims statistics. European countries were given the opportunity to recognize Covid cases as work accidents and/or occupational diseases (see Figure 1). National practices have been highly heterogeneous, but all have recognized that transmission of the virus could be associated with the workplace, and therefore be work-related (Eurostat, 2021). This is notably the case in Italy and Denmark, which have opened the possibility of recognizing it as a work accident and have seen a significant rise in claims during the crisis (+12 and +48% respectively between 2019 and 2020). However, Covid-19 is still mainly considered as an occupational disease. It can be recognized as both an occupational disease and a work accident in Germany, depending on whether the worker is a carer, and in Denmark, depending on whether exposure lasted more than 5 days (EUROGIP, 2020 and 2022).

Figure 1: Countries opening the possibility of recognizing Covid-19 as an accident at work (AW) and/or an occupational disease (OD)



Sources: Eurostat (2021). Possibility of recognising Covid-19 as being of occupational origin at national level in EU and EFTA countries.

At the same time, during the year of the pandemic, access to healthcare was considered more difficult⁶, notably due to the increased activity of healthcare workers. Confinement and travel restrictions may also have influenced people's behavior in terms of reporting accidents.

In France, for example, despite a fall in the reporting of sicknesses (all severities combined), the average duration of sick leave increased significantly (Assurance Maladie, 2021). This period of health crisis may thus have been associated with lower-than-usual levels of work accidents reporting.

This study aims to present updated estimates of under-reporting and to highlight potential effects of the crisis on reporting of accidents at work during the years 2020 and 2021. It draws on an initial methodology by EUROGIP (2017), based on a comparison of European statistics and on data from the European Labour Force Surveys (EU-LFS), carried out by Eurostat during 2020 in the ad-hoc module "Accidents at work and other work-related health problems".

⁶ For example, the Médecins du Monde report notes that nearly three out of four people in precarious situations had no access to healthcare in 2020.

2. Definitions of under-reporting, under-recognition and under-coverage

In this study, **under-reporting refers** to the number of cases of accidents at work (AW) which were not reported and which, had they been, would have been recognized by the relevant authorities.

This definition is like that proposed by Eurostat: "Under-reporting refers to a situation in which an accident occurs but is not reported, even though the economic sector concerned is included".

This theoretical number of cases is then compared with the total number of recognized accidents at work, so that the reporting level (in %) can be defined as follows:

$$\frac{\text{Number of recognized AW}}{\text{Number of recognized AW} + \text{Number of non – reported AW which should have been recognized}}$$

The definition therefore excludes, in both the numerator and denominator, reported work accidents that are not recognized at the end of the process. In France, this includes, for example, incomplete declarations and complete declarations which do not result in the recognition of a work accident by the accident insurance scheme.

The present study does not aim to evaluate **under-recognition**, a broader phenomenon than under-reporting, which includes all accidents at work, whether reported or not, which should have been recognized. It does, however, extend to the modalities of the recognition process, which can lead to the rejection of declared accidents. In the absence of exhaustive and harmonized data on recognition rates in the ESAW program (see next page), such a study would be more difficult to carry out.

Both methods used in this study are consistent with the definition of under-reporting. For the "survey" method, the assumption is that the accidents at work reported by the households surveyed in the European Survey would have been recognized by the relevant authorities in their respective countries.

Finally, **under-coverage** refers to the fact that part of the employed population is not included in claims data, for example if workers in some sectors or forms of employment are not insured against accidents at work.

To ensure comparability of results, the study only includes data from sectors that all countries claim to cover exhaustively (NACE A to N, R and S, i.e., to a first approximation, the bulk of the private sector, excluding workers in public administration, education, health and social work), and includes or excludes the self-employed from survey data, depending on whether or not they are insured in the respective countries.

3. The European Statistics on Accidents at Work (ESAW) program and EU Labour Force Surveys (EU-LFS)

European Statistics on Accidents at Work (ESAW)

Launched in 1990 by Eurostat, the Statistical Office of the European Union, the European Statistics on Accidents at Work (ESAW) project aims to compile and harmonize data on accidents at work resulting in more than three days' absence from work in EU countries. It follows on from the 1989 European Framework Directive on Safety and Health at Work (89/391/EEC) and its article 9⁷ making the following two activities compulsory for employers:

- Keeping a list of accidents at work resulting in the worker's incapacity to work for more than three days.
- Sharing, with the relevant authority and in accordance with national legislation and/or practice, reports concerning accidents at work suffered by its employees.

According to the ESAW methodology, an accident at work is defined as a discrete occurrence in the course of work which leads to physical or mental harm. The phrase 'in the course of work' means 'while engaged in an occupational activity or during the time spent at work. Only accidents resulting in (strictly) more than three days' absence from work are recorded, which means accidents resulting in "at least four calendar days" and requiring the victim not to return to work before the fifth working day after the date of the accident.

Accidents at work include accidents in traffic or on any means of transport or in public places during work, but exclude commuting accidents (accidents during the normal journey between home and the workplace, or between the workplace and a normal lunch break), as well as accidents from strictly natural causes (cf. Appendix 6). ESAW also records fatal accidents at work, defined as accidents which leads to the death of a victim within one year of the accident.

The transmission of data relating to statuses other than that of employee (self-employed, family workers, students) as well as some professions subject to confidentiality is optional, but must then be indicated in the metadata accompanying the transmission (cf. Appendix 4 and Appendix 5).

The data transmitted are divided into two groups: the main characteristics of the accident, the victim and the employer (occupation, status, age and sex of the victim; economic activity, size and economic activity of the company) and the variables relating to causes and circumstances (place, date, deviation and injury). Statistics are provided once a year and presented no later than eighteen months after the end of the reference year.

The European Union Labour Force Survey (EU-LFS) and the ad-hoc module "Accidents at work and other work-related health problems".

The EU-LFS is a large household sample survey in the countries of the European Union. It provides quarterly results on labour participation for people aged 15 and over, as well as for those outside the labour force. Its covers only people living in private households. The surveys are carried out by national statistical institutes. The "French edition" is carried out by INSEE.

Its first objective is to classify the population of countries into three mutually exclusive groups, covering the entire target population of the survey:

- employed persons;

7 <https://eur-lex.europa.eu/legal-content/FR/TXT/HTML/?uri=CELEX:31989L0391>

- unemployed persons;
- people outside the workforce (who are not considered unemployed or employed).

Within the EU-LFS, ad-hoc modules are collected at the request of Eurostat, which sets out the themes of future modules in a delegated regulation. A module on "accidents at work and other work-related health problems" has been scheduled for 2020, along with its three sub-modules: accidents at work, work-related health problems (physical or mental), and risk factors for physical health or mental well-being. It follows three previous editions (1999, 2007, 2013). It is collected in the same way as the EU-LFS inward and outward cluster survey: face-to-face, with the possibility of a proxy response. Due to the Covid crisis, telephone interviews and paper questionnaires were also carried out.

The accidents at work module focuses on the population of people aged between 15 and 74 who are either employed at the time of the interview or have been employed during the one-year period preceding the interview. Four items of information are provided by the interviewees:

- the number of accidents at work they suffered in the last 12 months (with three possible answers: none, one or "two or more");
- type of workplace accident (traffic accident or not) ;
- the job(s) associated with the accident(s) (main job, second job or other job) ;
- duration of absence from work.

4. Insurance systems and reporting levels for accidents at work

The ESAW program is based on a methodology (see above) defining the basic concepts: accident at work, scope of the population to be covered, accounting for the reference population, mandatory and optional variables to be transmitted. The data collected enable us to count the number of accidents recorded and to estimate incidence rates per 100,000 workers, which are used for comparison purposes.

At the beginning of the program, Eurostat pointed out the lack of comparability in the data supplied by the Member States. Several aspects were identified (Eurostat, 1999; Eurostat, 2001): the scope of workers (including both coverage of economic sectors and workers' status), reporting levels and the inclusion/exclusion of specific types of accident. For each submission, the relevant authorities in each state provide a file⁸ specifying the scope of the data communicated (see appendices).

Back in the 1990s, the Statistical Office drew a distinction between two types of system for managing the declaration procedure:

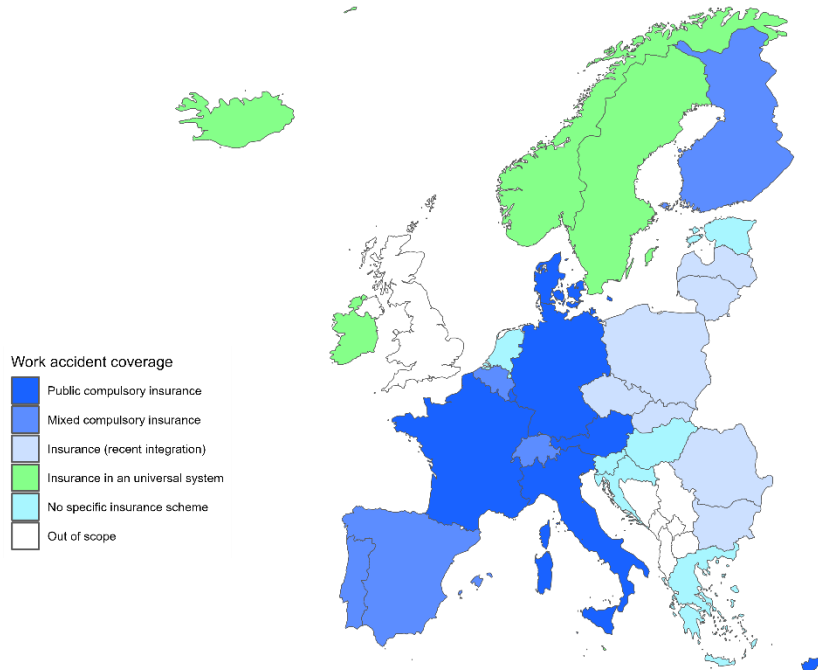
- insurance-based systems, with procedures based on notification of accidents at work to insurance companies, either public or private, depending on the state.
- systems based essentially on the employer's liability to notify accidents at work to the relevant authorities (which often turn out to be the national labour inspectorates). For example: Denmark, Ireland, the Netherlands, Sweden and the UK, as well as Norway, outside the EU-15, were part of this group.

In insurance-based systems, the payment of compensation and reimbursement of health costs associated with an accident at work are conditional on the claim being declared and recognized by the insurer. What's more, the financial terms of these benefits are generally better than those associated with claims of non-occupational origin accidents. This creates an incentive for victims to report accidents at work. This is why

8 https://ec.europa.eu/eurostat/cache/metadata/en/hsw_acc_work_esms.htm

Eurostat considers that the level of reporting under these systems is generally close to 100% (Eurostat, 1999).

Figure 2: Workers' compensation systems in Europe

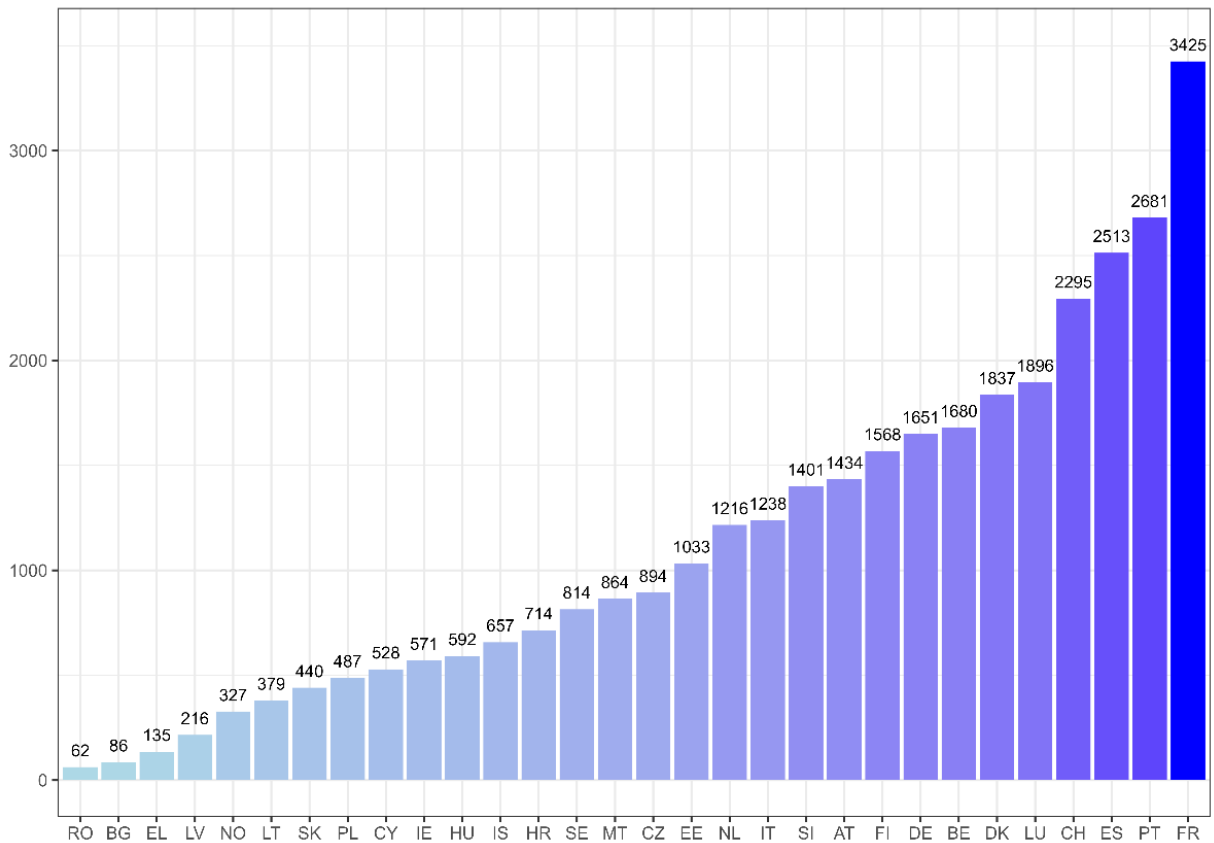


Source: EUROGIP classification based on MISSOC data⁹.

According to Eurostat, most other systems are based on a universal social security system. The management of accidents at work may therefore be entrusted to institutions other than a specific accident insurance organization. The financial terms of benefits do not generally depend on whether the occupational origin of the accident is recognized, and there is no strong economic incentive to declare the accident as an accident at work, although employers are still obliged to do so. Only accidents resulting in long-term absence from work or causing permanent injury can lead to specific coverage (e.g. permanent disability pension). In these systems, Eurostat considers that the level of reporting is lower (between 30% and 50%). In previous ESAW surveys (1998), these declaration levels were estimated by Eurostat, which then proposed correcting the data supplied by the Member States to make them comparable.

9 MISSOC (Mutual Information System on Social Protection) is the mutual information system on social protection set up by the European Union.

Figure 3: Incidence rate of non-fatal accidents at work by European country, 2019



Source: Eurostat (ESAW).

Scope: Non-fatal accidents at work resulting in at least four days' absence from work.

Population: All countries' insured population.

Since Eurostat's first assessment reports, social protection legislation and systems have undergone several changes. To date, according to MISSOC (cf. Appendix 8), most EU-15 countries (with the exception of Greece and the Netherlands) have at least one scheme specifically dedicated to covering accidents at work (although this may be under shared management with other institutions, e.g. other social security schemes such as health or disability insurance, or private insurance). This is also the case in most of the countries that joined the EU during the successive enlargements to Eastern Europe (see Figure 2).

Despite the predominance of insurance-based systems, Jacinto and Aspinwall (2004) conclude that the differences between countries in reporting and recording procedures for accidents at work are too great to allow obvious comparisons between national statistics. They note that reporting levels can approach 30% in some systems.

At the time, there was little data available on the phenomenon of under-reporting of accidents at work, apart from the initial assessments communicated by the ESAW program (Eurostat, 1999).

In 2015, Kurppa proposed an estimate for the Baltic States. By comparing differences between countries in the ratio of non-fatal to fatal accidents, he suggested that low incidence rates of non-fatal accidents combined with high incidence rates of fatal accidents are relevant indicators of under-reporting. He indicated that some Baltic countries have reporting levels of between 10% and 20%.

However, this method relies on the establishment of a reference ratio, generally taken from a group of countries with an insurance system and does not consider structural economic differences between countries (a country with a lower share of high-risk sectors will, all other things being equal, have a higher non-fatal/mortal ratio and a higher expected number of accidents). It also assumes exhaustive reporting of fatal accidents in each country, which some studies have contradicted (Gjertsen, Lund & Wergeland, 2022).

This method was further developed by EUROGIP to estimate reporting levels for all countries participating in the ESAW program in 2013. Jacquetin (2017) also suggested an additional method for estimating reporting levels based on the Labour Force Surveys and the ad-hoc module "Accidents at work and other occupational health problems" produced by Eurostat for the year 2013, and computed reporting levels based on the answers of European households.

In France, the Ministry of Health's Commission for the evaluation of the underreporting of AW/OD (« Commission d'évaluation de la sous-déclaration des AT-MP ») has determined that nearly 1.7 million accidents at work occurred in 2017, according to the results of a national survey. In relation to the 881,000 accidents recognized by the accident insurance system, this would indicate a real accident reporting rate of almost 52%, for a total amount of €110 million (Commission d'évaluation de la sous-déclaration des AT-MP, 2021).

The Swiss authorities also investigated the differences between systems, which led SUVA (Switzerland's main accident insurer) to report one of the highest incidence rates in Europe. They conclude that a direct comparison of data is not relevant "given the diversity of reporting and registration procedures used by different states", as well as a "tendency towards under-reporting" (Heimsch, Hulliger, Schüler & Datta, 2021). A counterfactual econometric simulation, estimating an empirical relationship between the incidence rate and GDP per capita data, the share of 18–24-year-olds in the population, the share of employees in small businesses and the nature (insurer or non-insurer) of the system, then leads to Switzerland being repositioned from 4^e to 9^e place (in terms of reporting level) after bringing non-insurer reporting systems into line with insurer system levels.

Finally, other international comparisons, especially with the United States (Benevide, Delclos, Cooper & Benach, 2003), pointed out that the systems participating in the ESAW program are based on a "passive" declaration approach based on a single administrative source (generally accident insurance, social security or labour inspection), which can lead to an underestimation of claims, even for fatal accidents (systems in European countries do not cover all self-employed workers, as well as certain high-risk public sectors).

5. Computing exposed populations in ESAW and EU-LFS

EUROGIP proposes to apply the methodology developed in its previous work by comparing administrative data from the ESAW program with two theoretical levels obtained:

- by applying a reference level of non-fatal accidents to fatal accidents (the « ratio method »);
- by computing the incidence rates experienced by households in the ad-hoc module "Accidents at work and other work-related health problems" (the « survey method ») from the Labour Force Surveys carried out in 2020.

This reconciliation requires the definition of a common perimeter for the population exposed to the risk of accidents at work between the different data sources.

a. Restriction of ESAW data to the private sector

The reporting level of accidents at work was assessed using statistics from the ESAW (European Statistics on Accidents at Work) program, which records all accidents at work which resulted in more than three days' absence from work and were recorded in the European Union by the relevant national authorities. The ESAW methodology assumes harmonization between the national data transmitted, but many differences remain and can create a significant statistical bias depending on the fields covered in practice by the relevant authorities.

Economic sectors

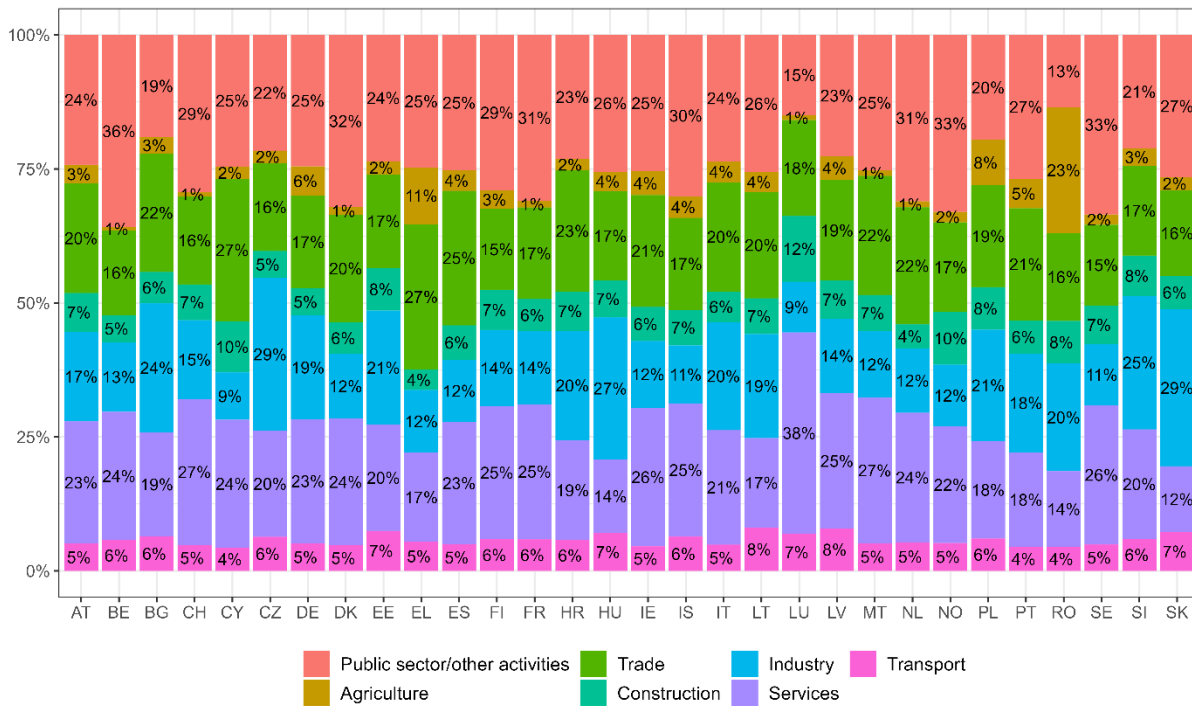
The sectors covered vary from country to country (as shown in Figure 4). The scope used here corresponds to the private sector (countries do not cover and report the public sector in an exhaustive and comparable manner) and excludes household activities and extra-territorial activities. Some high-risk sectors (e.g. army, police, fire department) are also not reported by all countries.

NACE sections are grouped into 6 aggregate sectors:

- agriculture (A),
- trade (G, I),
- construction (F),
- industry and energy (B-E),
- services (J-N, R, S)
- transport (H).

The remaining sections (O, P, Q, T, U) are grouped together in the "Public sector/other activities" sector.

Figure 4: Relative share of the population insured against accidents at work, by sector and country

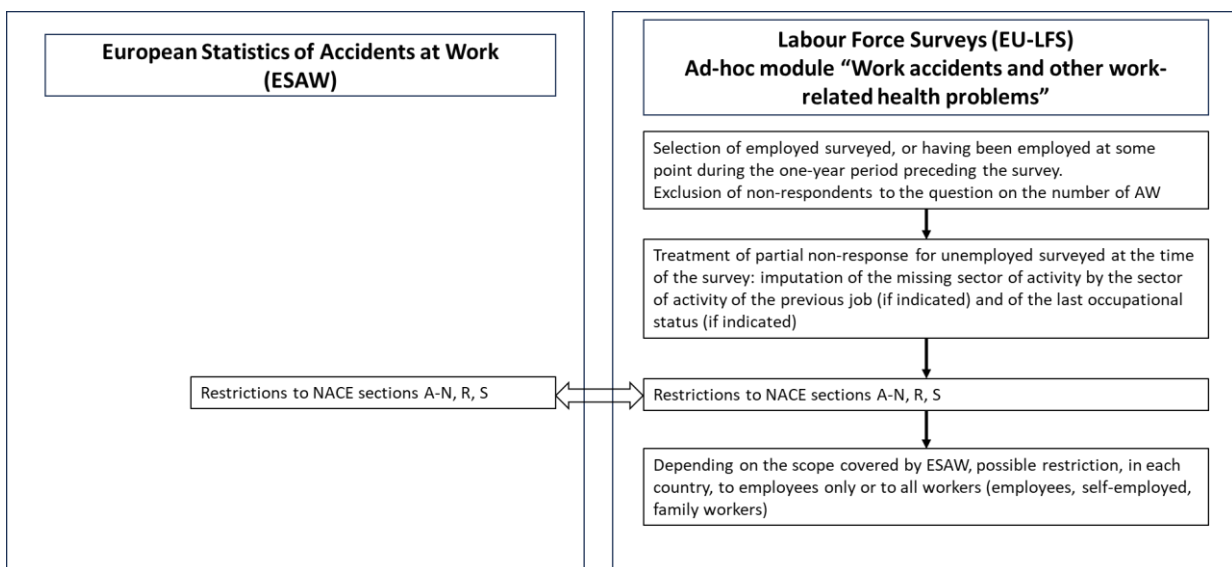


Source: Eurostat (ESAW). Scope: Total exposed population transmitted to Eurostat by countries.

b. Aligning the EU-LFS population with the ESAW population

Once the sector scope has been established, the population covered by ESAW is mapped.

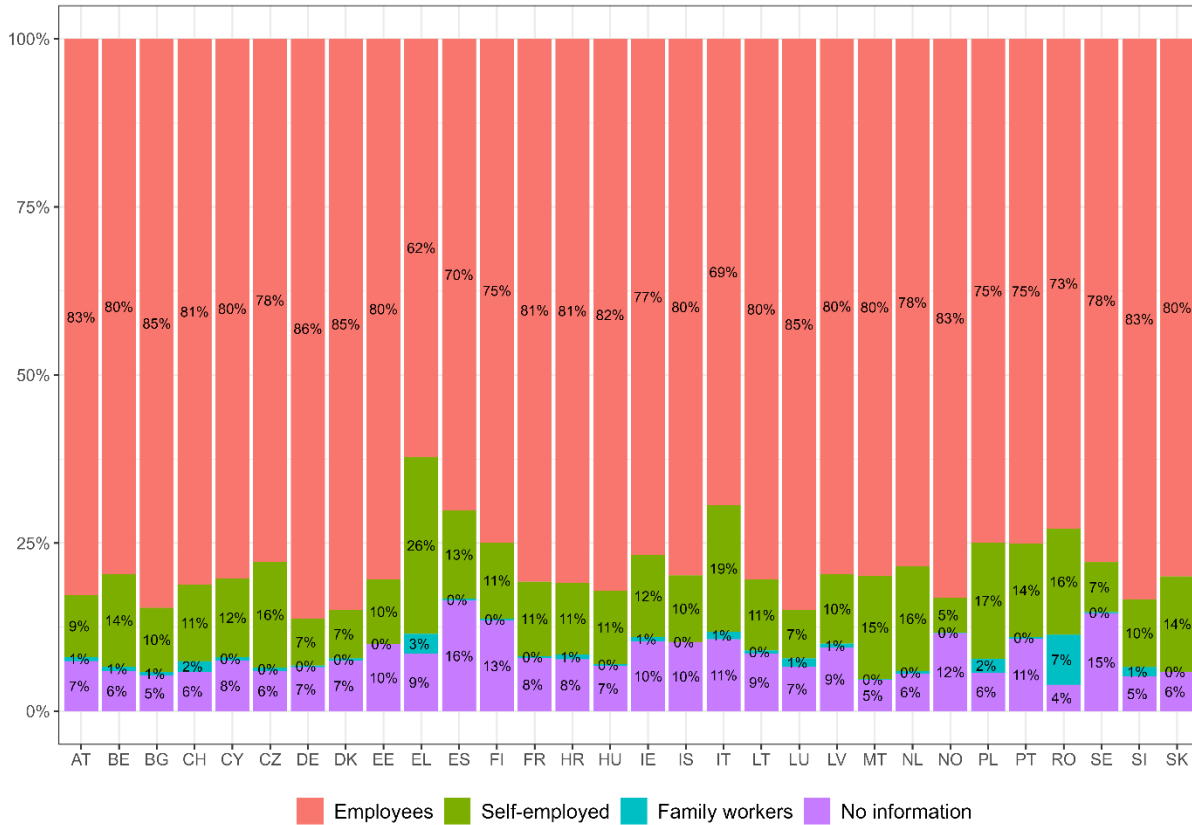
Figure 5: Filters applied to the ad-hoc module population and alignment with insured populations in ESAW



- Scope of workers covered

All countries cover employees, but some countries cover other categories of workers (self-employed, family workers) either partially, on a voluntary basis, or in their entirety. Self-employed workers, who represent a significant proportion of the population responding to the ad-hoc module (see Figure 6), have been included in the LFS-EU survey data where countries indicate that they are fully covered (Spain since 2019, Ireland, Greece, Croatia, Italy, Luxembourg, Malta, Austria, Poland, Portugal, Slovenia, Finland, Sweden). Family workers are also included for these countries.

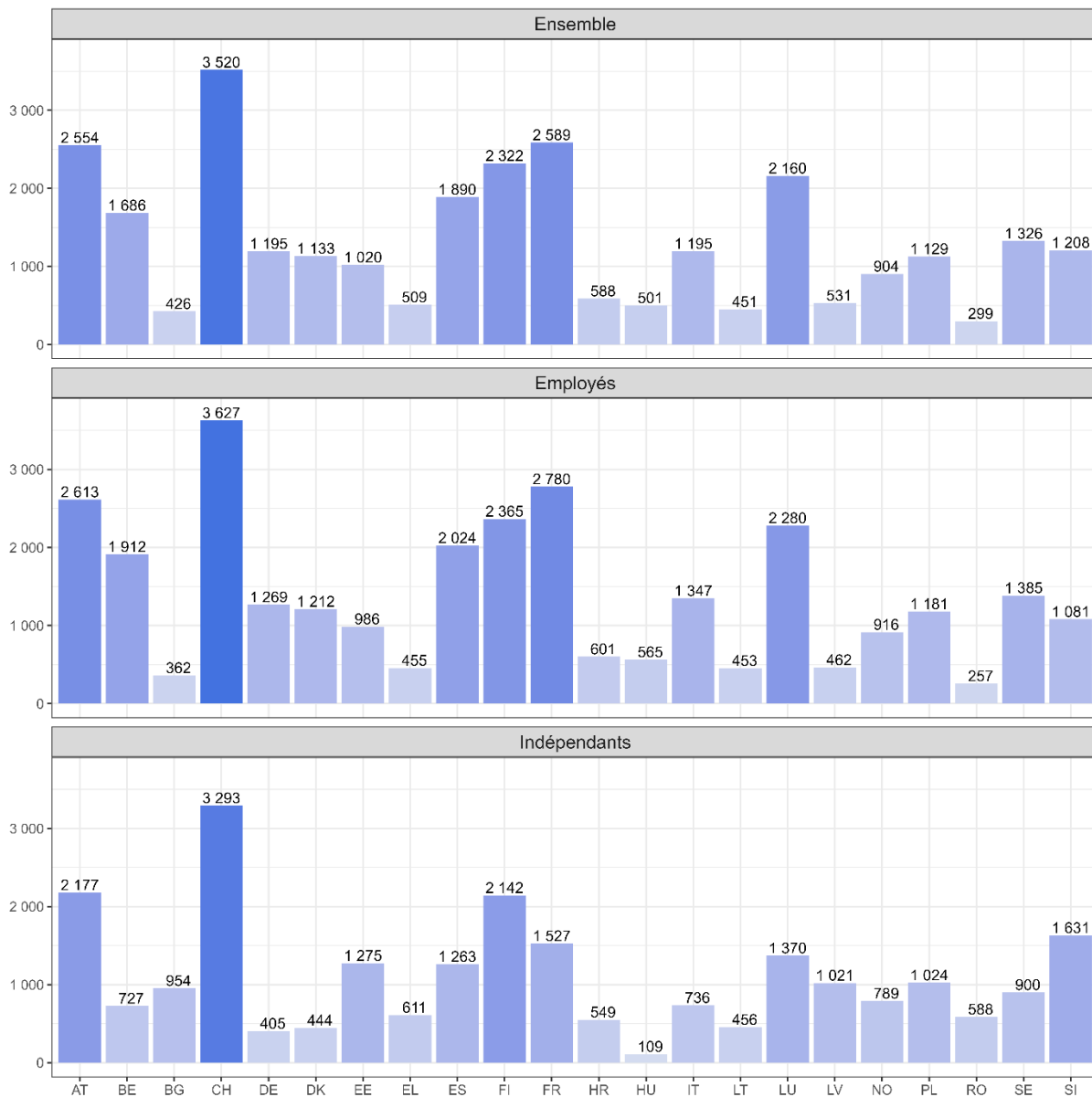
Figure 6: Share of workers by status (at time of survey) in 2020, by country (%)



*Source: LFS-EU (2020) ad-hoc module.
Population: All respondents.*

This distinction is important for countries that do not insure, or only partially insure (often on a voluntary basis), the self-employed population. Indeed, the inclusion or exclusion of the self-employed can have a significant influence on perceived incidence rates, as claims experience is often very different depending on the status of the workers (see Figure 7). For example, in the past, Greece did not cover the self-employed (Eurostat, 1999) even though they account for a large proportion of national employment.

Figure 7: Incidence rates felt by workers in the EU-LFS (2020), by employment status



Source: EU-LFS (2020).

Scope: Accidents at work leading to at least four days' absence from work.

Population: All respondents in each category, sectors A-N, R, S.

- Counting the exposed population

According to the ESAW methodology, the number of accidents must be related to the reference population, which is ESAW the number of people employed (people exposed to the risk of accidents at work). Eurostat indicates that this population cannot be expressed in full-time equivalents (FTE). However, many countries, such as France and Belgium, provide data expressed in FTEs. Where this information is not available, Eurostat indicates that the reference populations can be computed from the employment populations recorded in labour force surveys. For the ratio method, this heterogeneity does not pose any difficulty, but it may skew the comparison with surveys (since the underlying incidence rates are then related to several physical persons) and overestimate actual reporting levels.

As this difficulty cannot be corrected on a case-by-case basis, we are trying to identify the countries that are affected by this bias (these are potentially countries with higher-than-expected reporting levels).

- Defining the exposed population

In the ESAW methodology, this ideally refers to all people who were insured at some point during the year (even if not all year round). To correspond to this field, the population surveyed in the EU-LFS has been restricted to people aged between 15 and 74 (inclusive) who worked during the reference week (or declared themselves absent from work that week) or did not work that week but held a job during the one-year period preceding the survey. This filter may, however, include people who worked in the year prior to the survey year, but were out of work in the reference year and therefore not included in the ESAW population.

- Treatment of partial non-response in EU-LFS

For people questioned about whether or not they had suffered an accident at work, the economic sector and/or the employment status of the respondent could be missing, notably because the person was not in employment the moment he was surveyed ; to correct this situation as far as possible, the respondent's economic sector and employment status were imputed from data from the previous job (if the respondent declared one).

Comparison of the populations exposed between ESAW and EU-LFS validates the reprocessing of the EU-LFS sample (and the specific inclusion, in certain countries, of the self-employed and family workers) and its correspondence, for each country, with the population communicated to Eurostat within the framework of ESAW (cf. Table 2).

There are some significant discrepancies:

- In Luxembourg, the Netherlands and Switzerland, the EU-LFS population is significantly lower than the ESAW population, which can be explained by the large flow of regular cross-border workers going to work in these countries (Eurostat, 2021). In fact, ESAW data refer to workers present and declared within companies (regardless of their place of residence), while the EU-LFS survey refers to household members residing in the country¹⁰ (regardless of their place of work).
- In Poland, the EU-LFS population is larger, potentially due to the high number of posted workers (nearly 500,000 Polish posted workers in 2016, according to the European Commission).
- A significant gap persists for Germany (25%), but the reasons for this have not been identified.

In addition, ESAW populations remained relatively stable during the health crisis and essentially fell in line with the economic downturn, which would tend to confirm that most of the exposed populations reported by countries are expressed in physical persons (and not in full-time equivalents). The exposed population of some countries, however, fell sharply during the crisis period (e.g. Poland, Romania), which would tend to indicate that the population data communicated are not yet harmonized between countries.

10 The LFS reference population is based on the concept of residence, i.e. it can only count workers residing in one country. All cross-border workers, who live abroad and regularly cross the border to work, are therefore not included in the survey population. If the number of cross-border workers "entering" a country is large, the reference population would underestimate the number of actual workers (and incidence rates would then be overestimated).

Table 2: Comparison of exposed populations in ESAW (2019, 2020) and EU-LFS (2020)

Country	ESAW (2019) In millions	ESAW (2020) In millions	ESAW evolution	EU-LFS (2020) In millions	ESAW / EU-LFS gap	
AT	Austria	3,2	3,1	-5,2%	3,2	1,3%
BE	Belgium	2,6	2,6	-1,6%	2,5	-3,4%
BG	Bulgaria	2,0	1,9	-6,4%	2,3	13,9%
CH	Switzerland	2,9	2,9	-0,2%	2,7	-7,3%
CY	Cyprus	0,3	0,3	-14,3%	0,3	-7,5%
CZ	Czech Republic	3,7	3,6	-1,8%	3,3	-11,2%
DE	Germany	39,7	38,1	-3,9%	29,3	-24,6%
DK	Denmark	1,9	2,0	7,1%	1,9	-0,9%
EE	Estonia	0,5	0,4	-3,5%	0,4	-3,6%
EL	Greece	2,8	2,8	-2,0%	2,9	2,1%
ES	Spain	14,6	14,1	-3,2%	14,2	-1,1%
FI	Finland	1,8	1,8	-1,9%	1,8	-0,5%
FR	France	15,7	15,0	-4,6%	15,0	-2,1%
HR	Croatia	1,1	1,2	8,3%	1,3	10,0%
HU	Hungary	3,0	2,9	-2,0%	2,9	-0,5%
IE	Ireland	1,7	1,7	-2,3%	1,6	-7,4%
IS	Iceland	0,1	0,1	-5,1%	0,1	-16,6%
IT	Italy	17,9	17,5	-2,1%	17,4	-1,3%
LT	Lithuania	0,9	0,9	-3,1%	0,9	-3,4%
LU	Luxembourg	0,3	0,3	0,1	0,2	-49,1%
LV	Latvia	0,8	0,7	-18,8%	0,0	0,0%
MT	Malta	0,2	0,2	1,5%	0,2	1,2%
NL	Netherlands	5,3	5,3	-0,1%	4,3	-18,3%
NO	Norway	2,0	1,8	-10,1%	0,0	0,0%
PL	Poland	13,4	10,9	-18,7%	12,8	5,6%
PT	Portugal	3,6	3,5	-2,6%	3,4	-4,8%
RO	Romania	6,5	4,4	-32,8%	5,2	-4,8%
SE	Sweden	3,3	3,2	-2,3%	3,3	-0,9%
SI	Slovenia	0,7	0,7	-2,4%	0,8	4,8%
SK	Slovakia	1,6	1,6	-2,1%	1,6	-2,3%

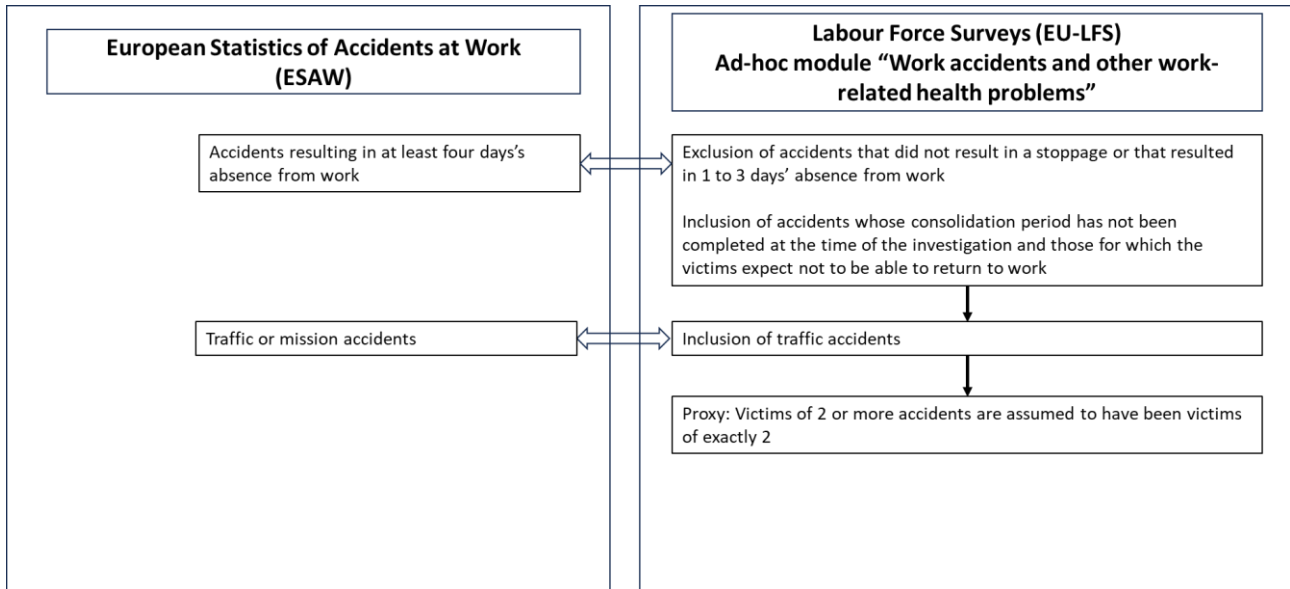
Source: Eurostat (ESAW), EU-LFS.

Scope: Insured population (possibly including self-employed and family workers, depending on the country) in sectors A-N, R, S.

6. Methodology for counting accidents at work

Once the population had been established, the accounting of accidents at work reported by EU-LFS households was aligned with the ESAW methodology.

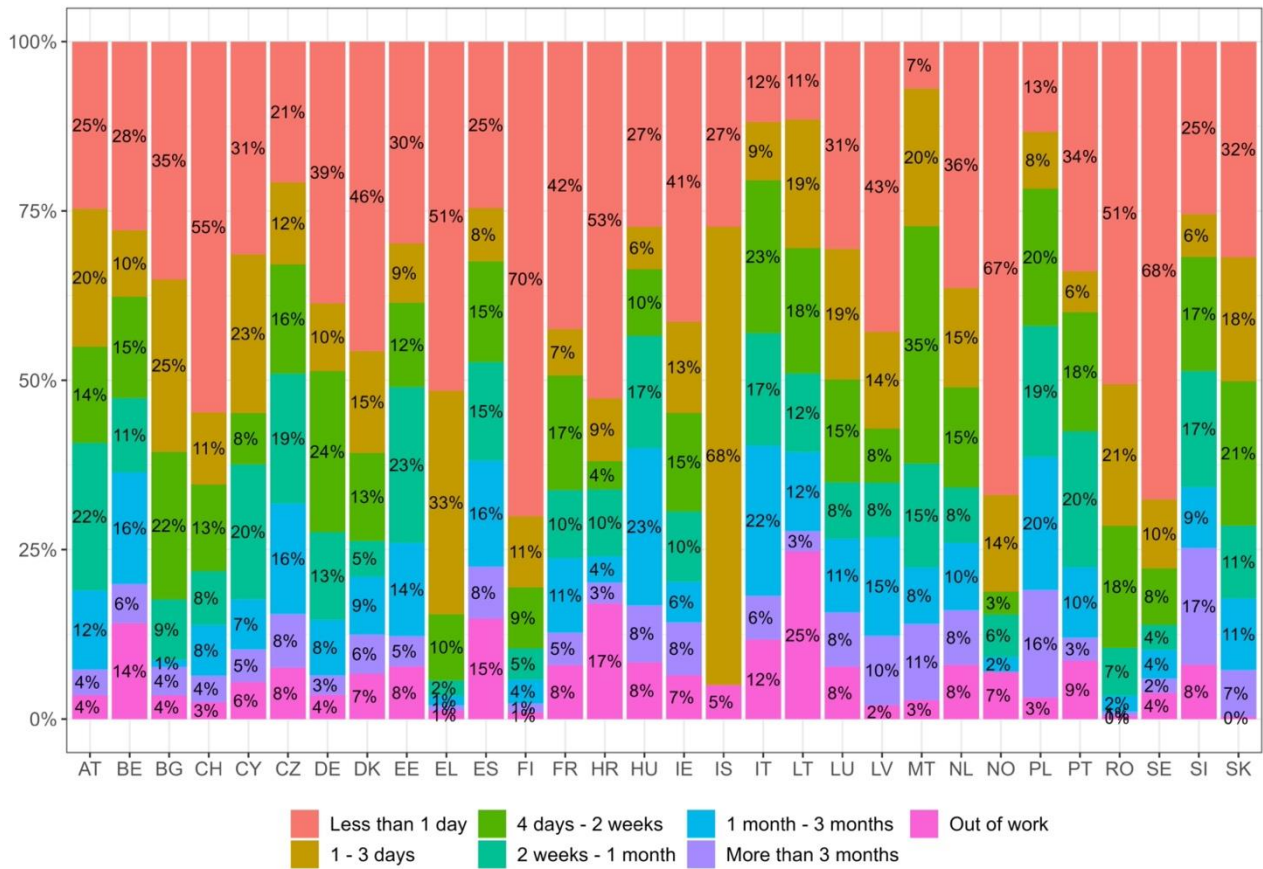
Figure 8: Recording and alignment of accidents at work with ESAW



- Length of time off work following an accident at work

According to the ESAW methodology, only accidents resulting in more than three days' absence from work (i.e. at least four days' absence) are retained in the EU-LFS. Accidents that caused a lesser duration (or no absence from work) are not counted (see Figure 9). Finally, people reporting an accident at work at the time of the survey, and not yet having returned to work or expecting never to work again, are assumed to have suffered an accident at work causing an absence lasting more than three days.

Figure 9: Distribution of accidents at work by length of absence in EU-LFS (2020)



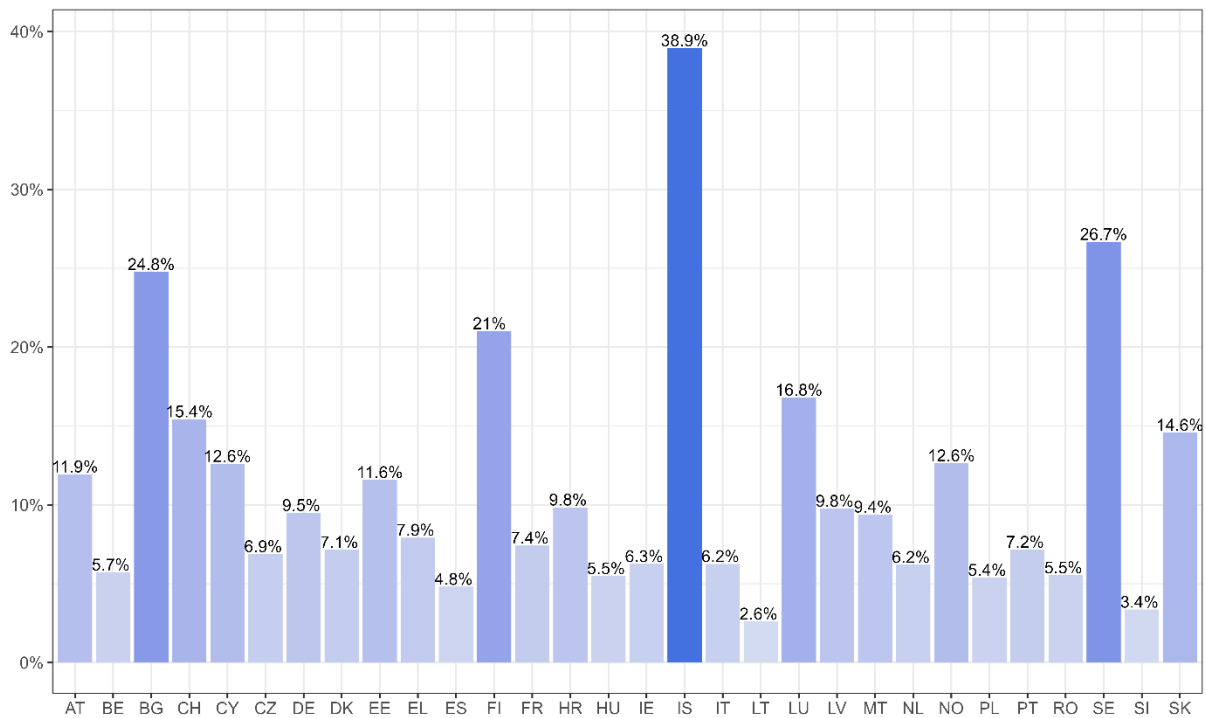
Source: LFS-EU (2020)

Population: All respondents having suffered an accident at work.

- Number of recorded accidents per victim

Each respondent can indicate, among three modalities, whether he or she has been the victim, during the past year, of 0 (first modality), 1 (2nd) or at least 2 accidents at work (3rd). It is assumed here that accidents at work are sufficiently rare for the number of people suffering 3 or more accidents be negligible, and the number of accidents associated with the 3rd modality of the question is set at precisely 2 (see Figure 10).

Figure 10: Share of victims of at least two accidents (EU-LFS 2020)



Source: EU-LFS (2020).

Scope: Non-fatal accidents resulting in at least four days' absence from work.

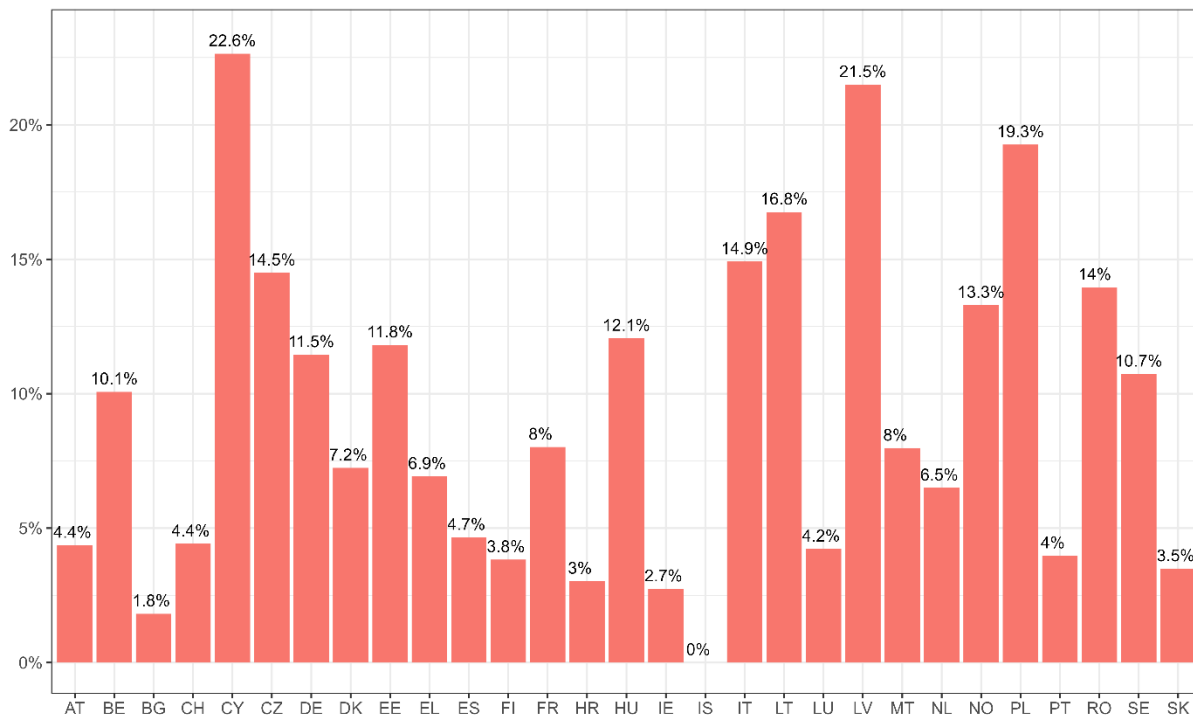
Population: All respondents having suffered an accident at work.

- Scope of covered accidents

Commuting accidents are excluded from the data transmitted to Eurostat by most countries, as required by the ESAW methodology. However, accidents occurring on the road, on mission or while travelling during work must be included, as well as accidents occurring on the premises of another company or private individual, in accordance with the ESAW methodology. These accidents are therefore included in the EU-LFS transmitted (see Figure 11).

On the other hand, accidents of medical or natural origin must be excluded. According to the metadata, however, they are transmitted by three countries: Croatia, France and Italy (cf. Appendix 6). For France, this number increases fatal incidence rates and makes French data difficult to compare with incidence rates of other countries (EUROGIP, 2016).

Figure 11: Share of traffic accidents in accidents at work (EU-LFS 2020)



Source: EU-LFS (2020).

Scope: Accidents at work leading to at least four days' absence from work.

Population: All respondents having suffered an accident at work.

- Fatal accidents

It has been possible to partially reprocess the number of fatal accidents in France by reducing it by part of the suicides and malaises recorded by the Occupational Risks Department of the French National Health Insurance Fund¹¹ firstly on the number of fatal accidents observed during the 2015-2019 period (in order to compute the average ratio of the main insurance systems, and then to compute the reporting level relating to this period), and then on the year 2020 in order to compute the reporting levels specific to the Covid period. In the absence of this reprocess, the estimated reporting level would be lower and close 40% to 50% in 2019 (see Table 3).

11 In France, excluded fatal accidents are those for which both the deviating element and the injury modality are poorly understood by the statistical system. The deviating element may be coded as "no information", "no material agent", or its modality may not be listed in the classification.

Table 3: Number of fatal accidents in France

Year	Fatal accidents	of which identified occupational origin	Relative share
2015	545	384	70%
2016	527	401	76%
2017	542	329	61%
2018	562	320	57%
2019	756	368	49%
2020	554	297	54%
2021	656	391	60%
2015-2019	2 932	1 802	61%

Source: French National Health Insurance Fund, calculations and reprocessing by EUROGIP.

Population: All employees, excluding agriculture employees and civil servants.

Finally, the ESAW methodology counts as fatal accidents all accidents resulting in the death of the victim within one year of the accident. This recognition process may vary from one country to another: in the Netherlands, fatal accidents are only recorded if the victim dies the same day the accident occurred; in Germany, they are only recorded if the victim dies within 30 days; and in other countries (Belgium, France, Italy, Sweden), there is no time limit. This difference has not been restated for the purposes of this study, in the absence of relevant data.

7. Matching time periods

The ESAW data relate to accidents at work occurring in calendar years, while the module relating to accidents at work in the EU-LFS Survey relates to the one-year period preceding the reference week in which people were interviewed. Accidents in the 2020 (resp. 2013) ad-hoc module may therefore largely have occurred in 2019 (resp. 2012), without the date or even the specific year of the accident being known (which is not provided in the Survey).

This difference may be negligible under normal circumstances: the number of people in the exposed population and the number of accidents recorded generally fluctuate relatively little from one year to the next. This was not the case in 2020, when the exposed population and the number of accidents fell significantly in most countries (in general, the number of accidents fell even more than the exposed population, so that incidence rates fell).

To correct for this cyclical bias (which had not been considered in previous EUROGIP work for the year 2013, as the economic situation was stable at the time), we study the reporting level over the two years covered by the responses to the EU-LFS questions on accidents at work. The incidence rates calculated then correspond to the total number of accidents recorded in these two years, divided by 100,000 "cumulative" workers in these two years, to compute the average incidence rate over the period 2019-2020 (resp. 2012-2013). For the EU-LFS ad-hoc module, the computed incidence rates are assumed to be those for the period 2019-2020 (resp. 2012-2013).

It should be noted that many countries conducted the survey over shorter periods than the full calendar year 2020 (cf. Appendix 7). As these periods are generally spread throughout the year (and not just at the beginning or end), we consider that the method used is also a good proxy for these countries.

8. Results according to the ratio method (2019, 2020 and 2021)

The first method used was proposed by Kari Kurppa (2015), then by Florian Jacquetin (EUROGIP, 2017) and is based on a comparison of the ratios of non-fatal to fatal accidents observed by country and over a long period. As Figure 12 shows, this ratio appears to be relatively stable over several consecutive years, although it may have undergone significant variations in 2020.

It should be noted that structural differences between countries' economic activities influence the distribution of accident severity, and that this ratio would, all other things being equal, be lower in countries where sectors with a high incidence rate of fatal accidents are more represented. It would then be appropriate to compute this ratio for each sector, but in this case, it seems difficult to estimate reliable ratios, as the number of fatal accidents considered for each sector is very low (or even zero). It is also much more sensitive to cyclical variations and can lead to significant biases for each sector. This is why the ratios are estimated for the whole of the exposed population considered (in the sectors selected, i.e. sections A-N, R, S).

Reprocessing may be necessary for certain countries. For example, the number of fatal accidents in France has been reduced by the number of deaths for which the occupational origin was not identified, for each of the sectors included in ESAW.

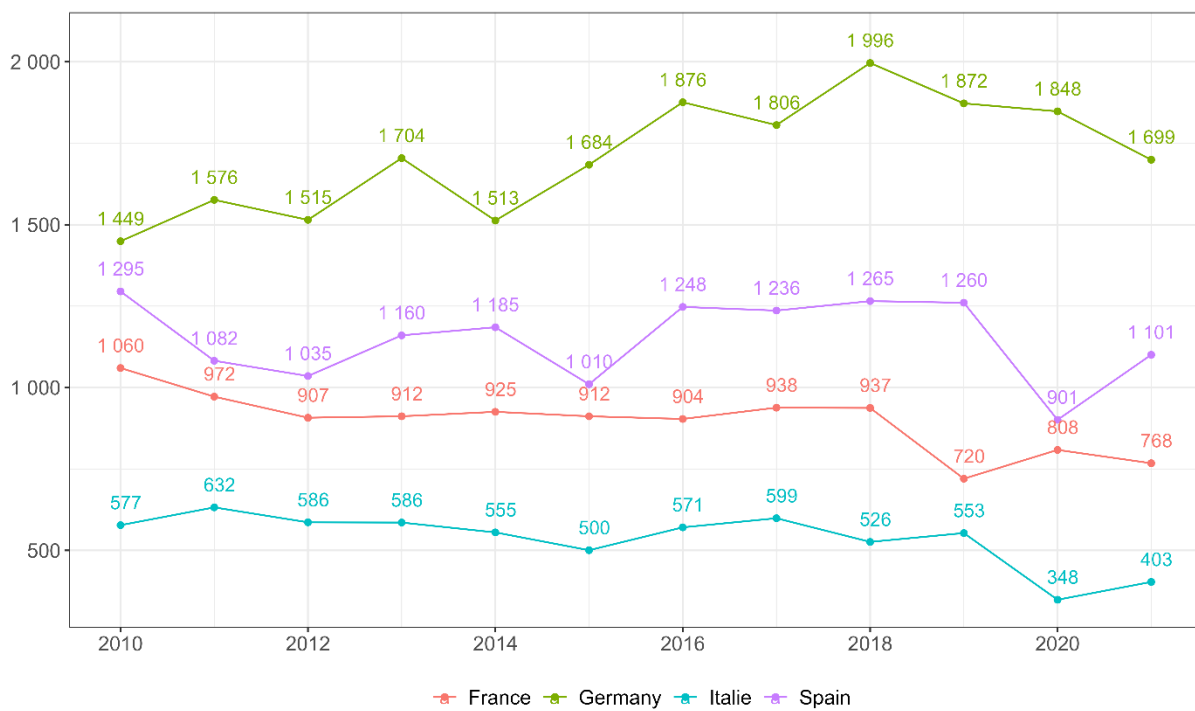
Countries recognizing Covid-19 as an accident at work may also see different trends in 2020. For example, Italy and Denmark will see a marked increase in the number of non-fatal and fatal accidents at work. To ensure comparability between countries, it would also be advisable to exclude these specific accidents, whose incidence and severity may influence the ratios for these countries (which has not been done, in the absence of exhaustive available data on the number of recognized Covid cases).

By applying the theoretical ratios of non-fatal accidents to observed fatal accidents, we can establish expected levels of non-fatal accidents and compare them with the number of recorded accidents. This method is similar to that used in EUROGIP's previous work (2017), but involves a different sectoral and temporal scope, a reprocess of the number of fatal accidents in France, a calculation of the reference ratio (1,422 non-fatal accidents for 1 fatal accident) over the 2015-2019 period and on a wider field of countries (Germany, Belgium, Denmark, Spain, Finland, France "after reprocessing", Netherlands, Portugal, Switzerland).

Over the 2015-2019 period, we observe very heterogeneous ratios between countries, ranging from 17 in Romania to 1,838 in the Netherlands (see Figure 13). The theoretical reporting level for a country each year can then be deduced from the empirical ratios observed in the same year, relative to the reference ratio:

$$\begin{aligned}
 \text{Reporting level}_{\text{country}} &= \frac{\text{Recorded non fatal AW}_{\text{country}}}{\text{Theoretical non fatal AW}_{\text{country}}} = \frac{\text{Ratio}_{\text{country}} \times \text{fatal AW}_{\text{country}}}{\text{Ratio}_{\text{ref}} \times \text{fatal AW}_{\text{country}}} \\
 &= \frac{\text{Ratio}_{\text{country}}}{\text{Ratio}_{\text{ref}}}
 \end{aligned}$$

Figure 12: Trends in the ratio of non-fatal to fatal accidents in 4 countries over the period 2010-2020

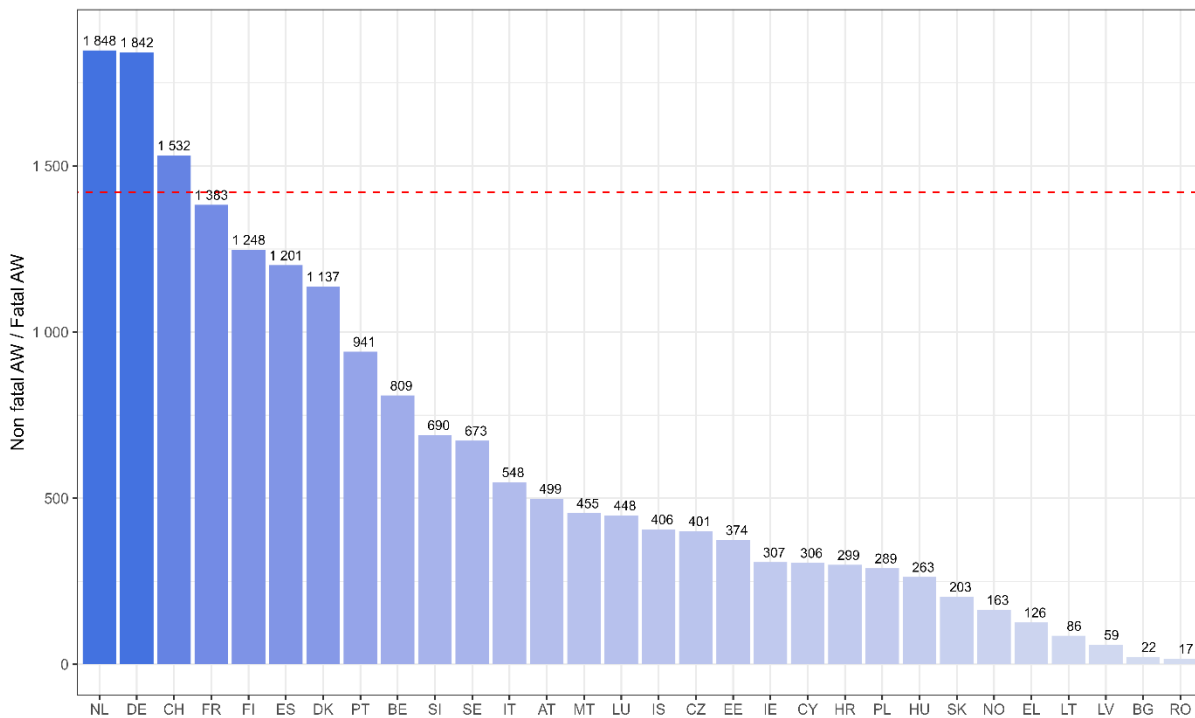


Source: Eurostat (ESAW), EUROGIP calculations.

Population: All insured workers in NACE sectors A-N, R, S.

Note: The number of fatal accidents in France is not reprocessed here.

Figure 13: Ratios of non-fatal to fatal accidents over the 2015-2019 period, by country



Source: Eurostat (ESAW), EUROGIP calculations

Population: All insured workers in NACE sectors A-N, R, S.

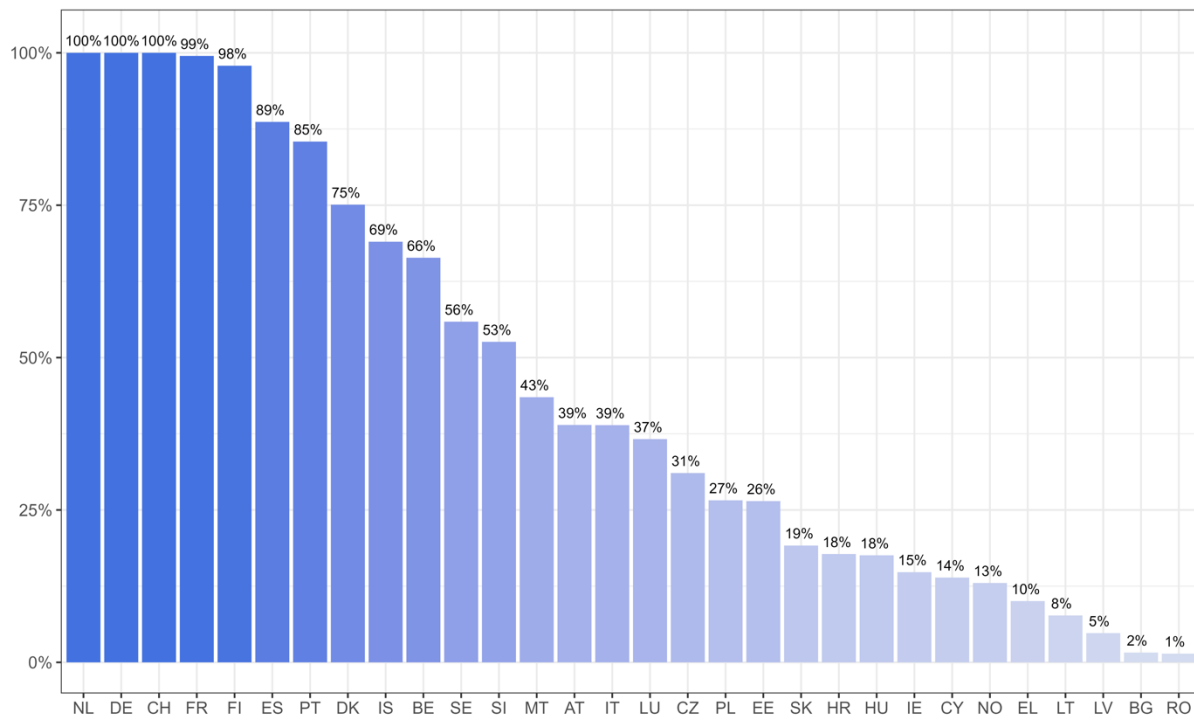
Note: The theoretical reference level (red dotted line) is 1,422 non-fatal accidents for 1 fatal accident. It is estimated for the period 2015-2019 for the following eight countries: Belgium, Denmark, Finland, France "after reprocessing", Netherlands, Portugal, Spain and Switzerland.

By construction, the countries with the highest ratios of non-fatal to fatal accidents are those whose reporting levels are at or close to 100%. All levels above 100% are reduced to 100% by default (see Figure 14).

During the Covid crisis, reporting levels fell in most countries (see Figure 15). The notable exceptions are countries where the reporting level is statistically sensitive to a very low number of fatal accidents (Luxembourg, Sweden).

By 2021, reporting levels will have risen in all countries, but will not return to pre-crisis levels overall (see Figure 16).

Figure 14: Theoretical declaration levels in 2019, by country (in %)

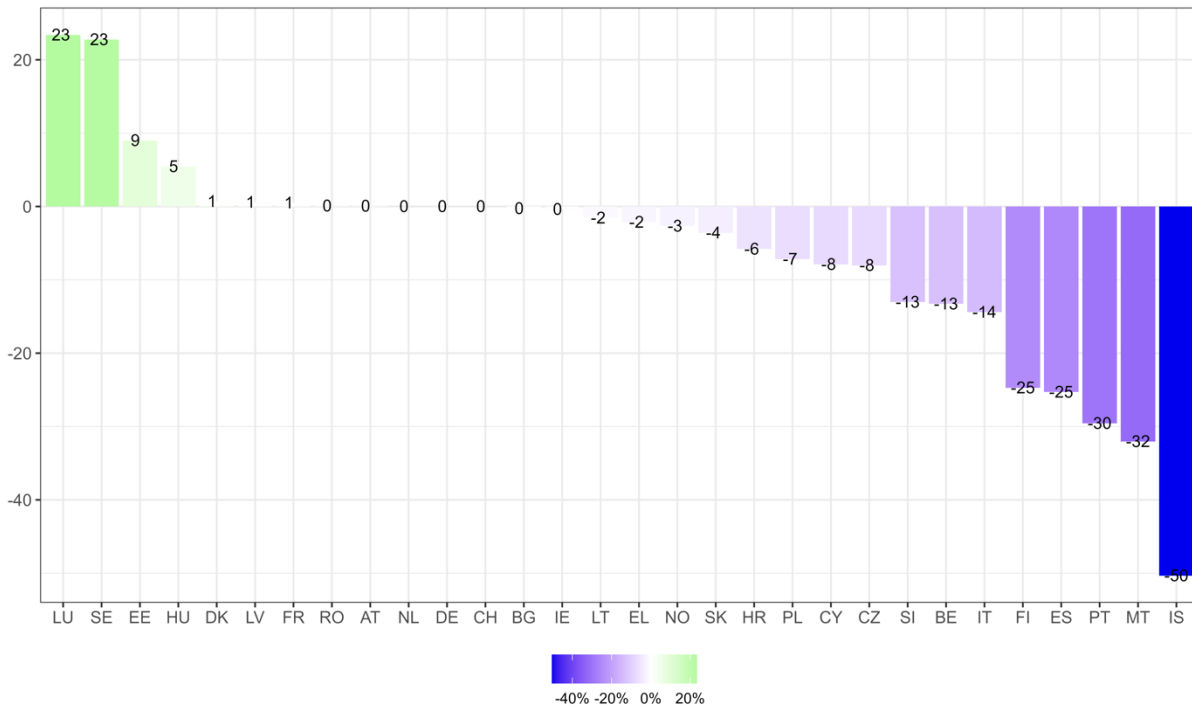


Source: Eurostat (ESAW), EUROGIP calculations.

Scope: Non-fatal accidents at work resulting in at least four days' absence from work.

Population: All insured workers in NACE sectors A-N, R, S.

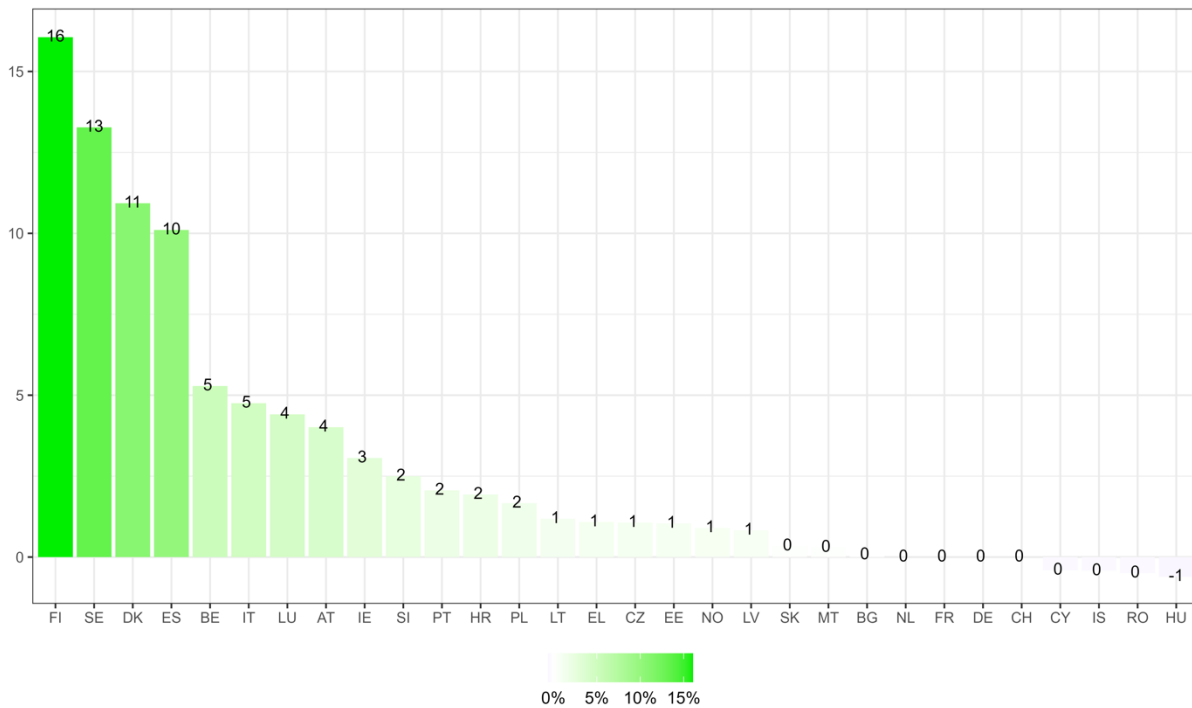
Figure 15: Change in reporting levels between 2019 and 2020, by country (in %)



Source: Eurostat (ESAW), EUROGIP calculations.

Scope: Non-fatal accidents at work resulting in at least four days' absence from work. Population: All insured workers in NACE sectors A-N, R, S.

Figure 16: Change in reporting levels between 2020 and 2021, by country (in %)



Source: Eurostat (ESAW), EUROGIP calculations. Scope: Non-fatal accidents at work resulting in at least four days' absence from work. Population: All insured workers in NACE sectors A-N, R, S.

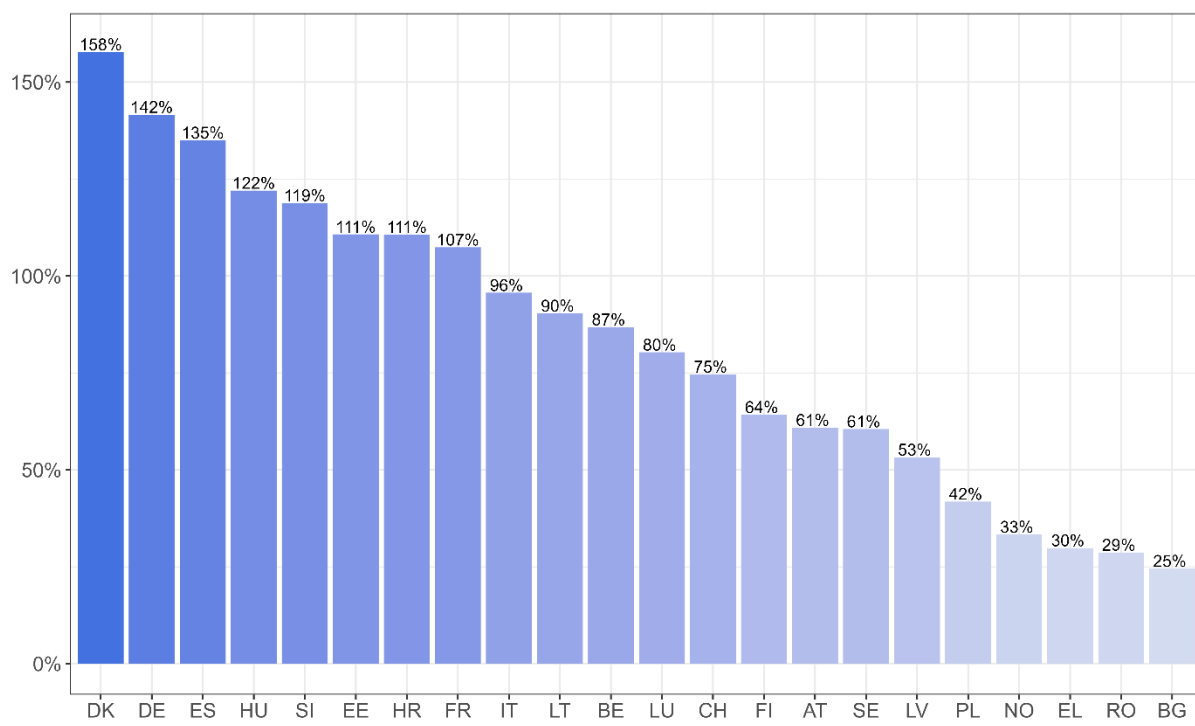
9. Results: estimate based on EU-LFS

The incidence rates experienced by the exposed population, as defined by the Labour Force Surveys, are related to the ESAW incidence rates, and make it possible to determine a theoretical reporting level for the periods 2012-2013 and 2019-2020. As the populations of the two sources do not fully correspond (although they are very close for most countries), the definition below reports incidence rates (number of non-fatal work accidents per 100,000 employed persons) rather than numbers of accidents at work.

$$Reporting\ level_{country} = \frac{ESAW\ incidence\ rate_{country}}{EU - LFS\ incidence\ rate_{country}}$$

Incidence rates for the EU-LFS are computed using the weights of surveyed people, to estimate incidence in the general population. The underlying confidence intervals are not presented, but the sampling rates (the proportion of people surveyed in relation to the target population) are given in Appendix 7.

Figure 17: Reporting levels for 2019-2020 according to the EU-LFS (2020)



Source: EU-LFS (2020), EUROGIP calculations.

Scope: Non-fatal accidents at work resulting in at least four days' absence from work. *Population:* Persons aged between 15 and 75 responding to the ad-hoc module, in employment or having been in employment in the year preceding the interview in NACE sectors A-N, R, S.

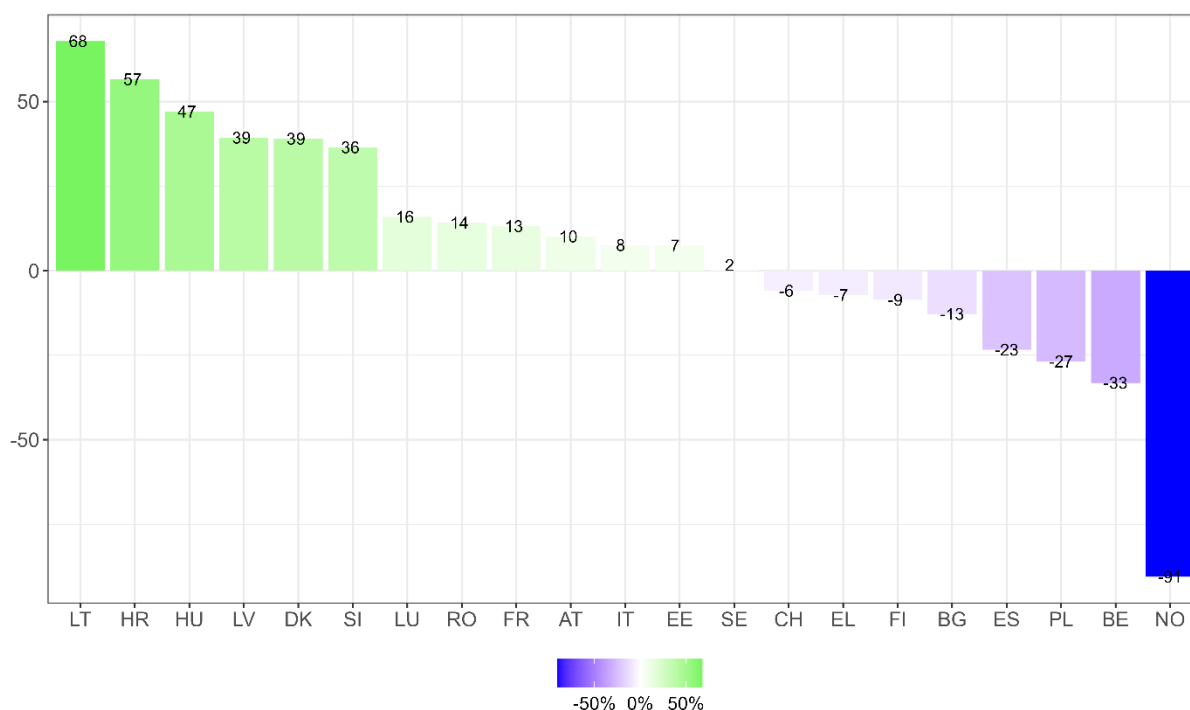
Between the two survey periods (2012-2013 and 2019-2020), the reporting levels estimated by this method evolve very heterogeneously (see Figure 18):

- They are falling in the following countries in particular: Finland (-9%), Switzerland (-6%), Spain (-23%) and Belgium (-33%).
- They are rising in Italy (+8%) and France (+13%), as well as in many Eastern European countries.
- The reporting level is 100% in Denmark and Spain in both surveys.

In some countries, estimated declaration levels even significantly exceed 100%: Spain, Germany, Denmark and Hungary in particular. As Germany did not participate in the previous module (2013), the evolution of its declaration level cannot be computed using this method at this time.

As a reminder, some countries provide (at least partial) population data expressed in full-time equivalents. This is notably the case in France, Belgium and Spain¹². In Spain, the decision to include the self-employed on a compulsory basis was potentially accompanied by a drop in the reporting level linked to the coverage of these new populations (the incidence rate experienced in Spain by the self-employed according to the EU-LFS being lower than that of employees, as shown in Figure 7).

Figure 18: Change in reporting levels between 2012-2013 and 2019-2020 according to the EU-LFS (2013, 2020 - in %)



Source: EU-LFS (2020), EUROGIP calculations.

Scope: Non-fatal accidents at work resulting in at least four days' absence from work.

Population: Persons aged between 15 and 75 responding to the ad-hoc module, in employment or having been in employment in the year preceding the interview, in NACE sectors A-N, R, S.

12 For Spain, the population is computed as the annual average of workers affiliated to the Social Security system on the last day of each month. This method does not perfectly account for workers who have not been employed for the whole year, nor for part-time workers.

10. Conclusion

The results are consistent with previous work in 2017 (covering the year 2013) and conclude to heterogeneous reporting levels between countries. They show a distinction between, on the one hand, historical insurance systems (whether monopolistic and public, private or mixed), which have a reporting level close to 100%, insurance systems in countries resulting from recent EU enlargements, insurance included in universal social protection systems and countries with no specific accident insurance. However, this distinction is not absolute, and the methods used do not always give convergent results.

Table 4: Summary of results relating to the level of reporting of work accidents

Country	Name	Ratio method			Survey method	
		2019	2020	2021	2012-2013	2019-2020
AT	Austria	39%	39%	43%	51%	61%
BE	Belgium	66%	53%	58%	120%	87%
BG	Bulgaria	2%	1%	1%	37%	25%
CY	Cyprus	14%	6%	6%		
CZ	Czech Republic	31%	23%	24%		
DE	Germany	100%	100%	100%		142%
DK	Denmark	75%	76%	87%	119%	158%
EE	Estonia	26%	35%	36%	103%	111%
EL	Greece	10%	8%	9%	37%	30%
ES	Spain	89%	63%	73%	158%	135%
FI	Finland	98%	73%	89%	73%	64%
FR	France	99%	100%	100%	94%	107%
HR	Croatia	18%	12%	14%	54%	111%
HU	Hungary	18%	23%	22%	75%	122%
IE	Ireland	15%	14%	17%		
IT	Italy	39%	25%	29%	88%	96%
LT	Lithuania	8%	6%	7%	23%	90%
LU	Luxembourg	37%	60%	64%	64%	80%
LV	Latvia	5%	5%	6%	14%	53%
MT	Malta	43%	11%	12%		
NL	Netherlands	100%	100%	100%		
PL	Poland	27%	19%	21%	69%	42%
PT	Portugal	85%	56%	58%		
RO	Romania	1%	2%	1%	15%	29%
SE	Sweden	56%	79%	92%	59%	61%
SI	Slovenia	53%	40%	42%	82%	119%
SK	Slovakia	19%	16%	16%		
CH	Switzerland	100%	100%	100%	81%	75%
IS	Iceland	69%	19%	18%		
NO	Norway	13%	10%	11%	124%	33%

Source: Eurostat (ESAW, EU-LFS), EUROGIP calculations. Note: for the ratio method, estimated reporting levels have been capped at 100%. For the survey method, reporting levels higher than 100% show that the sample experienced less AW than in the administrative data and tends to indicate that the under-reporting phenomenon is low in these countries.

In 2020, reporting levels are down in most European countries, except in some countries where the measurement of reporting levels is dependent on a low number of fatal accidents (cf. Appendix 2). Estimated levels are not always consistent with those estimated through the EU-LFS over the 2019-2020 period. For most countries, the survey method concludes with a higher reporting level than the ratio method, except for Finland and Switzerland.

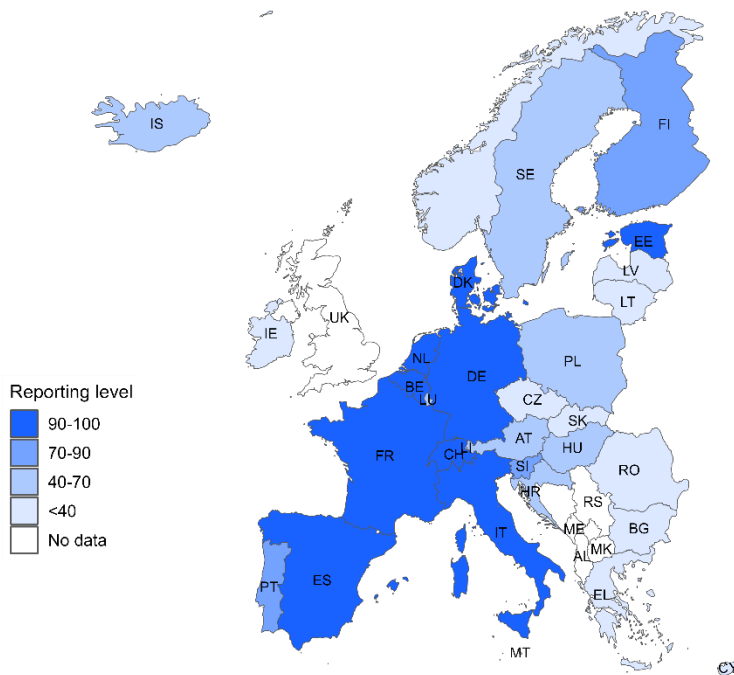
By 2021, reporting levels rose, but did not fully return to pre-crisis levels.

The proposed map (see Figure 19) is assumed to be representative of the results observed over the 2019-2020 period. In order of priority, the classification depends first on the results obtained using the survey method. When this method is not available (when states do not participate in the ad-hoc module), the ratio method is used. However, adjustments may be made according to the results observed.

When the survey method differs too widely from the ratio method, an intermediate classification is used. When one method is potentially biased (e.g. Italy, by using the ratio method), the second is preferred.

For comparison, reporting levels are estimated using the survey method for the 2012-2013 period. Where results from the 2020 surveys diverge too widely, an intermediate classification is used.

Figure 19: Estimated reporting levels for accidents at work in Europe in 2019 -2020



Source: Eurostat (ESAW, EU-LFS), EUROGIP calculations.

Statistical limits and uncertainties

There are several limitations to this study.

Concerning the ratio method:

- The drop in reporting levels estimated for 2020 is due to a sharper decline in non-fatal accidents than in fatal ones. This phenomenon could also be explained by the context of the health crisis, new situations at work and different exposure in some economic sectors and certain risk behaviors.
- Furthermore, in the absence of available data, fatal accidents at work linked to Covid have not been reprocessed for countries which have opened the possibility of recognition as accidents at work.
- For many countries, the number of fatal accidents is low (sometimes just a few dozen). Sudden variations from one year to the next can significantly alter the observed ratios, without this necessarily being attributable to an increase or decrease in under-reporting, but more simply to cyclical events. The results for these countries should therefore be analysed with great caution.
- As indicated by the metadata, the scope of recognition of fatal accidents is not the same from one country to another and may also lead to biases (this is the case in France, for example, which recognizes accidents whose origin is only medical). For France, a specific reprocessing has been carried out based on an individual fatal accident dataset.

Concerning the survey method:

- It is based on work carried out separately by the national statistical institutes, then aggregated by Eurostat into the Labour Force Survey. As such, these surveys cannot be considered as a perfectly homogeneous dataset. Significant methodological biases may persist interviewing methods and periods, weighting of individuals, etc.
- Due to the principle of statistical estimation, the reporting levels in % (estimated and presented in detail in the study) are subject to significant uncertainties and confidence intervals (which have not been presented in the study), depending for example on the sampling rate (percentage of the base population which is questioned during a survey and therefore forms part of the sample). These levels should therefore not be taken at face value, but rather used to assess the importance of the phenomenon of under-reporting of accidents at work.

Appendices

Appendix 1 Exposed population, accidents at work and incidence rates in Europe, 2019 and 2020 (all economy)

Country		Population (in millions)		Accidents at work		Incidence rate	
		2019	2020	2019	2020	2019	2020
AT	Austria	4.2	3.6	61.015	51.116	1.436	1.419
BE	Belgium	4.1	4.1	68.793	56.531	1.681	1.392
BG	Bulgaria	2.5	2.4	2.247	1.908	89	80
CY	Cyprus	0,4	0,4	2.168	1.527	531	424
CZ	Czech Republic	4.7	4.7	42.416	35.071	896	747
DE	Germany	52.6	50.9	867.949	766.563	1.652	1.505
DK	Denmark	2.7	2.9	50.218	74.510	1.838	2.567
EE	Estonia	0.6	0.6	6.195	5.232	1.035	906
EL	Greece	3.8	3.8	5.162	3.997	136	106
ES	Spain	19.5	19.0	489.990	388.866	2.515	2.045
FI	Finland	2.6	2.5	40.132	29.608	1.569	1.175
FR	France	22.7	21.3	779.623	624.195	3 429	2.934
HR	Croatia	1.5	1.6	10.416	8.611	717	552
HU	Hungary	4.0	3.9	23.886	24.274	594	617
IE	Ireland	2.3	2.3	13.293	12.114	572	528
IT	Italy	23.4	22.9	289.774	324.459	1.240	1.417
LT	Lithuania	1.2	1.2	4.703	3.850	382	321
LU	Luxembourg	0,4	0,4	7.282	6.002	1.899	1.463
LV	Latvia	1.0	0.9	2.274	2.016	218	226
MT	Malta	0.3	0.3	2.205	1.557	866	597
NL	Netherlands	7.6	7.7	92.875	76.880	1.217	997
PL	Poland	16.7	14.0	81.486	62.338	488	444
PT	Portugal	4.9	4.8	131.821	108.903	2.683	2.263
RO	Romania	7.6	5.4	4.936	4.135	65	76
SE	Sweden	5.0	4.9	40.720	39.882	815	811
SI	Slovenia	0.9	0.9	13.080	16.889	1.403	1.838
SK	Slovakia	2.2	2.2	9.699	7.889	442	366
CH	Switzerland	4.2	4.2	95.310	87.584	2.296	2.109
IS	Iceland	0.2	0.2	1.323	1.079	658	555
NO	Norway	3.0	2.8	9.976	9.694	328	343

Source: Eurostat (ESAW).

Scope: All accidents at work resulting in at least four days' absence from work and fatal accidents at work.

Population: All insured workers (all economy).

Note: the exposed population is not communicated by Eurostat but is computed based on the number of accidents at work recorded and the corresponding incidence rates.

Appendix 2 Calculation of reporting levels among the target population (NACE A-N, R, S) using the ratio method

Country		Accidents at work							
		Non-fatal		Fatal		Non-fatal / fatal		Reporting levels	
		2019	2020	2019	2020	2019	2020	2019	2020
AT	Austria	53.142	44.374	96	80	554	555	40%	40%
BE	Belgium	47.179	39.259	50	52	944	755	68%	55%
BG	Bulgaria	1.890	1.620	83	85	23	19	2%	1%
CH	Switzerland	82.872	75.600	52	41	1.594	1.844	115%	133%
CY	Cyprus	1.977	1.368	10	16	198	86	14%	6%
CZ	Czech Republic	36.639	30.103	83	92	441	327	32%	24%
DE	Germany	743.331	654.169	397	354	1.872	1.848	135%	133%
DK	Denmark	33.089	35.552	31	33	1.067	1.077	77%	78%
EE	Estonia	5.264	4.535	14	9	376	504	27%	36%
EL	Greece	4.859	3.708	34	33	143	112	10%	8%
ES	Spain	413.413	318.004	328	353	1.260	901	91%	65%
FI	Finland	30.611	22.877	22	22	1.391	1.040	100%	75%
FR	France	517.737	397.772	366*	266*	1.415	1.495	102%	108%
HR	Croatia	8.334	6.809	33	40	253	170	18%	12%
HU	Hungary	20.217	20.605	81	63	250	327	18%	24%
IE	Ireland	8.622	8.202	41	40	210	205	15%	15%
IS	Island	981	796	1	3	981	265	71%	19%
IT	Italia	228.437	175.602	413	504	553	348	40%	25%
LT	Lithuania	4.047	3.321	37	38	109	87	8%	6%
LU	Luxembourg	6.247	5.118	12	6	521	853	38%	62%
LV	Latvia	1.907	1.685	28	22	68	77	5%	6%
MT	Malta	1.855	1.302	3	8	618	163	45%	12%
NL	Netherlands	67.280	58.318	31	19	2.170	3.069	157%	222%
NO	Norway	5.922	5.889	32	40	185	147	13%	11%
PL	Poland	64.611	50.206	171	182	378	276	27%	20%
PT	Portugal	115.382	95.308	95	120	1.215	794	88%	57%
RO	Romania	4.393	3.678	217	170	20	22	1%	2%
SE	Sweden	27.012	25.716	34	23	794	1.118	57%	81%
SI	Slovenia	11.213	9.561	15	17	748	562	54%	41%
SK	Slovakia	8.444	6.861	31	31	272	221	20%	16%

Source: Eurostat (ESAW), EUROGIP calculations.

Scope: Non-fatal accidents resulting in at least four days' absence from work.

Population: All insured workers in NACE sections A-N, R,S.

Note(*): the number of fatal accidents in France has been adjusted by estimating the number of deaths for which the occupational origin has not been identified.

The level of reporting is calculated by comparing the annual ratio with the reference ratio (1,422 non-fatal accidents for 1 fatal accident), calculated based on the observed average for a selection of countries (Belgium, Denmark, Finland, France, Germany, Netherlands, Portugal, Spain and Switzerland).

Appendix 3 Calculation of reporting levels among the target population (NACE A to N) using the survey method

Country		ESAW 2019-2020			EU-LFS 2019-2020			Reporting level 2019-2020
		Non-fatal accidents	Population	Incidence rate	Non-fatal accidents	Population	Incidence rate	
AT	Austria	48,758	3,135,634	1,555	89,897	3,520,224	2,554	61%
BE	Belgium	43,219	2,603,313	1,660	53,558	2,800,659	1,912	87%
BG	Bulgaria	1,755	1,979,176	89	8,649	2,391,648	362	25%
CH	Switzerland	79,236	2,928,128	2,706	107,791	2,971,821	3,627	75%
DE	Germany	698,750	38,898,877	1,796	365,055	28,776,777	1,269	142%
DK	Denmark	34,321	1,919,960	1,788	23,742	2,095,494	1,133	158%
EE	Estonia	4,900	448,708	1,092	4,915	498,475	986	111%
EL	Greece	4,284	2,819,654	152	15,024	2,950,650	509	30%
ES	Spain	365,709	14,327,686	2,552	338,770	17,915,717	1,891	135%
FI	Finland	26,744	1,794,503	1,490	50,087	2,157,347	2,322	64%
FR	France	457,755	15,333,922	2,985	472,377	16,994,914	2,780	107%
HR	Croatia	7,572	1,162,285	651	8,336	1,416,525	588	111%
HU	Hungary	20,411	2,963,030	689	18,146	3,214,145	565	122%
IT	Italy	202,020	17,662,203	1,144	236,800	19,809,229	1,195	96%
LT	Lithuania	3,684	899,434	410	4,453	982,505	453	90%
LU	Luxembourg	5,683	326,476	1,741	3,815	176,073	2,167	80%
LV	Latvia	1,796	730,128	246	2,971	642,704	462	53%
NO	Norway	5,906	1,934,890	305	14,535	1,587,556	916	33%
PL	Poland	57,409	12,165,515	472	155,933	13,813,736	1,129	42%
RO	Romania	4,036	5,467,794	74	14,086	5,476,639	257	29%
SE	Sweden	26,364	3,285,514	802	54,524	4,112,092	1,326	61%
SI	Slovenia	10,387	723,472	1,436	9,552	790,714	1,208	119%

Source: ESAW, EU-LFS, EUROGIP calculations,

Scope: Non-fatal accidents resulting in at least four days' absence from work,

Population: All insured workers in NACE sections A-N, R,S

Appendix 4 Coverage of economic sectors (NACE) in ESAW

NACE	NACE Rev.2	AT	BE	BG	CH	CY	CZ	DE	DK	EE	EL	ES	FI	FR	HR	HU	IE	IT	LT	LU	LV	MT	NL	NO	PL	PT	RO	RU	SE	SI	SK
A	Agriculture, forestry and fishing	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	P	x	x	x	x	x	x	x	x	x
B	Mining and quarrying	x	x	x	x	x	x	x	x	P	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	off shores	x	x	x	x	x	n.a.	x	x	x	N	x	x	x	x	x	x	x	x	x	n.a.	N	x	x	x	x	x	x	x	N.A.	x
	others	x	x	x	x	x	x	n.a.	x	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
C	Manufacturing	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
D	Electricity, gas, steam and air conditioning supply	x	x	x	x	x	x	x	x	x	x	x	x	P	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
E	Water supply, sewerage, steam and air conditioning supply	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
F	Construction	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
G	Wholesale and retail trade; repair of motor vehicles, motorcycles	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
H	Transportation and storage	x	x	x	x	x	x	x	x	x	x	x	x	P	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	maritime transport (NACE 50)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	air transport (NACE 51)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	transport via Railways (NACE 49)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	N	x	x	x	x	x	x	x	x
	post & telecommunications (NACE 53)	x	x	x	x	x	x	x	x	x	x	x	x	P	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
I	Accommodation and food service activities	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
J	Information and communication	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
K	Financial and insurance activities	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
L	Real state activities	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
M	Professional, scientific and technical activities	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
N	Administrative and support service activities	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
O	Public administration and defence; compulsory social security	P	x	x	x	x	x	x	P	x	P	x	x	x	P	x	x	x	x	x	x	x	x	x	x	P	P	x	x	x	P
	of which defence, police and firebrigades (NACE 84.22, 84.24 and 84.25)	x	N	N	P	x	x	N	x	x	P	x	x	P	x	N	x	N	N	x	P	x	x	x	P	x	P	x	x	x	N
P	Education	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Q	Human health and social work activities	x	x	x	x	x	x	x	x	x	x	x	x	P	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
R	Arts, entertainment and recreation	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
S	Other service activities	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
T	Activities of households as employers; undifferentiated goods- and services-producing activities of households for own use	x	x	x	x	x	N	x	x	x	x	x	x	P	x	N	N	x	x	x	N	N	x	x	x	x	N	x	x	x	x
U	Activities of extra territorial organisations and bodies	x	x	x	x	N	x	x	P	N	N	x	x	x	x	x	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x

Source: ESAW metadata

In green (with a cross): data transmitted

Yellow (with a p): data partially transmitted

In red (with an N): data not transmitted,

Appendix 5 Coverage of professional statuses in ESAW

Professional status	AT	BE	BG	CH	CY	CZ	DE	DK	EE	EL	ES	FI	FR	HR	HU	IE	IT	LT	LU	LV	MT	NL	NO	PL	PT	RO	RU	SE	SI	SK	
1. Self employed	x	N	N	N	N	p	p	p	p	x	x	x	N	x	N	x	x	N	x	N	x	N	N	N	x	x	p	p	x	x	N
1.1 Self employed with employees	x	N	N	N	N	p	p	p	p	N	x	x	N	x	N	x	x	N	x	N	x	N	N	N	x	N	p	x	x	x	
1.2 Self employed without employees	x	N	N	N	N	p	p	p	p	x	x	x	N	x	N	x	x	N	x	N	x	N	N	N	x	x	x	p	x	x	N
2. Family worker	x	N	N	N	x	N	p	p	N	N	x	x	N	x	N	x	x	N	x	N	N	N	N	x	x	p	x	x	p	N	
3. Employee	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
3.1 Part time workers	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
3.2 Casual workers	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	N	x	x	p	x	
3.3 Trainees/Apprentices	x	x	x	x	x	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	p
4. Students	x	p	N	N	x	N	p	p	x	N	N	N	x	x	x	N	x	N	x	N	N	N	N	N	x	x	p	p	x	p	
5. Others	x	x	x	N	x	N	p	p	x	x	N	N	N	x	x	N	N.A.	N	x	N	x	N	N	N	x	x	x	N	p		p

Source: ESAW metadata

In green (with a cross): data transmitted

Yellow (with a p): data partially transmitted

In red (with an N): data not transmitted,

Appendix 6 Scope of accidents at work transmitted by each country to ESAW

Accidents in the course of work	AT	BE	BG	CH	CY	CZ	DE	DK	EE	EL	ES	FI	FR	HR	HU	IE	IT	LT	LU	LV	MT	NO	NL	PL	PT	RO	RU	SE	SI	SK
1. Commuting accidents	x	x	N	N	N	N	N	N	N	x	N	x	N	x	N	N	x	N	x	N	N	x	N	N	x	x	N	x	P	N
2. Accidents in a public place or in a mean of transport during a journey in the course of work	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	n.a.	x	x	x	P	x	x	x	x	x	x	x
2.1 Road traffic accidents in the course of work (public highways, car parks, internal ways inside the premises of the enterprise)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
2.3 Other accidents (slips, falls, aggressions, etc.) in a public place (pavement, staircases, etc.) or in the arrival and starting points (station, port, airport, etc.) of any mean of transport, during a journey in the course of work	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
2.4 Accidents on board of any means of transport (underground railway, tram, train, boat, plane, etc.) used during a journey in the course of work	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	N	x	x	x	x	x	x
3. Accidents occurred within the premises of another company than that which employs the victim, or in a private individual, in the course of work	x	x	x	x	x	x	x	x	x	x	x	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
4. Accidents having only a medical origin, in the course of work	N	N	N	N	N	N	N	N	N	N	N	N	x	x	N	N	x	N	x	N	N	N	N	N	P	N	N	N	N	N

Source: ESAW metadata

In green (with a cross): data transmitted

Yellow (with a p): data partially transmitted,

In red (with an N): data not transmitted.

Appendix 7 Survey reference periods and sampling rates by country

Country		Reference period	Polling rate
AT	Austria	Q1-Q4	0.25%
BE	Belgium	Q1-Q4	0.36%
BG	Bulgaria	Q1-Q4	0.43%
CH	Switzerland	Q1-Q4	0.17%
CY	Cyprus	Q2	1.06%
CZ	Czech Republic	Q1-Q4	0.30%
DE	Germany	Q1-Q4	0.08%
DK	Denmark	Q1-Q4	0.45%
EE	Estonia	Q2, Q4	1.18%
EL	Greece	Q2	0.44%
ES	Spain	Q1-Q4	0.19%
FI	Finland	Q1-Q4	0.42%
FR	France	Q1-Q4	0.17%
HR	Croatia	Q2	0.19%
HU	Hungary	Q3	0.49%
IE	Ireland	Q2	0.56%
IS	Iceland	Q1-Q4	1.17%
IT	Italy	Q1-Q4	0.20%
LT	Lithuania	Q2	0.43%
LU	Luxembourg	Q1-Q4	1.74%
LV	Latvia	Q1-Q4	0.47%
MT	Malta	Q1-Q4	1.86%
NL	Netherlands	Q1-Q4	0.47%
NO	Norway	Q1-Q4	0.46%
PL	Poland	Q2	0.14%
PT	Portugal	Q2	0.27%
RO	Romania	Q2	0.27%
SE	Sweden	Q1-Q4	0.20%
SI	Slovenia	Q3	0.67%
SK	Slovakia	Q2	0.37%

Q: quarter

The reference period covers the quarters during which the survey was carried out.

The sampling rate corresponds to the proportion of the survey target population represented by the sample questioned.

Appendix 8 Main characteristics of AT systems in Europe (from MISSOC)

Country		Principles of insurance and affiliation	Specific benefits in kind	Determinants of cash benefits
AT	Austria	Compulsory insurance financed by contributions	Yes	PI: income and gravity
BE	Belgium	Compulsory social insurance scheme financed by contributions	Yes	TI: income PI: income and gravity
BG	Bulgaria	Contributory social insurance scheme, with different ways of awarding non-work-related benefits, and no distinction between work-related deaths.	No	PI: income and gravity
CH	Switzerland	Compulsory insurance financed by contributions	Yes	TI and PI: revenue
CY	Cyprus	Compulsory social insurance scheme financed by contributions	No	TI: income and number of children PI: income and severity
CZ	Czech Republic	Compulsory liability insurance system financed by employer contributions	No	Employer and health insurance cover
DE	Germany	Compulsory insurance financed by contributions	Yes	TI: income PI: income and gravity
DK	Denmark	Compulsory insurance financed by employer contributions	Yes	TI: income PI: flat rate
EE	Estonia	No specific insurance. Covered by health and social insurance.	No	TI: income PI: severity
EL	Greece	No specific insurance. Covered by health, disability and survivors' insurance schemes.	Yes	Associated with disability pension
ES	Spain	Compulsory insurance financed by contributions	No	TI: income PI: income, severity and age
FI	Finland	Special compulsory and separate occupational injury and health system financed by employer premiums and the State budget	Yes	Income, severity and age
FR	France	Compulsory insurance financed by employer contributions	Yes	TI: income PI: income and gravity
HR	Croatia	No specific insurance. Covered by pension and health insurance.	Yes	Income and duration of affiliation
HU	Hungary	No specific insurance. Covered by health, disability and survivors' insurance.	No	TI: associated with sick pay (income) PI: income and severity

Country		Principles of insurance and affiliation	Specific benefits in kind	Determinants of cash benefits
IE	Ireland	Compulsory insurance financed by contributions	No	Disability benefit based solely on severity
IS	Iceland	Dual system, with a compulsory scheme financed by taxes and contributions and a supplementary scheme financed by contributions	Yes	TI: lump-sum and increased for child(ren) PI: lump-sum and one-off
IT	Italy	Compulsory insurance financed by contributions	Yes	TI and PI: income, severity, age and gender
LT	Lithuania	Compulsory insurance financed by contributions	No	Income and severity
LU	Luxembourg	Compulsory insurance financed by contributions	Yes	Income and severity
LV	Latvia	Compulsory insurance financed by contributions	Yes	Income and severity
MT	Malta	Compulsory social insurance scheme financed by contributions. Health plan benefits	No	TI: severity PI: associated with disability pension
NL	Netherlands	No specific insurance. Covered by health, disability and survivors' insurance.	No	No specific service
NO	Norway	Dual system, with the full range of health insurance benefits plus supplementary accident insurance	Yes	Income, severity and age
PL	Poland	Compulsory insurance financed by contributions and taxes	Yes	Associated with disability pension
PT	Portugal	Compulsory insurance financed by insurance premiums	Yes	Income and severity
RO	Romania	Compulsory social insurance scheme financed by employer contributions	No	TI: income PI: associated with disability pension
SE	Sweden	Separate, compulsory social insurance system for employees and the self-employed, financed mainly by contributions.	No	Income
SI	Slovenia	No specific insurance. Covered by the health, pension and disability schemes.	No	Income
SK	Slovakia	Compulsory insurance financed by employer contributions	No	Income and severity

Source: EUROGIP synthesis based on MISSOC data.

Note: TI for temporary incapacity and PI for permanent incapacity.

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References

Assurance Maladie. (2021). Rapport annuel 2020 de l'Assurance Maladie - Risques professionnels - Éléments statistiques et financiers.

Benavides, F., Delclos, G., Cooper, S., & Benach, J. (2003). Comparison of Fatal Occupational Injury Surveillance Systems Between the European Union and the United States. *American Journal of Industrial Medicine*, 44:385-391.

Commission d'évaluation de la sous déclaration des AT-MP (2021). Estimation du coût réel, pour la branche maladie, de la sous-déclaration des accidents du travail et des maladies professionnelles. Rapport remis sur le fondement de l'article L. 176-2 du code de la sécurité sociale

EUROGIP (2016). Indicateurs de sinistralité France-Allemagne / 2010-2014. Jacquetin F., EUROGIP-118/F

EUROGIP (2017). Étude du phénomène de sous-déclaration des accidents du travail en Europe selon trois méthodes statistiques : comparative, rapprochement des cas mortels, données d'enquêtes. Jacquetin F., EUROGIP-179/F.

EUROGIP. (2020). Covid-19 et assurance AT/MP dans 8 pays européens - EUROGIP-154/F

EUROGIP. (2022). Focus sur la reconnaissance en AT/MP du Covid-19 dans neuf pays européens. EUROGIP-173/F.

Eurostat. (1999). European statistics on accidents at work. 1998 Edition.

Eurostat. (2001). European statistics of accidents at work (ESAW) - Methodology – 2001 Edition.

Eurostat. (2013). European statistics of accidents at work (ESAW) – Summary methodology – 2013 Edition. Methodologies & Working papers.

Eurostat. (2021). Guidelines for ESAW data transmission 2021.

Eurostat. (2021). Possibility of recognising COVID-19 as being of occupational origin at national level in EU and EFTA countries. Statistical reports.

Fedris. (2021). Rapport statistique - Accidents du travail dans le secteur privé (2020).

Gjertsen, F., Lund, J., & Wergeland, E. (2022). Accuracy of fatal occupational injury registration in a high-income country: A comparison of two-source capture-recapture estimates with the number of cases identified in four register systems in Norway, 2000–2003. *Global Epidemiology* 4, 100072.

Heimsch, F., Hulliger, B., Schöler, S., & Datta, S. (2021). La statistique suisse des accidents professionnels en comparaison internationale. Fachhochschule Nordwestschweiz.

Inan. (2022). Quels sont les salariés les plus touchés par les accidents du travail en 2019 ? DARES Analyses N°53.

Kurppa, K. (2015). Severe Under-reporting of Work Injuries in Many Countries of the Baltic Sea Region: An exploratory semi-quantitative study. Finnish Institute of Occupational Health.

Ministerio de trabajo y economía social. (2021). Estadística de accidentes de trabajo 2020.

OECD. (2021). Teleworking in the COVID-19 pandemic: Trends and prospects



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