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The relation between collectively bargained and earned wages in sector level bargaining in 7 EU member states

BARWAGE Report No. 15

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21 August 2024

Funding



BARWAGE is a project within the Social Dialogue Program of the European Commission. (SOCPL-2021-IND-REL - Project ID 101052319). © 2024 Utrecht University, Central European Labour Studies Institute (CELSI), Fondazione Giuseppe di Vittorio, WageIndicator Foundation. All rights reserved.

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Please cite as: Besamusca, J. & Medina Ojeda, A. (2024). The relation between collectively bargained and earned wages in sector level bargaining in 7 EU Member States. *BARWAGE Project report 15* Amsterdam: WageIndicator Foundation. DOI: 10.5281/zenodo.13378400

Abstract

This study examines the relationship between collectively bargained wages and actual, earned wages across six sectors in seven EU Member States. We address the theoretical ambiguity surrounding this relationship, considering collective bargaining as both a wage-regulating institution and potentially subject to pressures for employer discretion.

Using coded data on bargained pay systems from the WageIndicator CBA database and microdata on earned wages from the 2018 European Structure of Earnings Survey, we employ two analytical strategies: a broad comparison of earned wages against bargained benchmarks, and a granular examination of pay scale tables by country and sector.

Our results reveal significant variations across countries and sectors, identifying four distinct configurations in the relationship between bargained and earned wages. These range from earned wages exceeding bargained levels to falling below both floors and medians.

The findings highlight the complex interplay between collective bargaining outcomes and actual earnings, demonstrating that the effectiveness of collective bargaining in setting wage standards varies considerably across contexts. This study contributes to understanding wage-setting mechanisms in Europe and provides insights for future labour market policies and research.

Keywords: collective agreements, pay rates, wages, wage inequality

Acknowledgments

This paper reflects the views of the authors only; the European Commission or any other funding agency or consortium partner cannot be held responsible for any use that may be made of the information contained therein.

BARWAGE

BARWAGE investigates the potential of collective bargaining as a tool for ensuring adequate minimum wages in the European Union. It explores the size of four wage-setting arenas across EU countries and industries: the national or peak level, sector-level collective bargaining, firm-level collective bargaining, and individual (non-collective) negotiations. BARWAGE uses microdata to identify what share of the workers are earning under 110% of the statutory minimum wage are covered by sectoral or enterprise collective bargaining. Using coded data of 900 CBAs from 9 EU countries, the presence and nature of pay scales in the sectoral and firm-level collective bargaining agreements (CBAs) are analysed. To deepen the insight into the impact of collective wage bargaining, national level data will be used to detail the wage arenas in 2 EU countries (Netherlands and Italy). The project lasts 2 years (2022-2024) and includes 6 work packages.

Utrecht University

The Faculty of Social & Behavioural Sciences of Utrecht University is a leader in education and research in the social and behavioural sciences. The Department of Interdisciplinary Social Science deals with issues such as discrimination in the job market, reintegration at work, growing up in a multicultural neighbourhood, developing your individual identity, high-risk behaviour in young people, growing inequality and the accessibility of care. Interdisciplinary Social Science focuses on understanding these complex issues and on finding solutions to the individual and societal problems that play a role in them.

Fondazione Giuseppe Di Vittorio

The Fondazione Di Vittorio (FDV) is national institute both for historical, social, and economic research, and for trade union education and training of trade union confederation CGIL. The FDV centres its activities around the core issues of work and employment, economics and welfare. Its aim is to put people and their rights back on the centre stage, along with their living and working conditions, their interests and the demands they express, linking all this to the values and ideals that make the CGIL one of the most important social and political entities in Italy.

Central European Labour Studies Institute (CELSI)

Central European Labour Studies Institute (CELSI) is a non-profit research institute based in Bratislava, Slovakia. It fosters multidisciplinary research about the functioning of labour markets and institutions, work and organizations, business and society, and ethnicity and migration in the economic, social, and political life of modern societies. CELSI strives to make a contribution to the cutting-edge international scientific discourse.

WageIndicator Foundation

WageIndicator Foundation collects, compares and shares labour market information through online and offline surveys and research. Its national websites serve as always up-to-date online libraries featuring (living) wage information, labour law and career advice, for employees, employers and social partners. In this way, WageIndicator is a life changer for millions of people around the world.

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Introduction

The collective bargaining agenda is broadly recognized to include a large variety of issues (Besamusca et al., 2018; Besamusca & Tijdens, 2015; Tijdens et al., 2022). Most of all, collective bargaining is often considered nearly synonymous to collective pay negotiations (Freeman & Medoff, 1985). A considerable body of research shows that employees covered by collective agreements earn higher wages on average compared to uncovered employees (Addison et al., 2014; Garnero et al., 2020; Magda et al., 2012). We often tacitly assume that pay provisions included in these collective agreements effectively fix the actual wages that employees' in covered firms will earn. Currently, policymakers assume this relation exist when formulating policies promoting collective bargaining as means of fixing adequate wages in the EU (Schulten & Müller, 2021).

Empirically, this relation has been tested only partially). A large number of studies have researched the wage differences between firms, and employees in firms, who are or are not covered by collective bargaining (Addison et al., 2014; Besamusca et al., 2023; Canal Dominguez & Rodriguez Gutierrez, 2020; Garnero et al., 2020; Magda et al., 2012). As such, these studies explored the extent to which earned wages, on average, differ between firms based on their coverage by any collective agreement, or specifically by a firm or sector level collective agreement. However, research rarely includes data on the actual provisions on pay included in collective agreements. In consequence, we are not sure about the extent to which the pay rates fixed in collective agreements effectively correspond to earned wages, or whether the relation between bargained pay rates and earned wages is constant across the earnings distribution.

Theoretically, the relation between bargained and earned wages is ambiguous. On the one hand, collective bargaining can be seen as an institution, actively regulating entitlement to a given level of pay, and legitimizing pay differentials between groups of workers (Freeman & Medoff, 1985; Tomaskovic-Devey & Avent-Holt, 2019). The creation of a level playing field, guaranteeing responsible firms paying decent wages are not undercut by low-wage competitors, is often cited as employers' main motivation for sector level bargaining (Hayter & Visser, 2021; Moore et al., 2019; Moore & Tailby, 2015; OECD, 2018; Traxler, 2010). This would suggest that the *raison d'être* of, especially sector level, collective bargaining is closely entangled with the wish to effectively fix wages. On the other hand, theories about the neo-liberalization of employment relations, suggesting that employers in Europe increasingly seek discretion over pay, would suggest that there may be a gap between the bargained pay rates and the payment of wages to employees in practice (Baccaro & Howell, 2017; Ibsen & Keune, 2018).

The aim of this study is to determine descriptively how pay rates in sector level collective agreements are related to earned wages in firms in the same sectors, and the extent to which this relation varies. We ask to what extent pay rates found in collective agreements correspond with earned wages. In so doing, we explore different configurations of this relationship across six sectors in seven EU member states using coded data on bargained pay systems from the WageIndicator CBA database (WageIndicator Foundation, 2024) and microdata on earned wages from the 2018 European Structure of Earnings Survey (ESES)(Eurostat, 2021).

The relation between collectively negotiated pay rates and earned wages

This section reviews the theory explaining negotiated and earned wages, the gaps between them, possible explanations and interpretations of such a gap.

Collectively bargained pay systems

When collective agreements include provisions on basic pay rates, they may regulate the level at which wages are fixed in different in detail, or may fix more general guidelines or wage floors. At the most basic level, collective agreements can include a single wage floor in order to guarantee an adequate minimum pay rate for the lowest paid employees (Eurofound, 2024).

In many EU member states, collective agreements commonly include more detailed wage fixing provisions, which regulate either wage floors (minimum payable rates) or exact pay rates for specific groups of workers in pay scales, also known as pay spines, pay systems, or pay grids. Common differentiation of pay rates in European collective agreements are based on different jobs, job families (i.e., a set of job functions representing different levels of skill and responsibility in a broader occupation, like junior and senior carpenters), career families (i.e., a set of job functions representing a specific division of the firm, like distribution and store career families in supermarkets) (Armstrong, 2007). Separate sets of pay scales are sometimes provided based on the characteristics of workers, like youth versus adult workers, qualified versus unqualified staff (Medina Ojeda & Besamusca, 2024).

Collective agreements sometimes set wage floors, or starting salaries, for these subgroups of employees, thus distinguishing between different pay grades (Hällberg & Kjellström, 2020; Kjellberg, 2019; Skedinger, 2008). The pay grades establish a consistent and transparent system for determining compensation levels across different job roles, aiming to ensure fairness and equity in pay practices (Armstrong, 2007). Each job or position is assigned to a specific pay grade or level within the pay scale table, reflecting the relative value, complexity, and responsibilities of the role .

They may also introduce further differentiation of pay rates within these pay grades by introducing stepped pay rates from a given starting salary until the maximum payable pay rate for a given group of workers (Armstrong, 2007). These incremental pay increases or "steps" based on factors such as years of experience, seniority, or level of certification, rewarding workers for their tenure and professional growth. Most commonly, these detailed pay steps are based on years of experience in a given job (Medina Ojeda & Besamusca, 2024).

Pay scale tables in collective agreements may include various components, such as job titles or codes, pay grades or levels, hourly, day, week, four weeks, monthly or annual salary rates, step increases based on experience or seniority, and effective dates for wage adjustments. These tables are often accompanied by detailed job descriptions and qualification requirements, ensuring clear alignment between roles and corresponding pay levels.

The relation between bargained and earned wages

Provisions on pay in collective agreements, including anything from a single wage floor to detailed pay scale tables with stepped pay grades, are the result of negotiations between bargaining partners. The

establish both wage levels deemed acceptable by both workers' and employers' representative, and pay differentials that are considered legitimate (Freeman & Medoff, 1985; Grimshaw et al., 2014). This wage fixing capacity has also been known to boost employer support for sector level collective bargaining in some countries, where a bargained set of pay rates or wage floors can create a level playing field and avoid a race to the bottom (Hayter & Visser, 2021; van Klaveren & Gregory, 2019). As such, collective bargaining constitutes an institutional arena in which economic inequalities are generated and re-generated, and that should be expected to be directly related to at least the minimum wages in firms covered by the collective agreement (Martins, 2021; Tomaskovic-Devey & Avent-Holt, 2019).

Nevertheless, there are also reasons to believe that bargaining partners do not intend, or do not succeed, to use collective agreements to fix actual, earned wages. As Baccaro and Howell (2017) argue, employers consider control over production processes or service delivery processes to be essential for their productivity and profitability, and one key area to exert such control, or discretion, is in pay. Interviews conducted for work package four of the BARWAGE project indicate that employers sought to negotiate discretion over pay in order to reward individual employees based on (perceived) performance on the job, as well as to attract scarce workers (Kahancová & Besamusca, 2024). Collective agreements that merely specify one wage floor, or only the starting salaries for multiple pay grades, explicitly expect such deviations from the bargained rates. However, more detailed pay systems like those including stepped grade grades, do often include provisions to facilitate employer discretion, such as for team or individual level performance bonuses or profit sharing mechanisms (Ibsen & Keune, 2018). A situation where the earned wage level differs from bargained pay rates (negotiated through CBAs) might be the result.

Downward deviations of earned wages, compared to bargained pay rates or wage floors, could result for a number of reasons. Firstly, like statutory minimum wages, collective agreements can include sub-minimum rates. For example, Dutch collective agreements often set lower pay rates for workers under the age of 21 (Berntsen, 2019; de Beer et al., 2017). Research has also identified sub-minimum pay rates for workers who are still in (vocational) education in training, workers hired in the context of reintegration programmes, unqualified workers, etc. (Eurofound, 2024; Medina Ojeda & Besamusca, 2024).

Finally, the similarity between bargained and earned wages may not be constant across the wage distribution. Collectively bargained pay provisions sometimes exclude groups of workers, from workers hired through employment agencies to employees in higher management positions (Besamusca, 2021). Collective wage bargaining might also exclude low skilled jobs from its scope, thus bargaining over the wages of a relatively privileged group of workers. Thus was one of the motivations for the introduction of a statutory minimum wage in Germany (Bosch, 2018). Additionally, in view of differences in individual workers' and employers' bargaining power, for example due to labour scarcity or simply reflecting broader class-based inequalities, some groups of workers might be more successful than others in negotiating wages above the bargained pay rates (Avent-Holt et al., 2020; Janietz & Bol, 2020; Leicht, 2020; Tomaskovic-Devey & Avent-Holt, 2019).

Methods

In this section, the databases used are briefly described followed by the selection criteria applied to each of them. Then, the codification of new variables necessary for this research is explained, including examples of the diversity of pay system structures included in collective agreements, and selected calculations per strategy.

In order to explore how collectively bargained pay rates compare to actual earned wages, we used two datasets: the CBA database from WageIndicator (2024) and the 2018 Structure of Earnings Survey (SES) published by Eurostat (2021), which is the most recent version of the survey that is currently available. The WageIndicator CBA Database, which has been maintained by BARWAGE project partner WageIndicator Foundation since 2013 (WageIndicator, 2023), contains over 2.000 coded collective agreement from around the world. For this study, we use the subsample of 1224 collective agreements collected in the 10 BARWAGE project countries², which is described in detail in the second report of the BARWAGE project (Medina Ojeda & Besamusca, 2024).

The European Structure of Earnings Survey (ESES) is an enterprise survey collected by statistical bureaus in the EU Member States, and harmonized by Eurostat (2014). It contains data on gross monthly wages, reported by local units of the enterprises in the sample, working hours, and a range of indicators describing firm characteristics and employees' socio-demographics. The ESES oversamples large firms and private sector firms (Besamusca et al., 2023). In view of this study's aim to link specific collective agreements to firms in the same sector, we do not expect the latter to impact the study. The oversampling of large firms does most likely result in an overestimate of actually earned wages, since large firms tend to pay higher wages than small firms (Canal Dominguez & Rodriguez Gutierrez, 2020). The following subsection explains, in detail, the selection criteria used to collect the subsamples from both databases and why, as well as the operationalization of variables to enable the comparison of the distribution of earned wages to collectively bargained pay rates across countries and industries.

Database and selection criteria

In order to compare bargained pay rates to earned wages, the data from the WageIndicator CBA Database was restricted to collective agreements that could be matched to observations in the 2018 ESES. This involved the reduction of the collective agreement sample to those agreements that (1) covered years and countries included in the ESES sample, and (2) included provisions on pay rates that could be matched to the earned wages observed in the ESES. Finally (3), the samples of the ESES and CBA Database were further restricted to those sectors where sufficient observations were available to allow for a meaningful comparison of bargained to earned wages.

Provided that the 2018 ESES only contained anonymized microdata on earned wages, it was not possible to match firm level collective agreements to specific observations in the ESES. Therefore, the

² Austria, Bulgaria, Czechia, Estonia, France, Italy, the Netherlands, Portugal, Slovakia, and Spain

CBA Database was restricted to multiemployer agreements³. Then, in order to match the WageIndicator CBA Database to the ESES universe, the collective agreement sample was reduced to observations covering the year 2018 in seven countries. Collective agreements were only included if they potentially include pay rates that were applicable to the signatory firms, or the larger sector in case of extended agreements, in 2018, the year in which the ESES microdata on wages were observed. Thus, the CBA dataset was constrained to collective agreements entered into force before or during the year 2018, and expired during or after the year 2018⁴, provided by coded start and end of a collective agreement. Since Austria was not included in the 2018 ESES, Austrian collective agreements were excluded (23 observations) from the CBA Database sample.

In the second step, we reduced the CBA Database sample to those collective agreements that effectively fixed pay rates, and did so in a manner that could be matched to microdata on wages. As the comparison of bargained to earned wages requires information on wages from both source databases, the selection of CBAs was reduced to those containing pay scale tables according to the most inclusive definition, meaning that they had to include one or more pay rates.

Given the exploratory nature of this research, the required data coding efforts could not cover all the selected data due to full required information was not available in practice. The first provisional subset is composed of 93 CBAs. After a deep check of each, a final selection of 83⁵ CBAs covers 7 countries and 6 sectors. The criteria selection permits a list covering 7 countries from the BARWAGE project: Czechia, Estonia, Spain, France, Italy, Netherlands, and Portugal. It is important to note that from Czechia and France, only one collective agreement fulfilled all required criteria. Given the explorative nature of this study, these two countries were kept in the study and country comparison nonetheless. Bulgaria only counted with one CBA in theory covering 2018, though official numbers were from before 2014.

In the third step, both the CBA Database and ESES samples were restricted to observations that could be meaningfully compared to matched observations in the other dataset. In order to be able to compare findings across sectors, the study included only those sectors where collective agreements were available in all or the majority of the countries: (1) Manufacturing, (2) Wholesale and Retail, (3) Transportation and Storage, (4) Accommodation and Food Services, (5) Human Health and Social Work Activities, and (6) Arts, Entertainment and Recreation. Table 1 shows an overview of the sectors included in each country. In two countries, collective agreements from only one sector could be included: Czechia and France cover only Manufacturing. Estonia covers Transport and Storage, and Human Health and Social Work Activities. The remaining countries include collective agreements from 3 sectors (Italy), 4 sectors (Portugal) or five sectors (Netherlands and Spain).

³ Specifically, the variable MBE_CBA needs to be equal to one (MEB_CBA==1). This restriction was the first one imposed, deleting 513 observations out the original 1224 CBAs. The resulting sample is so far 711 observations or CBAs.

⁴ In the WageIndicator CBA database, 2018 belongs to the range given by (cbadate_start_date, cbadate_end_date). In this step 298 observation were deleted.

⁵ In the Appendix, table A1 shows the list of the CBAs' titles used for this study. Those that did- not make it into this list provided official wage values too old to PPP convert them into 2018 values.

Table 1 Overview of sectors included in the study per country

	CZ	EE	ES	FR	IT	NL	PT
Manufacturing	✓		✓	✓	✓	✓	✓
Wholesale and retail trade			✓			✓	✓
Transportation and storage		✓			✓	✓	✓
Accommodation and food services			✓		✓	✓	✓
Human health and social work activities		✓	✓			✓	
Arts, entertainment and recreation			✓				

The appendix includes detailed tables reporting the sample size for the collective agreements (table A2) and the ESES observations (table A3). These table shows the uneven distribution of the selected observations across sectors and countries. Given the exploratory nature of this pilot study and its aim to test different approaches for matching bargained to earned wages, we choose to include all observations nonetheless, in order to maximize the scope of the pilot study.

Selection criteria to collect SES2018 sub-dataset: as mentioned, the goal is to compare data between the CBA database and the SES2018. Finally, to match the 83 included collective agreements, the ESES was reduced to observations from the 7 countries, and then further reduced per country to only include observations from those sectors that collective agreements were available from in that country (this resulted in a total of 838.609 observations). While the observation units in the CBA Database are collective agreements, those of the ESES are employees. The main variable to analyze is the monthly reference payment⁶ (variable b42 in the ESES 2018). Because collective agreements tend to fix salaries based on full-time hours, the ESES sample was restricted to employees working full-time work schedules according to company standards (this information is provided by variable b27=FT) and checking by country full monthly worked hours⁷. Finally, workers below the age of 20 years old were excluded from the survey data because they were covered by separate pay rates in the collective agreements in some countries. After the data selection, the last step required to have the database ready to use is the purchasing (power parity (PPP) adjustment when required. This adjustment is applied to those observations belonging to Czechia. The selected sub set is operated such that to obtain each country-sector' earned wage distribution and strategy 1 and 2 aggregated calculations. Table A3 of the appendix shows the distribution by sector and country of the selected sub dataset from the ESES 2018.

Coding the CBA pay scales to prepare for matching

In order to compare the collectively bargaining pay rates to the distribution of earned wages in the same sectors and countries, the pay systems in the 83 selected collective agreements were coded. The coding of the CBA pay scales is a time-consuming effort, especially for collective agreements that

⁶ Using Eurofound sources, a threshold of half 2017 PPS MSW was imposed to clean outliers. See <https://www.eurofound.europa.eu/en/publications/2017/statutory-minimum-wages-eu-2017>

⁷ Given that full-time means something different in each of the selected countries, the following are the total working hours used for this study. NL 144, FR 140, IT 148, ES 160, PT 158, EE 160 and CZ 158 for 2018, according to Eurofound (2019), Working time in 2017–2018, Publications Office of the European Union, Luxembourg.

include detailed pay systems. One of the aims of this pilot study was to explore the feasibility of different strategies for coding, and compare the quality of information yielded by the comparison of bargained and earned wages following different strategies. In this study, we applied two strategies: firstly, coding the lowest and highest pay rates of the collectively bargained pay system, and secondly, detailed coding of the bottom and top of each pay rate included in the agreement.

The specific structure and components of pay scale tables can vary across industries, organizations, and collective bargaining agreements, reflecting the unique needs and priorities of ONLY the parties involved in each negotiation process.

Therefore, pay scale tables are matrices composed of job functions or job groups and levels defining payment ranges. As there is no general (cross-CBA) standardization regarding how pay scale tables are presented the display of the information varies from table to table. Sometimes job functions or groups can be found in columns, others in rows. Then, it is crucial to identify job functions and payment ranges or levels in each pay scale table to avoid further confusion in the calculation process. Once full identification was achieved, we proceeded to extract all pay scale tables.

As stated, the presentation format and degree of information contained vary from across pay scale tables. Each of them is specific in content and many times, also in format to reflect the reality of a single and specific negotiation. The following table provide an example:

Table 2 Example of a pay scale table with stepped pay grades, monthly pay rates per July 2018

age / tenure	grade I	grade II	grade III	grade IV	grade V
17		657,06			
18	SMW	757,25	773,87		
19	SMW	876,8	889,24		
20	SMW	1115,95	1115,95	1115,95	1115,95
21		1355,05	1355,05	1355,05	1355,05
22/0		1623,13	1669,72	1716,32	1755,01
1		1647,53	1702,7	1758,61	1798,04
2		1679,95	1736,39	1801,63	1842,47
3		1713,02	1770,62	1846,05	1887,62
4			1805,49	1882,45	1924,86
5				1919,58	1962,82
6				1957,97	2002,08
7					2042,12

Source: NLD Association National Organization DIBEVO, NLD Dutch Piano and Musical Instrument Industry (NPMB) – 2017.

Table 2 shows a rather complex pay scale table regarding the information contained. It has several groups or job functions (representing the scale's steps), and it also provides several levels differentiating among stages of expertise or seniority for each step. It gives relevant information for workers under age, signalled at 22 years old. For this research purpose, only those considered as adults are covered, as under-age workers usually receive a lower wage than the SM targeting adults.

After extracting the pay scale tables of each CBA selected, the following calculations are computed for each CBA: minimum, maximum, mean, and median monthly wage for 2 matching strategies, differentiating between general and specific levels.

The first strategy provides general levels, i.e. identify the general wage floor, as well as the ceiling, i.e., the maximum wage, the median and the average wage of each extracted pay scale table. Following our example from the previous section, Table 3 shows the strategy 1 calculations:

Table 3 Strategy 1 calculations based on the example pay scale in table 2

Strategy 1	
min	1.623,1
max	2.042,1
mean	1.810,3
median	1.799,8

The second strategy provides local pay scales' step levels, i.e. for each pay scale step (group or job function) it identifies the mentioned calculations. Given that pay scale tables differ in the number of steps/groups contained, even when the calculations are sorted, a step result may be higher than the next. For example, a series of the average of the minimum wage for each step does not always show a constantly increasing line. This can be the case for all 4 calculations aggregations of the strategy 2. Following our example, Table 4 shows the strategy 2 specific calculations:

Table 4 Strategy 2 Calculations based on the example pay scale in table 2

Strategy 2	g1	g2	g3	g4
min	1.623,1	1.669,7	1.716,3	1.755,0
max	1.713,0	1.805,5	1.958,0	2.042,1
mean	1.665,9	1.737,0	1.840,4	1.901,9
median	1.663,7	1.736,4	1.846,1	1.906,2

The result of this exercise is the already mentioned list of 83 CBAs with calculations for strategies 1 and 2. This implies the creation of new variables (4 for strategy 1 and 19 for strategy 2). These new variables are merged into the original CBA preselected list⁸. All new coded variables are converted to monthly amounts and then adjusted by PPP.

⁸ Specifically, merge between the WP5 CBA data set pre-selected and the WP5 input data_sorted.dta using the "human_id" variable

Estimation and Linking/Matching strategy

Once the new calculations are ready to work with, the comparison analysis proceeds from general to specific levels, starting with the calculations from strategy 1 comparing at general levels negotiated and earned wages. In the appendix, Table A1 contains a list of the 83 CBAs selected allowing the creation of new variables added to the sub dataset. The calculations of both strategies allows general aggregations such as average, minimum, maximum and median of each CBA and also per sector per country. When contrasted with the micro data obtained from the ESE 2018, general gaps can be estimated. For example, the country average gap between earned and bargained wages shown in Figure 1, is obtained as the average earned wage per country (calculated from the ESES 2018 sample) and the average bargained wage (obtained from the CBA sample) per country. A positive gap means the average earning wage is higher than its corresponding negotiated benchmark.

Given the nature of the CBA database, i.e. overlapping registration periods, a set of assumptions was required. The CBAs selection for this study is based on the fact that 2018 is covered by the CBAs' limiting dates (cbadate_start_date, cbadate_end_date). Then, if 2018 pay scale is available, the pay scale table is fully extracted and the aforementioned calculations are coded. As the goal is to link/compare to the micro data from ESES 2018 which is collected in Oct 2018, the targeted data in the CBA dataset are the values that where in place by Oct. 2018 (or approximate to them as much as possible). When there is no 2018 pay scale table available, but CBAs dates cover this year, the closest date table was extracted. To obtain a cleaner comparison, we restrict the data collected from the ESES 2018 to the countries and sectors covered by the CBA sub dataset. Then, the same calculations are obtained, i.e. minimum, maximum, mean and median. As mentioned, these calculations use the monthly reference payment (b42 variable) filtering by full-time schedule and customized by country monthly hours for the countries and sectors selected.

The main calculations to compare target minimum and median wages. In the appendix, Table A5 shows the maximum wages per country and industry found in the ESES 2018. For comparison purposes, ESES earned wage distribution plots' limits on wages are established such that the maximum wages⁹ found in the CBA sub dataset are covered.

Table 5 Data to compare

CBAs coded pay scales represent bargained wages.
ESES 2018 represent earned wages.

Results: comparing bargained to earned wages

In order to understand how collectively bargained pay rates relate to earned wages, we explore the ranges of the distribution of both bargained and earned wages, using the first strategy outlined in the previous section. Following the second strategy, we then superimpose the coded pay ranges on the distribution of earned wages to compare the density of wage bargaining and earned wages at different

⁹ In the CBA sub dataset the maximum wage found in the pay scale tables is almost 14000, and it corresponds to the Manufacturing industry in the Netherlands. Excepting this industry in this country, all the other industries in selected countries cover up to 10000.

levels of the actual wage distribution. We present this comparison by plotting and contrasting the gaps between bargained and earned wages. We show a series of country-sector plots containing information from the different indicated sources (specific CBAs' pay scales vs country's industry general wage distribution). Provided that minimum statutory wages are set per country, country-level rules over sectors. Therefore the comparison is presented in the same way: sectors per country.

To correctly interpret the results, it is essential to consider the exploratory feature of this study, the different observation units, and the different composition and distribution of the samples here involved. Therefore, the comparison provides only an approximated benchmark between bargained and earned wages.

An overview of bargained pay rates and earned wages

To get an impression of the relation between earned wages (obtained from the ESES2018) and bargained pay rates (obtained from the WageIndicator CBA Database), we first compare their general characteristics and levels.

The bargained wage floors¹⁰ in the sample of collective agreements range from €618 in the Spanish Accommodation and Food Services industry to from €10.003 in the Dutch Transport sector. The highest¹¹ payable rates found in the collective agreements range from €3.622 in the Portuguese Accommodation and Food Services industry to nearly €14.000 per month in the Dutch Transport sector. The average bargained wage floors per country¹² fall between €1.142 (Czechia) and €3.001 (Netherlands); country average maximum pay rates¹³ fluctuate from €1.209 (Czechia) to €3.635 (Netherlands).

The calculations using the ESES 2018 data reflect the monthly (individual observations) wage ceilings earned in 2018. Within the sectors selected for this study, the highest wage ceilings are earned in Spain and France (around €300.000). Italy follows with €200.000, while the rest of the selected countries are below €75.000.

The following table summarizes the results of the median earned wage obtained from the ESES 2018, only for those sectors and countries covered by the CBA sub dataset. The full information covering all these sectors per country can be found in the Figure A3 of the appendix. The Manufacturing sector leads the median earned wages in Czechia, Spain, France and Italy. While in Estonia and Portugal, the Transportation and Storage sector is the industry with the highest median earned wages. It is worth noting that, in Portugal, this sector is the only one among the selected industries that shows a median monthly earned wage above €1.000 euros. Accommodation and food Services display the lowest

¹⁰ This is the range composed by the lowest wage floor among all the first pay scale tables steps and the highest wage floor among the last pay scale tables steps.

¹¹ This is the range composed by the highest maximum wage among all the first pay scale tables steps and the highest among all the pay scale tables last steps.

¹² This is the average of all the values of strategy 1 for each country. In other words, it is the general average of all the wage floors of all the pay scale tables steps.

¹³ This is the average of all the maximum wages of all the pay scale tables steps per country.

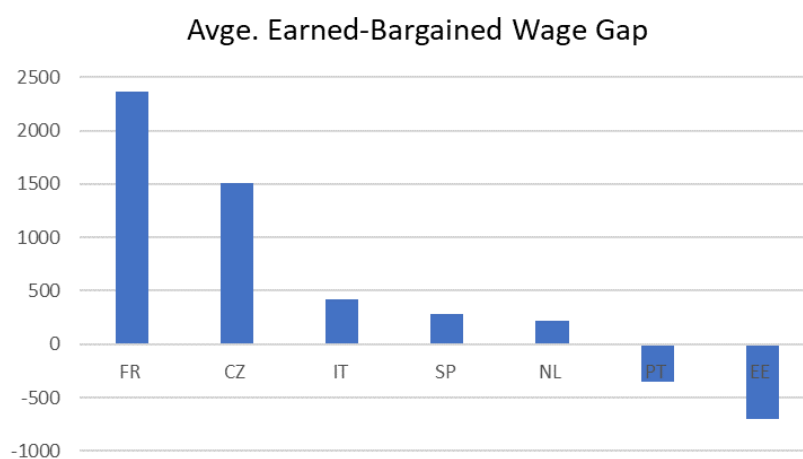
median earned wages in all the countries selected except in Spain and France, where the lowest are in Arts, Entertainment and Recreation and Human Health and Social Work Services respectively. The next table, Table 6 sums up the median earned wage obtained from the survey ONLY for those sectors that can be compared/contrasted with the respective bargained counterpart.

Table 6 ESES 2018 Median Earned Wages, by country and sector

SES 2018 Median Earned Wages						
	Manuf.	WS & Retail Trade	Trans & Storage	Accomm. & Food Ss.	HH & Social Work Acts.	Arts, Sport & Recreation
CZ	2381					
EE			1243		1150	
FR	3728					
IT	2490		2167	1743		
NL	3517	3074	3536	2307	3203	
PT	948	905	1162	804		
ES	1908	1551	0	1512	1748	1497

Source: Own elaboration using SES 2018

Figure 1 2018 Bargained vs. Earned, Mean Wage Gap, by country



Source: Own elaboration using WI CBA database and SES

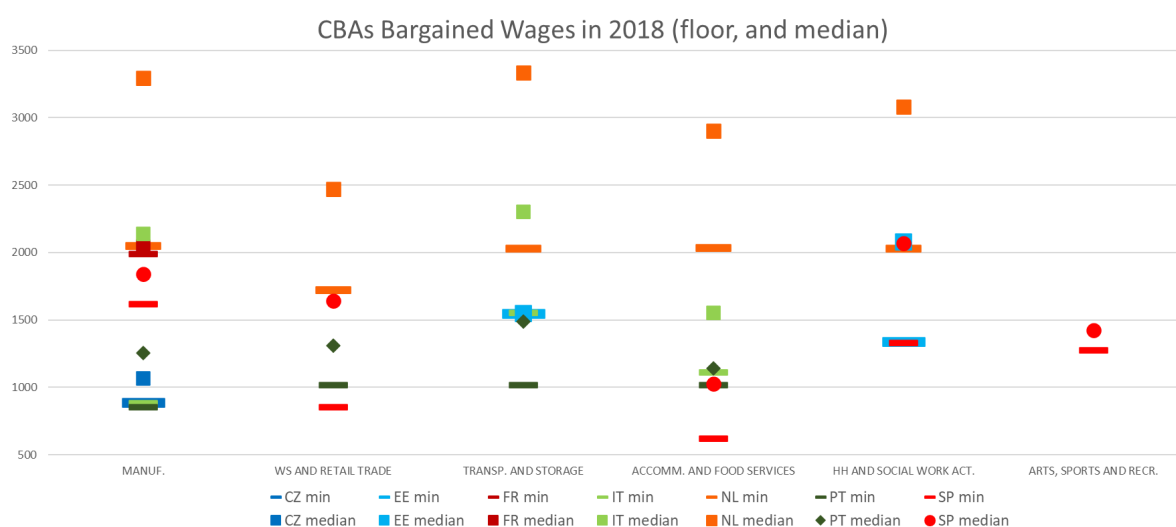
About equal or far removed? Average bargained and earned wages

To understand how closely bargained pay rates reflect actual, earned wages, we then proceed to study how the median bargained pay rates compare to the median earned wages in the same sector. This first plot, Figure 1, shows the gap between the average mean bargained pay rate across all collective agreements per country, and the average earned monthly wage per country. In countries showing an

upward-pointing bar (above zero on the y-axis), the average earned wages exceed the average bargained pay rates. This could reflect, for example, a situation in which collective agreements focus on fixing wage floors for low skilled and/or new employees. Negative, downward pointing bars mean that average earned wage is lower than the average bargained pay rate in the country. This could happen, for example, if collective bargaining covered a relatively privileged and high-paid share of the workforce.

Figure 1 provides a cross-country initial view of the general gap between average earned and bargained wages. France and Czechia, based on data from the manufacturing sector only, present the highest positive gaps between average earned wages and bargained pay rates, with median earned wages exceeding the bargained means by about €2.300 and €1.500 per month respectively. Mean earned wages are also higher than mean bargained wages in Italy, Spain and the Netherlands, although the gaps as substantially smaller. Finally, Portugal and Estonia display negative gaps, meaning that their average earned wages are lower than their average bargained benchmarks. In the appendix, Figure A1 presents the gap at the median instead of mean of bargained and earned wages, which shortens the differences between earned and bargained wages. Figure A2 of the appendix compared the highest earned and bargained wages.

Figure 2 Collectively bargained wages in 2018 (minimum and median)



Given the uneven distribution of the sectors covered in each country, as well as potentially differences across sectors, we then compare bargained wage floors, bargained median pay rates, and earned median wages by sector. To contrast these figures with their counterparts in negotiated wages, figure 2 summarizes the strategy 1 calculations obtained from the CBA Database. The figure includes the

negotiated wage floor¹⁴ (see horizontal marks in figure 2) and the median¹⁵ pay rates (remaining shapes in the figure), per country and sector.

Comparing the bargained wage floors and median pay rates (figure 2) to the median earned wages (table 6), we find four different configurations across the seven countries: (1) earned wages may exceed both bargained floors and medians, (2) comparable median bargained and earned wages are substantially higher than bargained wage floors, with median earned wages exceeding bargained medians in some sectors; (3) median bargained and earned wages show similar levels, with earned wages falling below bargained medians in some sectors.; and, finally (4), earned wages falling below both bargained wage floors and medians.

The manufacturing sector in Czechia and France is an example of the first configuration. The manufacturing sector in Czechia fixes a minimum bargained monthly wage of €889 and a median monthly pay rate of €1065. Both are below the median earned wage of €2.381, shown in the first cell of the previous table 6 at. Median earned wages thus exceed the bargained median by more than €1.000. The French manufacturing sector fixes a minimum bargained pay rate of €1.900 and a median bargained pay rate above €2.000. Therefore, the median earned wage of €3.700 substantially exceeds both of its corresponding bargained levels.

In Italy, the Netherlands and Spain, we find mixed patterns corresponding to the second configuration, where median earned wages are generally well above bargained wage floors, but proximate to median bargained pay rates in most sectors, with some sectors showing higher earned than bargained medians. Italy is the most ideal example of this configurations, with differences between bargained and earned medians being smaller than €300 in all three sectors. The Italian manufacturing sector presents a bargained wage floor of just below €900 per month and a median pay rate of almost €2.200. The actual median earned wage in this sector (€2.490) is higher than the bargained media, but not by much. The difference is even smaller in the accommodation and food services industry, with a bargained wage floor of €1.100, a median pay rate of almost €1.600, and an earned median wage of €1.700. The earned median wage in transportation and storage (€2.167) falls just below the median pay rate of €2.300, but comfortably above the bargained wage floor of €1.500.

In the Netherlands, we also find a substantial difference between bargained wage floors on the one hand, and bargained and earn medians on the other. Three sectors show very similar patterns to the Italian case. The manufacturing industry fixes a minimum bargained wage floor just above €2.000 and a median of €3.300. Its median earned wage of €3.517 minimally exceeding its negotiated benchmark. In the transportation and storage sector, bargained wage floor is set at a lower level, just above €2.000. However, just like manufacturing, it has a median pay rate just above €3.300 and a median wage of €3.536 also overpasses its bargained benchmark. The Dutch Human Health and Social Work

¹⁴ These are the wage floors negotiated per sector per country. The wage floor in Figure 2 represents the lowest wage floor negotiated per sector per country.

¹⁵ Specifically this is calculated as the median of the median values of Strategy 1 calculated for each CBA belonging to a certain sector.

Activities sector negotiated a minimum wage floor of just above €2.000 and a median of just over €3.000. The earned median wage in this sector (€3.200) falls around 4% above its bargained benchmark.

However, in the remaining two sectors, the difference between bargained and earned medians is larger than in Italy. The Wholesale and Retail Trade sector has a bargained wage floor of €1.700 and a median of €2.500. The earned median wage (€3.074) is substantially higher than the bargained median. The median earned wage falls below the bargained median pay rate in one of the five Dutch sectors: the Accommodation and Food Services industry shows negotiated wage floors just above €2.000 and a median of €2.900. Therefore, the sectoral median earned wage of €2.300 runs short of its bargained median benchmark.

The last country in this group is Spain. Like in the Netherlands, the difference between median bargained and earned wages is sometimes minimal, but can be substantial. Compared to both Italy and the Netherlands, the differences between the bargained wage floors and median bargained pay rates are sometimes small. The Spanish manufacturing industry shows a minimum bargained wage floor of €1.600, a median bargained pay rate of €1.800, and a median earned wage of €1.908. The Arts and Recreation sector negotiated a minimum wage floor of almost €1.300 and a median of €1.400. At €1.497, its earned median wage was almost the same. In the Wholesale and Retail Trade sector, the distance between the bargained wage floor (below €1.000) and the median bargained pay rate (€1.600) was larger. Like the other two sectors, however, the earned median wage (€1.551) almost matches its bargained level, be it slightly lower than the bargained median in this case.

Slightly larger, but not dramatically so, differences between bargained and earned median wages were found in the remaining two sectors. Accommodation and Food Services also shows a minimum negotiated far below €1.000 (specifically €618) and a median of just over €1.000. Therefore, the earned median wage in the Spanish Accommodation and Food Services industry, €1.512, also overpasses its bargained benchmark. The Human Health and Social Work Activities industry negotiated wage floors just above €1.300 and a median just above €2.000. Its median earned wage (€1.748) was higher than its bargained wage floor, but lower than its bargained median benchmark.

We present Portugal as an example of the third configurational group. Like Italy, the Netherlands and Spain, bargained median pay rates sometimes fall slightly below the earned median wages in Portuguese sectors. Unlike the countries in the second group, however, we found no cases where earned medians exceeded the bargained median pay rates, but two examples of earned median wages falling below the bargained wage floors. The Portuguese Manufacturing industry presents a bargained wage floor of 850 euros per month and a median pay rate around €1.250. Thus, the median earned wage in this sector (€948) is higher than the bargained wage floor but lower than the median pay rate. Similarly, the earned median wage in transportation (€1162), was higher than the minimum negotiated rate (just above €1.000) but lower than the median pay rate (just below €1.500). Thus, the earned median barely reached 78% of its bargained median benchmark in the transport and storage sector.

In the two remaining sectors, earned wages fell below both bargained wage floors and medians. Wholesale and Retail Trade presents negotiated wage floors just above €1.000 and a median pay rate of €1.300. Then, the median earned wage (€905) is lower than both bargained benchmarks. The Accommodation and Food Services industry in Portugal also shows negotiated wage floors just above €1.000 and a median pay rate of €1.100. Therefore, the sectoral median earned wage of €804, runs short of its bargained benchmarks (almost 80% of the negotiated wage floor and 70% of the bargained median wage).

Finally, the Estonian Transport and Storage sector represents the fourth configuration, with earned wages falling below bargained wage floors and median pay rates in all cases. It negotiates only one pay rate, which is the minimum to be paid to drivers, and is fixed at €1.550. The results obtained from the ESES survey show an earned median wage of €1.200, which is lower than its corresponding bargained wage floor. Human Health and Social Work Activities in Estonia present a minimum bargained monthly pay rate of €1.300 and a median pay rate just above €2.000. The median earned wage in this Estonian sector is €1.150, running short with respect to the wage floor negotiated.

Given the imbalance in sectoral coverage across the seven countries, as well as the fact that not all existing collective agreements are included in the sample, we do not mean to present this countries as ideal types. Rather, we present the four different configurations here to demonstrate that the relation between bargained and earned wages can effectively vary both within and between countries.

Falling outside the pay scale boat? Detailed pay grades to the distribution of earned wages

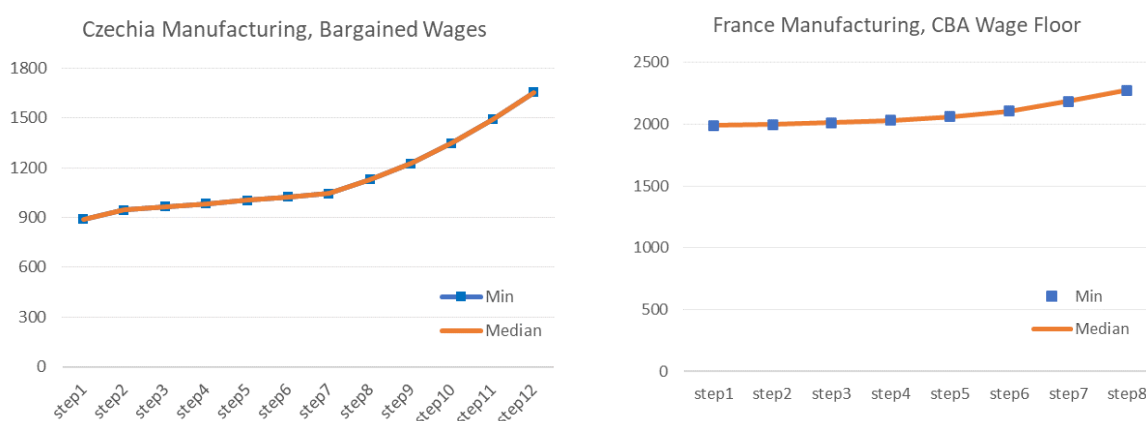
In the previous section, presenting the results of the first matching strategy, we presented a global comparison between bargained and earned wages at median levels across the seven countries and six sectors in the study. In this section, we rely on the more specific coding of the pay grade levels, following the second matching strategy to deepen our understanding of the relation between the scope and distribution of bargained and earned wages. In this analysis, we firstly examine pay rates at different pay grade levels to study wage inequality in collectively bargained pay systems across the four configurations of the bargained-earned wage gap identified in the previous section. Subsequently, we show the starting rates of each pay grade within a collective agreement by plotting it onto the distribution of earned wages in the same sector and country. We complement the analysis providing information about the median and maximum wages negotiated. This allows us to evaluate the share and level of the actual, earned wage distribution that is covered in collective bargaining, as well as show the density (or intensity) of collective bargaining at different parts of the earned wages distribution.

Pay advancement in pay scale tables

In the first configuration of the relationship between bargained and earned median wages, the latter exceeded both wage floors and median pay rates by a substantial difference, as observed in Czechia and France. Figure 3 displays the starting pay rate (floor) and median pay rate of each pay grade included in the Czech and French collective agreements in this study. Both collective agreements include a pay spine with multiple pay grades (12 in case of the Czech agreement and 8 in the French

agreement), which enable wage growth as workers advance to higher paying jobs in the sector. The pay system in the Czech manufacturing collective agreement starts at a wage floor of €890. The highest floor pay grade starts at €1.650, about 1,85 times the lowest wage floor. The French Manufacturing sector displays bargained floor wages ranging from €1.900 to €2.270, thus guaranteeing only €370 (20%) wage advancement between the starting rates of the lowest and highest floor pay grades. The pay spines do not include detailed steps within the pay grades, thus the observed starting and median pay rates for the grades are the same in the figure (as can be seen from the completely overlapping blue and orange lines)

Figure 3 Manufacturing Bargained Wages (Floor and Median), Czechia and France



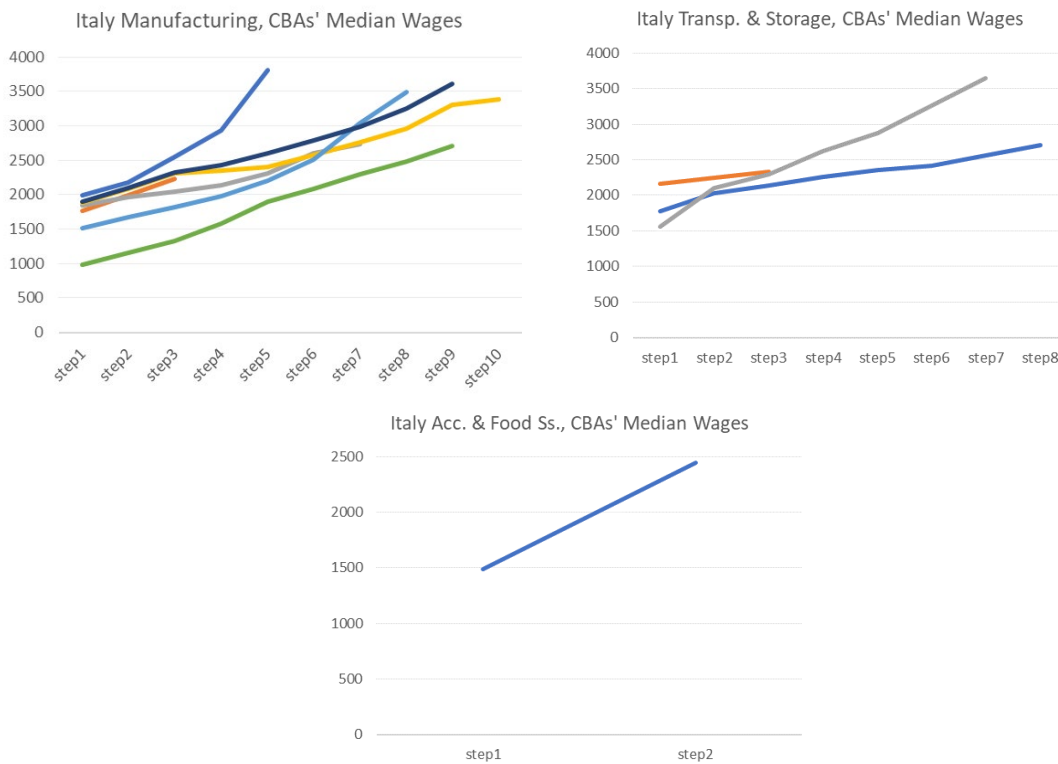
Italy, the Netherlands and Spain

In the second configuration of the relation between median earned wages and bargained wage floors and median pay rates, we observed that median earned and bargained wages were set a similar levels, and both exceeded wage floors by some distance. This was observed in Italy, the Netherlands and Spain.

Figure 4 plots the median pay grades of the collective agreements in the Italian manufacturing (top left), transport and storage (top right) and accommodation and food (bottom) sectors, where each line represents the pay grades observed in one collective agreement. The figure shows there is substantial variation across collective agreement. The Italian Manufacturing industry negotiates wage floors ranging from €880 to around €3.600, and presents a median bargained wage starting almost at €1.000. However, median pay rates of the lowest pay grades in these agreements are set anywhere between €1.000 and €2.000. Some collective agreements include only three pay grades (e.g., orange line) while others contain up to 10 pay grades. Median pay grades in one agreement increase steeply from €2.000 to €3.800 in just five pay grades (e.g. blue line), while others cover a narrower wage range in over nine steps (e.g., dark blue, yellow and green lines). The Italian Transportation and Storage industry negotiates wage floors ranging from €1.500 to just over €3.600, and presents a median bargained wage starting at €1.500. The number of pay grades included in the collective agreements varied between three and eight. The Italian Accommodation and Food Services sector (bottom plot) represented by only one very simple pay scale table. It contains only 2 steps (pay grades). The

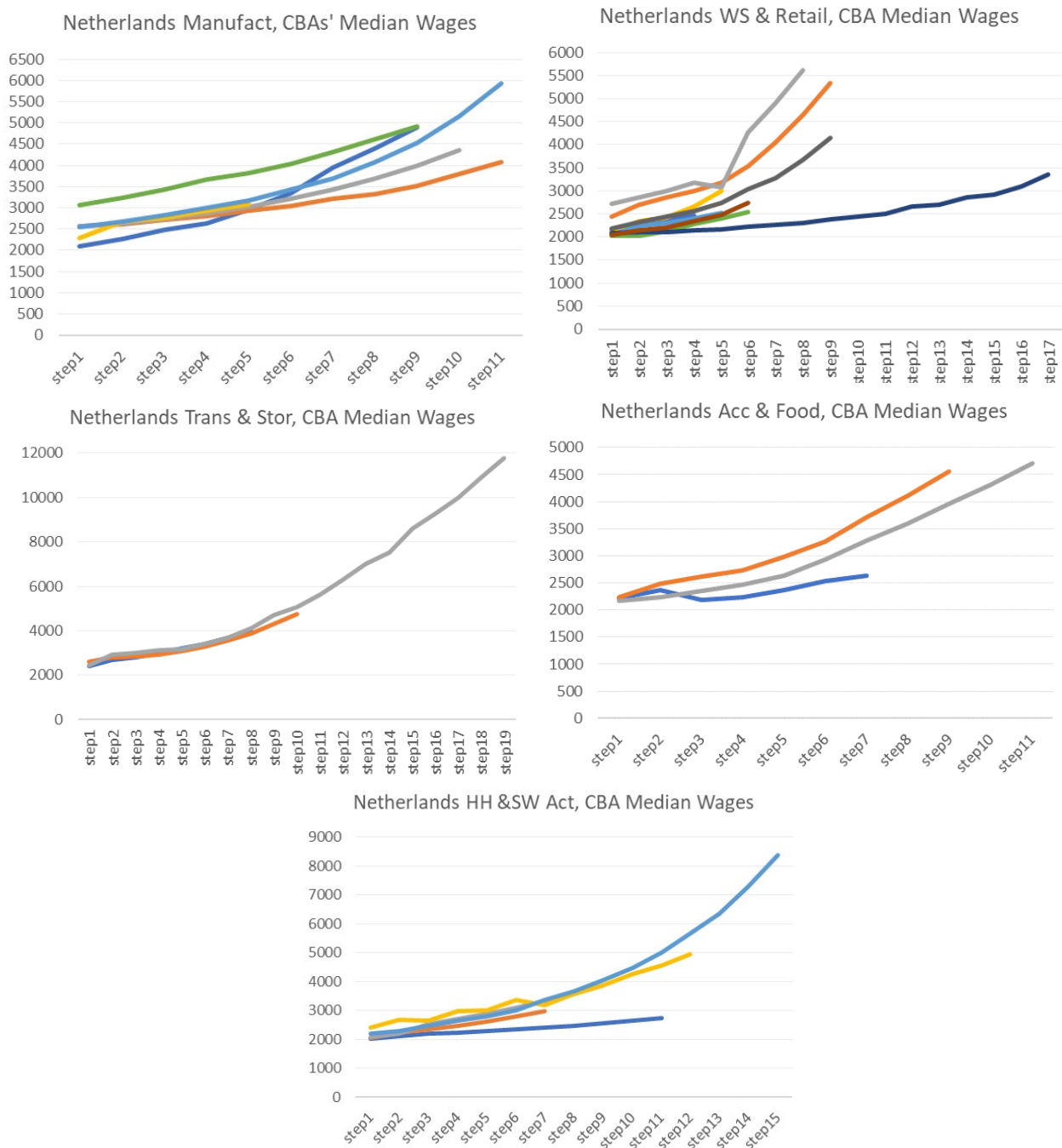
bargained floor pay grades vary from €1.100 to €2.400, while the maximum bargained starts from €2.200 and the median bargained wage starts at €1.500.

Figure 4 Italy Bargained Median Wages, Manufacturing, Transport, and Accommodation and Food services industries



In the Netherlands, manufacturing sector collective agreements negotiated pay grades with starting rates between €2.000 and €4.700, while the median rates of the lowest and highest pay grades varied between €2.000 and €6.000. with an average median wage of above €3.300 (Figure 5, top left pane). The number of pay grades and the covered wage levels covered varied between the five coded collective agreements, but less so than in Italy. The Dutch Wholesale and Retail Trade sector negotiated pay grades' starting wages ranging from €1.700 to €5.600, and median pay rates in the pay grades varied from €2.000 to €5.600 (top right pane). Most of the nine coded collective agreements in the sector included between six and nine pay grades, with one outlier that included a pay system broken down into 17 grades. As the dark blue line in the figure shows, however, this collective agreement primarily distinguishes itself by fixed very many pay grades at minimally different pay levels, while it actually covers a smaller wage range than many of the other agreements.

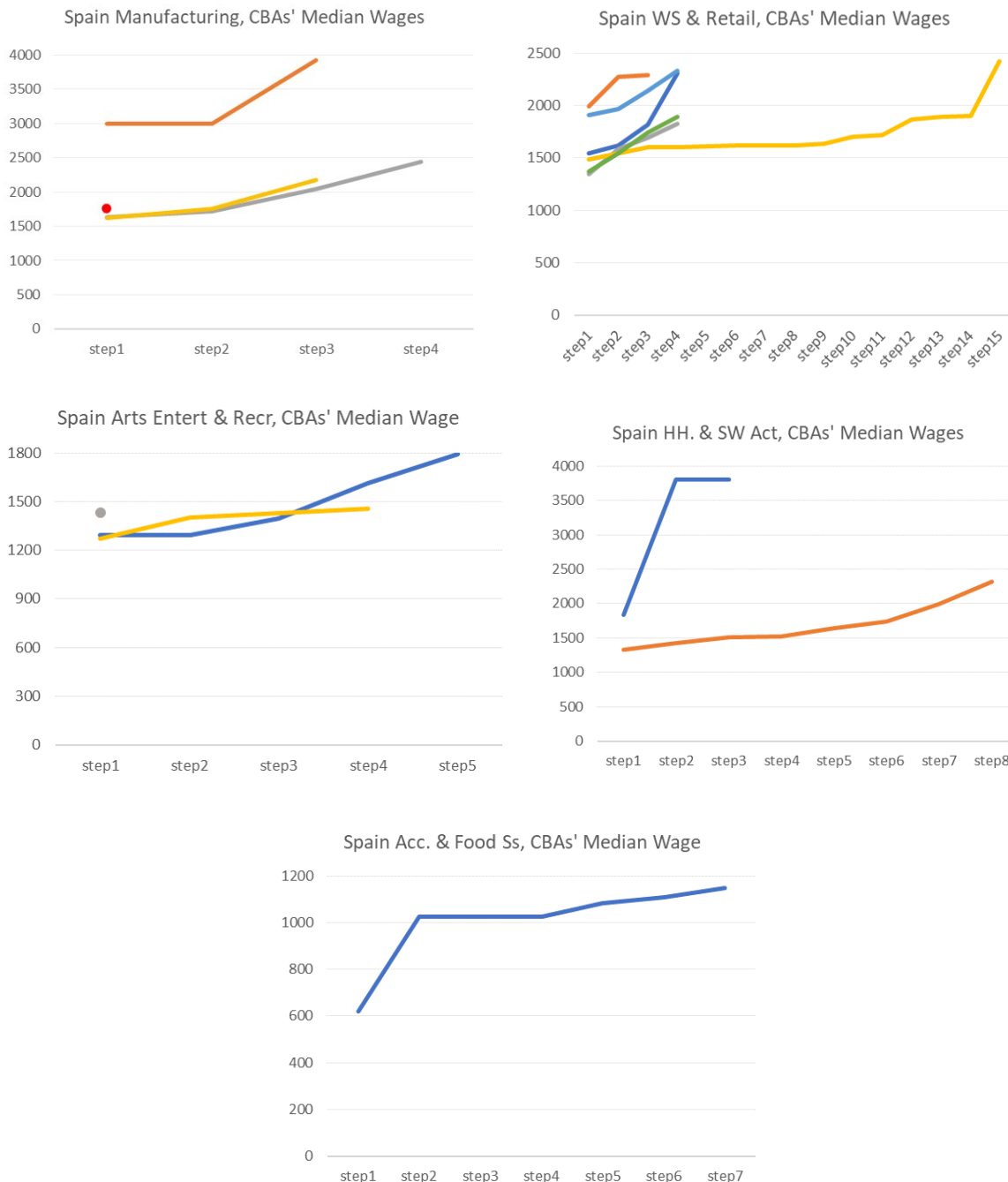
Figure 5 Netherlands, Bargained Median Wages, selected sectors



Dutch Transport and Storage industry negotiated wage floors within a range from €2.000 to a whopping €10.000 per month, and median wages between €2.400 and €12.000, with an average median wage of €4.600. As the bottom left pane in figure 5 shows, the coded collective agreements contain very comparable pay systems until pay grade 10; while, above this level, one collective agreement adds another nine pay grades, while the other has none. The Accommodation and Food Services industry in the Netherlands negotiated wage floors within a range from €2.000 to €4.100, and median wages between €2.200 and €4.700 with an average median wage of €2.900. The Dutch Human Health and Social Work Activities in the Netherlands negotiated floor wages from €2.000 to €7.200,

and median wages ranging from €2.000 to €8.400, and an average median pay rate of €3.200. Similarly to transport and storage and accommodation and food, the slope of the different collective agreements' pay grades is very similar, but some collective agreements contain more pay grades in order to fix pay grades up to much higher wage levels than others.

Figure 6 Bargained Median Wages in Spain, selected sectors



In Spain, most sectors fixed a lowest pay grade at a level between €1.300 and €1.500 (see figure 6), with much more diversity in the level of the highest pay grades. The coded collective agreements in the Spanish manufacturing industry included starting rates in bargained pay grades ranging from

€1.600 to €2.900 per month, and median pay rates in the grades varied between €1.600 and €3.800. The number of steps in this Spanish industry ranges from 1 to a maximum of 4 (figure 6, top left pane). As can be seen in the figure, three out of four collective agreements fix pay grades at comparable levels, whereas a fourth agreement (orange line) contains pay rates at about twice the level of the other three.

The Spanish Wholesale and Retail Trade sector negotiated starting rates of pay grades between €1.300 and €2.300 per month, with median rates in the pay grades ranging from to €1.400 to €2.400 (figure 6, top right pane). Again, the sector includes a number of quite similar agreements, and one agreement fixing many more pay grades (i.e., 15 grades). The Human Health and Social Work Activities sector (middle left pane) negotiated pay grades with starting rates within a range from €1.300 to €3.200 per month, and median pay rates between €1.300 and €3.800, with an average median wage of €1.700. The two coded collective agreements include radically different pay systems: one contains 3 pay grades that include steeply increasing rates. The second agreement contains 15 grades with slowly increases pay rates, all of which fall below those included in the other agreements.

The Arts, Entertainment and Recreation sector (middle left pane) negotiated wage floors from to €1.300 to €1.800. The Spanish Accommodation and Food Services industry negotiated wages floors ranging from a mere €600 to €1.100.

Portugal

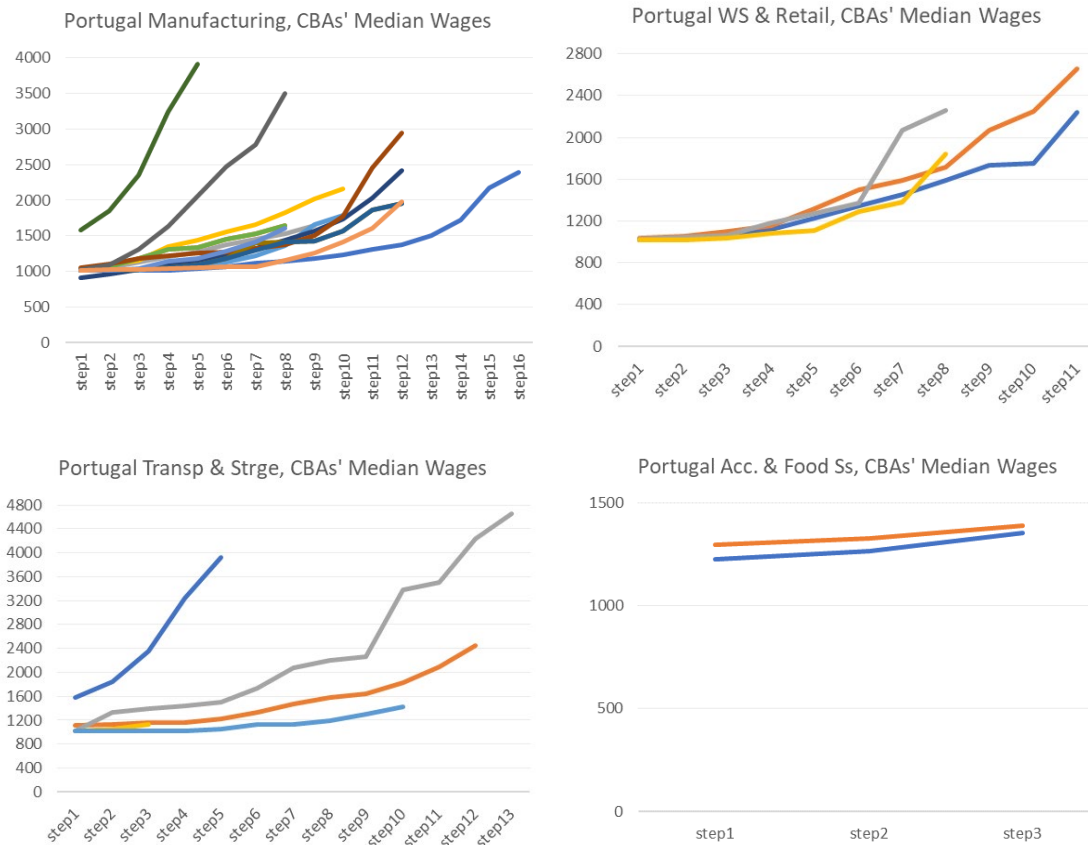
In the third configuration of the relation between earned and bargained wages, observed in Portugal, median earned wages usually fell between the bargained wage floor and median pay rates, and sometimes just below the bargained wage floor. In Portugal, the starting rates of the lowest pay grades were set at or just below €1.000 in all four sectors in the study. However, the level of the highest negotiated pay rates varied quite substantially between sectors and between collective agreements in a sector.

The Portuguese manufacturing sector (figure 7, top left pane) bargained wage floors within a range from €851 to €3.500. As the figure shows, there different collective agreements in the sector differ both in terms of the number of pay grades they fix (from 4 to 16 grades), with regard to the wage earned according to the median pay rate in the highest grade (from approximately €1.000 until almost €4.000), and in the pace of wage growth from one grade to another (as seen from the flatter compared to the steeper sloped lined in the figure).

The Portuguese Wholesale and Retail Trade industry (top right pane), bargained wage floors were fixed with a range from €1.000 to €2.600 (same range for bargained median wages). Until the sixth step, the pay systems of the four coded collective agreements are very similar, with diversity found in higher pay grades, similar to some of the Dutch sectors. The Transport and Storage sector (bottom left pane) includes bargained wage floors within a range from €1.000 to €4.200. The bargained median wages also start at €1.000 and go up to €4.600. In this sector too, the figure shows substantial variation between the pay systems of the five coded collective agreements, be it not as extreme as in manufacturing. In the Finally, in the Portuguese Accommodation and Food Services (bottom right

pane) sector two collective agreements were coded that have very similar pay systems, with one fixing marginally higher pay rates than the other in the same number of pay grades, with minimal wage increases between the pay grades. The bargained wage floors are fixed just above €1.000. The bargained median wages in this sector vary around €1.300.

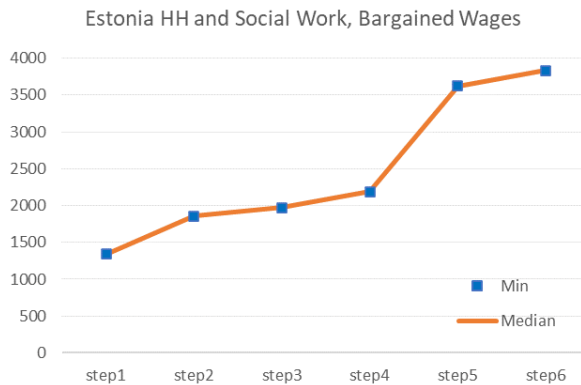
Figure 7 Bargained Median Wages in Portugal, selected sectors



Estonia

In Estonia, representing the fourth configuration of the relation between earned and bargained wages, the median earned wage fell below both bargained wage floors. One of the two Estonian collective agreements, covering the transportation and storage sector, only fixes a single minimum pay rate. This is set as €1.500 per month. The collective agreement in the human health and social work activities sectoral collective agreement fixed six pay grades, with starting rates ranging from €1.300 to €3.800 (figure 8)

Figure 8 Bargained Wages in Estonia's Human Health & Social Work Activities sector

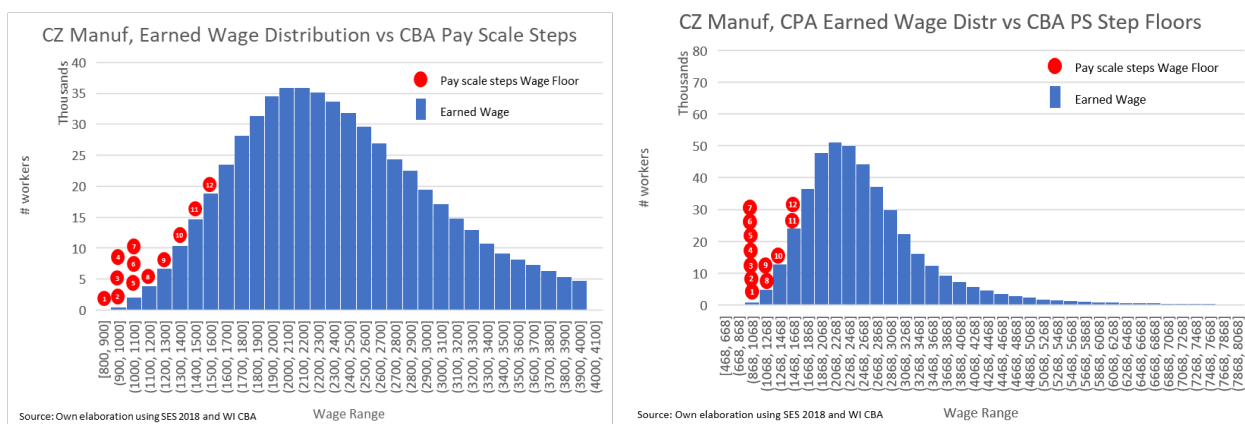


Pay grades and the distribution of earned wages

We then plot the observed starting rates of the collectively bargained pay grades onto the distribution of earned wages in the same sector and country to observe their relation more closely. Figure 9 shows a histogram of earned wages in the Czech Manufacturing industry (including all earned wages (covering +/-99% of the labor in the sector) in the left pane and the distribution of those earned wages covered with collective pay agreement, CPA, in the right pane. The red dots on or above the blue bars of the histogram represent the starting rates of the bargained pay grades (negotiated floor wages).

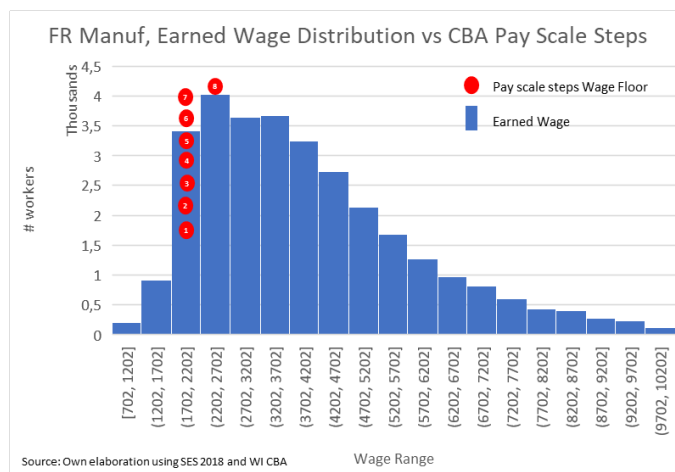
Data from the ESES2018 indicates that the starting rates of all bargained pay grades (ranging from €890 to €1650) fall within the bottom 10% of workers in the Czech manufacturing sector, as indicated by the red dots (pay grades) in figure 9 above the first three blue bars representing the distribution of earned wages. The median earned wage (€2.380) exceeds the last step of the maximum negotiated wages by 37%. The comparison shows a difference of more than 176k cases not covered by collective pay agreement.

Figure 9 Earned wage distribution vs collectively bargained pay grade floors in the Czech manufacturing sector



In French manufacturing, the bottom 5% of the sector’s workers earn a wage below the minimum negotiated wage floor of €1900 (see figure 10). All employees in the sector are covered by some form of collective pay agreement; therefore, we do not show any difference between the distribution of earned wages in employees in covered versus non-covered firms. The top 75% of the sector’s workers earns a wage higher than the highest pay grade negotiated. The median earned wage in this sector is around €3.700 (located at the 7th bar) which is 1.6 times the highest negotiated pay grade, and 1.9 the lowest one.

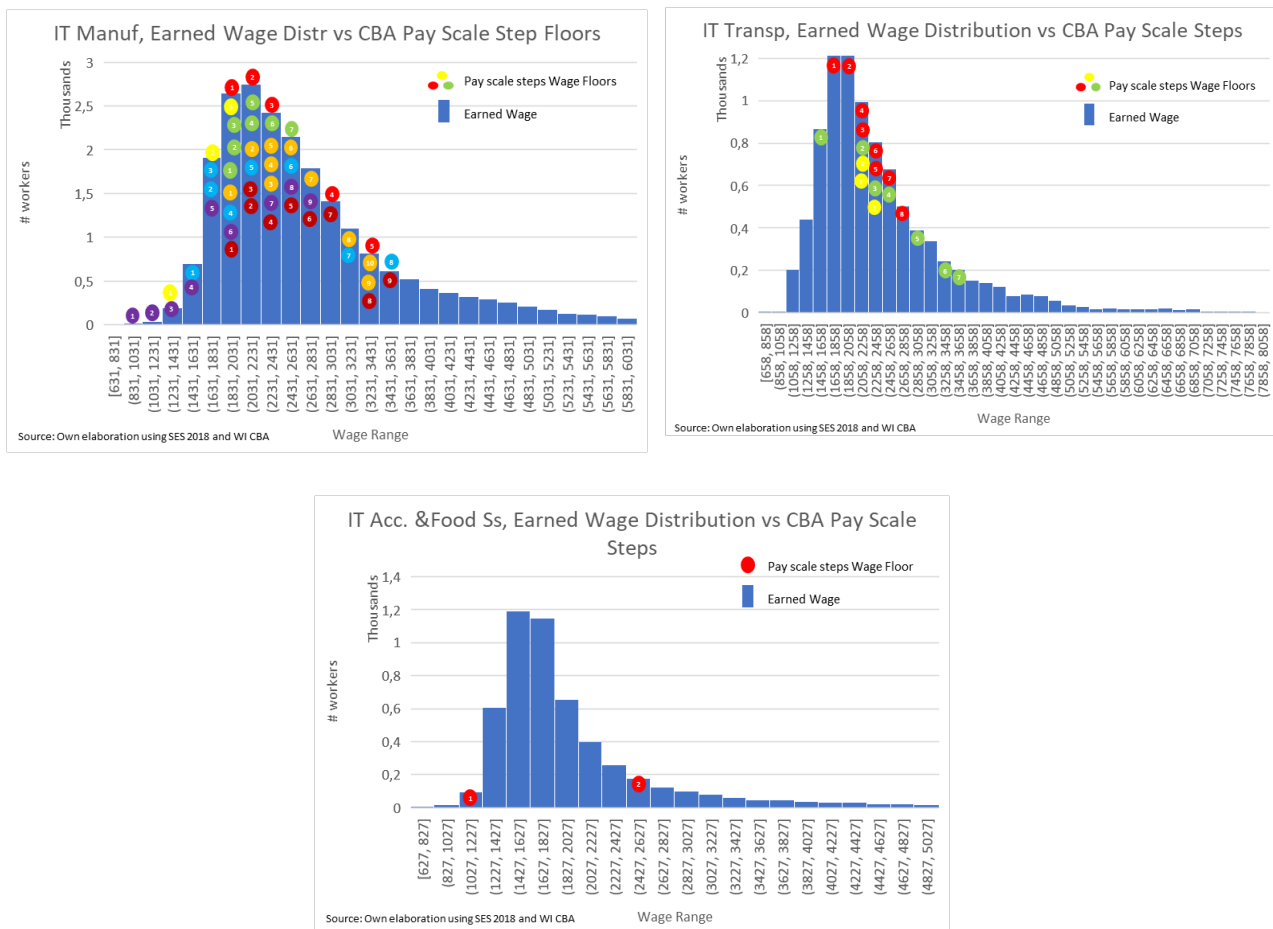
Figure 10 Earned wage distribution vs collectively bargained pay grade floors in the French manufacturing sector



Italy

Figure 11 shows that collectively bargained pay rates cover a much larger share of the earned wage distribution in Italy, compared to the previous Czech and French examples. In the manufacturing, (figure 11, top left pane), starting rates of the different pay grades are set at the second bar of the earned wage distribution (€831-€1031), with only a marginal % of employees earning reported wage below the bargained wage floor of any collective agreement. More than the bottom 75% of the sector’s workers earn a wage within the bargained median range (i.e. between the lowest and highest median bargained wages, €977-€3.800). The top 15 % of employees have wages above the highest pay grade in any of the collective agreements in the sample (€3.800). The earned median wage is almost €2.500, located at the 9th bar.

Figure 11 Earned wage distribution vs collectively bargained pay grade floors in Italy, by sector



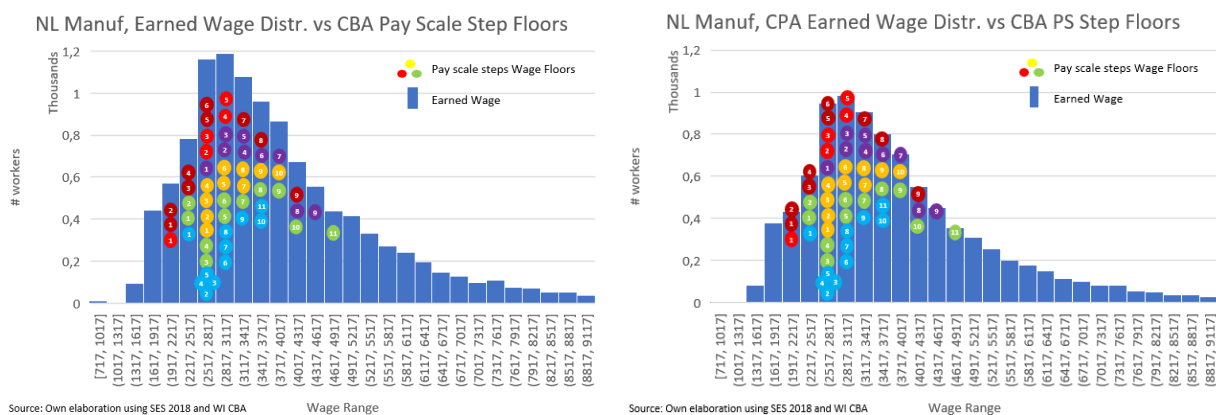
In the Italian Transportation and Storage sector (top right pane), the bottom 10% of employees earned a wage lower or equal to the lowest wage floor negotiated in any of the three coded collective agreements in the sector (€1.553). From percentile 10 to percentile 90, the sector’s employees earn a wage within the bargained median range (between the lowest and the highest median bargained in any of the CBA covered, €1553–€3649). The median earned wage is just above €2.100, locate at the 8th blue bar. As all employees in the three Italian sectors work in firms that report being covered by a collective agreement, we do not show a comparison between the earned wage distribution of covered and non-covered employees.

The Accommodation and Food Services industry in Italy bargains wage floors ranging from €1.100 to just above €2.400, and presents a median bargained wage starting almost at €1.400. When looking at earned wages in the Accommodation and Food Services industry (figure 11, bottom pane), the bottom 10% earns a wage below the starting bargained median wage of the coded collective agreement. Almost 64% of the sector’s workers earn a wage within the bargained median range (€1.486–€2.444). The median earned wage in this sector is €1.743 (6th blue bar).

The Netherlands

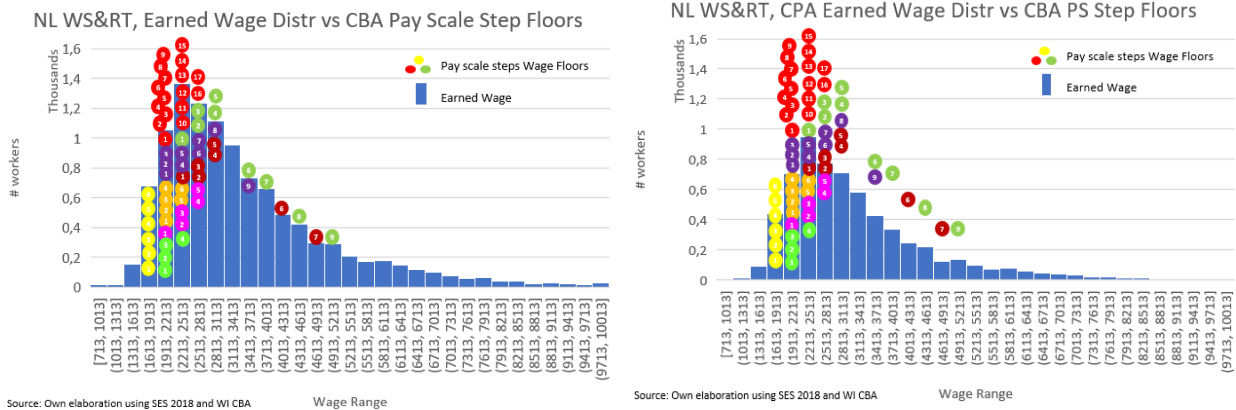
Despite the median earned wage (€3.500) exceeding the average median pay rate in the Dutch manufacturing sector (almost €3.400), the bottom 6% earns a wage equal or below the starting rate of the lowest pay grades in any of the five coded collective agreements (see Figure 12, top left pane). Employees earning wages between the 50th and 95th percentile, earned a wage between the negotiated median and the highest bargained pay rates. Approximately 81% employees observed in the ESES2018 in the Dutch manufacturing industry, worked in a firm that is covered by some form of collective agreement, including sector and firm level agreements. When considering only these cases, the median earned wage remains at the same level as when considering the full sector.

Figure 12 Earned wages distribution vs collectively bargained pay grade floors in the Dutch manufacturing sector



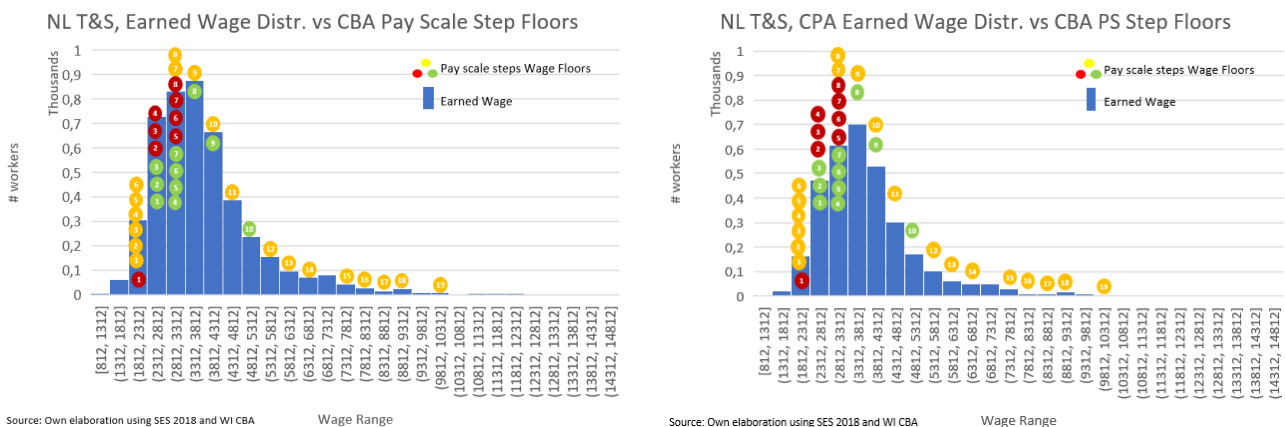
The analysed ESES data in the Dutch Wholesale and Retail Trade sector (figure 13) shows that only the bottom 1% of employees earns a wage below the starting rate of the lowest bargained wage floor. Approximately 58% of the employees in the Dutch wholesale and retail trade industry worked in a firm that is covered by some form of collective pay agreement. When considering only these cases, the median earned wage was of €2.900. This result is lower than the one considering the full sector, i.e. also those cases not covered by any form of collective pay agreement. The difference in the percentage covered can be observed in the different length of the blue bars between left and right panes of figure 13. The higher level of the blue bars to the right of the x-axis in the left compared to the right pane, indicates that a large share of the employees earned above bargained maximum levels, work in firms that are not covered by collective agreements. Considering only employees in firms covered by collective agreements, the bottom 1% of workers earns a wage below the lowest bargained floor. And the top 10% earns a wage above the highest floor negotiated.

Figure 13 Earned wages distribution vs collectively bargained pay grade floors in the Dutch wholesale & retail trade sector



The Dutch Transport and Storage sector contains the most wide pay scale table of our sample (see figure 14 orange dots). In consequence, only the bottom 1% earns a wage below the lowest bargained floor levels. From percentile 1 to 99, workers earn a wage between the negotiated median and the highest wages bargained. According to the ESES2018, 71% of the Transport and Storage sector employees work in a firm that is covered by some form of collective pay agreement. Our results show that the median earned wage of employees in firms covered by a collective agreement is of €3.584, which is higher than the median wage of the full sector (3.500). Comparing the distributions of the two groups (figure 14, left and right pane), the difference appear to be driven by a handful of observations earning wage above the highest bargained pay rate (already set very high at €10.000 per month).

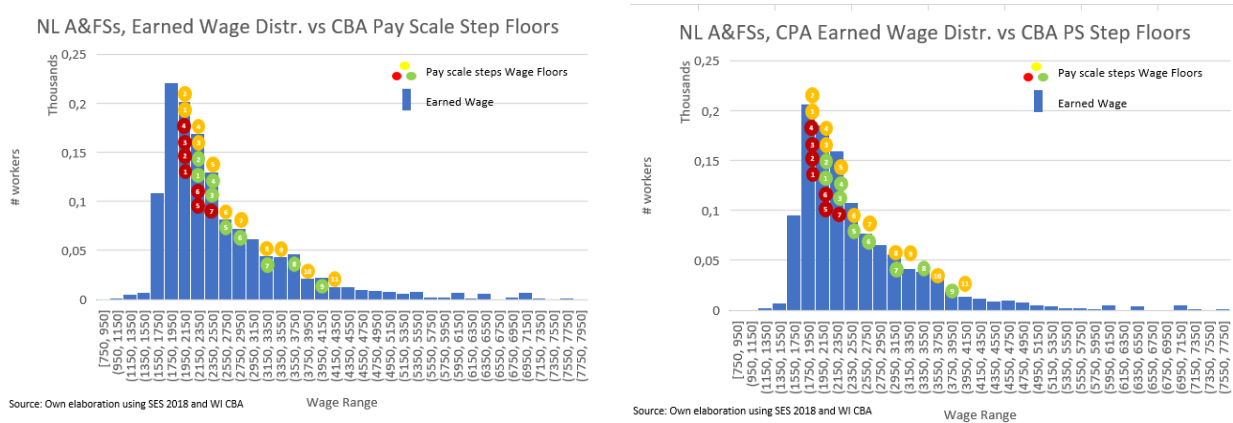
Figure 14 Earned wages distribution vs collectively bargained pay grade floor in the Dutch transport & storage sector



In the Dutch Accommodation and Food Services industry, the bottom 20% earns a wage below the lowest bargained floor levels (see figure15). Approximately 88% of employees worked in a firm that was covered by some form of collective agreement, but the median earned wage was the same for employees in covered and non-covered firms, as can be seen from the similarity between the left and right panes of the figure. As the figure shows, there are substantial numbers of employees who earn

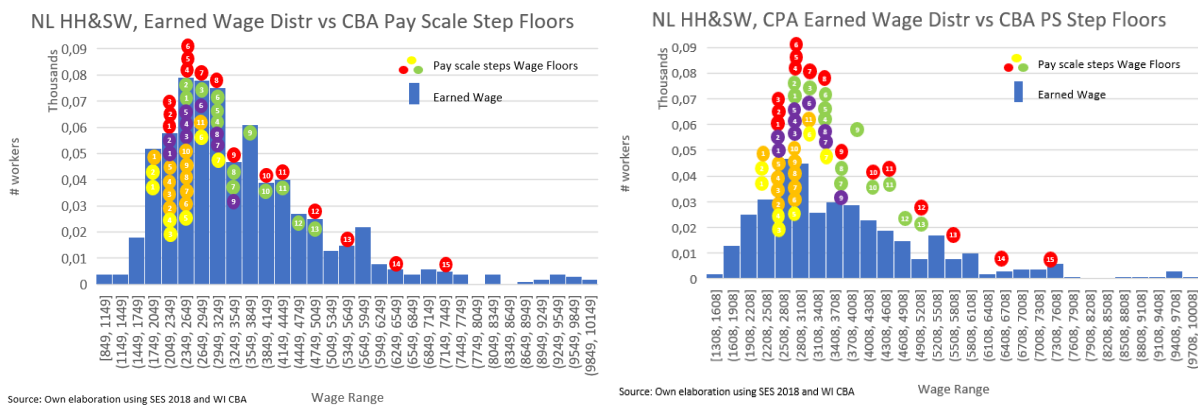
wages below the starting rate of the lowest bargained pay grade. When considering the full sector, 31% of the workers in this sector earns a wage below the lowest bargained floor (2.032). Only the top 5% of the workers earns a wage higher than the maximum bargained floor (4.131) Considering the sector includes work in restaurants, bars and cafes, it is quite likely that a substantial share of these employees, are workers covered by the pay scales for youth workers (Besamusca, 2024).

Figure 15 Earned wage distribution vs collectively bargained pay grade floors in the Dutch accommodation & food services sector



In the Dutch Human Health and Social Work Activities, the bottom 5% of the workers earn a wage below the starting rate of the lowest bargained wage floor. Between percentiles 10 and 95, workers earn a wage within the bargained floors range (i.e. the lowest-highest negotiated floor range €2.031-€7.230). Only 53% of this sector is covered by some form of collective agreement. When considering only employees in firms covered by a collective agreement, the earned median wage is €3.400, which is higher than the median of the full sector (€3.200).

Figure 16 Earned wage distribution vs collectively bargained pay grade floors in the Dutch human health & social work activities sector



Spain

Finally, we look at five sectors in the last country in this configuration: Spain. The bottom 35% of employees in the Spanish manufacturing sector earned a wage below the starting rate of the lowest pay grade in any of the four coded collective agreements (Figure 16, top left panel). Only the top 10% of the workers in this sector earned a wage above the highest bargained floor. The earned median wage was €1.908 (located at the 7th blue bar). Therefore, only one CBA (orange dots) negotiated wage floors above such a value.

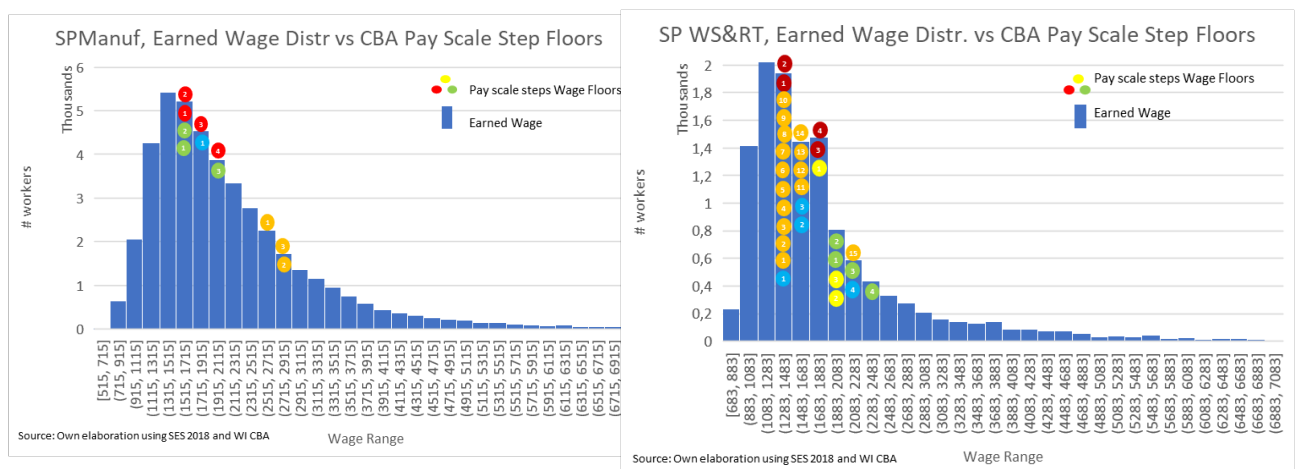
In the Spanish wholesale and retail trade sector (figure 16, top right pane), the bottom 36% of employees earns a wage below the lowest wage floor negotiated. The earned median wage was €1.551 (5th blue bar). And as in the manufacturing sector, only the top 10% of the workers earned a wage above the highest bargained floor.

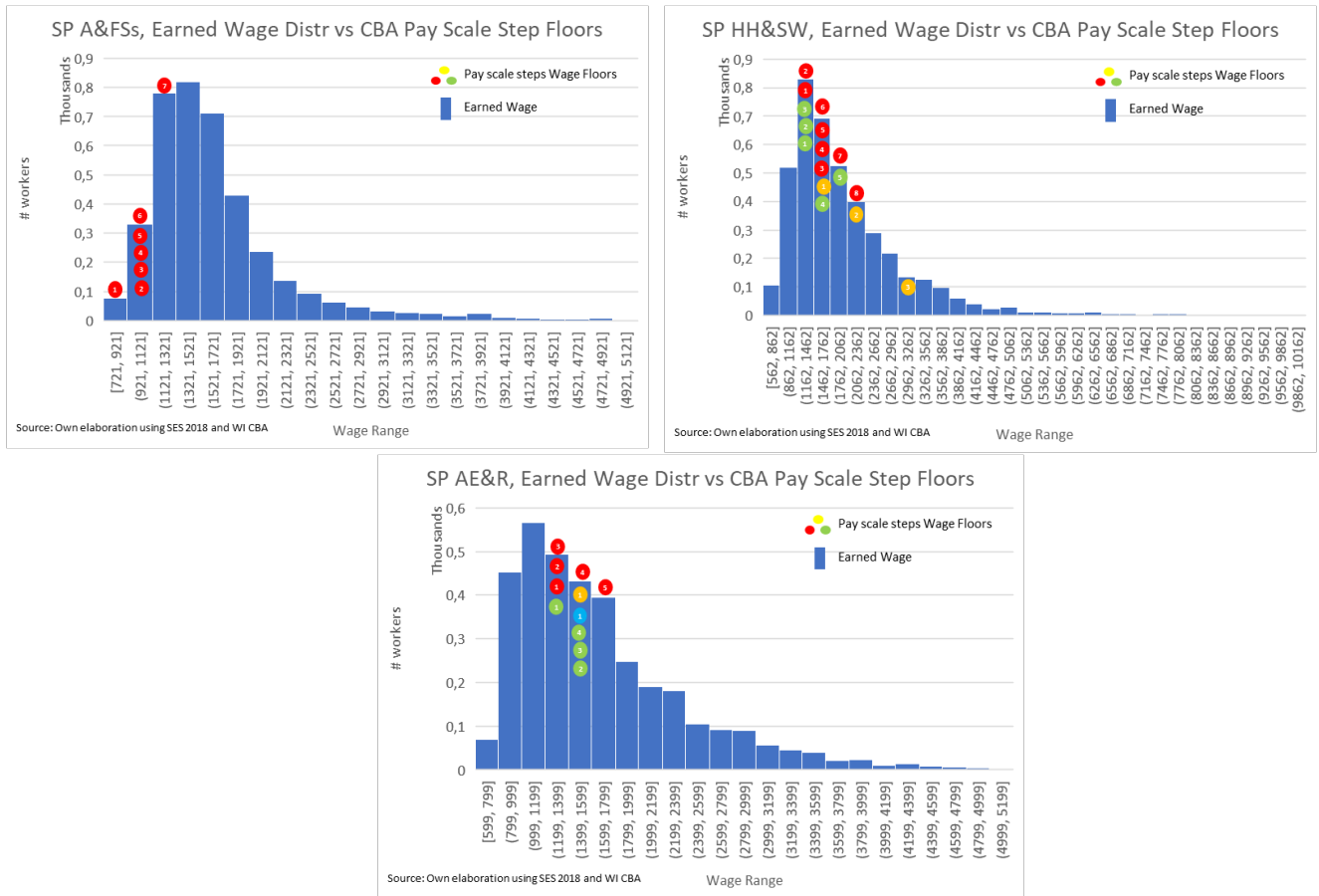
In the accommodation and food sector (figure 16, bottom left pane), all workers in this ESES sample earns a wage higher than the negotiated floor. This is probably related to the relatively low wage floor of €600 in this sector, compared to floors above €1.300 in all other sectors. Only the bottom 10% earns a wage equal or lower than the highest floor bargained benchmark, while all other workers earned wages above the coded collective agreement. The median earned wages was €1.512 (4th bar).

In the Human Health and Social Work Activities (figure 16, bottom right pane), the bottom 26% earns a wage equal or below the lowest bargained floor level. The median earned wages was €1.748 (4th bar). The top 25% of the workers earned a wage above the highest floor bargained. And the top 5% earned a wage above the highest maximum negotiated.

Finally, the last Spanish sector covered for this research is Arts, Entertainment and Recreation. The bottom 34% earns a wage lower than the minimum wage floor negotiated. The earned median was €1.497, located at the 4th bar, precisely where most of the negotiated floor pay grades are observed. The top 34% earned a wage above the highest bargained floor.

Figure 17 Earned wage distribution vs collectively bargained pay grade floors in Spain, by sector

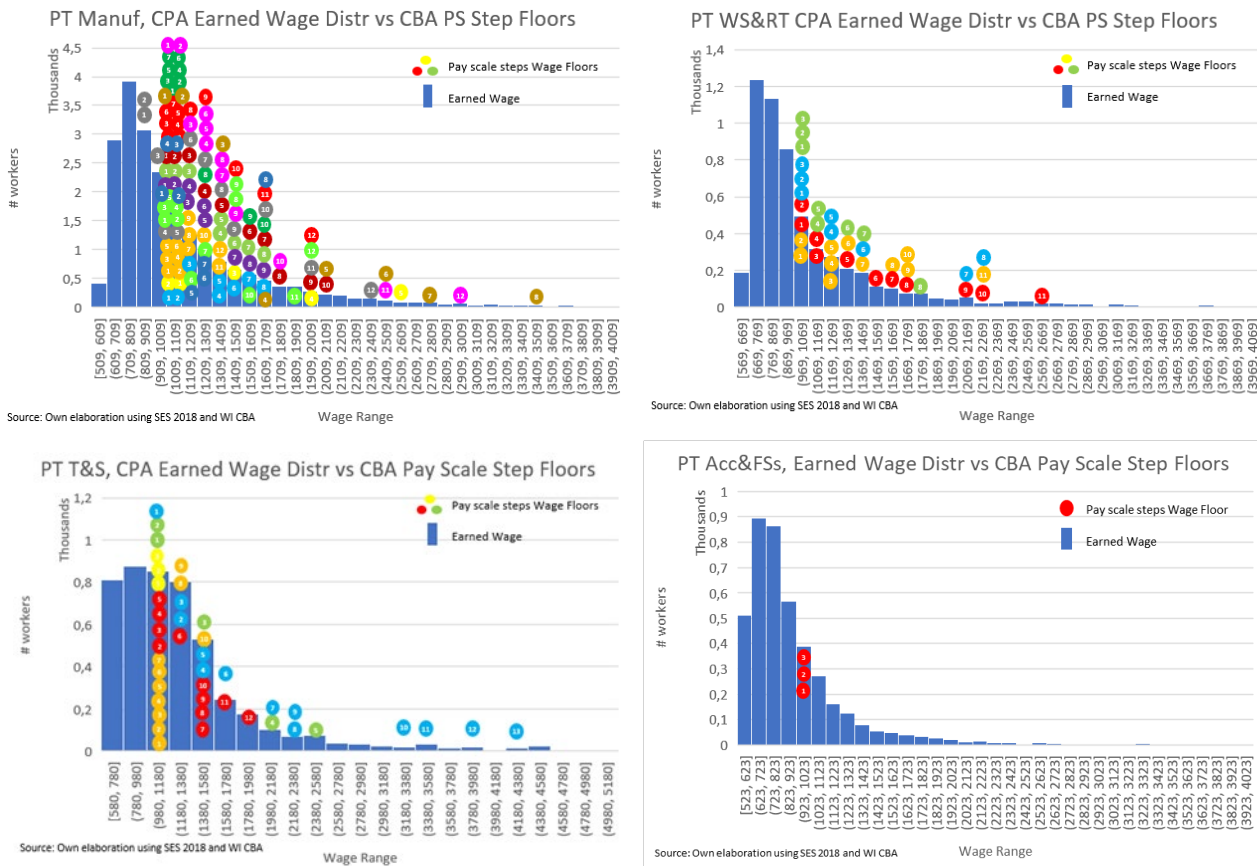




Portugal

Figure 18 shows the Portuguese sectors that have above 87% of their workers covered by some form of collective pay agreements. In the Portuguese Manufacturing (Figure 18, top left) the earned median wage was €940 (5th bar). The bottom 38% earned a wage below the lowest bargained floor. And only the top 2% earned a wage above the highest negotiated floor. In the Wholesale and Retail Trade, the bottom 49% of employees earns a wage below the lowest bargained floor in any of the coded collective agreements in the sector (Figure 18, top right). From percentile 50 to 95 workers earn a wage matching the corresponding bargained median wage range. Approximately 97% of the employees in this sector were employed in a firm covered by some form of collective agreement. On the top 4% earned a wage above the highest floor bargained. In the Accommodation and Food Services, the bottom 75% earns a wage equal to or below the lowest negotiated floor. Only the top 10% earns a wage matching the corresponding bargained median and highest wage ranges. As 95% of this sector is covered by some form of collective agreement, we do not show a comparison between results among covered and uncovered firms. 87% of this Portuguese transportation of storage sector is covered by some form of collective pay agreement. The median earned wage of those covered by any form of collective agreement is of €1.155, which runs short with respect to the average median bargained. The bottom 38% earned a wage below the lowest floor negotiated. And only the top 1.7% earned a wage above the highest maximum bargained.

Figure 18 Earned wage distribution vs collectively bargained pay grade floors in Portugal, by sector

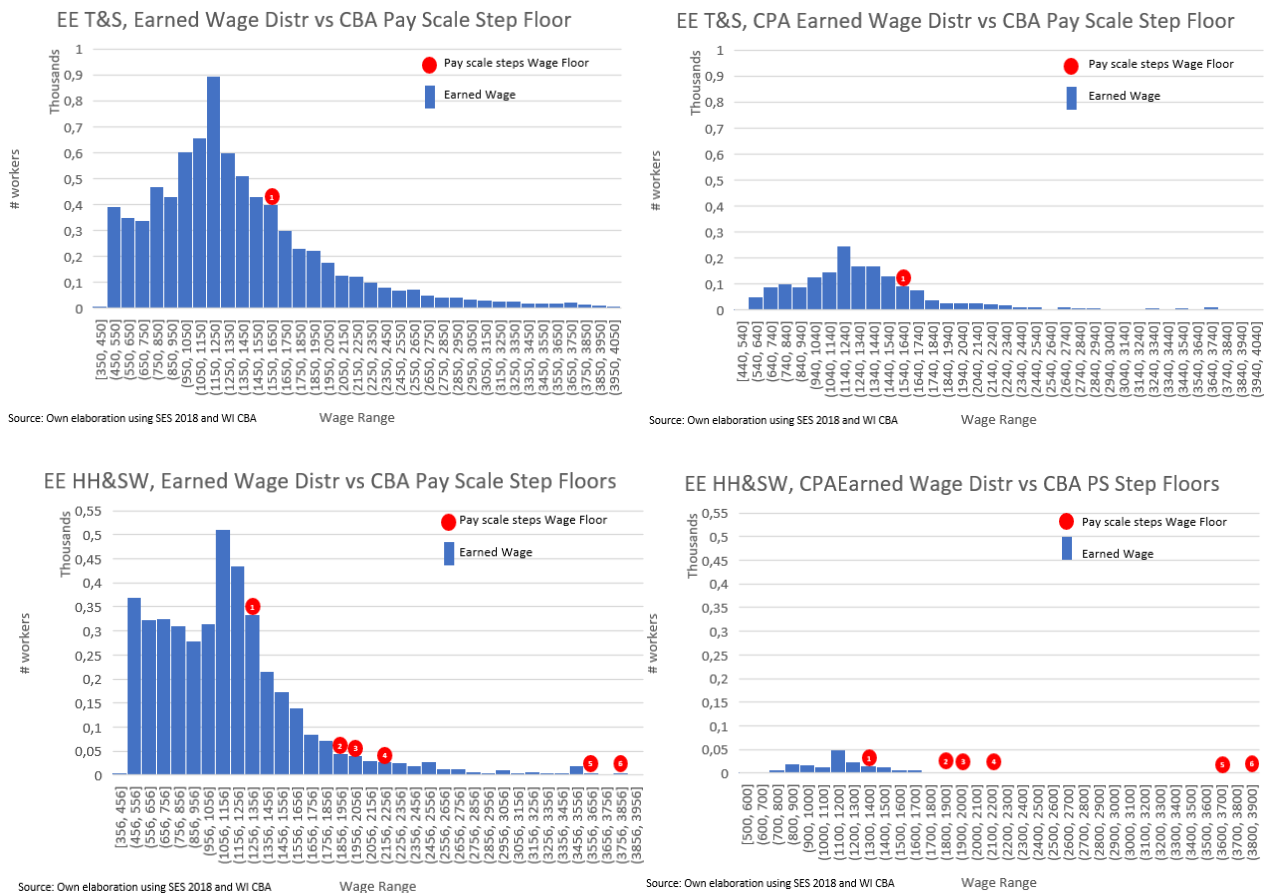


Estonia

Contrary to most of the other examples shown for the other countries in the study, the figures below show that the bargained pay rates are found only in the upper part of the earned wage distribution. Estonia is the country with by far the lowest collective bargaining coverage. In the Estonian Human Health and Social Work Activities and the Transport and Storage sectors, data from ESES2018 indicate that only 5% and 23% of employees worked in a firm covered by a collective agreement. This can explain part of the discrepancy, as negotiated wage floors do not apply to the majority of employees.

The Transportation and Storage sectoral collective agreement in Estonia only provides one bargained amount as the minimum wage to be paid to drivers, €1.500. Therefore, only one step can be obtained from this information (red dot in the following plot, Figure 19, top left). When analyzing the ESES 2018 data, acknowledging for the full observations set, the bottom 70% of the workers in this sector earn a wage below the negotiated benchmark. When analyzing only the ESES observations in firms covered by some form of collective pay agreement, the share of employees earning below the negotiated wage floor is 72% of this set of observations (figure 19, top right). The difference can be observed in figure 19; on the left we see the full earned wage distribution (blue bars) and on the right we see the distribution of wages of employees in firms that are covered by a collective agreement. The red dot represents the wage floor negotiated.

Figure 19 Earned wage distribution vs collectively bargained pay grade floors in Estonia, by sector



The Estonian human health and social work activities sector is shown in the Figure 19, bottom plots). The earned median wage is 1.150 (8th bar). When the full sector is considered, the bottom 74% earns a wage below the lowest bargained floor. And only the top 1% earns a wage above the highest negotiated floor. The top 25% of employees earn a wage between the starting rates of the lowest and highest pay grades. When acknowledging only those cases of the ESES 2018 covered by some form of collective agreement, they represent only the 5% of the full earned wage distribution. The bottom left pane of figure 19 shows the full earned wage distribution, and the right side pane includes only the distribution of earned wages covered by any form of collective agreement. The median earned wage among covered workers is €1.150, which compares low to the average median bargained wage of €2.400. When considering only those covered by collective pay agreements, 73% earned a wage below the minimum floor negotiated. Therefore the top 27% earns between the lowest and highest floor negotiated.

Conclusion and discussions

This working paper, developed for the BARWAGE project (European Union social dialogue grant 101052319), aimed to quantitatively compare earned and bargained wages in 6 sectors in 7 European countries using data from 2018.

This research presents a pioneering exploration of the relationship between collectively bargained wages and actual earned wages across seven European countries: Czechia, Estonia, France, Italy, the Netherlands, Portugal, and Spain. The study focuses on key sectors including manufacturing, wholesale and retail, transportation and storage, accommodation and food services, human health and social work activities, and arts, entertainment, and recreation. Our analysis employs two complementary strategies. The first provides a broad comparison of earned wages against their bargained benchmarks at average and median levels. The second offers a more granular examination, considering all steps of the pay scale tables extracted for this study, disaggregated by country and sector.

The initial strategy reveals a striking dichotomy among the studied countries. Czechia, France, Italy, the Netherlands, and Spain exhibit a positive wage gap, indicating that earned wages, on average, exceed their respective bargained benchmarks. Conversely, Estonia and Portugal demonstrate a negative gap, with earned wages falling below negotiated benchmarks. Notably, we observe that countries with a wider range between wage floors and median bargained wages tend to have more expansive pay scale tables. This broader scope potentially serves as a mechanism to constrain employer discretion during wage negotiations, a feature particularly evident in the Netherlands, Italy, Spain, and Portugal. Among the countries studied, the Netherlands consistently leads in both earned and bargained wage levels. Sector-wise, the transport and storage industry emerges as the frontrunner in both earned and negotiated wages, likely reflecting the sector's essential nature and its critical importance to national economies. These findings provide crucial insights into the varied landscapes of wage-setting mechanisms across Europe, highlighting the complex interplay between collective bargaining outcomes and actual earnings. They set the stage for a deeper exploration of the factors underlying these national and sectoral variations.

This study compared bargained wage floors and median pay rates with median earned wages across seven countries, revealing four distinct configurations: a) Earned wages exceeding both bargained floors and medians (e.g., manufacturing in Czechia and France). b) Comparable median bargained and earned wages substantially higher than bargained wage floors, with earned medians sometimes exceeding bargained medians (e.g., Italy, Netherlands, and Spain). c) Similar levels of median bargained and earned wages, with earned wages occasionally falling below bargained medians (e.g., Portugal). And d) Earned wages falling below both bargained wage floors and medians (e.g., Estonian transport and storage sector). These configurations demonstrate significant variability in the relationship between bargained and earned wages both within and across countries. Italy showed the closest alignment between bargained and earned medians, with differences smaller than €300 across all sectors. The Netherlands and Spain exhibited more mixed patterns, with some sectors showing larger disparities. Portugal presented a unique case where earned medians never exceeded bargained medians, and in some sectors fell below bargained wage floors. Estonia's transport and storage sector exemplified the most extreme case, with earned wages consistently below both bargained floors and medians. These findings highlight the complex interplay between collective bargaining agreements

and actual earnings. They suggest that the effectiveness of collective bargaining in setting wage standards varies considerably across different national and sectoral contexts. This variability underscores the importance of considering both bargained and earned wages when assessing labor market outcomes and the impact of collective bargaining systems.

The second strategy calculations shows a more specific comparison between earning distributions and the wage floors of every step of each CBA's pay scale covered per sector in the selected countries. This allows the identification of the specific wage distribution section at which the bargained wage floors are located. The analysis is complemented by comparing median earned and median bargained wages.

When comparing bargained wage floors and pay grades with earned wage distributions across various sectors in seven European countries, there are significant variations in the relationship between collectively bargained wages and actual earnings. We observe wide disparities between bargained and earned wages in some countries. For example, in the Czech manufacturing sector, all bargained pay grades fall within the bottom 10% of earned wages. In French manufacturing, the top 75% of workers earn above the highest negotiated pay grade. We also found closer alignment in other countries. For example, Italian sectors showed a better match between bargained and earned wages, with most workers' earnings falling within the bargained range. The Netherlands demonstrated mixed results, with some sectors showing good alignment and others significant disparities. Among the instances of earned wages falling below bargained floors, Spain, Portugal and Estonia. In Spain and Portugal, substantial proportions of workers in various sectors earned below the lowest bargained wage floors. Estonia showed the most extreme case, with the majority of workers earning below negotiated minimums in studied sectors.

Regarding the Impact of collective bargaining coverage, countries and sectors with higher collective bargaining coverage generally showed better arrangement between bargained and earned wages. Estonia's low coverage (5-23% in studied sectors) likely contributed to the significant discrepancies observed.

It is worth to note sector-specific variations. Accommodation and Food Services sectors often showed larger proportions of workers earning below bargained minimums, possibly due to factors like youth wages. Manufacturing and Transportation sectors generally showed better matching between bargained and earned wages.

These findings highlight the complex relationship between collective bargaining agreements and actual wage outcomes. They suggest that the effectiveness of collective bargaining in setting wage standards varies considerably across national and sectoral contexts. Factors such as bargaining coverage, enforcement mechanisms, and sector-specific characteristics play crucial roles in determining the alignment between negotiated and actual wages. The study underscores the need for nuanced approaches to labor market policies and collective bargaining practices, taking into account national and sectoral specificities. Future research could further explore the reasons behind these variations and the mechanisms that lead to better matching between bargained and earned wages.

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Appendix

Table A1. WP5 CBAs titles

<p>KolektivnÃ- smlouva vyÃjÃjÃ-ho stupnÃ, sklenÃjÃTMstvÃ- ESP Patronal Association of the Medium Distribution and Supermarkets of Castilla y LeÃ³n (PAMEDISCALE), ESP Association for the Development of the Distribution of Castilla y LeÃ³n (ADD) - 2016 IV CONVENIO COLECTIVO ESTATAL DE INSTALACIONES DEPORTIVAS Y GIMNASIOS 2018 - 2019 - 2018 CONVENIO COLECTIVO PARA EL GRUPO DE EMPRESAS CENTRO FARMACÃ%UTICO DEL NORTE Y CENTRO DISTRIBUIDOR DEL NORTE PARA LOS AÃ±OS 2016-2017-2018-2019-2020 - 2016 ESP National Federation of Perfumers and Drugstores of Spain (FENPYDE), ESP National Federation of Herbdontic Associations (FENADIHER) - 2017 CONVENIO COLECTIVO ESTATAL PARA LAS EMPRESAS DEDICADAS AL COMERCIO DE FLORES Y PLANTAS, 2018 - 2020 - 2018 VIII CONVENIO COLECTIVO SECTORIAL DE ÃMBITO ESTATAL DE LAS ADMINISTRACIONES DE LOTERÃAS, 2019 - 2017 CONVENIO COLECTIVO DE HOSTELERIA DE BIZKAIA, AÃ±os 2018-2020 - 2018 ESP National Association of Large Distribution Companies (ANGED) - 2017 ESP BLADE, ESP ANEPA, ESP ASPREN - 2017 ESP Spanish Confederation of Gambling (CEJ), ESP Spanish Bingo and Random Game Federation (FEJBA) - 2017 CONVENIO COLECTIVO ESTATAL DE INDUSTRIAS CÃRNICAS, 2018 - 2020 - 2018 CONVENIO COLECTIVO DE ALTADIS, S.A.U., IMPERIAL TOBACCO ESPAÃA, S.L.U., Y TABACALERA, S.L.U. 2015 2020 - 2015 CONVENIO COLECTIVO DEL GRUPO DE EMPRESAS JD-SPRINTER , 2017 - 2020 - 2017 ESP ALDEFE Spanish Association of Refrigeration, Logistics and Distribution Companies - 2018 ESP ANEPCCA National Association of Environmental Health Companies - 2017 ESP FENIL State Federation of Dairy Industries - 2017 CONVENIO COLECTIVO DE TRABAJO PARA PELUQUERÃAS, INSTITUTOS DE BELLEZA Y GIMNASIOS 2018 - 2020 - 2018 EST Eesti Perearstide Selts EST Estonian Hospitals Association, EST Estonian Ambulance Association - 2017 EST Association of Automobile Companies - 2017 FRA National Federation of Retail Textile Stores - 2004 ccnl industria della carta e cartone, cellulosa, pasta legno, fibra vulcanizzata, aziende cartotecniche e trasformatrici della carta 2017-2019 - 2017 ccnl dipendenti da aziende dei settori pubblici esercizi, ristorazione collettiva e commerciale e turismo 2018-2021 - 2018 ccnl dipendenti aziende esercenti produzione cemento, calce e suoi derivati, gesso e relativi manufatti 2016-2018 - 2016 ccnl lavoratori cooperative esercenti attivitÃ settore taxi,radio taxi e settori strumentali e collaterali al trasporto pubblico locale non di linea 2015-2019 - 2015</p>

ccnl area tessile-moda chimica-ceramica - 2018 - 2017
 ccnl-dipendenti-dalle-aziende-metalmecaniche-e-della-installazione-di-impianti-2019- - 2016
 CCNL Ormeggiatori e barcaioli dei porti italiani (2019) - 2016
 ccnl-per-il-personale-dipendente-da-societ-e-consorzi-concessionari-di-autostrade-e-trafori-2016 - 2016
 CCNL Industria alimentare 2015-2019 - 2015
 ccnl radio piattaforme 2017-2020 - 2017
 METALMECCANICA - Piccola e media industria - Confapi CONTRATTO COLLETTIVO NAZIONALE DI LAVORO 29 LUGLIO 2013 - 2017
 NLD Association National Organization DIBEVO, NLD Dutch Piano and Musical Instrument Industry (NPMB) - 2017
 NLD Trade organizations Arcares and Z-org (ActiZ) - 2018
 NLD Transport and Logistics Netherlands (TLN), NLD Vertical Transport Association - 2017
 NLD Employers Association Publishing Company - 2017
 NLD Association of Chain Stores in Food (VGL) - 2017
 NLD Trade center, professional organization of retailers, in Woerden, NLD Dutch Association of Cooperative Employers in Utrecht - 2017
 Cao Reisbranche 2018-2019 - 2018
 NLD Association of Drugstore and Related Branch Companies (VDF), NLD Royal Dutch Drugstore Association - 2017
 NLD Association of Laboratory Dental Technicians in the Netherlands (VLHT) - 2018
 NLD Industry Association Uitvaartbedrijven (BGNU) - 2018
 NLD BOVAG - 2018
 Cao papierindustrie 2018-2020 - 2018
 NLD Industry Association Entrepreneurs in Childcare - 2018
 CAO voor Tankstations en Wasbedrijven 2017-2019
 CAO Openbaar Vervoer 2018-2020
 Cao Foodservice Groothandel levensmiddelen 2017-2019
 Cao Elektronische detailhandel 2018-2019
 NLD FME-CWM (FME-CWM) - 2018
 NLD INretail, NLD Dutch Jewellery and Watchmaking Industry (NJU), NLD Association of Retailers in the Perfumery Trade (BODEPA), NLD Association of Chain Stores in Textiles (VGT) - 2018
 NLD Central Association of Furniture Manufacturers - 2018
 Recreatie 2019-2020
 CAO Grafimedia 2018-2020 - 2018
 cao schilders 2016-2020
 CAO Horeca KHN 2018-2019 - 2018
 NLD Association of Retailers in the Do-It-Yourself Industry (VWDHZ) - 2017
 CAO Apotheken 2017-2019 - 2017
 Acordo coletivo entre a LACTICOOP - UniÃŁo de Cooperativas de Produtores de Leite de Entre Douro e Mondego, UCRL e outra e o Sindicato dos Profissionais de LactiÃŁnios, AlimentaÃŁo, Agricultura, EscritÃŁrios, ComÃŁrcio, ServiÃŁos, Transportes RodoviÃŁrios, MetalomecÃŁnica, Metalurgia, ConstruÃŁo Civil e Madeiras e outro - RevisÃŁo global 2018 - 2018
 Acordo coletivo entre a MEO - ServiÃŁos de ComunicaÃŁes e MultimÃŁdia, SA e outras e o Sindicato Nacional dos Trabalhadores das TelecomunicaÃŁes e Audiovisual - SINTTAV e outros - RevisÃŁo global 2018 - 2018
 Acordo coletivo entre a Douro Azul - Sociedade MarÃŁtimo -TurÃŁstica, SA e outras e a FederaÃŁo de Sindicatos dos Trabalhadores do Mar - FESMAR - RevisÃŁo global 2018 - 2018

PRT National Association of Importers/Warshousers and Retailers of Chemical and Pharmaceutical Products (NORQUIFAR) - 2018

PRT Mutualista AÃ§oreana de Transportes MarÃ-timos S.A., PRT Navegar - Portuguese International Navigation Company, PRT Vieira & Silveira - Maritime Transport, PRT SACOR MARITIMA S.A., PRT Transinsular - Island Maritime Transport - 2018

PRT National Association of Wool Manufacturers (ANIL), PRT National Association of Home Textile Industries (ANIT-LAR) - 2018

PRT Food Products Distributors Association (ADIPA) - 2018

PRT National Association of Food Merchants and Industrialists (ANCIPA) - 2017

PRT Food Products Distributors Association (ADIPA) - 2018

PRT Business Association of the Electrical, Household Appliance, Electronics and Information and Communication Technology Sectors (AGEFE) - 2018

PRT Portuguese Association of Tanneries - 2017

PRT Association of Chemical and Pharmaceutical Products Wholesalers - 2018

PRT National Association of Wool Manufacturers (ANIL), PRT National Association of Home Textile Industries (ANIT-LAR) - 2018

PRT Portuguese Association of Chemical Companies, PRT Portuguese Association of Glues, Adhesives and Sealants, PRT Association of Cosmetics, Perfumery and Body Hygiene Manufacturers, PRT Association of Soap, Detergent and Conservation and Cleaning Products Manufacturers, PRT National Association of Tyre Retreading Manufacturers, PRT Portuguese Paint Association, PRT Portuguese Plastics Industry Association, PRT Portuguese Association of Rubber Manufacturers, PRT National Association of Plant Protection Industry - 2018

PRT Association of Flat Glass Transformers of Portugal - 2018

PRT National Passenger Transport Association (ANTROP) - 2018

PRT National Passenger Transport Association (ANTROP) - 2018

PRT Portuguese Pharmaceutical Industry Association (APIFARMA) - 2017

PRT Portuguese Association of Paper and Board Manufacturers (FAPEL) - 2017

PRT Portuguese Association of Paper and Board Manufacturers (FAPEL) - 2017

PRT MEO - ServiÃ§os de ComunicaÃ§Ãµes e MultimÃ©dia, S.A PRT MEO - ServiÃ§os de ComunicaÃ§Ãµes e MultimÃ©dia, S.A, PRT UCS - CUIDADOS INTEGRADOS DE SAÃ§DE S.A., PRT Portugal Telecom - 2018

PRT National Association of the Clothing, Apparel and Fashion Industries (ANIVEC/APIV) - 2018

PRT National Association of Food Merchants and Industrialists (ANCIPA) - 2018

PRT Portuguese Association of Hotels, Restaurants, and Similar - 2018

PRT Portuguese Association of Hotels, Restaurants, and Similar - 2018

Table A2. CBAs per country and sector

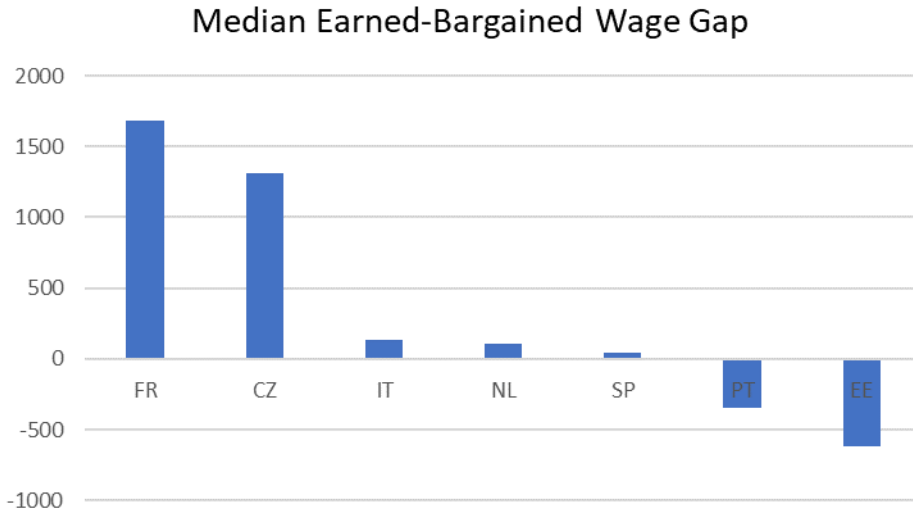
	All sectors						Total
	Manuf acturi ng	Wholesale and retail trade; repair of motor vehicles and motorcycle s	Transport ation and storage	Accommoda tion and food service activities	Human health and social work activities	Arts, entertain ment and recreatio n	
CZ	1	0	0	0	0	0	1
EE	0	0	0	0	0	1	1
ES	4	6	0	1	2	4	17
FR	1	0	0	0	0	0	1
IT	7	0	3	1	0	0	11
NL	6	9	3	3	5	0	26
PT	14	4	5	2	0	0	25
Total	33 40.24	19 23.17	11 13.41	7 8.54	7 8.54	5 6.10	82 100.

Table A3 WP5 SES2018 sectors per country

Country code	Economic Sector in NACE Rev. 1.1 (2002 and 2006) and NACE Rev. 2 (2010)						Total
	XC	XG	XH	XI	XR	XS	
CZ	619315 61%	178807 18%	154636 15%	19458 2%	31999 3%	13011 1%	1017226 100%
EE	37403 53%	15445 22%	8133 12%	3396 5%	4267 6%	1760 3%	70404 100%
ES	44098 57%	12759 16%	9021 12%	3947 5%	4233 5%	3592 5%	77650 100%
FR	32156 42%	20305 27%	10978 14%	2080 3%	9178 12%	1814 2%	76511 100%
IT	22636 43%	11303 21%	9381 18%	5307 10%	2357 4%	2217 4%	53201 100%
NL	11433 38%	11024 37%	4712 16%	1377 5%	728 2%	881 3%	30155 100%
PT	23903 57%	6025 14%	5527 13%	4222 10%	1061 3%	1009 2%	41747 100%
Total	790944	255668	202388	39787	53823	24284	1366894

58% 19% 15% 3% 4% 2% 100.00

Figure A1: Median Earned-Bargained Wage Gap



Source: Own elaboration using WI CBA database and SES

A2: 2018 Bargained (Mean and Max.) vs. Earned (Max.) Wage Roof

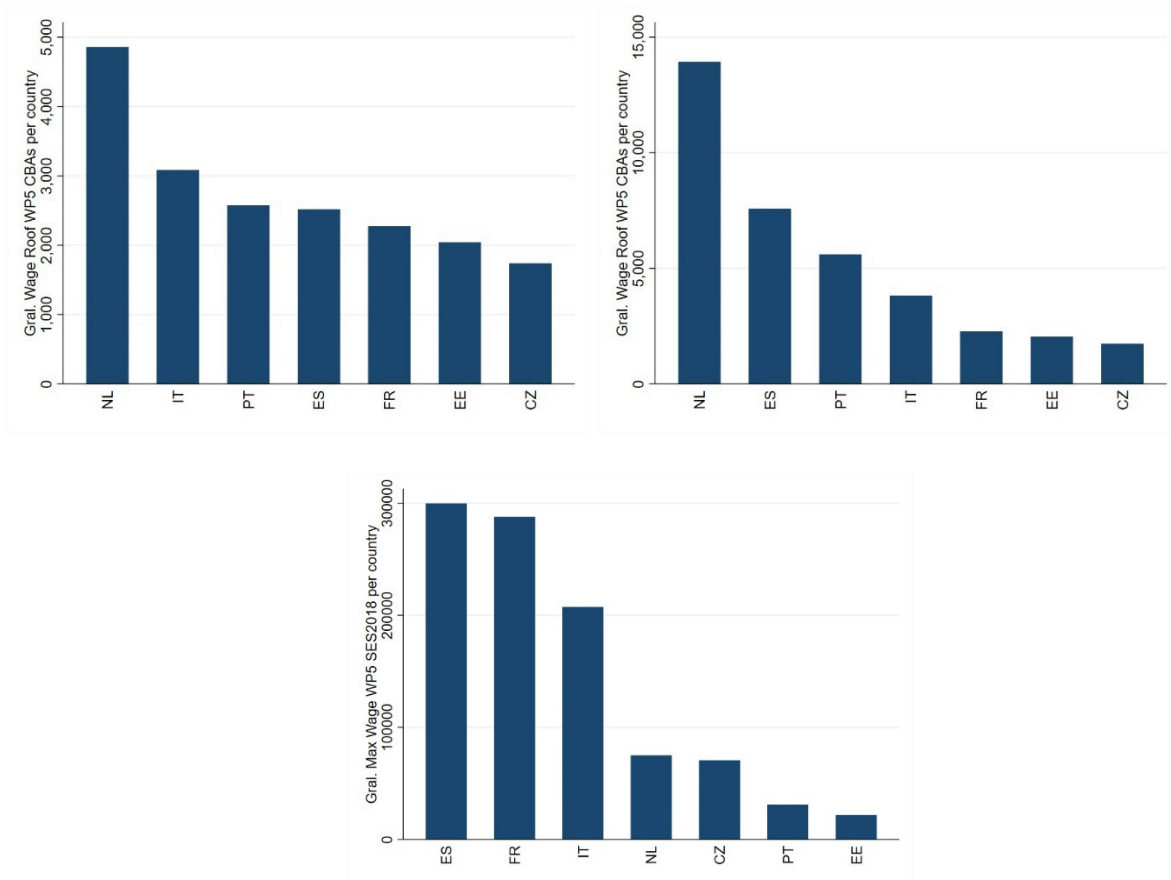


Figure A3. SES 2018 Median Earned Wages by sector, selected countries

