



**Gender pay gap 2020**  
**English version**

# **Löneskillnaden mellan kvinnor och män 2020**

Vad säger den officiella lönestatistiken?

**Medlingsinstitutet**

Swedish National Mediation Office



# Gender pay gap

**The gender pay gap has narrowed every year since 2007. Women's average monthly wage in 2020 was SEK 34,200, which is 90.2 per cent of the men's average of SEK 37,900. In other words, the pay gap was 9.8 per cent. This is demonstrated by the Swedish National Mediation Office's processing of wage structure statistics.**

**Differences in wages** may be due to a large number of different factors. Taking into account the explanatory factors available from the statistics, using standard weighting, an unexplained difference of 4.4 per cent remained between the sexes for 2020.

One important explanation for the difference in average wage between the sexes is a gender-segregated labour market where women and men still largely work in different occupations, and where these occupations have different wage levels.

The pay gap has narrowed both in the short and long term: dropping 0.1 percentage points between 2019 and 2020, and 6.5 percentage points between 2005 and 2020. The most significant narrowing of the gap between 2019 and 2020 took place in the regions. There, the unweighted difference decreased by 0.9 percentage points.

This report begins with an analysis of the gender pay gap in 2020 – that is, during the coronavirus pandemic that shook Sweden's economy and labour market. The figures presented must be analysed with caution, as a number of factors make them uncertain this year.

Both the standard-weighted and the average (unweighted) wage differences are presented and the different sectors are analysed separately. Corresponding figures for the period 2005–2020 are also presented.

In the second chapter of the report, we examine changes in the structure of the labour market from a gender perspective on the basis of wage structure statistics and we study the specific effects of the pandemic.

## 1.1 The official wage statistics and pay gap

The Swedish National Mediation Office is responsible for the content and scope of the official wage statistics. The statistics can roughly be broken down into three parts: economy wage statistics, wage structure statistics and EU statistics.

The National Mediation Office, instituted in the year 2000, is tasked with analysing wage trends from a gender equality perspective.<sup>1</sup> It has done so annually since its first yearly report in 2001. Since 2009, the analysis is published in a separate report, alongside the report on the wage structure statistics for the entire economy.

Wage differences between men and women have been analysed in the reports based on the official wage structure statistics, which are the best suited statistics for this purpose.

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1 Section 4, first paragraph of the Ordinance (2007:912) regarding instructions for the Swedish National Mediation Office.

### 1.1.1 Wage structure statistics

The wage structure statistics are an annual study based on individual information. The objective of the study is to provide comparable information on the wage structure on the labour market. Wage structure statistics allow researchers to analyse wage levels, wage structure and wage developments.

The wage structure statistics include information on wages, gender, age, working hours and occupation according to the Swedish Standard Classification of Occupations (SSYK). Information on level of education obtained from Statistics Sweden's education register is linked to the wage structure statistics.

#### Detailed information: Facts about the wage structure statistics

The wage structure statistics are an annual study. The measurement period is one single month – September for the private sector and the state, and November for municipalities and regions. This means that the statistics are sensitive to when the collective bargaining wage increases occur and if there has been enough time for the new wages to have been paid at the time of measurement.

The wage structure statistics are published in May the year after the data collection year and are broken down by sector (private sector, municipalities, regions and the state; the private sector is broken down into blue-collar and white-collar employees). In June of the same year, a compilation is published for the whole labour market, where hourly wages for blue-collar employees are translated into monthly salaries.

The study is a census survey for municipalities, regions and the state. For the private sector, the wage structure statistics are a sample survey that comprises around 50 per cent of the total number of employees in the private sector. The target population in the survey consists of individuals aged 18-66 years with permanent and temporary employment and active business operators/partners with wages and terms of employment according to an agreement.

All companies with at least 500 employees are included in the survey each year. The selection, consisting of around 8,700 companies, organisations and foundations, is made through a simple random sample. Under normal circumstances, around 20 per cent of the companies change from year to year. It is the small and medium-sized enterprises that are replaced in the survey, since companies with at least 500 employees are always included.

The selection is stratified by company size (seven size categories) and industry (83 industry groups) in 530 strata, where the individual items in each respective stratum are allocated the respective stratum's index factor. Using this index factor, calculations can be made of the wage structure for Sweden as a whole.

The wage structure statistics for the whole labour market apply the concept of monthly salary. The measurement of monthly salary includes several different wage components where all wages are indexed to full time. Besides fixed salary, fixed wage supplements and a large number of variable wage supplements are also included. A management supplement is an example of a fixed wage supplement. Variable supplements often depend on the placement of the

working hours (such as supplements for uncomfortable working hours or shift work). Other variable supplements include supplements for higher risk, dirt and heat.

The wage structure statistics do not include any information on collective agreement affiliation for the employee or information on so-called lump sum payments or bonuses and other irregular compensation.

### 1.1.2 Difference between wages and income

It is important to note the difference between wages and income. Wages are compensation for work performed during a specific unit of time, such as an hour or a month. Wages are presented in the wage structure statistics as monthly wages, and part-time wages are translated into full-time wages to enable comparison.<sup>2</sup>

Besides wages, income can for example include transfers and capital gains. Income includes compensation that is received during a specific period of time, usually one year. In contrast to wages, income is accordingly affected by whether one works part or full time, overtime or is absent from work. The term income is not covered by the National Mediation Office's official wage statistics.

### 1.1.3 Monthly wage measured for comparison

The gross wage measurement for monthly wage includes several different wage components. Besides contractual fixed wage, fixed wage supplements and a large number of variable wage supplements are also included.<sup>3</sup> The term basic wage includes contractual wage including fixed supplements.

When analysing the gender pay gap using the wage structure statistics, the monthly wage measurement is used.

The choice of measurement for the analysis affects the calculated gender pay gap. Including various wage increments, such as increments for being on-call or working uncomfortable hours, also affects the size of the wage difference. Bonuses and other irregular compensation are additional examples of factors that can affect the pay gap.<sup>4</sup> The Swedish National Mediation Office's report on the pay gap for 2010 took a special look at how different wage supplements affect the gender pay gap.<sup>5</sup>

### 1.1.4 The classification of occupations does not capture everything

In 2014, a revised Swedish Standard Classification of Occupations (SSYK 2012) was introduced. The classification is significantly more detailed than its predecessor, although certain occupations are still bundled together into groups. The classification does not for obvious reasons capture other wage-influencing factors beyond occupation, such as individual productivity or social skills.

2 The calculation method to translate hourly wages to monthly wage varies between the public and private sectors. In the public sector, the wage is multiplied by 165. In the private sector, the hourly wage is multiplied by the number of hours reported as corresponding to a full-time position.

3 Annual incentive systems such as bonuses, profit sharing or the allocation of shares/options are not included in the wage structure statistics, nor is overtime pay. For a more detailed description of the wage structure statistics, see "Avtalsrörelsen och lönebildningen 2019" [Collective bargaining negotiations and wage formation 2019], (Swedish National Mediation Office, 2020).

4 See Granqvist "Inte bara lön" [Not just wages] (Saco, 2009) for a study of wage benefits, bonuses and wage differences between male university graduates and female university graduates.

5 "Vad säger den officiella lönestatistiken om löneskillnaden mellan kvinnor och män 2010", [What do the official wage statistics say about the gender pay gap 2010] (Swedish National Mediation Office, 2011).



### Detailed information: Swedish Standard Classification of Occupations (SSYK 2012)

Since the 2014 survey (published in 2015), the wage structure statistics' occupation codes are structured according to the Swedish Standard Classification of Occupations (SSYK 2012). SSYK 2012 is an updated version of the older occupation classification, SSYK 96.

SSYK 2012 is based on the International Standard Classification of Occupations ISCO-08, which is drafted and published by the UN agency, the International Labour Organization (ILO). ISCO-08 is in turn an update of its predecessor ISCO-88 and the EU variant ISCO-88 (COM).

The goal has been to achieve an occupation classification that better reflects today's occupational structure. The classification is also meant to meet the requirements of international reporting and comparability as far as possible.

SSYK is primarily developed to classify people according to the work they do. There are multiple users of SSYK, including Statistics Sweden, the Swedish Public Employment Service and the Swedish National Mediation Office.

Like SSYK 96, SSYK 2012 has a hierarchical structure with four levels. The first numerical level indicates occupational area, the second indicates main group, the third occupational group and the fourth the occupation. The number of main groups has increased in SSYK 2012 from 27 to 46, the number of occupational groups from 113 to 147, and the number of occupations from 355 to 429. The number of occupational areas is unchanged at 10. See Appendix 1 for a more detailed description.

The changes between SSYK 2012 and its predecessor SSYK 96 are significant, as classes have been added, aggregated, divided, moved or removed. Some classes have an unchanged content, but may have been given a new code and/or name. Occupation data from SSYK 2012 can generally not be translated to the old occupation standard SSYK 96 or vice versa.

The publication SSYK 2012 is available on Statistics Sweden's website [www.scb.se/ssyk](http://www.scb.se/ssyk).

#### 1.1.5 Alternative statistical methods

In addition to studying differences in average wage between men and women, alternative methods can also be used. These methods take into consideration how men and women are divided with regards to different wage-influencing factors. The size of the pay gap in such calculations is dependent on what variables are included. The pay gap that remains after having taken these variables into account, referred to as the unexplained pay gap, is the pay gap that cannot be explained with the variables available.

The National Mediation Office uses two methods, standard weighting and regression analysis, to take into account factors that affect the calculation of the wage differences between men and women.

### Standard weighting and regression analysis

**Table B2 in Appendix 2** shows how the individuals in the wage structure statistics are distributed according to various wage-influencing factors. The table shows, for example, that women have a higher education than men, that men and women work in different occupations, that women are somewhat older and that it is more common for women to work part time. To get an alternative view of the relationship between men's and women's wages, consideration can be given to such differences. Two ways of doing this are through so-called standard weighting or regression analysis.

The **standard weighting** that is used by the Swedish National Mediation Office means that wage amounts for different groups are calculated by multiplying the number of employees (men and women) by the average wage for men and women, respectively.

The groups are formed by combinations of four age groups, two education categories, two working hour groups, two sector groups and within each occupation (SSYK 2012 at the four-digit level consists of 429 occupations). The various wage amounts are then added. By subsequently dividing the wage amount for women by the wage amount for men, the standard weighted wage ratio is obtained.

An alternative to standard weighting is regression analysis. Regression analysis of questionnaire and register data is the most common empirical method used in labour market research to study differences in outcomes between individuals or groups. Regression analysis can be used to study the relationship between one factor (such as gender) and an outcome variable (such as wage) and at the same time take other factors into account (such as occupation, sector, education).

When wages are analysed by means of regression analysis, a model is first established that includes different factors that are assumed to affect the size of the wages, such as gender. Then, so-called coefficients are calculated that show how much impact the various factors (explanatory variables) have on the wages. To avoid the significance of gender being determined by men and women working in, for example, different sectors or occupations that have wages at different levels, additional explanatory variables are included in the model. By including these, one can calculate the size of the gender pay gap, given the level of the other variables. The choice of explanatory variables is justified by access to data and economic theory.

A more detailed description of how regression analysis is used in this chapter is provided in Appendix 3.

#### 1.1.6 Some wage-influencing factors are missing in the statistics

The wage structure statistics contain a wealth of information about employees and their places of work. However, there are obviously factors beyond what can be found in the statistics which might influence a person's wage, such as absence from work or various aspects of individual productivity. Wages are also based on other information that is missing in the statistics, such as the requirements for a position in the form of qualifications, expertise, motivation and other characteristics that employees or applicants have.

### 1.1.7 Unexplained not the same as unfounded

It is not possible to use standard weighting or regression analysis to say whether unfounded pay gaps exist. The unexplained gap is only unexplained in a statistical sense.

An unfounded pay gap is defined in this context as a difference in outcome that is due solely to gender. In other words, an unfounded gender pay gap exists if differences in wages remain when consideration has been taken to all systematic differences in characteristics between the sexes. In practice, this is basically impossible, as not all possible factors can be captured in statistics.

Because of this, it is difficult to determine if differences in outcome between men and women are due to relevant differences in characteristics – that cannot be observed in the statistics, but are clear when the wage is set – or due to discrimination.<sup>6</sup> Standard weighting and regression analysis can therefore only indicate the connection between gender and wage outcome after consideration has been given to differences in a number of different observable characteristics. They cannot, however, indicate a causal relationship, i.e. the analysis cannot prove that the remaining pay gap (the “unexplained pay gap”) between the sexes depends solely on gender.<sup>7</sup>

Since it cannot be shown that the remaining wage difference is solely due to gender, it is also not possible to say if wage discrimination is occurring according to the Discrimination Act. Applying different wage terms for men and women who do the same or similar work at the same employer is illegal unfair treatment. But based on the official wage structure statistics, no determination can be made as to whether one occupation or job is comparable to another.

A more detailed discussion on discrimination can be found in Chapter 3.

## 1.2 How large was the gender pay gap in 2020?

**Table 1.1** shows that for men and women alike, the highest average wages were found among white-collar workers in the private sector, while blue-collar workers in the private sector had the lowest average wages.

### 1.2.1 Unweighted difference in wages

The table shows average wages<sup>8</sup> for men and women, and women’s wages as a percentage of men’s (the unweighted pay gap).

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6 Qualitative methods such as interviews of employees or employers also cannot with certainty ascertain whether discrimination has occurred. An individual may feel that he or she has been discriminated against without that being the case. Correspondingly, an individual can be discriminated without being aware of it. Employers in turn rarely voluntarily say that discrimination takes place at the workplace.

7 A causal connection exists if it is the individual’s gender that determines the wage. The existence of a correlation (connection) between gender and wages need not mean that gender determines the wage level. This connection may rather be attributable to other factors that the analysis has not taken into consideration.

8 The average wage (or mean wage) is the sum of the wages in a group divided by the number of people in the group.



Table 1.1 Average wages \* and women's wages as a percentage of men's wages, 2020

	Women	Men	Total	Women's wages as a percentage of men's wages	Difference in per cent
All sectors	34,200	37,900	36,100	90.2	9.8
Private sector	34,400	38,000	36,600	90.5	9.5
Blue-collar employees	27,300	30,500	29,400	89.5	10.5
White-collar employees	40,300	47,600	44,400	84.7	15.3
Public sector	34,000	37,200	34,900	91.4	8.6
Municipalities	32,000	32,600	32,200	98.2	1.8
Regions	37,100	45,200	38,900	82.1	17.9
State	38,600	41,100	39,800	93.9	6.1

\*The monthly wages are rounded to the nearest SEK 100.

Source: Swedish National Mediation Office and Statistics Sweden.

As the table shows, women had an average of 90.2 per cent of men's salaries in 2020, which means that the gender pay gap was 9.8 per cent (100-90.2). There was a large variation between different sectors. The largest pay gap was in the regions: 17.9 per cent. In the regions, there is an uneven distribution of men and women across occupations. Of the many women who work there, a large number of them are assistant nurses, while a large proportion of the few men who work there are doctors. The second-largest pay gap was among white-collar employees in the private sector: 15.3 per cent. The pay gap was smallest in the municipalities, amounting to 1.8 per cent. The second-smallest pay gap – 6.1 per cent – was in the state. For blue-collar employees in the private sector, the pay gap was 10.5 per cent.

### 1.2.2 An illustration of gender composition

The fact that men and women work in different occupations and that these occupations have different wage levels is an important explanation for why men's and women's wages differ. The variation in gender composition at occupation level in relation to the wage level and gender pay gap can be illustrated graphically in a "bubble diagram" (**diagram 1.1**).

The diagram is constructed by showing women's wages as a percentage of men's for each occupation (y-axis) against the average wage level (x-axis). Each observation (occupation) in the diagram is then illustrated by a circle, the size of which represents the number of employees in the occupation.

Lastly, the gender composition is described by the different colours used for the surface of the different circles, depending on the proportion of men and women in the occupation. Female-dominated occupations are indicated in yellow,<sup>9</sup> male-dominated occupations in purple, and gender-neutral occupations with at most a 40-60 split in grey.

The variables that form the basis for the diagram are obtained from the wage structure statistics in the statistics database (published on Statistics Sweden's website).<sup>10</sup> Not all occupations are included in the data material due to uncertainty in the estimates.<sup>11</sup> In total, there is information on 260 different occupations. Not all circles

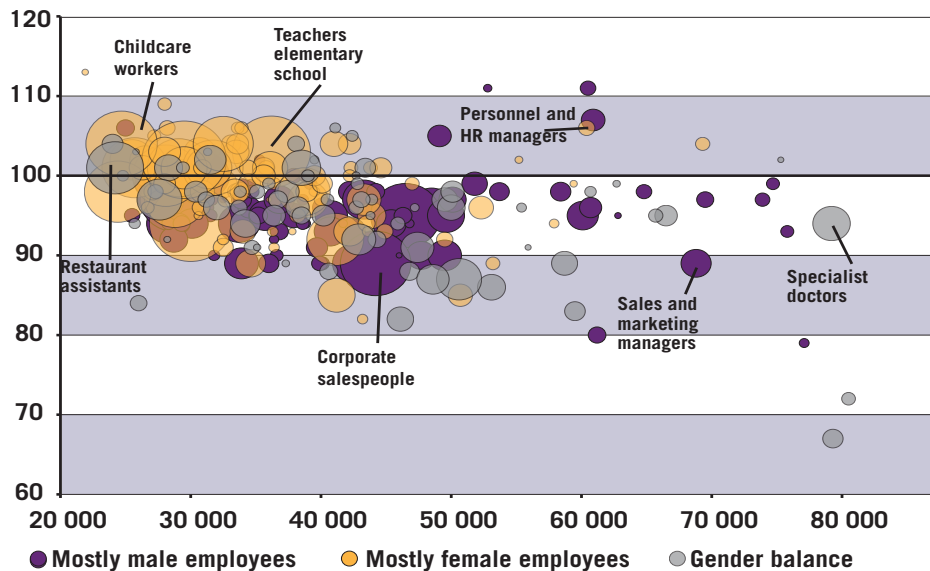
9 Predominantly female occupations are defined as occupations with more than 60 per cent women.

10 All data can be found in Statistics Sweden's database: [http://www.scb.se/sv/\\_/Hitta-statistik/Statistikdatabasen/](http://www.scb.se/sv/_/Hitta-statistik/Statistikdatabasen/)

11 Information for occupations that contain fewer than 100 observations of either gender is not published in the statistics database. If the uncertainty (mean error in relation to mean value) is too large with regard to the wage estimate, the observation is not presented. Observations are also not presented if an individual company can be discerned.

are visible in the diagram, as they partially overlap each other. For technical reasons, the x-axis showing women's wages as a percentage of men's wages and the y-axis with wage levels have been truncated (60 to 120 per cent, and SEK 20,000 to SEK 80,000, respectively).

Diagram 1.1 Women's wages as a percentage of men's, average wage, number and ratio of women for the respective occupation, the entire economy, 2019



Source: Swedish National Mediation Office and Statistics Sweden.

**Diagram 1.1** shows that the majority of the occupations have an average salary of less than SEK 40 000 per month. The accumulation to the left of the diagram makes it difficult to distinguish individual occupations but, for example, the yellow circle to the far left just over the 100 line represents the occupation “childcare workers”. The average salary for the occupation is SEK 24,700 per month, the fact that the circle is somewhat above the line means that women have a higher average wage than men (4 per cent higher), and the number of employees is 89,700. To take another example, the large purple circle beneath the 100 line in the middle of the diagram comprises “corporate salespeople”. In this occupation the average monthly wage is SEK 44,200, women’s wages are on average 11 per cent lower than men’s, and the number of employees is 87,100.

There are more circles (professions) in yellow at the lower average wages, which means that many female-dominated professions have lower wages than male-dominated professions.

The fact that most of the occupations are below the 100 line means that women’s wages in most of the occupations are lower than men’s on average. It also appears as if the higher the salary, the larger the gender pay gap in the respective occupation. In other words, there appears to be a negative covariation between women’s wages as a percentage of men’s and the level of average wages.

One occupation that clearly goes against this pattern is “Personnel and HR managers”, the yellow circle in the top middle of the diagram. The average wage in this occupation is SEK 60,400 per month, women’s wages are 106 per cent of men’s, and the number of employees is 4,800.

The calculations are based solely on average wage differences. Accordingly, in the calculations for diagram 1.1, consideration has not been given to men and women being distributed differently between sectors, nor have potential differences in company-specific factors such as industry, company size, etc. been taken into account.

### 1.2.3 Difference after standard weighting

The standard weighting used in **table 1.2** takes into account the fact that men and women work in different occupations and sectors, have different levels of education, different working hours<sup>12</sup> and different ages (the standard weighting method is described in more detail in the fact box in section 1.1.5). After standard weighting, women's wages as a percentage of men's increase to 95.6 per cent. This means that the unexplained pay gap that remains is 4.4 per cent for the entire labour market in 2020.

Table 1.2 Women's wages as a percentage of men's wages in 2020

	Unweighted percentage	Unweighted difference in per cent	Standard weighted percentage	Standard weighted difference in per cent
<b>All sectors</b>	90.2	9.8	95.6	4.4
<b>Private sector</b>	90.5	9.5	94.5	5.5
<b>Blue-collar employees</b>	89.5	10.5	96.1	3.9
<b>White-collar employees</b>	84.7	15.3	93.4	6.6
<b>Public sector</b>	91.4	8.6	98.3	1.7
<b>Municipalities</b>	98.2	1.8	99.8	0.2
<b>Regions</b>	82.1	17.9	96.9	3.1
<b>State</b>	93.9	6.1	96.3	3.7

Source: Swedish National Mediation Office and Statistics Sweden

After standard weighting, the regions no longer have the largest pay gap in 2020. The largest unexplained pay gap, 6.6 per cent, is found among private sector white-collar employees. The regions' unexplained pay gap is 3.1 per cent after standard weighting (compared with an unweighted pay gap of 17.9 per cent).

The smallest unexplained pay gap, 0.2 per cent, is in the municipalities. Employees in the private sector have an unexplained pay gap of 3.9 per cent. Among state employees, the unexplained pay gap is 3.7 per cent.

12 In the wage structure statistics, all wages are adjusted upwards to full-time wages. The variable of working hours is included in standard weighting and regression analysis because part-time employees can have a different salary than full-time employees, even calculated per hour.

### 1.3 Gender pay gap developments

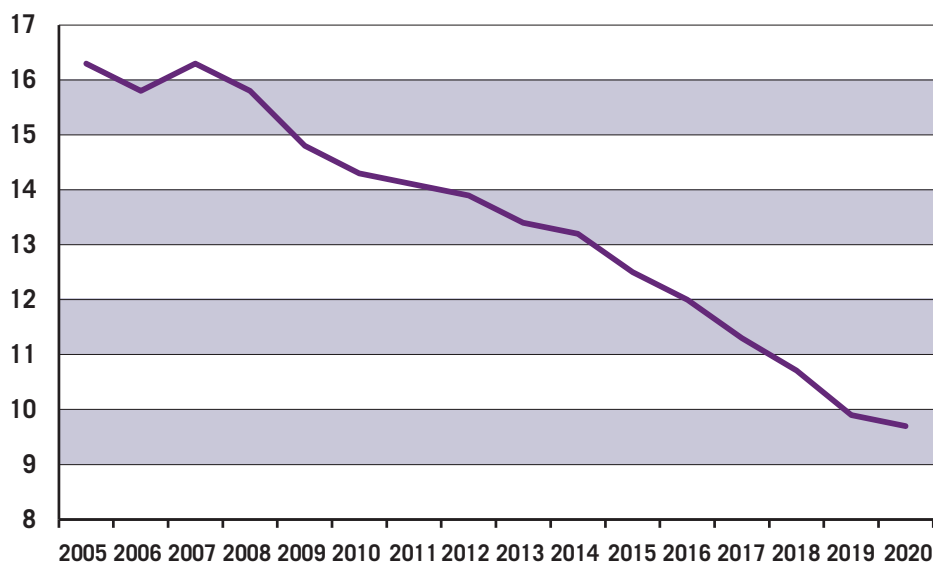
Between 2019 and 2020, the unweighted gender pay gap narrowed by 0.1 percentage points. Women's average wage increased by SEK 700 (an increase of 2.1 per cent) and men's average wage increased by SEK 700 (an increase of 1.9 per cent). Women's average wage therefore increased more than men's in percentage terms.

The average rates of increase vary between the sectors. The largest increase belongs to women in the municipalities, with 2.6 per cent, and the smallest increase belongs to men employed in the regions, with 0.9 per cent.<sup>13</sup>

The rate of increase for the individuals that can be followed in the statistics between 2019 and 2020 was higher for women than for men: 2.4 per cent and 2.0 per cent respectively. Developments must be analysed with particular caution this year owing, among other things, to the extension of collective agreements in 2020, which in turn affected the timing of pay reviews for certain groups during the year.

The pay gap has clearly been shrinking in recent years. **Diagram 1.2** shows the development between 2005 and 2020.

Diagram 1.2 Change in gender pay gap



Source: Swedish National Mediation Office and Statistics Sweden.

Women's average wage has increased by SEK 12,100 or 54.8 per cent during the period, which equates to an average annual increase of 3.7 per cent. During the same period, men's average wage has increased by SEK 11,500 or 43.6 per cent. This equates to an average annual increase of 2.9 per cent.

**Table 1.3** shows the unweighted gender pay gap between 2005 and 2020.

13 One explanation for the outcome is a revision of occupational codes whereby certain white-collar occupations have been classified as blue-collar occupations and vice versa, which has made the outcome for white-collar employees appear low. The outcome is also affected by the selection rotation, where certain companies in the sample are replaced from one year to another.

Table 1.3 Gender pay gap (unweighted) 2005–2020

	2005	2006	2007	2008	2009	2010	2011	2012	2013
<b>All sectors</b>	16.3	15.8	16.3	15.8	14.8	14.3	14.1	13.9	13.4
<b>Private sector</b>	14.7	14.1	14.0	14.1	13.4	12.8	12.8	12.2	12.1
<b>Blue-collar employees</b>	11.7	11.2	10.3	10.9	10.0	10.0	9.9	9.1	9.5
<b>White-collar employees</b>	22.7	21.9	22.1	21.9	20.8	20.8	20.6	19.9	19.4
<b>Public sector</b>	16.6	16.3	17.0	15.9	15.1	14.6	14.1	14.1	13.4
<b>Municipalities</b>	8.4	8.4	9.0	7.7	6.6	6.1	6.1	6.2	5.8
<b>Regions</b>	28.6	28.0	27.6	27.3	26.9	26.5	26.0	25.0	23.8
<b>State</b>	14.3	12.8	12.7	12.4	11.3	10.7	9.4	8.9	8.2

	2014	2015	2016	2017	2018	2019	2020	Change 2005–2020
<b>All sectors</b>	13.2	12.5	12.0	11.3	10.7	9.9	9.8	-6.5
<b>Private sector</b>	12.2	11.9	11.9	10.9	10.2	9.4	9.5	-5.2
<b>Blue-collar employees</b>	10.4	10.3*	10.3*	10.0*	10.1*	9.7*	10.5*	-1.2
<b>White-collar employees</b>	18.6	18.3*	17.9*	17.1*	16.7*	15.5*	15.3*	-7.4
<b>Public sector</b>	13.1	12.0	10.7	10.1	9.9	9.3	8.6	-8.0
<b>Municipalities</b>	5.4	4.6	3.4	3.1	2.8	2.4	1.8	-6.6
<b>Regions</b>	23.6	22.4	21.1	20.6	20.0	18.8	17.9	-10.7
<b>State</b>	7.9	7.3	7.3	6.5	6.5	6.3	6.1	-8.2

\*Not comparable with years before 2014 due to changed classification of personnel category.

Source: Swedish National Mediation Office and Statistics Sweden

For blue-collar and white-collar employees in the private sector, comparisons should not be made with years prior to 2014, when their classifications changed.<sup>14</sup>

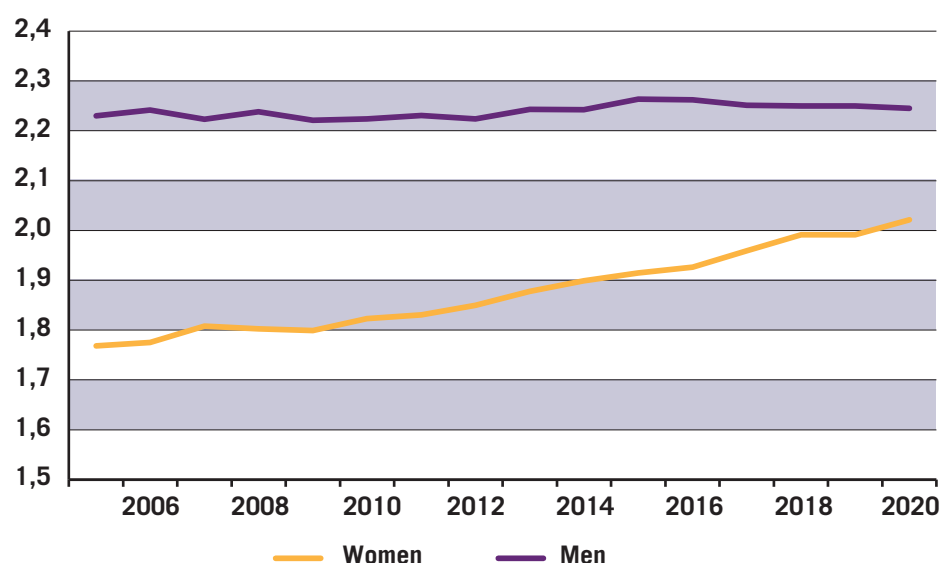
The rate at which the pay gap has narrowed differs between sectors, as shown in table 1.3. The largest change is in the regions, where women's wages moved closer to men's by 10.7 percentage points between 2005 and 2020. The second-largest change is the decrease among state employees, where the pay gap narrowed by 8.2 percentage points.

During this period, wage distribution has increased more among women than among men, as shown in **diagram 1.3**. This development can most likely be explained by reduced occupational segregation, meaning that more women are now found in high income occupations.<sup>15</sup> For example, more women are becoming managers. This is one of the compositional changes that may affect wage distribution.

14 In the study, the classification of personnel categories (blue-collar/white-collar employees) from 2014 was based on what occupation code the employees have. This has entailed structural changes for private sector blue-collar and white-collar employees, which affect the calculations of the pay gap.

15 See also section 1.4.3.

Diagram 1.3 Wage distribution trends for men and women 2005–2020  
Percentile quotient P90/P10



Source: Swedish National Mediation Office.

Wage distribution has been calculated by dividing the wage in the 90th percentile by the wage in the 10th percentile.<sup>16</sup> A quotient of two then means that the 10 per cent with the highest wages earn at least twice as much as the 10 per cent with the lowest wages.

**Table 1.4** shows women's wages as a percentage of men's after standard weighting during the same period.

Table 1.4 Gender pay gap (standard weighted) 2005–2020

	2005	2006	2007	2008	2009	2010	2011	2012	2013
All sectors	6.8	6.6	6.5	6.6	6.0	5.9	5.9	6.1	5.8
Private sector	8.3	8.1	7.8	7.9	7.3	7.3	7.2	7.4	7.0
Blue-collar employees	5.6	5.1	5.2	4.6	4.5	4.0	3.8	3.7	4.3
White-collar employees	9.8	9.7	9.5	10	9.1	9.3	9.2	9.6	8.6
Public sector	3.5	3.4	3.4	3.4	3.0	2.9	3.0	3.1	3.0
Municipalities	0.9	1.0	1.2	0.8	0.6	0.4	0.6	0.7	0.6
Regions	5.3	5.2	4.8	5.4	4.7	4.8	4.6	4.6	4.4
State	7.1	6.5	6.3	6.3	6.2	5.8	5.6	5.3	5.2

	2014	2015	2016	2017	2018	2019	2020	Change 2005–2019
All sectors	5.0	4.6	4.5	4.3	4.4	4.2	4.4	-2.4
Private sector	6.2	5.7	5.6	5.3	5.5	5.2	5.5	-2.8
Blue-collar employees	3.8	3.1*	3.5*	3.6*	3.8*	3.6*	3.9*	-1.7
White-collar employees	8.1	7.7*	7.2*	6.5*	6.7*	6.4*	6.6*	-3.2
Public sector	2.2	2.1	1.9	1.9	1.8	1.7	1.7	-1.8
Municipalities	0.5	0.4	0.3	0.3	0.3	0.2	0.2	-0.7
Regions	4.0	3.9	3.8	3.8	3.5	3.3	3.1	-2.2
State	4.4	4.2	4.0	4.0	3.7	3.7	3.7	-3.4

\*Not comparable with years before 2014 due to changed classification of personnel category.

Source: Swedish National Mediation Office and Statistics Sweden.

<sup>16</sup> The 10th percentile is the wage where 10 per cent of employees have a lower wage and 90 per cent have a higher wage. The 90th percentile is the wage where 90 per cent of employees have a lower wage and 10 per cent have a higher wage.



The unexplained pay gap after standard weighting (i.e. when corrected for differences in occupation, sector, education, age and if the person works part time) increased by 0.2 percentage points between 2019 and 2020. However, the effects of the pandemic make the statistics difficult to interpret for this particular year.

The unexplained pay gap after standard weighting also decreased between 2005 and 2020. The largest decrease was in the state, where the unexplained pay gap decreased by 3.7 percentage points.<sup>17</sup>

However, it is important to remember that comparisons of how the pay gaps have changed over time, particularly from one year to the next, must be made with great caution. Besides effects of, for instance, changes in the sample selection of the companies included in the wage structure statistics and revisions of control variables, the calculated pay gap can be affected by the structure of collective agreements and by whether the contractual wage increases have had time to be paid out at the time of measurement. Changes in the composition of the workforce are another factor that can affect the change in pay gaps over time.<sup>18</sup>

## 1.4 Gender pay gap with regression analysis

This section uses regression analysis to examine how the size of the pay gap changes when taking into account how men and women are distributed across different wage-influencing factors such as occupation and level of education.

Regression analysis can be used to study the relationship between one factor (such as gender) and an outcome variable (such as wage) and at the same time check for other factors such as occupation, sector and education (see fact box in section 1.1.5 for more information on regression analysis).

### 1.4.1 What factors affect the gender pay gap?

**Table 1.5** shows the results from the regression analysis for the entire labour market. The analysis is built up in different steps, and information on the employee's characteristics and work is added gradually in various models. This way, the significance of the various individual and work-related characteristics is clarified.

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17 The parties on the labour market may report different levels in relation to pay gaps. This may in part be due to them studying different sample selections or having more detailed information.

18 For an in-depth discussion, see section 2.2 in "*Vad säger den officiella lönestatistiken om löneskillnaden mellan kvinnor och män 2009?*" [What do the official wage statistics say about the gender pay gap 2009?] (Swedish National Mediation Office, 2010).

Table 1.5 Gender pay gap, whole labour market, 2020  
Regression analysis with logarithmised monthly wage as a dependent variable

	Model 1*	Model 2*	Model 3*
All sectors	-8.3	-11.6	-3.8
Private sector	-8.9	-10.4	-4.5
Blue-collar employees	-10.4	-9.5	-3.0
White-collar employees	-14.2	-14.1	-6.0
Public sector	-6.6	-6.9	-1.5
Municipalities	-1.3	-3.8	-0.3
Regions	-14.2	-13.2	-2.8
State	-5.3	-6.4	-2.9

\*Corresponds to  $(\exp(\beta_1)-1)*100$ .

Note: All estimates have a 5 per cent level of significance.

Source: Swedish National Mediation Office.

**Model 1** shows results from a base model where gender is the only factor affecting the wage. The pay gap is then 8.3 per cent. This figure constitutes a base value. With this value, the results of including additional factors that may influence the pay gap can be compared. The estimate corresponds to the previously noted pay gap (9.8 per cent for all sectors), but as both the method and calculation data have changed, the outcome is different. For example, all individuals without an education code have been excluded.

**Model 2** shows the gender pay gap after including the individual's age and level of education. For the whole economy, the unexplained pay gap increases to 11.6 per cent. This is due to a composition effect and to women on average having more education and being older than men. This implies an unclear link between gender, education and wages. However, the sectoral analysis shows that the unexplained gap is decreasing among blue-collar employees in the private sector, in the regions and the state, but is increasing among white-collar employees in the private sector and in the municipalities.

**Model 3** shows the unexplained pay gap when occupation is added to all of the factors above. Occupation explains a large part of the gender pay gap. The unexplained pay gap that remains when occupation is also included in the analysis is 3.8 per cent. The unexplained pay gap is more than halved in almost all sectors when occupation is added to the analysis.

The fact that the pay gap shrinks compared with model 2 indicates that women and men work in different occupations with different pay. This is also clear from the "bubble diagram" above (diagram 1.1 in section 1.2.2).

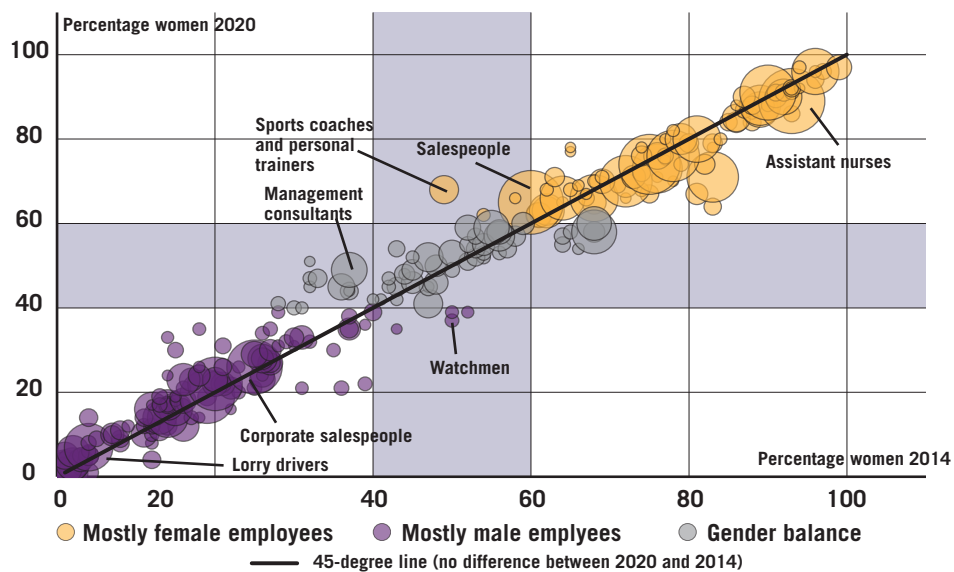
#### 1.4.2 Occupation the most important explanation of pay gap

Of the various factors taken into account, it is occupation that makes the single largest contribution to explaining the gender pay gap. This is apparent when looking at what percentage of the average pay gap is explained by the different factors. When the calculation takes occupation into account, we see that the unexplained pay gap decreases substantially.

### 1.4.3 Reduced gender segregation

The labour market is gender-segregated so that women and men are to a large extent in different occupations with different wage levels. One explanation for the narrowing of the pay gap could be a decrease in gender segregation. **Diagram 1.4** illustrates the change from 2014 to 2020. The diagram plots the proportion of women for each occupation and year, where the x-axis indicates the proportion of women in 2014 and the y-axis the proportion of women in 2020. The diagram includes a help line with a gradient of 45 degrees. The help line makes it easier to determine whether the proportion of women has increased or decreased between the two years. A circle located on the line indicates that the proportion is unchanged. A circle above the line indicates that the proportion of women has increased, and below the line that it has decreased. The gender composition of the occupations is shown with different colours. The occupations in yellow have more than 60 per cent women, the occupations in purple have more than 60 per cent men, and the occupations in grey have a gender-neutral distribution. The size of the circles indicates the number of employees in the occupation. The shading shows the range of gender-neutral occupations.

Diagram 1.4 Proportion of women in 2014 and 2020 for each occupation and the number of employees in the occupation in 2020 broken down by gender composition



Source: Swedish National Mediation Office.

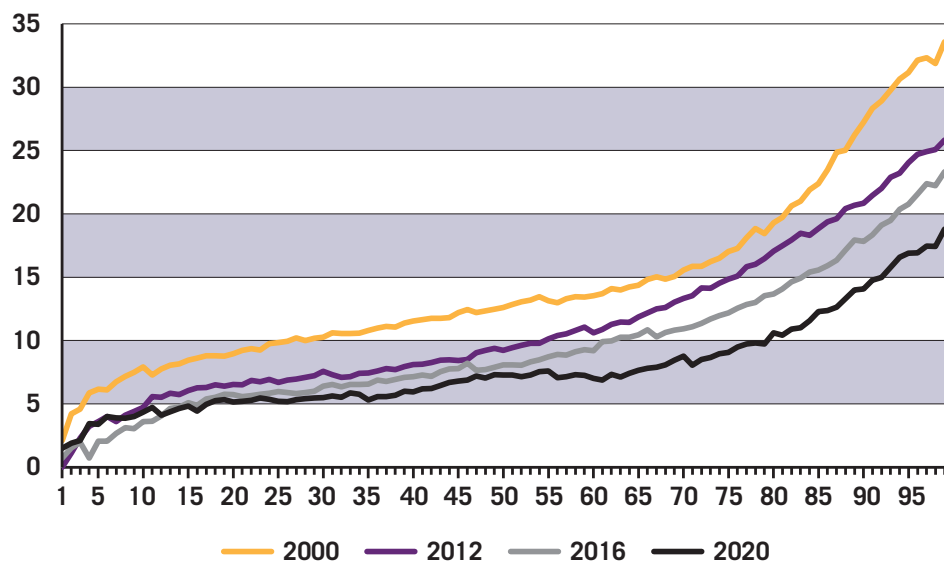
The diagram shows that the proportion of women has increased in male-dominated occupations and decreased in female-dominated occupations, so that occupational segregation has decreased. The proportion of women has increased in 64 out of 106 male-dominated occupations and decreased in 48 out of 82 female-dominated occupations. The proportion of women has also increased in 33 out of 53 gender-neutral occupations. As male-dominated occupations often have a higher wage level, this development may be one explanation for the narrowing of the gender pay gap.

### 1.4.4

### 1.4.5 Reduced difference across the board

**Diagram 1.5** illustrates the difference between women's and men's pay distributions for the years 2000, 2012, 2016 and 2020. The diagram indicates the percentage pay gap between women and men for each percentile. The diagram shows that the pay gap increases in distribution, i.e. the higher the salary, the greater the difference between the genders. The diagram illustrates the phenomenon commonly referred to as the "glass ceiling". The main explanation is that there are fewer female than male managers in the Swedish labour market.

Diagram 1.5 Difference (in percentage) between women's and men's wages by percentile Years 2000, 2012, 2016 and 2020



Source: Swedish National Mediation Office.

A comparison between the lines in the diagram shows that the pay gap decreases from year to year in almost all percentiles. The decrease is highest in the higher wage positions. This can be explained, for example, by the increase in the proportion of female managers. The difference between the median wage for men and women, i.e. the 50th percentile, was 7.3 per cent in 2020. This difference has decreased by 5.3 percentage points since the year 2000. In the 90th percentile, the wage difference was 14.1 per cent, a decrease of 13.1 percentage points since the year 2000. The corresponding decrease for the 95th percentile is 14.2 percentage points.