Gross monthly earnings per employee (Social Security – Data analysed by Statistics Portugal)

March de 2019

## Statistics Portugal starts the quarterly release of statistics on gross earnings based on Social Security information

Based on the data from the Monthly Statement of Earnings (DMR – *Declaração Mensal de Remunerações*) sent by enterprises to the Social Security, Statistics Portugal starts the quarterly release of statistics on gross earnings. This information concerns about 396 thousand enterprises and around 3.6 million employees. Statistics Portugal aims, in the future, to complement this information with data from other social protection systems. In 2018, the gross monthly earnings per employee increased by 2.9% from 2017 and stood at €1,142. According to the 1st quarter of 2019 provisional results, there was a year-on-year change of 2.5%.

## 1. Introduction

With this Press Release, Statistics Portugal starts the quarterly release of statistics on gross monthly earnings per employee[1], computed from the Social Security Monthly Statement of Earnings (DMR), which started to be sent to Statistics Portugal to allow implementing a Simplex+ measure.

The monthly received data, at enterprise level, includes the number of employees, the enterprise economic activity sector, and the sum of earnings for each combination of "Social Security Contributory Scheme" and "Earnings Components".

This data are already being used by Statistics Portugal in other surveys with the purpose of replacing similar information usually collected by means of a survey by administrative data, and, therefore, exempting enterprises from providing the data twice. This is the case of several (sectoral) surveys used to compute the Business Turnover, Employment, Wage and Hours worked Indices and, soon, the Labour Cost Index.

The data received from Social Security refer always to the last four months and have a provisional nature (mainly in the most recent months), given the existence of a non-negligible share of DMR not yet submitted or still subject to corrections by the enterprises.

In this Press Release, the data published correspond to monthly series of three-month moving averages (moving quarters ended in the reference month) from March 2014 to March 2019.

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[1] In fact, it corresponds to the gross monthly earnings per job, as described in the Technical note.

This information is stored in the "StatsLab –Statistics in development" area of Statistics Portugal website. The statistics published in this area have two characteristics: i) they are part of projects aiming at creating new statistical products and are still under development and, yet, ii) they already contain useful information for economic and social analysis. Actually, further developments of the earnings statistics now released are foreseen to occur in the following directions:

1. Integration of similar information from the Portuguese civil servants retirement and survivor pensions funds (CGA – *Caixa Geral de Aposentações*), for a larger coverage of the employee population.

2. Forecast of the final values of the last three months, in order to minimize the constraints raised by the incomplete but timely nature of the data received. For this purpose, Statistics Portugal is developing a Supervised Machine Learning algorithm (under the Support Vector Machine class), which allows obtaining estimates similar to the final values sent later by the Social Security.

3. Use of data from the Social Security (and from *Caixa Geral de Aposentações*) at the employee level, already requested to both organizations, which would allow releasing complementary information, namely:

   - Earnings per employee (as an alternative to the current figures of earnings per job).

   - Earnings by employees' characteristics (sex, age group, educational level, among others, through the integration with other sources of data).

   - Earnings distributions (median, quartiles or deciles) and inequality indicators.

   - Flows of entries into and exits from the labour market, and the associated earnings changes.

## 2. Results

The earnings change substantially according to the economic activity[2] and the enterprise size, measured by the number of its employees, increasing, globally, with the latter, as shown in Figure 1.

In 2018, the total gross monthly earnings per employee stood at €773 in the activities of *Agriculture, forestry and fishing* and at €921 in the activities of *Construction*. On the other side, it stood at €2,472 in the *Financial and insurance activities* and at €1,953 in the activities of *Information and communication*. Note that in the activities of *Electricity, gas, steam and air conditioning supply*, included in the sections B to E, the earnings stood at €3,021.

By employment size class, the earnings stood between €832 in enterprises with 1 to 9 employees and €1,408 in enterprises with 250 to 499 employees. In enterprises with 500 employees and over, the total gross earnings were, however, slightly smaller: €1,376.

Globally, in 2018, the total gross monthly earnings per employee stood at €1,142, coming from an increase of 2.9% vis-à-vis 2017, when it stood at €1,110. This increase was higher than the one observed in 2017 (2.4%).

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[2] The economic activity designations can be found in Table 2 of the Annex.

On the other hand, the regular gross monthly earnings per employee, which exclude, among other earnings components, the Christmas and holidays allowances and, thus, have a less seasonal behaviour[3], stood at €924. The regular gross earnings corresponded to 80.9% of the total gross earnings, and this proportion has been slightly decreasing since 2014, when it was 82.0%.
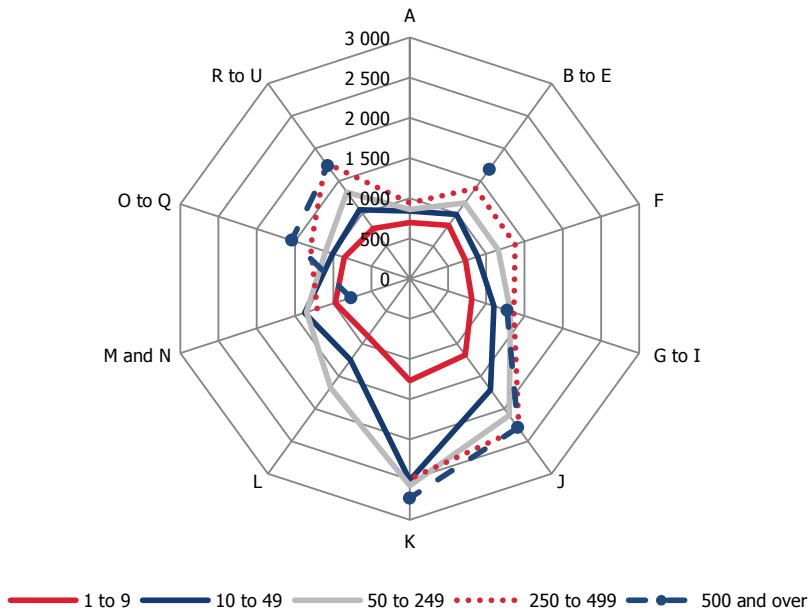
The most recent available (provisional) information for March 2019 (quarter ended in March 2019)[4] shows that the total gross monthly earnings per employee was €1,068 (Figure 2), which corresponds to a 2.5% year-on-year change.

In real terms, taking into account the inflation effect measured by the Consumer Price Index (CPI), the total gross monthly earnings registered a year-on-year increase of 1.7%, close to the observed value for whole 2018: 1.8% (1.0% in 2017).

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[3] For a more detail description of the earnings components included in the total and the regular gross monthly earnings, see the Technical note.

[4] The monthly data analysed in this Press release refer to moving quarters ended in the reference month. The time series of the indicators under analysis can be found in the tables of the Annex.

**Figure 1: Total gross monthly earnings per employee by economic activity and employment size class in 2018** (Euro)



| | |
|---|---|
| A: | Agriculture, forestry and fishing |
| B to E: | Mining and quarrying; manufacturing; electricity, gas, steam and air conditioning supply; water supply; sewerage, waste management and remediation activities |
| F: | Construction |
| G to I: | Wholesale and retail trade; repair of motor vehicles and motorcycles; transportation and storage; accommodation and food service activities |
| J: | Information and communication |
| K: | Financial and insurance activities |
| L: | Real estate activities |
| M and N: | Professional, scientific and technical activities; administrative and support service activities |
| O to Q: | Public administration and defence; compulsory social security; education; human health and social work activities |
| R to U: | Arts, entertainment and recreation; other service activities; activities of households as employers; undifferentiated goods- and services-producing activities of households for own use; activities of extraterritorial organisations and bodies |

**Figure 2: Year-on-year and annual change of the total gross monthly earnings per employee and the CPI**
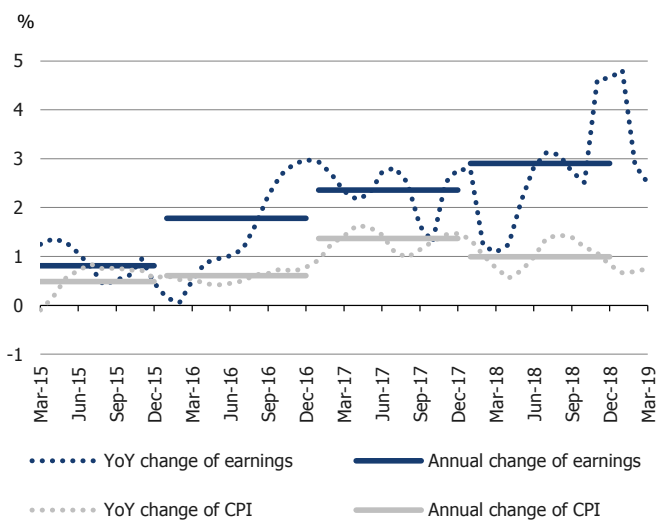


Gross monthly earnings per employee – March 2019

INSTITUTO NACIONAL DE ESTATÍSTICA
STATISTICS PORTUGAL

## Table 1: Number of employees and gross monthly earnings per employee (total and regular)

| Portugal | Quarter ended in month | | | Year-on-year change | | |
|---|---|---|---|---|---|---|
| | Number of employees | Total gross earnings | Regular gross earnings | Number of employees | Total gross earnings | Regular gross earnings |
| | Thousands | Euro | | % | | |
| **2019** | | | | | | |
| March | 3.608,3 | 1.068 | 951 | 4,0 | 2,5 | 3,1 |
| February | 3.610,3 | 1.148 | 943 | 4,1 | 2,9 | 3,0 |
| January | 3.624,6 | 1.283 | 934 | 4,1 | 4,8 | 3,0 |
| **2018** | | | | | | |
| December | 3.634,3 | 1.269 | 928 | 4,1 | 4,7 | 3,0 |
| November | 3.632,1 | 1.179 | 924 | 4,2 | 4,6 | 2,9 |
| October | 3.614,5 | 1.060 | 924 | 4,2 | 2,5 | 2,8 |
| September | 3.611,3 | 1.111 | 923 | 4,3 | 2,7 | 2,7 |
| August | 3.606,8 | 1.195 | 922 | 4,5 | 3,1 | 2,4 |
| July | 3.592,1 | 1.187 | 922 | 4,5 | 3,1 | 2,4 |
| June | 3.560,4 | 1.141 | 923 | 4,5 | 2,8 | 2,3 |
| May | 3.523,3 | 1.060 | 925 | 4,5 | 2,1 | 2,3 |
| April | 3.493,2 | 1.044 | 924 | 4,7 | 1,2 | 2,0 |
| March | 3.470,6 | 1.042 | 922 | 4,9 | 1,1 | 1,9 |
| February | 3.467,0 | 1.116 | 915 | 5,0 | 1,2 | 1,8 |
| January | 3.480,8 | 1.224 | 907 | 5,1 | 2,8 | 1,6 |
| **2017** | | | | | | |
| December | 3.489,6 | 1.212 | 901 | 5,2 | 2,8 | 1,4 |
| November | 3.487,3 | 1.127 | 898 | 5,2 | 2,5 | 1,3 |
| October | 3.468,5 | 1.034 | 899 | 5,1 | 1,3 | 1,4 |
| September | 3.461,5 | 1.082 | 899 | 5,2 | 1,6 | 1,4 |
| August | 3.451,8 | 1.159 | 900 | 5,8 | 2,5 | 1,7 |
| July | 3.437,6 | 1.151 | 900 | 6,4 | 2,8 | 2,0 |
| June | 3.406,7 | 1.110 | 902 | 6,7 | 2,7 | 2,5 |
| May | 3.371,0 | 1.038 | 905 | 6,5 | 2,3 | 2,4 |
| April | 3.335,4 | 1.031 | 906 | 6,2 | 2,2 | 2,6 |
| March | 3.309,8 | 1.030 | 905 | 6,0 | 2,3 | 2,8 |
| February | 3.301,9 | 1.102 | 899 | 5,8 | 2,7 | 2,8 |
| January | 3.311,5 | 1.191 | 893 | 5,6 | 2,9 | 2,6 |
| **2016** | | | | | | |
| December | 3.317,9 | 1.180 | 888 | 5,4 | 3,0 | 2,3 |
| November | 3.315,9 | 1.100 | 886 | 5,2 | 2,9 | 2,1 |
| October | 3.301,7 | 1.021 | 886 | 5,0 | 2,7 | 2,2 |
| September | 3.291,6 | 1.064 | 887 | 4,7 | 2,2 | 2,2 |
| August | 3.264,0 | 1.131 | 885 | 4,0 | 1,6 | 1,8 |
| July | 3.231,5 | 1.120 | 882 | 3,4 | 1,1 | 1,2 |
| June | 3.192,6 | 1.081 | 880 | 2,9 | 1,0 | 0,6 |
| May | 3.164,9 | 1.015 | 883 | 2,9 | 1,0 | 0,7 |
| April | 3.139,4 | 1.009 | 883 | 2,9 | 0,9 | 0,6 |
| March | 3.121,3 | 1.007 | 881 | 3,1 | 0,5 | 0,5 |
| February | 3.120,9 | 1.074 | 875 | 3,0 | 0,1 | 0,2 |
| January | 3.135,5 | 1.157 | 870 | 3,2 | 0,1 | 0,0 |
| **2015** | | | | | | |
| December | 3.149,3 | 1.146 | 868 | 3,2 | 0,5 | 0,2 |
| November | 3.151,2 | 1.069 | 867 | 3,3 | 1,0 | 0,6 |
| October | 3.143,4 | 994 | 867 | 3,4 | 0,6 | 0,5 |
| September | 3.142,6 | 1.041 | 867 | 3,5 | 0,5 | 0,4 |
| August | 3.138,0 | 1.112 | 869 | 3,5 | 0,4 | 0,2 |
| July | 3.126,3 | 1.107 | 872 | 3,3 | 0,8 | 0,5 |
| June | 3.103,6 | 1.070 | 875 | 3,2 | 1,1 | 0,9 |
| May | 3.074,9 | 1.005 | 876 | 3,1 | 1,3 | 1,0 |
| April | 3.049,7 | 1.000 | 878 | 3,1 | 1,4 | 1,1 |
| March | 3.028,0 | 1.002 | 876 | 3,0 | 1,2 | 1,1 |

**Source:** Calculations by Statistics Portugal using the Social Security Monthly Statement of Earnings (DMR).

**Table 2: Number of employees and gross monthly earnings per employee (total and regular) by economic activity (NACE Rev. 2) in March 2019**

| Portugal | Quarter ended in month | | | Year-on-year change | | |
|---|---|---|---|---|---|---|
| | Number of employees | Total gross earnings | Regular gross earnings | Number of employees | Total gross earnings | Regular gross earnings |
| | Thousands | Euro | | % | | |
| **Total** | **3,608.3** | **1,068** | **951** | **4.0** | **2.5** | **3.1** |
| A - Agriculture, forestry and fishing | 79.5 | 738 | 666 | 1.8 | 5.1 | 4.8 |
| B - Mining and quarrying | 8.7 | 1,362 | 1,192 | 0.0 | 6.7 | 5.0 |
| C - Manufacturing | 691.3 | 1,038 | 936 | 1.8 | 2.4 | 3.1 |
| D - Electricity, gas, steam and air conditioning supply | 11.9 | 2,615 | 2,490 | 1.2 | -1.8 | 1.6 |
| E - Water supply; sewerage, waste management and remediation activities | 27.0 | 1,028 | 944 | 5.8 | 1.9 | 2.3 |
| F - Construction | 264.8 | 874 | 785 | 6.8 | 2.6 | 2.7 |
| G - Wholesale and retail trade; repair of motor vehicles and motorcycles | 638.9 | 1,031 | 889 | 2.9 | 2.1 | 2.2 |
| H - Transportation and storage | 165.6 | 1,415 | 1,214 | 4.4 | 4.0 | 6.3 |
| I - Accommodation and food service activities | 287.0 | 762 | 686 | 6.3 | 3.6 | 3.7 |
| J - Information and communication | 108.7 | 1,798 | 1,596 | 10.1 | 1.9 | 2.1 |
| K - Financial and insurance activities | 77.5 | 2,568 | 2,048 | 2.1 | -0.5 | 0.5 |
| L - Real estate activities | 42.7 | 977 | 893 | 9.1 | 3.5 | 2.7 |
| M - Professional, scientific and technical activities | 173.3 | 1,292 | 1,189 | 8.3 | 1.8 | 2.0 |
| N - Administrative and support service activities | 312.6 | 775 | 650 | -0.1 | 3.5 | 4.2 |
| O - Public administration and defence; compulsory social security | 141.3 | 1,131 | 1,091 | 10.4 | 2.5 | 2.6 |
| P - Education | 134.7 | 1,117 | 1,082 | 3.1 | 4.8 | 4.7 |
| Q - Human health and social work activities | 318.2 | 1,017 | 935 | 4.7 | 0.5 | 2.4 |
| R - Arts, entertainment and recreation | 35.5 | 1,165 | 1,022 | 8.1 | 2.0 | -0.1 |
| S - Other service activities | 83.3 | 921 | 851 | 1.3 | 2.1 | 2.4 |
| U - Activities of extraterritorial organisations and bodies | 1.1 | 1,735 | 1,682 | 0.0 | 3.4 | 3.6 |

**Source:** Calculations by Statistics Portugal using the Social Security Monthly Statement of Earnings (DMR).

## Table 3: Number of employees and gross monthly earnings per employee (total and regular) by employment size class in March 2019

| Portugal | Quarter ended in month | | | Year-on-year change | | |
|---|---|---|---|---|---|---|
| | Number of employees | Total gross earnings | Regular gross earnings | Number of employees | Total gross earnings | Regular gross earnings |
| | Thousands | Euro | | % | | |
| **Total** | **3,608.3** | **1,068** | **951** | **4.0** | **2.5** | **3.1** |
| From 1 to 9 employees | 898.3 | 800 | 744 | 2.3 | 4.0 | 3.8 |
| From 10 to 49 employees | 867.8 | 1,009 | 906 | 3.4 | 2.8 | 2.8 |
| From 50 to 249 employees | 787.4 | 1,152 | 1,022 | 5.1 | 2.2 | 2.5 |
| From 250 to 499 employees | 237.8 | 1,305 | 1,127 | 6.8 | 1.6 | 2.0 |
| From 500 to 999 employees | 198.6 | 1,295 | 1,137 | 4.7 | 0.8 | 2.9 |
| 1000 employees and over | 618.5 | 1,267 | 1,095 | 4.4 | 1.1 | 3.3 |

**Source:** Calculations by Statistics Portugal using the Social Security Monthly Statement of Earnings (DMR).

## Table 4: Number of employees by economic activity (NACE Rev. 2) and employment size class in 2018

| Portugal | Total | From 1 to 9 employees | From 10 to 49 employees | From 50 to 249 employees | From 250 to 499 employees | 500 employees and over |
|---|---|---|---|---|---|---|
| | Thousands | | | | | |
| **Total** | **3.564,3** | **887,1** | **862,0** | **773,2** | **232,2** | **809,9** |
| A | **82,9** | 42,5 | 24,0 | 11,5 | 3,9 | - |
| B to E | **734,6** | 97,7 | 214,6 | 235,0 | 73,4 | 113,9 |
| F | **254,7** | 98,5 | 90,0 | 45,7 | 10,5 | … |
| G to I | **1.087,7** | 375,3 | 279,9 | 169,7 | 45,3 | 217,6 |
| J | **102,6** | 17,9 | 17,4 | 24,6 | 10,0 | 32,7 |
| K | **76,9** | 10,5 | 6,9 | 11,5 | 4,4 | 43,6 |
| L | **41,0** | 29,8 | 7,7 | 2,7 | … | - |
| M and N | **490,5** | 103,4 | 65,5 | 67,6 | 35,6 | 218,4 |
| O to Q | **573,8** | 59,6 | 125,1 | 181,5 | 41,1 | 166,5 |
| R to U | **119,6** | 51,9 | 30,9 | 23,3 | 7,3 | 6,2 |

**Source:** Calculations by Statistics Portugal using the Social Security Monthly Statement of Earnings (DMR).

**Notes:**
- Null value, without results.
… Value not disclosed for confidentiality reasons, less than 3 enterprises in the economic activity and employment size class.

## Table 5: Total gross monthly earnings per employee by economic activity (NACE Rev. 2) and employment size class in 2018

| Portugal | Total | From 1 to 9 employees | From 10 to 49 employees | From 50 to 249 employees | From 250 to 499 employees | 500 employees and over |
|---|---|---|---|---|---|---|
| | Euro | | | | | |
| **Total** | **1.142** | **832** | **1.073** | **1.250** | **1.408** | **1.376** |
| A | **773** | 697 | 842 | 862 | 941 | - |
| B to E | **1.168** | 821 | 986 | 1.162 | 1.389 | 1.681 |
| F | **921** | 729 | 890 | 1.156 | 1.379 | … |
| G to I | **1.078** | 809 | 1.099 | 1.314 | 1.360 | 1.273 |
| J | **1.953** | 1.173 | 1.710 | 2.104 | 2.306 | 2.287 |
| K | **2.472** | 1.265 | 2.506 | 2.572 | 2.492 | 2.729 |
| L | **1.038** | 884 | 1.250 | 1.676 | … | - |
| M and N | **1.005** | 972 | 1.375 | 1.347 | 1.209 | 770 |
| O to Q | **1.196** | 857 | 1.006 | 1.098 | 1.296 | 1.543 |
| R to U | **1.066** | 773 | 1.059 | 1.329 | 1.781 | 1.736 |

**Source:** Calculations by Statistics Portugal using the Social Security Monthly Statement of Earnings (DMR).

**Notes:**
- Null value, without results.
… Value not disclosed for confidentiality reasons, less than 3 enterprises in the economic activity and employment size class.

**TECHNICAL NOTE**

The statistics on "Gross monthly earnings per employee" published with this Press release are the result of the calculations and analysis performed by Statistics Portugal with the information from the Monthly Statement of Earnings (DMR – *Declaração Mensal de Remunerações*) sent by enterprises to the Social Security. This Information is sent monthly to Statistics Portugal, following a protocol celebrated between the *Instituto de Informática, I.P.* and Statistics Portugal. These statistics are stored in the StatsLab area of the Statistics Portugal website, where new statistical resources that give useful information for economic and social analysis are published, despite being under development.

The information received from the DMR includes the sum of earnings reported by enterprises to the Social Security by "Social Security Contributory Scheme" and "Earnings Components.

The **gross monthly earnings per employee** correspond to the ratio between the sum of the all earnings paid by the enterprises and the total number of employees in those enterprises. Hence, its evolution reflects changes in the amount of earnings paid (for example, the payment of bonuses, holiday allowances or overtime work), but also in the number of employees and its composition, namely in terms of non-observed characteristics in this dataset (part-time versus full-time workers; educational level; occupation; years of experience; hours worked; among others).

In the calculations by enterprise's economic activity (NACE Rev. 2), there were excluded the records where it was not possible to match the enterprise with its record on the enterprises' economic activity file compiled by Statistics Portugal (FUE - *Ficheiro de Unidades Estatísticas*), which corresponds to 0.7% of enterprises and 0.1% of employees in 2018.

Each employee is counted as many times as the number of jobs he/she is reported reports to the Social Security. For example, an employee with two jobs in two different enterprises is counted twice. Therefore, the total number of employees corresponds to the total number of jobs. Besides employees, ship-owners, teachers that own educational institutions, members of statutory bodies, and domestic workers are also included.

**Earnings components:** correspond the classification of earnings according to its nature, which cover the following:

- Transport and daily allowances
- Bonuses and other monthly benefits
- Commissions
- Compensations owed for termination of the employment contract
- Holiday allowance
- Fees for rendering services due to the accumulation of positions/duties
- Compensation in intermittent employment contracts
- Regular monthly allowances
- Christmas allowance
- Bonuses and other non-monthly benefits
- Base salary
- Meal allowance
- Overtime work
- Night-time work
- Regular non-monthly allowances
- Armed forces
- Variable earnings
- Paid untaken holidays
- Earnings statements corrections
- Temporary work in higher positions
- Promotions

*(to be continued)*

## Total gross monthly earnings

The total gross monthly earnings correspond to the sum of all gross earnings (before taxes and contributions to the Social Security) paid by enterprises and subject to withholding taxes and contributions to the Social Security. Thus, it does not include the amounts exempt from tax withheld and contributions to the Social Security as, for example, meal allowances up to €4.77 or €7.63, if paid in cash or meal cards. It includes all components of the variable "Earnings components".

## Regular gross monthly earnings

The regular gross monthly earnings corresponds to the sum of all gross earnings (before taxes and contributions to the Social Security) paid by enterprises on a regular and monthly basis and subject to withholding taxes and contributions to the Social Security. It only includes the components "Base salary", "Meal allowance", "Regular monthly allowances" and "Bonuses and other monthly benefits" of the variable "Earnings components". In 2018, it corresponded to 80.9% of the total gross monthly earnings.

## On year rate of change

The on year (year-on-year) change compares the level of the variable in the current quarter/month with that of the corresponding quarter/month of the previous year. This rate of change, considering a seasonal stable pattern, is not affected by this type of fluctuation, but may, however, be influenced by specific effects in a given quarter/month.

## Annual rate of change

The annual change compares the level of the variable in the last year over the level of the variable in the previous year.

## Revisions

The data base of DMR is in continuous updating, always existing some share of non-delivered earnings statements, mainly in the last 4 months.

The information published with this Press release that regards the last 3 reference months (moving quarters ended in those months) will be subject to revisions in the next months. These revisions result from the integration of data sent later by some enterprises.

Due to rounding, the totals in tables and figures do not always match the sum of parts.

The present Press release includes data received on 23 April 2019.

**Next Press Release:** 8 August 2019.