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REPORT FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT AND THE COUNCIL

on implementation of Regulation (EC) No 453/2008 of the European Parliament and of the Council on quarterly statistics on Community job vacancies

1. INTRODUCTION

1.1 Background

Job vacancy statistics (JVS) record the number of jobs vacant at a particular moment, namely the part of the labour demand that is not met by labour supply. They therefore provide key information on possible gaps between labour supply and demand including labour market mismatches, which occur when the skills or location of people seeking a job do not correspond to the expectations from possible employers.

Regulation (EC) No 453/2008 of the European Parliament and the Council of 23 April 2008 on quarterly statistics on Community job vacancies[1] ('the JVS Regulation') establishes the framework for producing and evaluating quarterly job vacancy statistics.

Article 10 of the JVS Regulation requires the Commission to report to the European Parliament and the Council on the implementation of the Regulation by 24 June 2010 and every three years thereafter. The purpose of this report is to assess the quality both of statistics provided by Member States and of European aggregates. Furthermore, areas where improvements could be made in the future are identified and presented.

This is the Commission's fifth report to the European Parliament and the Council[2]. The report is based on experience of providing data at quarterly intervals and on documentation provided by Member States in their annual quality reports. This report focuses on the quality of JVS received since the previous edition. It examines the JVS sent to the Commission for the reference quarters from the first quarter of 2019 (2019Q1) to the fourth quarter of 2021 (2021Q4).

1.2 Legal framework

To complement the general framework established by the JVS Regulation, the Commission adopted two implementing regulations:

- Commission Regulation (EC) No 1062/2008[3], which defines the seasonal adjustment procedures to be applied from the first quarter of 2014, the structure and content of the annual quality reports that Member States are to supply to the Commission, and the dates on which these reports are to be sent; and
- Commission Regulation (EC) No 19/2009[4], which defines the term 'job vacancy', sets deadlines for sending data and specifies the periods to be covered by the first set of

1 OJ L 145, 4.6.2008, p. 234.

2 See previous report, COM(2019) 368 of 13 August 2019.

3 Commission Regulation (EC) No 1062/2008 of 28 October 2008 implementing Regulation (EC) No 453/2008 of the European Parliament and of the Council on quarterly statistics on Community job vacancies, as regards seasonal adjustment procedures and quality reports (OJ L 285, 29.10.2008, p. 3).

4 Commission Regulation (EC) No 19/2009 of 13 January 2009 implementing Regulation (EC) No 453/2008 of the European Parliament and of the Council on quarterly statistics on Community job vacancies, as regards the definition of job vacancy, the reference dates for data collection, data transmission specifications and feasibility studies (OJ L 9, 14.1.2009, p. 3).

data supplied. The annex to this legal act lists the Member States running feasibility studies and the subjects these studies cover.

Under the above legislation, all Member States are required to provide time series for the total number of vacancies and number of occupied posts in their country, starting from the first quarter of 2010. They should provide the data no more than 70 days after the end of the quarter (T+70). In addition, Member States with an overall number of employees exceeding 3% of the EU total are required to send flash estimates no more than 45 days after the end of the quarter (T+45).

Member States are required to provide the number of job vacancies and of occupied posts for all business units and by economic activity, for each section of the NACE Revision 2 (NACE Rev. 2) classification[5]. However, for small businesses (defined as units with under 10 employees) and NACE Rev. 2 sections O-S[6] (where the main activities are public administration, health services and education), the JVS Regulation states that any Member States that have difficulties in providing data should conduct feasibility studies.

Although these feasibility studies have enabled some Member States to achieve full coverage of the economy, this is not yet the case for three of them (Denmark, France and Italy). The data for these countries are not fully comparable with those of the rest of the EU. In both France and Italy, public institutions are not covered within the sectors of public administration, education and human health (NACE Rev. 2, sections O, P and Q). Furthermore, France only includes units with 10 employees or more in surveys whereas Denmark only covers units within the business economy (NACE Rev. 2, sections B-N).

Since the last report, Italy and Malta have started transmitting job vacancy data for all enterprise sizes, including those with 1-9 employees. With this move, Malta now covers the full scope of job vacancy statistics.

The rest of the report is structured as follows: Section 2 presents progress in implementing the JVS Regulation over the last 3 years, Section 3 analyses the main impact of the COVID-19 crisis on JVS whereas Section 4 assesses the quality of job vacancy statistics. Finally, Section 5 draws conclusions and suggests ways to meet user expectations even better in the future.

2. GENERAL PROGRESS SINCE THE LAST REPORT

There have been no legislative changes since the adoption of the last report in 2019.

[5] Regulation (EC) No 1893/2006 of the European Parliament and of the Council of 20 December 2006 establishing the statistical classification of economic activities NACE Revision 2 and amending Council Regulation (EEC) No 3037/90 as well as certain EC Regulations on specific statistical domains (OJ L 393, 30.12.2006, p. 1).

[6] Covering: Public administration and defence, compulsory social security (section O), education (section P), human health and social work activities (section Q), arts, entertainments and recreation (section R) and other service activities such as activities of membership organisations, repair of computers and personal and household goods, and other personal service activities (section S).

As regards the production process, a number of improvements have been made to the JVS production chain, as detailed in the following paragraphs.

2.1 Standards for data collection

JVS have been transmitted by all Member States using the Statistical Data and Metadata eXchange (SDMX)[7] data structure and internationally agreed code lists (available online through a dedicated registry)[8]. The same coding was used in Eurostat's JVS database and to transmit JVS to the European Central Bank.

Since the transmission of JVS for reference quarter 2021Q3 (flash and final), Member States have started using version 2.3 of the Data Structure Definition used in SDMX transmissions of JVS data, that also incorporates the new NUTS classification[9].

Using the SDMX standards for data transmissions avoids ambiguities and misunderstandings with Member States and simplifies the data validation process, making it suitable for automation.

2.2 Data validation

The data have been systematically validated through a new tool, which checks whether the codes and data structures used meet the agreed SDMX standards for data transmissions. This simplifies the production process and reduces the risk of errors arising from wrong coding. When the file transmitted is not in line with the SDMX standards in force, it is automatically rejected. All Member States receive a success or failure notification by email and they may access the IT validation report through a web service.

Since the last report, Eurostat has adapted the production process in order to process all types of SDMX formats, be they compact or generic.

Moreover, for each quarterly transmission, Eurostat makes plausibility checks by comparing data over time and across NACE Rev. 2 economic activities. In the event of significant quarter-on-quarter changes in the number of occupied posts or job vacancies, Eurostat asks Member States to confirm the data or retransmit a corrected data file. When large revisions or sudden changes are detected, in any particular NACE section, they are systematically followed up with the countries concerned.

2.3 Seasonal adjustment

Under Article 1 of Commission Regulation (EC) No 1062/2008, Member States are also required to transmit seasonally adjusted data. It is mandatory to supply this data on job vacancies and occupied posts at least for individual/aggregated NACE Rev. 2 sections B-E, F,

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7 https://sdmx.org/ (available only in English).

8 https://webgate.ec.europa.eu/sdmxregistry/ (available only in English).

9 Regulation (EC) No 1059/2003 of the European Parliament and of the Council of 26 May 2003 on the establishment of a common classification of territorial units for statistics (NUTS) (OJ L 154, 21.6.2003, p. 1).

G-I, J, K, L, M-N, O-Q, R-S. Eurostat uses the data supplied on seasonally adjusted job vacancies and occupied posts to calculate the seasonally adjusted job vacancy rates as a ratio.

At the EU and euro area levels, occupied posts and job vacancies are first aggregated across Member States and then seasonally adjusted (direct seasonal adjustment).

Eurostat publishes seasonally adjusted data for European aggregates alongside data that is not seasonally adjusted (see Section 4.5).

Eurostat has improved the seasonal adjustment annex of national quality reports. In particular, this updated annex details the seasonal adjustment models used, the outliers detected, the size of adjustments and the volatility of results.

3. IMPACT OF THE COVID-19 CRISIS

3.1 Survey of Member States

In March 2020, Eurostat launched a survey for countries to report the main issues they faced in collecting data since the start of the pandemic. The most frequent issue reported in the survey was a lower response rate from businesses due to closures and new working arrangements (short-time work, teleworking etc.), as confirmed in the metadata files for 2020Q1 and 2020Q2.

Although the COVID-19 crisis started in most Member States in mid-March 2020, the impact was rarely visible in 2020Q1 data, depending on the reference date for the JVS data collection. As expected, most countries recorded a year-on-year drop in the job vacancy rate for 2020Q2.

3.2 Impact on data transmissions

Despite these hindrances, JVS data for reference quarters 2020Q1 and Q2 were transmitted and released on time, for almost all Member States.

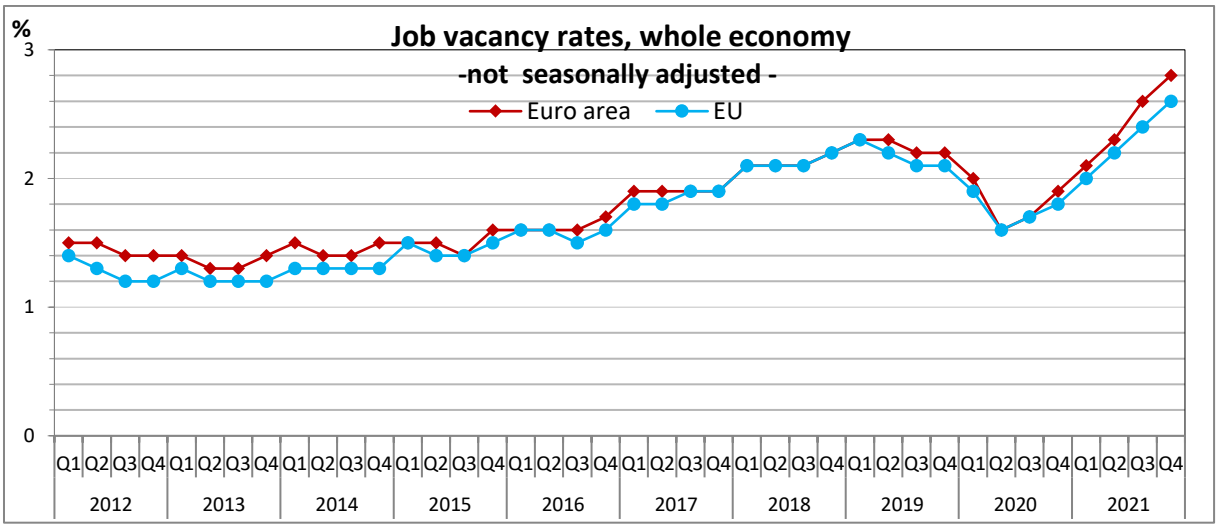
Only France was not able to transmit 2020Q1 data and resumed transmissions for the 2020Q2 reference period. Italy managed to send final data in time for both the 2020Q1 and 2020Q2 news releases but not the corresponding earlier flash estimates.

3.3 Developments in job vacancy statistics

As shown in the chart below, the job vacancy rate first recorded a sharp decrease, both in the euro area and in the EU, over the 2020Q1-Q2 period. From 2020Q3 onwards, it gradually recovered up to 2021Q4 when it reached 2.6% for the EU, 0.3 percentage points above the peak recorded in 2019Q1.

Turning to individual economic activities, the greatest increases in JVS compared with pre-pandemic levels were observed in NACE sections: J (‘Information and communication’); N

('Administrative and support service activities' also including temporary employment agencies); I ('Accommodation and food service activities') and C ('Manufacturing')[10].



4. DATA QUALITY

This part of the report examines all quality dimensions in European statistics on job vacancies: relevance, accuracy, timeliness, punctuality, coherence and comparability.

4.1 Relevance

Collecting JVS data is important for economic analysis, being the only data source that measures unmet labour demand. Quarterly data on job vacancies are used by the Commission (the Directorate-General for Employment, Social Affairs and Inclusion and the Directorate-General for Economic and Financial Affairs) and the European Central Bank to monitor short-term developments in the business cycle and on the labour market. The job vacancy rate is one of the principal European economic indicators[11], the primary source of information used to analyse and monitor short-term cyclical economic developments within the EU, the euro area and individual EU countries. This is considered a better indicator than estimates such as labour shortage indicators.

JVS are also used to analyse developments in the unemployment rate using the Beveridge curve, as was done for instance in the Commission's Joint Employment Report[12], in the Autumn 2021 economic forecasts of the Commission[13] and in several analytical reports from the OECD.

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10 See: https://ec.europa.eu/eurostat/databrowser/view/jvs_q_nace2/default/table?lang=en (available only in English, French and German).

11 Communication of the Commission to the European Parliament and the Council on *Eurozone statistics - Towards improved methodologies for Eurozone statistics and indicators*, COM(2002) 661.

12 https://ec.europa.eu/social/main.jsp?catId=738&langId=en&pubId=8351 (available only in English).

13 See: European Commission, Directorate-General for Economic and Financial Affairs, European economic forecast: Autumn 2021, 2021, https://data.europa.eu/doi/10.2765/199989 (available only in English).

However, JVS would be even more relevant if existing gaps in the coverage of small businesses and NACE Rev. 2 sections O to S, including public institutions, were filled. This would also allow publishing the number of vacancies and occupied posts in addition to the rate. This is not possible for the time being due to the incomplete coverage of EU economies.

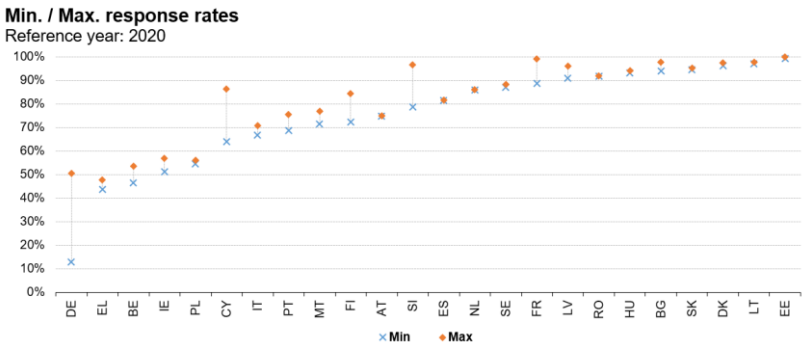
Among countries with full coverage of the economy, some flag the number of occupied posts and vacancies as confidential. In the third quarter of 2022, Eurostat will contact them to discuss a possible release of the number of occupied posts and vacancies for total economy.

4.2 Accuracy

As an indication of accuracy, Member States calculate the coefficients of variation in the number of job vacancies (not seasonally adjusted), taking into account the characteristics of their national sample design. The coefficient of variation expresses the standard error as a percentage of the mean value being estimated. It provides a measure of the variability of the estimated number of job vacancies. According to the quality reports for the 2020 reference year, the coefficients of variation for total job vacancies were below 15% in all Member States except for Ireland, Greece and Cyprus[14].

The sample size and response rate significantly affect the accuracy of estimates. According to the quality reports from Member States, the sample size varied from around 2 500 businesses in Finland, 2 683 in Malta, 3 300 in Cyprus up to around 100 000 in Poland and 155 000 in Germany[15].

The response rate varied from 13% in Germany[16] (for the postal survey conducted in the fourth quarter) and between 43% and 48% for Greece (depending on the quarters) up to 97% or more in Lithuania and 99% in Estonia. In 2020, the median response rate across Member States remained high, ranging from 79% to 86% depending on the quarter.



CZ, HR and LU: Not applicable; no survey conducted and administrative data used

In terms of revisions, the situation differs for the two releases of the job vacancy rate, i.e. the flash and the final estimates. The flash estimates, which are released at T+50 days, may be

14 See the JVS metadata: http://ec.europa.eu/eurostat/cache/metadata/en/jvs_esms.htm.

15 This corresponds to the sample size of each fourth quarter when a full postal survey is conducted. The other three quarters are surveyed by following up all the respondents who completed the postal survey.

16 The job vacancy survey is not mandatory in Germany, which explains the low rate of response to the postal survey run every fourth quarter of the year. The results from this survey are re-weighted using administrative data, through generalised regression estimation, to correct for any bias due to non-response.

revised at T+78 days, when the final estimates are published. Although the flash data do not cover all Member States, revisions of the flash estimates did not exceed 0.1 percentage points for the euro area and the EU, over the reference period of this report.

As regards final estimates published at T+78 days, revisions can be measured by comparing the first and second transmissions of JVS for a given quarter. For the euro area and the EU, revisions in the job vacancy rate never exceeded 0.1 percentage points over the reference period of this report.

4.3 Timeliness and punctuality

The timeliness of JVS transmissions was generally satisfactory as regards both the flash estimate and the final publication. Member States have been reminded regularly of the importance of meeting the mandatory deadlines for transmitting data on principal European economic indicators, including job vacancy statistics. Although some delays were occasionally recorded for Greece, there were no structurally late deliveries that could impair the timely publication of the JVS release.

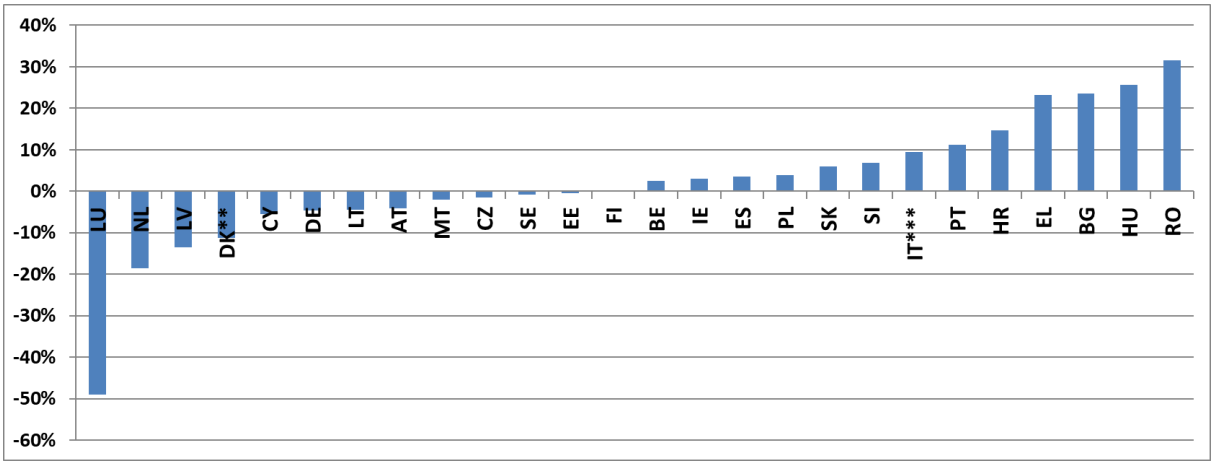
4.4 Coherence and comparability

There is no other harmonised source available at European level that measures unmet demand on the labour market which could be used for comparing with job vacancy statistics. Many Member States count vacancies reported to public employment services, but it is problematic to use these figures to assess consistency of the JVS. This is because such data may suffer from undercoverage, as not all vacancies may be reported to the public employment service, and/or over-reporting if any filled vacancies still remain in the administrative register. Moreover, JVS from administrative sources are based on national definitions, which differ from one country to another.

The number of occupied posts, which is the denominator of the job vacancy rate, can be compared with information from other sources, in particular the number of employees reported in the Labour Force Survey (LFS). Comparisons and subsequent assessments of differences must nevertheless take account of conceptual and survey-related differences between sources. In particular, job vacancy statistics are estimated from a sample of businesses, whereas the LFS is based on a sample of households.

As shown in the figure below, the difference between the number of employees recorded in the LFS and the number of occupied posts recorded in JVS for the whole economy generally varies between -20% and +20% with the exception of Luxembourg (-49%), Greece (23%), Bulgaria (24%), Hungary (26%) and Romania (32%).

Relative difference between the number of employees (LFS) and occupied posts (JVS) for NACE sections B-S, annual data for 2020*



* No information for FR; JVS in France cover only enterprises with 10+ employees and cannot be compared with LFS data.

** DK: comparison for the aggregated NACE sections B-N.

*** IT: Occupied posts are not recorded for section O and only very partially for sections P and Q. Hence, those sections have been omitted in this comparison with LFS data.

The negative gap measured for Luxembourg can be explained by the large proportion of cross-border work, which creates large discrepancies between the domestic concept of the labour market used in the LFS and the national one applied in JVS: the LFS surveys resident households only, whereas JVS cover resident enterprises, including their non-resident (i.e. cross-border) workers.

In the case of Greece, the identified gap points to differences between both sources as regards methodology and definitions. In particular, job vacancy data only cover businesses with three or more employees. Finally, some businesses might not be captured in the sampling frame because they started operating after the business register was updated, leading to some underestimation of occupied posts.

Bulgaria's quality report stated that the definition of employees used in the LFS is broader than for JVS statistics. In particular, it encompasses people working under a commercial contract (contract for certain work to be done), those working under management and control contracts, and those working without a contract of any kind. Moreover, JVS do not include military personnel.

Hungary does not cover businesses with fewer than five employees in its job vacancy statistics, which explains part of the recorded gap.

In its quality report, Romania explained that discrepancies between the LFS and JVS regarding the number of occupied posts reflected the fact that occupied posts collected using JVS methods did not include the following:

- individuals whose employment contract is suspended for a given period (on the grounds of maternity leave, childcare leave, sick leave or unpaid leave, or because of some other type of absence);

- posts which, though temporarily suspended, might fall vacant and be occupied for a limited period of time; and
- posts in armed forces or in the informal sector.

Together with the responsible national authorities of the countries listed above, Eurostat will continue monitoring discrepancies between the number of employees recorded by the LFS and the number of occupied posts recorded in JVS.

It is also important that vacancies and posts on the payroll of temporary agencies are covered and assigned to Section N of NACE Rev. 2.

Finally, the main challenge as regards comparability is for all Member States to cover the entire economy in their job vacancy surveys, i.e. to include small businesses and NACE Rev.2 sections O to S, including public institutions. Since the last progress report, Italy and Malta have made good progress and their JVS data now cover enterprises with fewer than 10 employees. However, as mentioned in Section 1.2, data for Denmark, France and Italy are still not fully comparable with that of other Member States.

4.5 Accessibility and clarity

Job vacancy statistics are disseminated through Eurostat's standard distribution channels, namely the online database and the 'Statistics Explained' pages on Eurostat's website[17]. The website provides timely information on the job vacancy rate for both the European aggregates and individual Member States, including charts on developments over time. As job vacancy statistics belong to the principal European economic indicators, a news release is published every quarter[18].

Metadata supplied to users in support of data releases have been updated using the annual quality reports provided by Member States. These can be found on Eurostat's website[19].

5. CONCLUSIONS

Over the past three years, Eurostat has continued to improve the transmission (with the support of NSIs), validation and dissemination of European statistics on job vacancies. As regards seasonal adjustments, Eurostat has collected detailed methodological information from Member States and made it available to users as an annex to the annual quality reports.

The COVID-19 crisis had an impact on the collection of JVS data, in particular concerning response rates. However, all Member States managed to transmit JVS data on time, except

[17] See: http://ec.europa.eu/eurostat/statistics-explained/index.php/Job_vacancy_statistics and http://ec.europa.eu/eurostat/statistics-explained/index.php/Job_vacancy_and_unemployment_rates_-_Beveridge_curve (available only in English).

[18] See the release calendar for euro indicators: https://ec.europa.eu/eurostat/news/euro-indicators/release-calendar (available only in English, French and German).

[19] See the JVS metadata and the EU and national quality reports: https://ec.europa.eu/eurostat/cache/metadata/en/jvs_esms.htm (available only in English)

France for one quarter. The impact on the economy was visible in JVS time series: after a sizeable drop in 2020Q1 and 2020Q2, the job vacancy rates recovered and even exceeded pre-pandemic levels, in particular for NACE Rev. 2 Section J ('Information and communication').

Despite the crisis, the European aggregates were published as scheduled. In general, only very minor revisions have been recorded for the European aggregates, as regards both the flash and final estimates.

To improve the comparability of JVS across countries further, it is important that all Member States fully cover the public sector (in the case of Denmark and Italy) and small businesses (in the case of France). Improved coverage would also make it possible to publish the number of vacancies, for European aggregates, in addition to the job vacancy rate. Eurostat will continue addressing this issue, in close cooperation with the countries concerned, under the ongoing review of EU legislation on labour market statistics on businesses.

This review project aims at evaluating and modernising the whole EU legislation in the field of labour market statistics on businesses. In the field of job vacancy statistics, Eurostat envisages to propose the following improvements:

- eliminating possible biases by covering all economic activities and business sizes, including small firms with fewer than 10 employees, public institutions and the public sector;
- introducing precision targets for the number of vacancies and occupied posts; and
- specifying in the legislation the statistical units used for collecting JVS data, limiting them to enterprises and local units.

Further proposals could emerge from the public consultation that was carried out on the Have your say website of the Commission. This was an opportunity for all stakeholders to express their level of satisfaction with labour market statistics on businesses, including JVS, and suggest possible improvements.

Eurostat will continue to monitor the compliance and quality of JVS at regular intervals, using the data delivered and other national documentation, including quality reports, and follow this up closely with the responsible national statistical authorities.