



INSTITUTO NACIONAL DE ESTATÍSTICA  
STATISTICS PORTUGAL

---

# REVISION OF LABOUR FORCE SURVEY DATA THE COVID-19 PANDEMIC

17<sup>th</sup> Workshop on Labour Force Survey Methodology

Neuchâtel-Switzerland, 25-26 April 2024



# CONTENTS

1. THE COVID-19 PANDEMIC AND THE IMPACT ON THE LFS
2. REVISION OF ESTIMATES
3. IMPACT OF THE REVISION

The screenshot displays the website of the Instituto Nacional de Estatística (INE) of Portugal. The page is titled "Employment statistics" and features a sub-header "The unemployment rate remains at 6.1% and the labour underutilisation rate decreases to 11.3% - 3rd Quarter 2023" dated 06 November 2023. The main content includes a "Summary" section with several paragraphs detailing the changes in the employed population, teleworking, unemployed population, unemployment rate, and labour underutilisation. A "Methodological note" is also mentioned. At the bottom, there are download links for a "Press release" (PDF, 390 Kb) and "Tables" (Excel and CSV files for various categories and revised LFS data).

Home / Products / Press Releases

Statistics Products WebInq PT Search

Previous issues Calendar

Theme Labour market Search word Date to

**Employment statistics**

**The unemployment rate remains at 6.1% and the labour underutilisation rate decreases to 11.3% - 3rd Quarter 2023**  
06 November 2023

**Summary**

In the 3rd quarter of 2023, the employed population (5,015.5 thousand people) increased by 0.5% (26.8 thousand) from the previous quarter and by 2.2% (109.2 thousand) from one year before.

The share of the employed population who has teleworked, that is, who has worked from home using information and communication technologies was 16.6% (833.0 thousand people), 1.7 percentage points (pp) less than in the 2nd quarter of 2023.

The unemployed population, estimated at 326.1 thousand people, has increased by 0.5% (1.4 thousand) from the previous quarter and by 4.4% (13.7 thousand) from a year earlier.

The unemployment rate stood at 6.1%, the same value as in the 2nd quarter of 2023 and 0.1 pp more than in the 3rd quarter of 2022.

The labour underutilisation covered 620.9 thousand people, having decreased by 0.5% (3.4 thousand) from the previous quarter and increased by 1.7% (10.2 thousand) from a year before. The labour underutilisation rate (11.3%) has decreased from the previous quarter (0.1 pp) and remained unchanged from the same quarter of 2022.

The inactive population aged 16 and over (3,518.0 thousand people) has decreased by 0.5% (17.2 thousand) from the previous quarter and by 2.0% (73.7 thousand) in the year-on-year comparison.

See the "Methodological note on the revision of the labour force survey data: The context of the COVID-19 pandemic"

Press release  
 PDF (390 Kb)

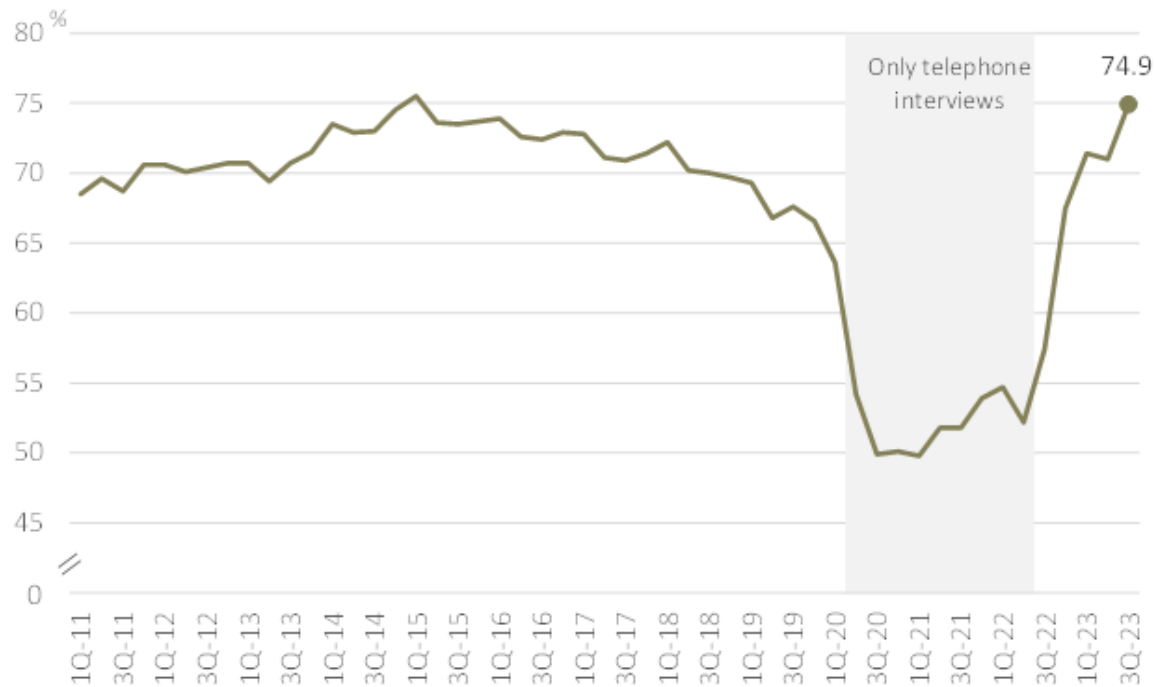
Tables  
 Excel (219 Kb)  
 CSV (33 Kb)  
 Excel "Work from home" (181 Kb)  
 CSV "Work from home" (15 Kb)  
 Excel "Revised LFS\_2020-2023" (41 Kb)  
 CSV "Revised LFS\_2020-2023" (6 Kb)

[www.ine.pt](http://www.ine.pt)

# THE COVID-19 PANDEMIC AND THE IMPACT ON LFS

Between the 1<sup>st</sup> half of March 2020 and the end of the 2<sup>nd</sup> quarter of 2022, Statistics Portugal suspended the face-to-face interviewing (CAPI), replacing it exclusively with the telephone interviewing (CATI).

Figure 1. Response rates in the Labour Force Survey



Source: Statistics Portugal, Labour Force Survey.

The **response rate** is sensitive to the lack or out of date telephone contacts in the sampling frame.

- CAPI in the first interview contributes to update contacts.
- Decrease of the response rate after moving from CAPI to CATI in the first interview.
- CAPI was resumed in the 3Q2022.

Decision on **increasing the sample size**, which gradually took place between 1Q2021 and 2Q2022, allow to:

- Comply with the IESS **precision requirements** introduced in 2021.
- Move from a **sample size** of around 24,000 dwellings in 1Q2021 to 30,000 in 2Q2022.

# THE COVID-19 PANDEMIC AND THE IMPACT ON LFS

---

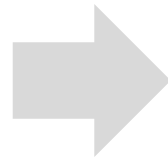
Since the beginning, Statistics Portugal monitored **the impact of the suspension of CAPI** on the main labour market indicators and on the characteristics of the respondents, controlling the processes that could minimize the changes:

- **Restricted the sampling frame** to dwellings with valid telephones.
- **Analysed the inclusion of additional information in the calibration weighting** like “educational attainment”, in addition to the usual model (monthly estimates of the resident population by region, sex and age).
- **Eurostat asked countries to avoid any changes** in the calibration weighting, as this was a period of great instability. Changes in the calibration could introduce an additional source of incomparability at European level and create a break in series.
- **Statistics Portugal published supplementary indicators** in the Press Releases to monitoring the evolution of the labour market, always warning that the impacts of measures to “control” the COVID-19 pandemic could interfere with the normal evolution of estimates.

# THE COVID-19 PANDEMIC AND THE IMPACT ON LFS

---

Moving from a mixed-mode interviewing (CAPI+CATI) to 100% telephone interviewing (CATI) during the COVID-19 pandemic may have contributed to some **shifts and uncertainty (bias) in the results.**



The reintroduction of CAPI in the 3Q2022 led to:

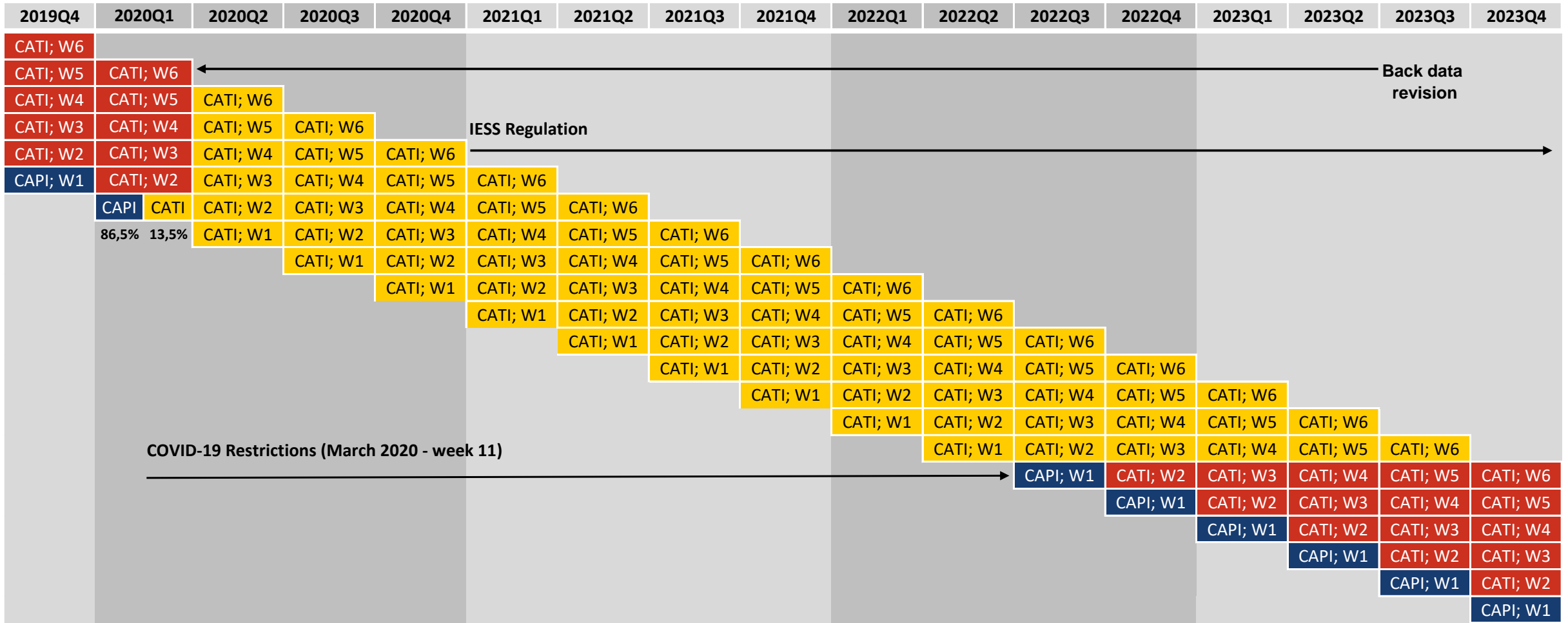
- An increase in the response rate.
- Gradual reversion of some results to pre-pandemic levels.
- **Year-on-year changes different from expected.**

# REVISION OF ESTIMATES

---

- In preparation for the 3Q2023 release, Statistics Portugal resumed the previous work on including additional variables in the **calibration weighting**.
- After simulations it was decided to add only the variable "**educational attainment**" broken down by NUTS 2, and six educational levels: i) no level of education; ii) 1<sup>st</sup> cycle of primary education; iii) 2<sup>nd</sup> cycle of primary education; iv) lower secondary education; v) upper secondary and post-secondary non-tertiary education; and vi) tertiary education.
- Choice relied on the **potential bias** on educational attainment when moving from CAPI to CATI.
- The **revision** covered the period affected by the suspension of CAPI: 2Q2020 to 2Q2023 (13 quarters).
- **Estimates for 3Q2023**, the last quarter affected by the suspension of CAPI (6<sup>th</sup> wave), **were obtained under the same calibration weighting**.
- The reintroduction of CAPI was done through the 1<sup>st</sup> wave (1/6 of the sample) from 3Q2022 to 4Q2023. The 3Q2023 was the last quarter affected by CATI in the 1<sup>st</sup> wave.

# REVISION OF ESTIMATES



Legend:

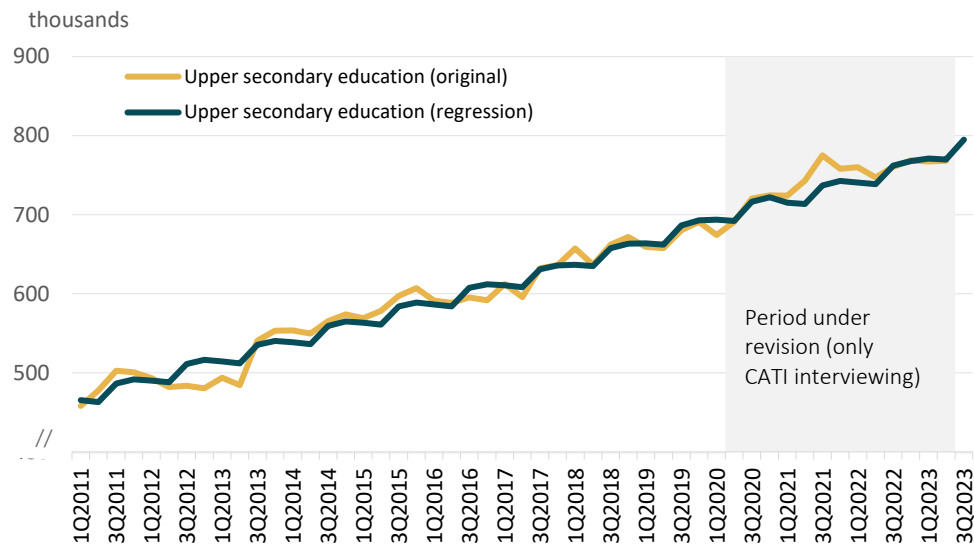
- CAPI 100% Computer Assisted Personal Interviewing
- CATI ≈60% Computer Assisted Telephone Interviewing; ≈40% Computer Assisted Personal Interviewing
- CATI 100% Computer Assisted Telephone Interviewing
- W1 1<sup>st</sup> wave
- ...
- W6 6<sup>th</sup> wave

# REVISION OF ESTIMATES

- Educational attainment counts (estimated/sample-based control totals) were obtained under a **linear regression model** applied to each level and region (NUTS 2) taking the estimates from 1Q2011 (T=1) to 1Q2020 (T=37).
- The dependent variable was the educational attainment level, and the explanatory variables were time and quarter (3 dummy variables representing Q1, Q2 and Q3 where Q4 is the baseline).

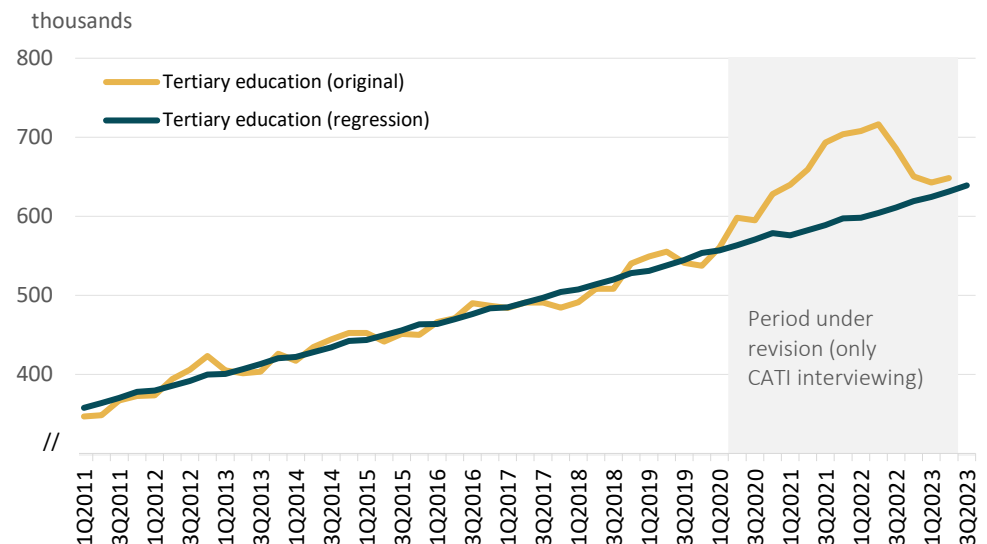
$$Y = \beta_0 + \beta_1 T + \beta_2 Q_1 + \beta_3 Q_2 + \beta_4 Q_3 + e$$

Upper secondary and post-secondary non-tertiary education - Norte  
(thousand persons)



Source: Statistics Portugal, Labour Force Survey.

Tertiary education - Norte  
(thousand persons)



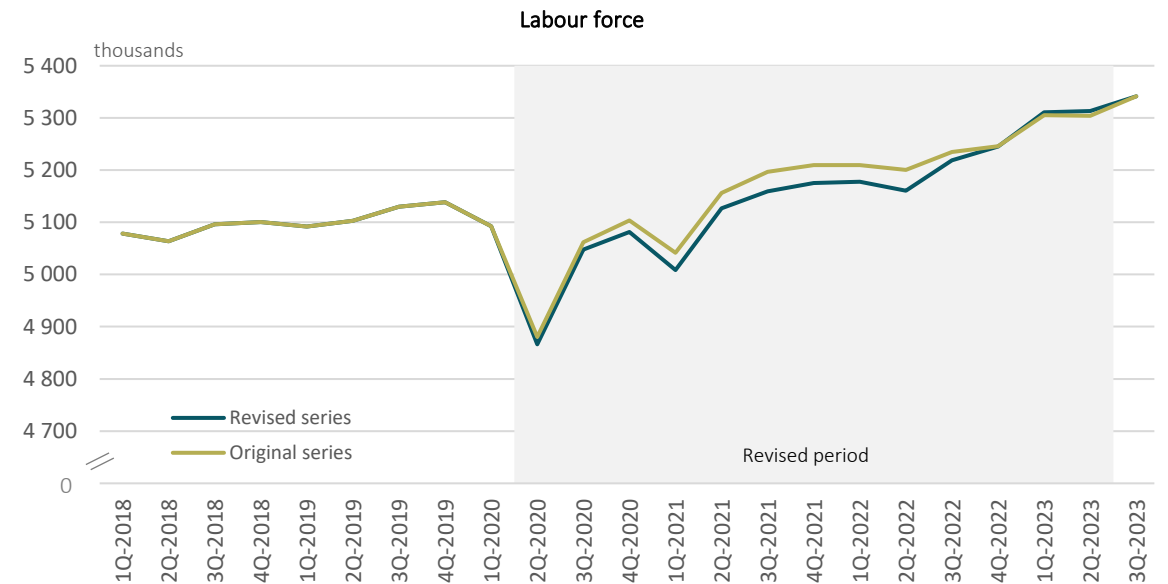
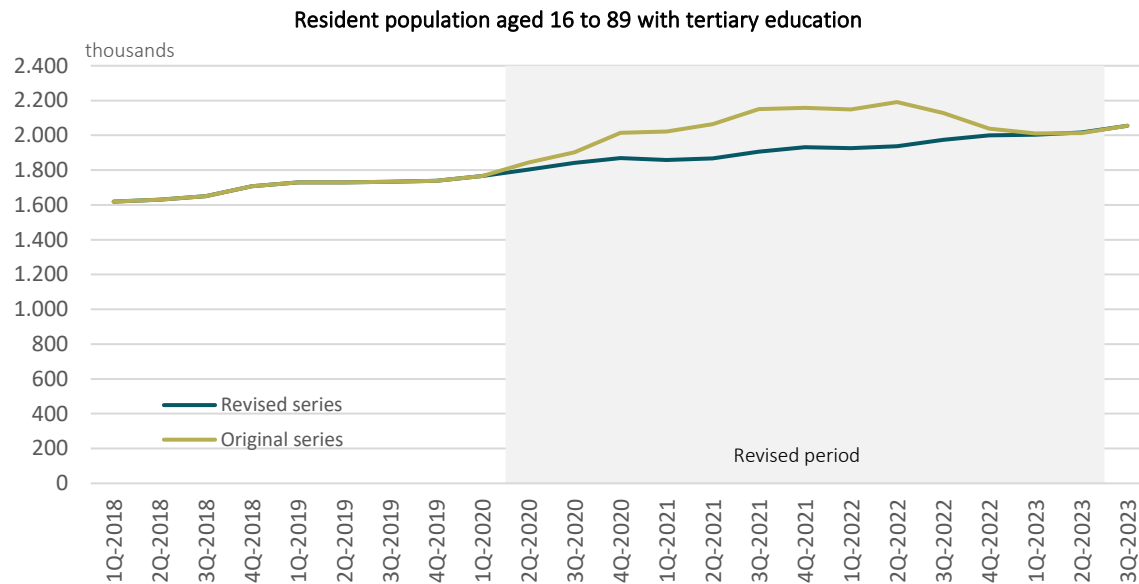
Source: Statistics Portugal, Labour Force Survey.



# IMPACT OF THE REVISION

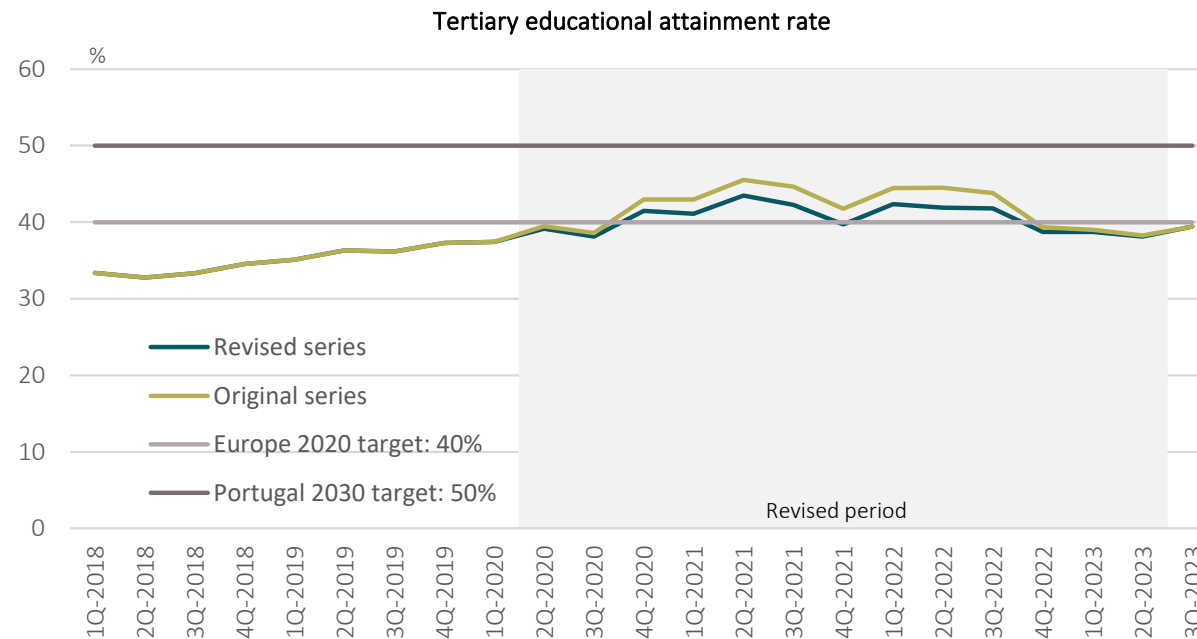
The following figures compare the original and revised estimates for some of the main indicators affected by the suspension of CAPI.

- At the beginning of 2023, the estimates dropped to pre-pandemic levels and the **absolute differences** between the original and revised series were **relatively small**.



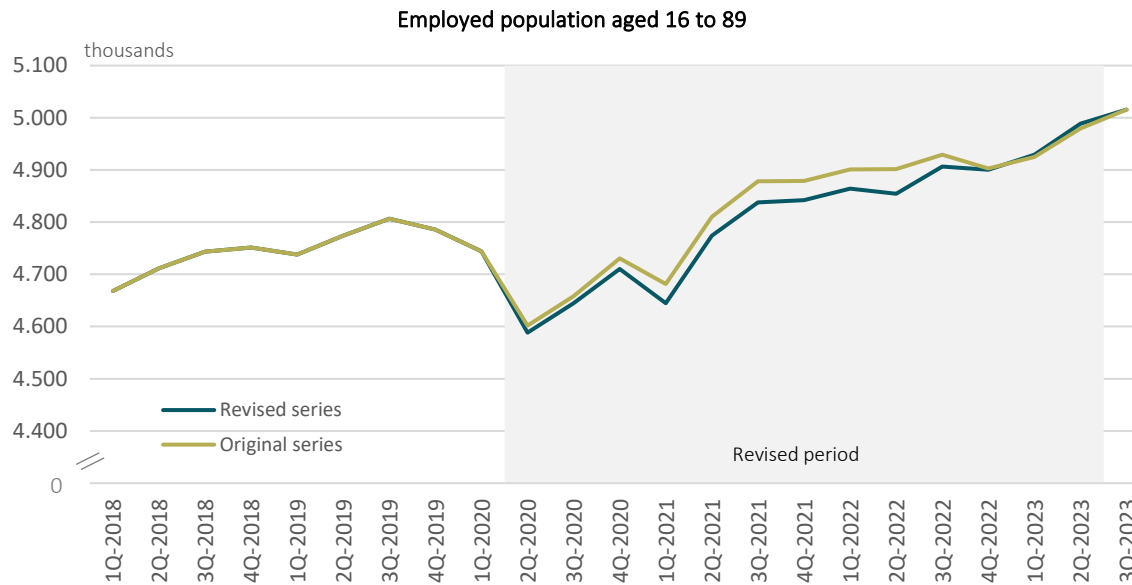
# IMPACT OF THE REVISION

- The **attainment rate of tertiary education was revised downwards** in all revised quarters, between 0.1 pp in 2Q2023 and 2.6 pp in 2Q2022.
- In 3Q2023, this rate was 39.4%, 0.6pp less than the Europe 2020 Strategy target of 40%.
- Considering the annual figures, in 2020, the tertiary educational attainment rate was also revised downwards (0.6 pp less than the figure originally published), standing at 39.0%.



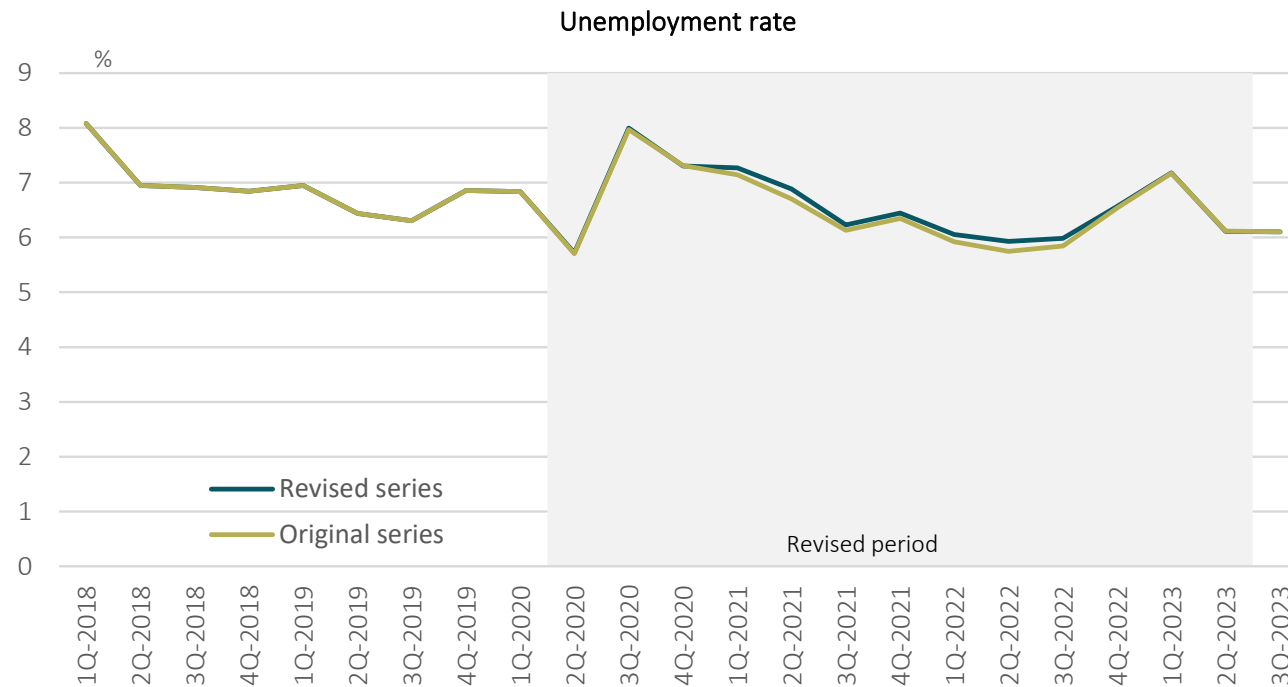
# IMPACT OF THE REVISION

- The **employed population was overestimated** between 2Q2020 and 4Q2022 – by a maximum of 47.1 thousand people (1.0%) in 2Q2022 – and **underestimated** in the first two quarters of 2023 – by a maximum of 9.3 thousand (-0.2%) in 2Q2023.
- The **unemployed population was revised upwards** in the period under analysis, with a maximum difference of 7.3 thousand people (2.1%) in 2Q2022.



# IMPACT OF THE REVISION

- These revisions had a minor impact on the **unemployment rate**: the highest difference was 0.2 pp in 2Q2021 and 2Q2022.





INSTITUTO NACIONAL DE ESTATÍSTICA  
STATISTICS PORTUGAL

---

**THANKS FOR YOUR ATTENTION!**

**Luís Correia** ([luis.correia@ine.pt](mailto:luis.correia@ine.pt))

**Célio Oliveira** ([celio.oliveira@ine.pt](mailto:celio.oliveira@ine.pt))



**25 DE ABRIL** 1974  
2024

**50**  
**Anos**