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Research paper

# Inflation and the national wage in Portugal

*Prices, pay and take-home income since euro entry*


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## About this paper

Every figure in the text carries a numbered source and an evidence grade that says how the figure was checked (Appendix A explains the grades). Claims about groups of people are presented as hypotheses, with the data for and against them set out side by side. The paper was drafted with AI language models under a written protocol. A reviewer from a different AI model family then checked it against the sources, and the sources were re-read where they could be reached; the Methods appendix states this in full. Where a source could not be read, the paper says so and treats the gap as a gap, not as a finding.

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# Abstract

This paper asks how prices and wages have moved in Portugal since euro entry, why pay is low by European Union standards, how much of an employer's labour cost reaches the worker, what minimum-wage rises do, and which measures could raise real take-home pay. Four findings stand out. First, Portugal has a wage **level** problem more than a wage **trend** problem: real average full-time pay was flat from 2000 to 2019, then rose 15,9 % in 2019–2025 [S7; A][S8; A], yet median earnings are still 54 % of the EU27 median in purchasing-power terms [S6; A]. Second, the inflation shock cut average real pay in 2022 only [S7; A][S1; A]; by 2025 food, average pay and the minimum wage had all risen about 31–32 % since 2021 [S1; A][S7; A][S3; A]. An illustrative 100 € renewed each year in short-term deposits kept 88,1 € of purchasing power before tax, arithmetic rather than a measured saver outcome [S19; A][S1; A]. Third, low pay mostly mirrors low productivity rather than an unusually low labour share. Portuguese research supports minimum-wage spillovers up to percentile 54 in 2006–2019 [S85; A]; employment effects remain not measured. Unit profits contributed about half of domestic price growth in 2022 and labour costs led from 2023 [S8; A]; this accounting split cannot identify causes or motives. Fourth, a minimum-wage earner has zero monthly income-tax withholding [S33; A]; our sole-earner calculation gives a final annual IRS (*imposto sobre o rendimento das pessoas singulares*, personal income tax) of 0 € to 250 €, depending on qualifying invoices, which a first-bracket rate cut does not change [S29; A-i][S32; A-i]. Source readings settle the tax-amendment year and the November withholding rules, and supply official projections [S68; A][S76; A][S67; A]. Low-income inflation, above-reference tax assessments, linked pay data, emigration motives, saver outcomes, current-scheme costs, the field observer's own testimony and statistical revisions remain open, alongside unresolved source conflicts. We assess ten measures, each with mechanism, evidence, cost, risk and sequence, separate historical fiscal costs from current-regime gaps, and mark our own proposals.

## Key findings

- Portugal has a wage level problem more than a wage trend problem: real average full-time pay was flat from 2000 to 2019 and then rose 15,9 % in 2019–2025 [S7; A][S8; A], yet median earnings are still 54 % of the EU27 median in purchasing-power terms [S6; A] (Figure 3, Table 2).
- The inflation shock cut average real pay in 2022 only; by 2025 food, average pay and the minimum wage had all risen about 31–32 % since 2021 [S1; A][S7; A][S3; A] (Figures 4 and 5, Table 4).
- Unit profits contributed about half of the rise in Portugal's GDP deflator in 2022 (2,56 of 5,33 pp, 48 %), and labour costs contributed most from 2023 [S8; A]; the split is an accounting identity and cannot identify causes or motives (Figure 1, Table 6).
- The minimum wage is 86,3 % of median base pay in the Quadros de Pessoal (2024) but 68,8 % of median earnings including regular bonuses [S27; A] computed; the ratio depends on the basis, and rankings need one basis for every country (Figure 9, Table 2a).
- A minimum-wage earner has zero monthly IRS withholding [S33; A], but our sole-earner arithmetic gives a final annual IRS of 0 € to 250 € depending on qualifying invoices, which a cut in the first-bracket rate does not change [S29; A-i][S32; A-i] (Table 3a).
- An illustrative 100 € renewed each year in new short-term deposits kept 88,1 € of purchasing power before tax over 2021–2025 [S19; A][S1; A]; this is arithmetic on annual averages, not a measured saver outcome (Figure 8).
- A hypothesis, not a finding: 38,0 % of foreign-nationality full-time employees earned the minimum base wage in 2022, in a restricted QP sample, against 21,4 % of Portuguese nationals [S38; A-i] / C, while the share of all full-time employees at the minimum fell as foreign employment grew [S27; A]; whether the gap persists within sector, occupation and tenure is not measured (§5.3).

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# 1. Introduction and research questions

Public debate about pay in Portugal mixes two complaints. One says that wages "never rise" and that inflation has eaten what little did rise. The other says that the minimum wage has risen so fast that "everyone now earns the minimum". Each has a measurable core, and each is argued with numbers that mix wage concepts (base pay, earnings, compensation), price indices (IPC or HICP), payment bases (14 or 12 a year) and country groups. This paper separates the measurable core from the rhetoric, using only figures traced to an official source, and says where the evidence stops.

The question matters for three reasons. First, the 2021–23 inflation episode brought annual HICP inflation of 8,1 % in 2022 [S1; A]. Second, the statutory minimum wage, the *retribuição mínima mensal garantida* (RMMG, the guaranteed minimum monthly pay set each year by decree), rose from 505 € in 2014 [S27; A] to 920 € in 2026 [S36; A], and a tripartite agreement commits to 1 020 € in 2028 [S53, S55; A]. Third, Portugal has cut the personal income tax (*imposto sobre o rendimento das pessoas singulares*, IRS) repeatedly, most recently by Decreto-Lei n.º 212/2026 of 4 November, whose preamble calls it the fifth reduction since April 2024 [S54; A].

We address five research questions.

- **RQ1.** How have consumer prices and wages moved in Portugal since euro entry (1999/2002), and have real wages recovered from the 2021–23 inflation shock?
- **RQ2.** Why are Portuguese wages low relative to the EU, and why does the minimum wage cover so large a share of workers?
- **RQ3.** How much of the employer's labour cost reaches the worker as take-home pay at the minimum, a low and a middle wage, and how does that compare with the EU and the OECD?
- **RQ4.** What does the evidence say about the employment and wage-distribution effects of minimum-wage rises, in general and in Portugal since 2014?
- **RQ5.** Which measures could raise real take-home pay sustainably, and with what mechanism, evidence, cost and risk?

A companion paper covers price levels, quality of life and regions.

# 2. Data, sources and method

## 2.1 The evidence base

The paper rests on an evidence record ([S1]–[S52]), sources added during revision ([S53]–[S64]) and a scan of the company's local facts store. Notes imported into that store by AI tools are leads only and never cited; a database of cross-checked official statistics is cited with the label (B).

The core series are: Eurostat HICP (prc_hicp_aind, prc_hicp_minr) [S1][S2]; Eurostat minimum wages and their metadata (earn_mw_cur, earn_minw_esms, earn_mw_avgr2) [S3][S4][S5]; the Structure of Earnings Survey (SES) [S6]; national-accounts salaries, deflators and productivity (nama_10_fte, nama_10_gdp, nama_10_lp_ulc) [S7][S8][S9]; OECD Taxing Wages and average wages [S12][S13]; AMECO wage shares [S14]; ECB rates [S17]–[S19]; and the Quadros de Pessoal (QP) series 2014–2024 published by DGCP/MTSSS, an annual employer census of full-time pay in October [S27].

## 2.2 What was read at source, by whom and when

On 2026-11-08 the drafting stage read by script, at the official source, the CIRS articles on rates, the *mínimo de existência* (tax-free minimum) and IRS Jovem [S28][S29][S31], the 2026 withholding tables (*retenção na fonte*) [S33], the RMMG and tax decrees [S36][S53][S54], the tripartite agreement [S55], the Commission's forecast [S56] and the Eurostat series [S1][S7][S8]. The same day an independent reviewer and the verification stage read further statutes at source, with the IAS Portaria, the CFP report, the Banco de Portugal's March 2025 Bulletin and the CNSF survey [S60][S29][S32][S30][S61][S62][S63][S38][S64]: label (A-i). Figures read on 2026-11-07 for the companion housing paper carry (A-c) [S20][S22][S24][S25][S26]. Unread items are listed in §11.

## 2.3 Definitions

| Item | Options | Choice in this paper | Reason |
|---|---|---|---|
| Wage measure | QP base pay and earnings (October, full-time, mainland) [S27; A]; SES median monthly earnings (excludes 13th/14th payments) [S6; A]; nama_10_fte average full-time adjusted salary [S7; A]; OECD average wage [S13; A]; INE pay per job [S48; D] | **Median** for the typical worker (QP over time; SES across countries, in PPS); **mean** nama_10_fte for long real series. | The top decile pulls the mean up (QP top-decile base pay 3 555,66 € vs median 950 €) [S27; A]; nama_10_fte is our only annual EU-comparable series from 2000. |
| Deflator | Household final consumption deflator (P31_S14); HICP; OECD constant prices; INE IPC | **P31_S14** for real wages; HICP as a check, shown once. | P31_S14 prices what resident households buy. HICP also covers tourists' spending in Portugal. The choice moves the 2000–2025 result between +16,4 % and +22,0 % (conflict d). |
| 14 vs 12 payments | The RMMG and most salaries are paid 14 times a year (12 months plus *subsídio de Natal* and *subsídio de férias*, the Christmas and holiday allowances). Eurostat publishes the minimum wage as (monthly × 14) / 12 [S4; A]. | Annual amounts, or Eurostat's × 14/12 level for cross-country euro and PPS comparisons. For minimum ÷ median ratios, both sides on the same basis (Table 2a). | Mixing a × 14/12 numerator with a 12-payment denominator inflates Portugal's ratio by up to 16,7 % (conflict a). |
| IPC vs HICP | INE's IPC (residents) vs HICP (includes non-residents' spending) | **HICP**; INE's release could not be read. | 2023 gap of 1 pp (5,3 % vs 4,3 % from press) [S1; A] / [S47; D]. |
| Wage share | Adjusted (AMECO ALCD0) vs unadjusted (D1 ÷ GDP) | **Adjusted**; unadjusted in §6. | Falling self-employment biases the unadjusted share. |
| Gross, net, employer cost | Employer cost = gross × 1,2375; take-home = gross − 11 % TSU (*taxa social única*, social contributions) − withholding | All three (Table 3); OECD wedge for comparisons. | The debate mixes them. |
| Withholding vs final tax | Monthly *retenção na fonte* is an advance; final IRS is settled once a year | Both shown for the RMMG (Tables 3 and 3a). | Zero withholding does not by itself mean zero final tax. |

PPS (purchasing power standard) is Eurostat's artificial currency that removes price-level differences between countries. The Kaitz index is the minimum wage divided by the median (or mean) wage.

## 2.4 Method

We follow the ten-stage evidence method of our earlier housing paper: claim-by-claim checks against official data, statutory checks with verbatim spans, a verification record, and an independent review before revision. We estimate no causal models; where our numbers are descriptive, we say so at the

point of use.

## 3. Since when: a timeline

Index values are annual averages; real salaries are deflated by P31_S14 (2015 prices).

**Table 1. Prices and average pay in Portugal, selected years**

| Year | HICP index PT (2015 = 100) | HICP rate PT | HICP rate EA20 | Nominal full-time salary PT (€/year) | Real salary PT (2015 €) | PT salary as % of EU27 (nominal €) |
|---|---|---|---|---|---|---|
| 1999 | 71,18 | 2,2 % | — | — | — | — |
| 2002 | 79,24 | 3,7 % | 2,3 % | 13 601 | 17 437 | 62,0 % |
| 2008 | 92,78 | 2,7 % | 3,4 % | 16 099 | 17 016 | 61,5 % |
| 2014 | 99,50 | −0,2 % | 0,4 % | 16 430 | 16 573 | 55,9 % |
| 2019 | 103,71 | 0,3 % | 1,2 % | 18 569 | 17 610 | 56,6 % |
| 2022 | 113,03 | 8,1 % | 8,4 % | 21 131 | 18 216 | 59,2 % |
| 2025 | 124,83 | 2,2 % | 2,1 % | 26 202 | 20 410 | 63,2 % |

*Sources: HICP [S1; A]; nama_10_fte [S7; A]; P31_S14 [S8; A]; real values and ratios computed. Salaries are annual amounts, so the 14-payment question does not arise. Data file T1. Annual refreshes of the HICP, pay and deflator series remain open; the exact PT/EU salary inputs were not reread.*

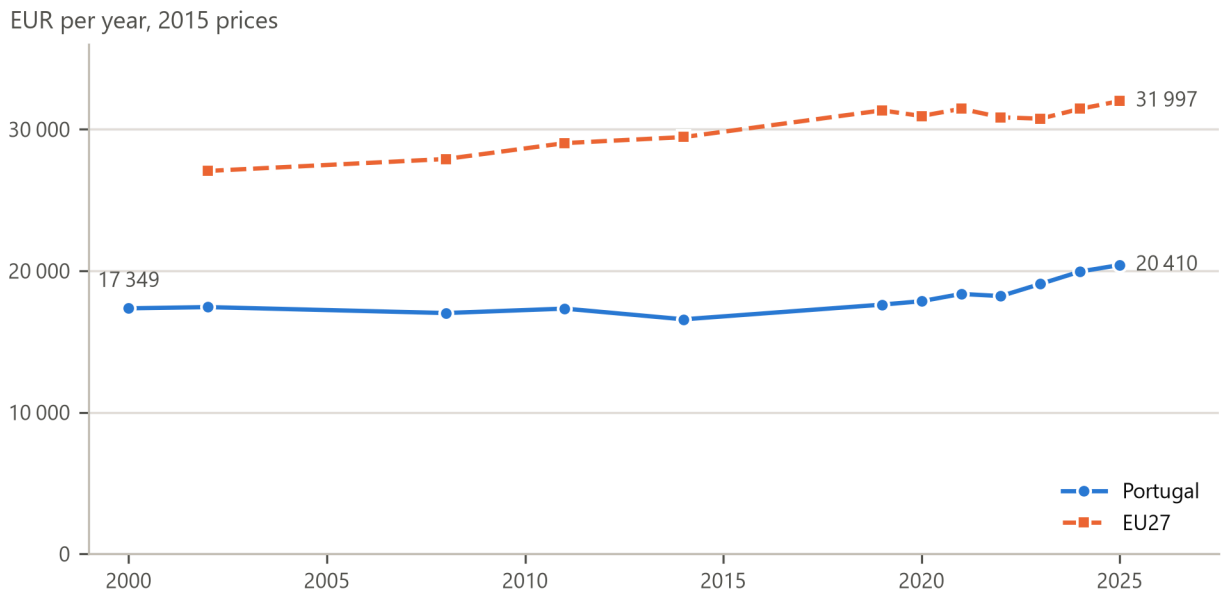



**Figure 3. Real average full-time salary, Portugal and EU27, 2015 prices, 2000–2025.**

*Source: nama_10_fte [S7] ÷ P31_S14 deflator [S8] × 100, computed as in Table 1.*

**Euro entry and the stagnation of the 2000s (1999–2007).** Portugal joined the euro in 1999 and adopted the notes and coins in 2002. Prices rose by 30,3 % between 1999 and 2008 (HICP index 71,18 → 92,78) [S1; A] computed. Real average pay barely moved: 17 349 € in 2000 and 17 016 € in 2008, in 2015 prices [S7, S8; A] computed. The OECD series tells the same story in dollars of constant purchasing power: 38 604 in 2000 and 37 765 in 2008 [S13; A]. Throughout, Portugal's nominal salary stayed at about 62 % of the EU27 level.

**Crisis, troika and the minimum-wage freeze (2008–2014).** The sovereign-debt crisis led to an EU-IMF programme in 2011–2014. Nominal full-time pay fell from 16 660 € (2011) to 16 430 € (2014) [S7; A], and real pay bottomed at 16 534 € in 2015 [S7, S8; A] computed. The minimum wage was 485 € in early 2014 (Eurostat's 2014-S1 figure of 566 € is 485 × 14 / 12) [S3; A] computed and 505 € in the October 2014 QP month [S27; A]. The length of the freeze and the decrees behind each step were not read (open).

**The minimum-wage path (2015–2019).** The RMMG rose every year under successive social-concertation agreements. Real average pay recovered to 17 610 € by 2019, roughly its 2000 level [S7, S8; A] computed, while the adjusted wage share fell from 60,2 % (2000) to 53,5 % (2019) [S14; A].

**Pandemic (2020).** Prices fell 0,1 % [S1; A]. The average salary rose, to 18 907 € from 18 569 € in 2019 [S7; A], possibly through composition if job losses fell on lower-paid workers (not measured).

**Inflation shock and ECB tightening (2021–2023).** Energy prices rose fastest: Portuguese HICP energy rose 23,8 % in 2022 [S1; A]. Headline HICP reached 8,1 % in 2022 and 5,3 % in 2023 [S1; A]. The ECB raised its deposit facility rate from −0,50 % to 0 % on 27 July 2022 and to a peak of 4,00 % on 20 September 2023 [S18; A]. The 12-month Euribor averaged 3,86 % in 2023, up from −0,49 % in 2021 [S17; A] computed.

**Disinflation, rate cuts and tax changes (2024–2026).** Inflation fell to 2,7 % (2024) and 2,2 % (2025) [S1; A]; the Banco de Portugal corroborates the latter [S67; A], while Eurostat's revision status remains open. The ECB cut the deposit rate to 2,00 % (11 June 2025), then raised it to 2,25 % (17 June 2026) [S18; A] and 2,50 % (16 September 2026) [S83; A], the latest effective-date row read (page update date unspecified). Portuguese HICP inflation was 3,6 % year on year in September 2026 [S81; A]; the October flash estimates were 3,9 % for Portugal and 4,0 % for the EA21 [S81; A], distinct from Table 1's EA20. IRS rates were cut repeatedly and IRS Jovem was widened (§7). The RMMG reached 870 € in 2025 [S53; A] and 920 € in mainland Portugal from 1 January 2026 [S36; A].

# 4. How it shows: the measured symptoms

## 4.1 The HICP path and its components

Over the whole euro period, Portuguese prices rose a little less than euro-area prices: from 2002 to 2025 the HICP index rose by 57,5 % in Portugal and by 62,2 % in the euro area [S1; A] computed. In the shock years the two moved together (2022: 8,1 % vs 8,4 %; 2023: 5,3 % vs 5,4 %) [S1; A].

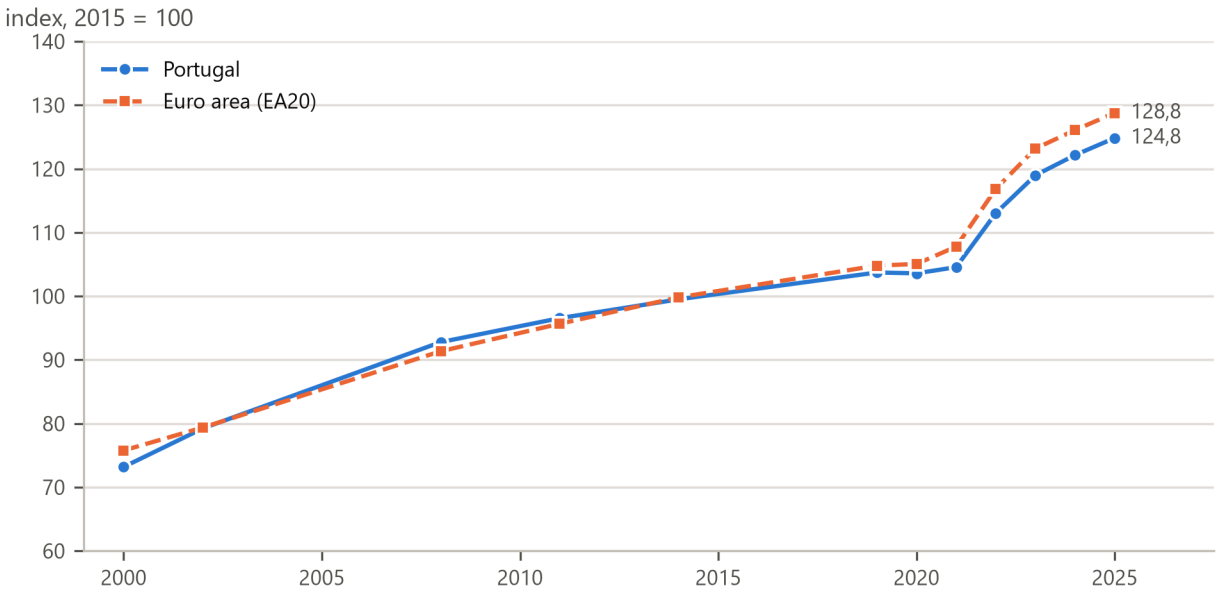



**Figure 2. HICP index, Portugal and euro area (2015 = 100), 2000–2025.**

*Source: Eurostat prc_hicp_aind, annual averages [S1].*

Components matter more for small budgets. From 2021 to 2025, prices rose 19,4 % overall, but food and non-alcoholic beverages rose 30,8 %, actual rents 20,9 % and energy 16,0 % [S1; A] computed (evidence stage, from annual rates; the index endpoints are not in our data file, §11). INE's household budget survey 2022/2023 shows mean spending of 16 294 € a year in the first income quintile against 34 994 € in the fifth, with food at 12,9 % of the average household's spending [S52; B]. A low-income price index was not built (open). INE's IPC rebasing preserves total-IPC results when long series are recalculated [S86; A]; this leaves the missing HICP component endpoints and the low-income reweighting open.

The 2025 food figure is in conflict: HICP CP01 gives 2,9 % [S1; A], while a press report of INE's national IPC gives 4,8 % for "alimentos" [S47; D]. The press category may be unprocessed food only. We use HICP and flag the gap (conflict c).

## 4.2 Real wages

**Table 2. Real growth of average full-time pay, Portugal and EU27**

| Period | PT, P31_S14 deflator | EU27, P31_S14 | PT, HICP deflator | PT, OECD constant prices |
|---|---|---|---|---|
| 2000→2019 | +1,5 % | — | — | +0,9 % |
| 2008→2025 | **+19,9 %** | +14,7 % | — | — |
| 2019→2025 | +15,9 % | — | — | +15,4 % |
| 2000→2025 | **+17,6 %** | +18,3 % (2002→2025) | +22,0 % | +16,4 % |

*Sources: [S7, S8, S13; A]; computed. Annual full-time adjusted salaries (no 14/12 issue). 2000→2019 and 2019→2025 on P31_S14 computed from the levels in Table 1 (17 349 → 17 610 → 20 410). Revised Eurostat inputs were not retrieved at the enrichment stage; the table's figures and labels are retained, their refresh still open.*

Two facts follow. First, real pay was flat for two decades and then rose quickly: about +16 % in six years, faster than in the EU27 since 2008. Second, the shock year was 2022 only. Deflated by HICP, the average full-time salary fell 1,5 % in 2022 and rose 4,2 % in 2023, 4,9 % in 2024 and 2,6 % in 2025; the EU27 figures were −3,7 %, −0,2 %, +2,3 % and +1,7 % [S7, S1; A] computed (the 2024 figure is

(24 984 ÷ 23 184) ÷ 1,027 − 1 = 4,93 %). From 2021 to 2023 Portuguese nominal pay rose 16,8 % against prices of 13,8 %; in the EU27, pay rose 11,6 % against prices of 16,1 % [S7, S1; A] computed. On this average measure, Portugal recovered from the shock earlier than the EU27.

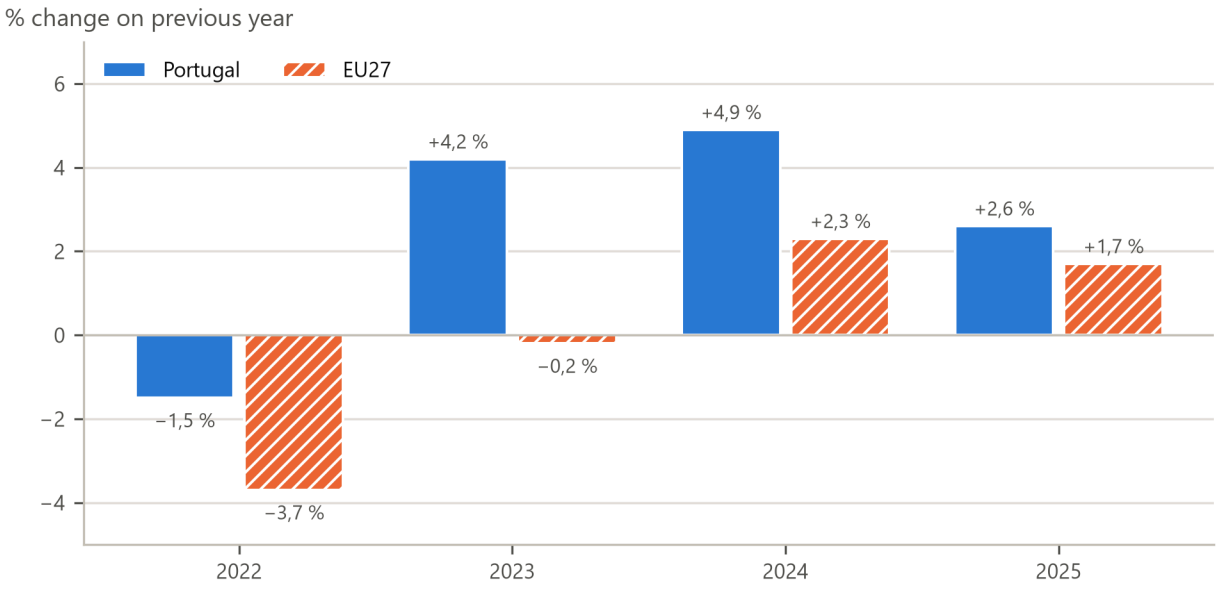



**Figure 4. Real average full-time salary, year-on-year change, HICP-deflated, Portugal and EU27, 2022–2025.**

*Source: [S7][S1], computed.*

For the bottom of the distribution, the RMMG rose 14,3 % from 2021 to 2023 (665 € → 760 €) [S27; A] computed, close to HICP (+13,8 %), but food, which weighs more in low budgets, rose 24,3 % [S1; A] computed. Without a low-income price index (open), we cannot net these out.

INE, via the press, reports gross monthly pay per job of 1 835 € in the second quarter of 2026, +5,1 % nominal and +1,8 % real against IPC of 3,3 % [S48; D]. With HICP at 3,6–3,9 % in autumn 2026 [S2; A], real gains in 2026 are likely to be smaller than in 2023–2025.

## 4.3 Minimum-wage coverage and wage compression

The RMMG has moved towards the middle of the distribution. In QP base pay (both sides paid 14 times, so the ratio is basis-consistent), the minimum was 78,7 % of the median in 2014 (505 € ÷ 641,93 €) and 86,3 % in 2024 (820 € ÷ 950 €) [S27; A] computed. The first and second deciles of base pay equalled the RMMG in every year from 2016 to 2024 [S27; A]. The share of full-time employees paid exactly the RMMG rose from 20,4 % in 2014 to a peak of 23,9 % in 2020, then fell back to 20,4 % in 2024 [S27; A]. Meanwhile the share with base pay of at least 1 000 € rose from 24,7 % to 45,7 % (nominal) [S27; A] computed.

So "everyone is converging on the minimum" is half true. The bottom half of the distribution is compressed: the median is only 16 % above the RMMG. But the share **at** the minimum has not grown since 2020, and the upper half has pulled away in nominal terms.

Cross-country comparisons depend on the basis. Table 2a puts the ratios we hold side by side, and Figure 9 ranks them.

**Table 2a. Minimum ÷ typical wage for Portugal, by basis (conflict a)**

| Measure | Year | Numerator | Denominator | Ratio | Same basis on both sides? |
|---|---|---|---|---|---|
| QP base pay | 2024 | RMMG 820 € | median base pay 950 € | 86,3 % | Yes: monthly base pay, October, 14-payment scheme [S27; A] computed |
| QP base pay | 2023 | RMMG 760 € | median base pay 880 € | 86,4 % | Yes [S27; A] computed |
| QP earnings (*ganho*) | 2024 | RMMG 820 € | median earnings 1 191,02 € (mainland) | 68,8 % | Yes: October monthly amounts; *ganho* adds regular bonuses and overtime [S27; A] computed |
| SES, 12-payment RMMG | 2022 | 705 € | median monthly earnings 1 099 € | 64,1 % | Yes: both exclude the 13th and 14th payments [S3, S4, S6; A] computed |
| SES, × 14/12 RMMG | 2022 | 823 € | 1 099 € | 74,9 % | No: numerator includes the extra payments, denominator excludes them |
| Eurostat earn_mw_avgr2 | 2025 | minimum wage | average monthly earnings | 70,3 % | Unknown: numerator not documented on the page read [S5; A] |
| Banco de Portugal (OECD ratio) | 2023 | minimum wage | median wage | 68 % | OECD concept not read by us [S38; A-i] |

*Data file T2a. The Eurostat country annex specifies October earnings, excluding non-standard payments, with restricted sector coverage [S69; A]; Portugal's numerator adjustment remains open.*

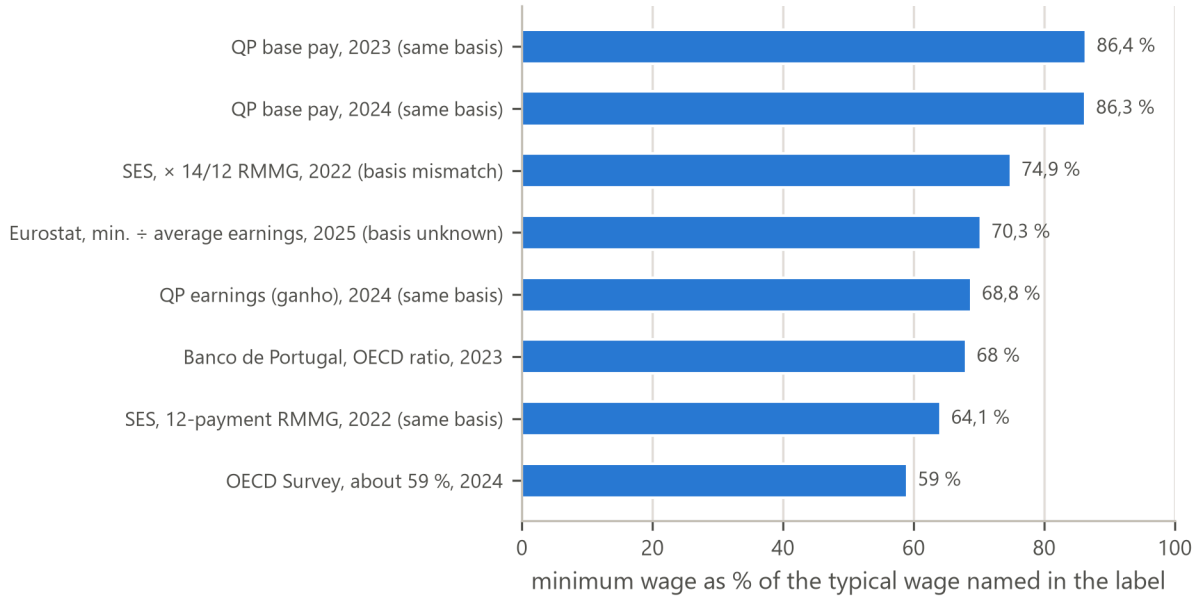



**Figure 9. Minimum ÷ typical wage for Portugal, by basis: the ratios of Table 2a and §4.3, ranked.**

*Source: [S27][S3][S4][S5][S6][S38][S78].*

Three points follow. First, the 86 % common in Portuguese debate is a base-pay ratio; on earnings including regular bonuses, the same census gives 68,8 % for 2024, close to the Banco de Portugal's 68 %. Second, Eurostat's dataset title refers to **average** earnings; with a right-skewed distribution (§2.3), a ratio to the mean is the lower of the two. Third, rankings need one basis for every country. The Banco de Portugal calls Portugal's 68 % the "highest in the euro area" [S38; A-i], but its figure note says that the OECD calculates no ratio for Cyprus and Malta [S38; A-i]; the statement covers only the euro-area members with an OECD ratio, and members without a statutory minimum fall outside it. On Eurostat's measure, 70,3 % is the highest of the six countries we fetched (Portugal, Spain, France,

Germany, Greece, Slovenia) [S5; A]. We rank Portugal on no wider set. The OECD Survey reports a minimum wage of about 59 % of the gross median wage in 2024 [S78; A]. The different year and the unreconciled OECD concepts leave conflict (a) open.

## 4.4 Take-home pay and the tax wedge

**Table 3. From employer cost to take-home pay, single worker without dependants, mainland, 2026, one ordinary monthly payment**

| Gross monthly pay | Employer cost (× 1,2375) | Employee TSU (11 %) | IRS withholding, Tabela I | Take-home | Take-home ÷ employer cost |
|---|---|---|---|---|---|
| 920,00 € (RMMG) | 1 138,50 € | 101,20 € | 0,00 € | **818,80 €** | 71,9 % |
| 1 600,00 € | 1 980,00 € | 176,00 € | 192,27 € | 1 231,73 € | 62,2 % |
| 2 000,00 € | 2 475,00 € | 220,00 € | 301,34 € | 1 478,66 € | 59,7 % |

*Sources: withholding computed from Despacho n.º 233-A/2026, Tabela I [S33; A] (rows "Até 920,00 \| 0,00 %"; "Até 1 819,00 \| 24,10 % \| 193,33"; "Até 2 119,00 \| 31,10 % \| 320,66"; formula "(Remuneração mensal × Taxa) – Parcela a abater"); RMMG [S36; A]; TSU rates 23,75 % and 11 %, Código Contributivo art. 53.º [S61; A-i]. Basis: one of the 14 annual payments, in an ordinary month; withholding on the subsídios and the November 2026 adjustment (§7.1) are not covered. Withholding is an advance on the final annual tax, not the final tax.*

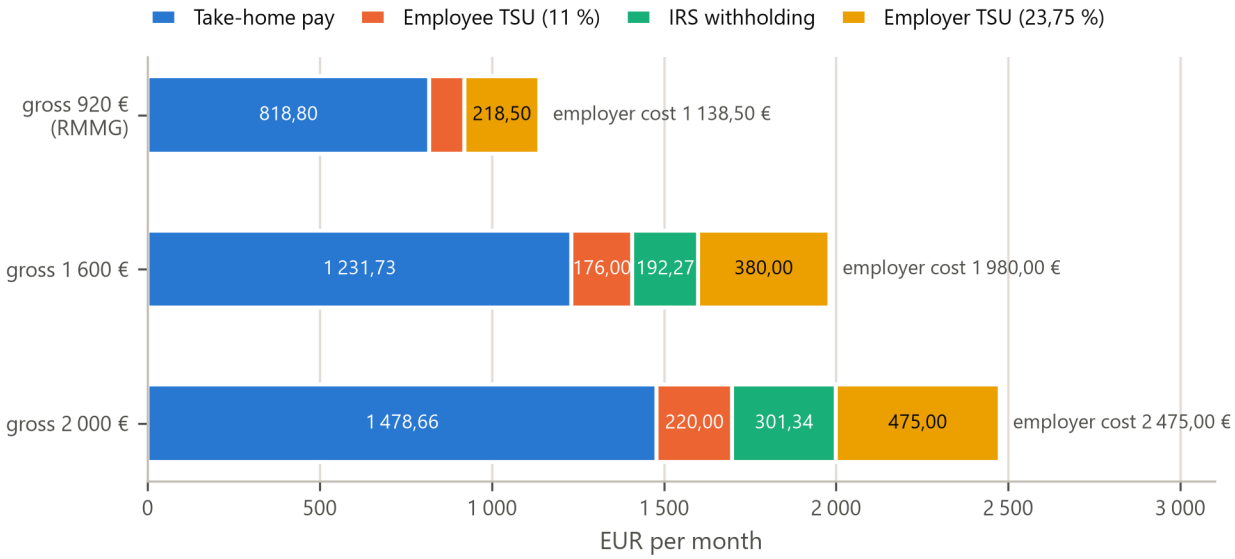



**Figure 7. From employer cost to take-home pay, single worker without dependants, mainland, 2026, one monthly payment.**

*Source: Table 3 [S33][S61]; employer TSU = employer cost − gross pay, computed.*

**Zero withholding is not the same as zero tax.** The minimum-wage earner has no IRS withheld each month. The final annual IRS depends on the *mínimo de existência* in CIRS art. 70.º. Its reference value is "o maior valor entre 12 880 € e 1,5 × 14 × IAS" (n.º 1) [S29; A], and 920 € × 14 = 12 880 €, so a sole RMMG earner sits exactly at the reference value. For such a taxpayer, n.º 2 a) sets the *abatimento* (the reduction of taxable income) as "a diferença positiva entre o valor de referência e a soma das deduções específicas com Limite despesas gerais; Taxa 1.º escalão" [S29; A-i]. Table 3a applies these words.

**Table 3a. Annual IRS of a single taxpayer whose only income is the 2026 RMMG (our arithmetic, not a tax-authority assessment)**

| Step | Rule (source) | Amount |
|---|---|---|
| Gross employment income | 920,00 € × 14 [S36] | 12 880,00 € |
| Reference value | max(12 880 €; 1,5 × 14 × IAS = 11 279,73 €), art. 70.º n.º 1 [S29][S62] | 12 880,00 € |
| Specific deduction | 8,54 × IAS 537,13 €, art. 25.º n.º 1 a) [S30][S62] | 4 587,09 € |
| General-expenses limit ÷ first-bracket rate | 250 € ÷ 12,20 %, art. 70.º n.º 2 a), art. 78.º-B, art. 68.º [S29][S32][S28] | 2 049,18 € |
| *Abatimento* | 12 880 − (4 587,09 + 2 049,18) | 6 243,73 € |
| Taxable income | 12 880 − 4 587,09 − 6 243,73 | 2 049,18 € |
| *Coleta* (tax before deductions) | 2 049,18 € × 12,20 % | 250,00 € |
| General family-expenses deduction | 35 % of qualifying invoices, "limite global de € 250", art. 78.º-B n.º 1 [S32] | 0 € to 250 € |
| Final IRS before any other deduction from the tax | *coleta* − deduction | 0 € (invoices ≥ 714,29 €) to 250 € (no invoices) |

*Labels: art. 68.º [S28; A]; art. 70.º n.º 1 [S29; A], n.º 2 a) and d) (A-i); arts. 25.º and 78.º-B [S30][S32] and the IAS (indexante dos apoios sociais, the index for benefits and tax limits) [S62; A-i]; arithmetic computed. The n.º 2 d) cap ("não pode ser superior à diferença entre os rendimentos brutos e as deduções específicas", 8 292,91 €) does not bind. Data file T3a.*

Two results follow, both our own arithmetic. First, in this example and before any other deduction from the tax, qualifying general-expenses invoices of at least 714,29 € eliminate the 250 € coleta; with fewer qualifying invoices, up to 250 € remains before other deductions, after a year of zero withholding. How many such earners reach that threshold is not measured. Second, the *coleta* is 250 € whatever the first-bracket rate: the formula leaves taxable income of 250 € divided by that rate, so the rate cancels out. Cutting the first-bracket rate therefore does not change this worker's tax; the general-expenses deduction and the reference value do. The 250 € result applies to this example, where gross income equals the reference value. Below it the result also depends on gross income and the statutory bounds, and higher incomes fall under other parts of art. 70.º n.º 2, so we compute no final IRS at 1 600 € or 2 000 €. The above-reference ranges in n.º 2 b) and c), the bounds in d) and the household-income exclusions in n.º 4 were read [S29; A]. Worked above-reference assessments and low-earner settlement statistics remain open.

The wedge on the minimum-wage worker is therefore mainly the social contribution: 28,1 % of the employer's cost (1 − 71,9 %) goes to TSU (computed). At 1 600 € and 2 000 € the monthly wedge rises to 37,8 % and 40,3 % of employer cost, before the annual IRS settlement (computed).

In international terms, the OECD tax wedge for a single worker without children at 67 % of the average wage was 36,1 % in Portugal in 2025, against an OECD average of 31,3 % and an EU-22 OECD average of 37,3 % [S72; A]. At 100 % of the average wage it was 39,3 %, 35,1 % and 41,7 % [S72; A]. The Portuguese wedge at 67 % fell from 37,5 % (2023) to 36,1 % (2025) [S12; A]. Portugal therefore taxes low and middle earners more than the OECD average but less than the average EU member of the OECD. Eurostat's low-wage wedge shows a larger fall (to 32,4 % in 2024) [S10; A]. Its metadata assigns estimation to the OECD through 2023 and to the JRC's Euromod model thereafter, using beginning-of-year tax parameters that exclude later changes [S11; A]. We use the OECD for comparisons over time; the numerical reconciliation remains open (conflict b).

## 4.5 Essentials versus wages

**Table 4. Cumulative change 2021→2025 (from annual averages)**

| Item | PT | EU27 |
|---|---|---|
| HICP all items | +19,4 % | +22,1 % |
| Food and non-alcoholic beverages | +30,8 % | +33,2 % |
| Actual rents | +20,9 % | — |
| Energy | +16,0 % | — |
| Average full-time adjusted salary (nominal, annual) | +32,0 % | +22,2 % |
| Minimum wage, Eurostat basis | +30,8 % | — |

*Sources: [S1, S3, S7; A] computed (evidence stage). Eurostat's basis is the monthly RMMG × 14 ÷ 12 [S4; A]; because the conversion factor is constant, the change equals the change in the RMMG itself (665 € → 870 €, +30,8 %) [S27, S53; A] computed.*

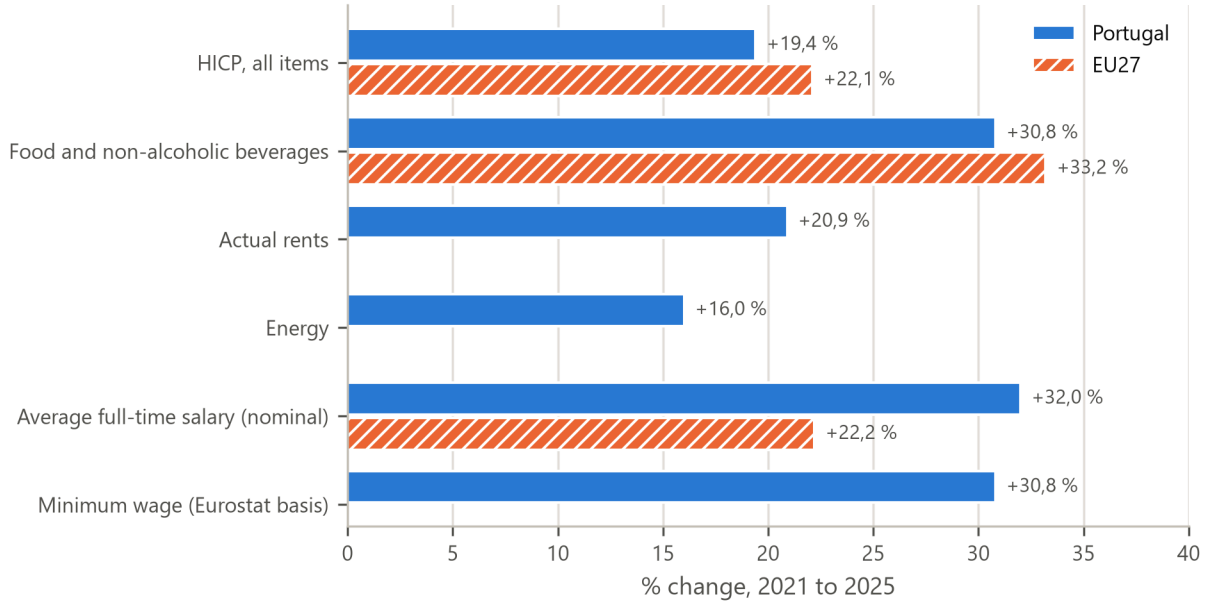



**Figure 5. Cumulative change 2021→2025: prices of essentials and pay, Portugal and EU27 (Table 4).**

*Source: [S1][S3][S7], computed.*

The food, rent and energy index endpoints behind Table 4 remain unretrieved, as do a low-income price index and real wages by decile.

From 2021 to 2023 food outran pay (§4.2); by 2025 wages had caught up on average. The temporary zero VAT (*IVA zero*) on a basket of essential foods (18 April 2023 to 4 January 2024, Lei n.º 17/2023 [S49; C]/E) cut the basket's prices by "cerca de 9,29%" by August 2023, per the government [S49; C]; INE's mechanical simulation put the May 2023 CPI effect at about 0,8 pp with full pass-through [S49; D]. One housing headline: the HICP index of actual rents stood at 136,37 in Portugal against 120,51 in the EU27 in 2025 (2015 = 100) [S59; B].

## 4.6 Real deposit rates and savings

New household deposits with agreed maturity of up to one year earned 0,05 % (2021), 0,13 % (2022), 1,78 % (2023), 2,61 % (2024) and 1,53 % (2025) on average [S19; A], against HICP inflation of 0,9 %, 8,1 %, 5,3 %, 2,7 % and 2,2 % [S1; A]. The real return on this product was negative every year, and −7,4 %

in 2022 (computed). Portuguese banks paid less than the euro-area average on the same product (2023: 1,78 % against 2,68 %) [S19; A]. In September 2026 the new-deposit rate (1,83 %) was again below inflation (3,6 %) [S19, S2; A].

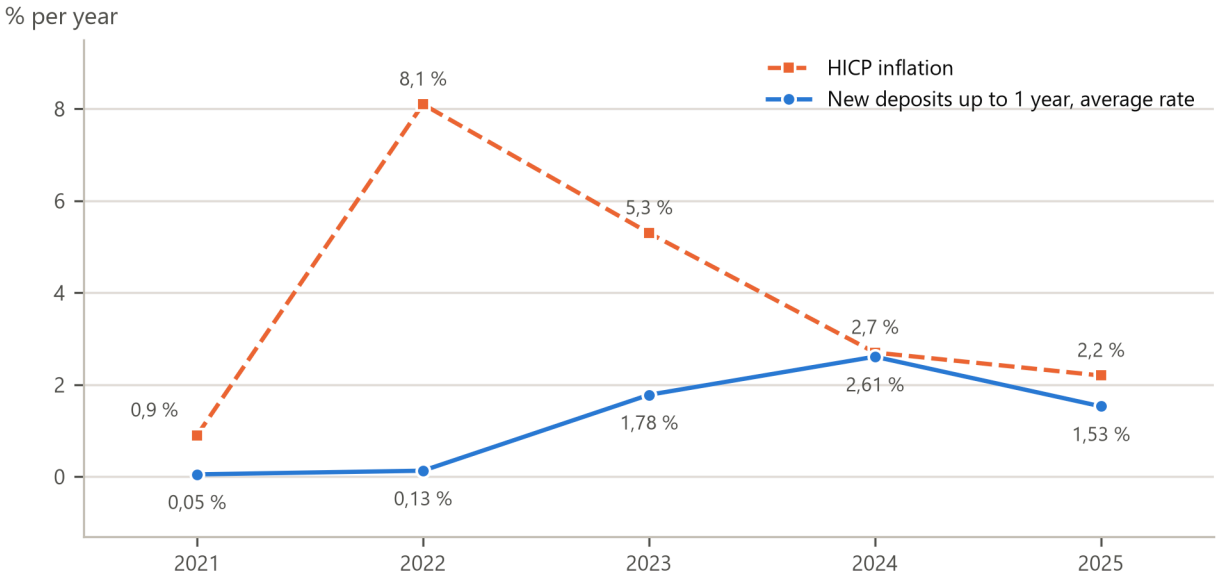



**Figure 8. New short-term household deposit rate and HICP inflation, Portugal, 2021–2025.**

*Source: ECB MFI interest rates [S19]; HICP [S1].*

As an illustration, 100 € placed in January 2021 and renewed each year at that year's average new-business rate would have kept 88,1 € of purchasing power by the end of 2025, gross of tax (euro area, same product: 88,5 €) [S19, S1; A] computed. This is arithmetic on annual averages, not what savers earned: it ignores current accounts, older deposits, other maturities, renewal dates and tax.

Deposits are 75,4 % of households' financial assets (ISFF 2024) [S52; B], but that says where the money is, not how many savers hold the modelled product. The CNSF's 2023 survey reports that 84 % of savers kept savings in current accounts and 33,9 % used term deposits, with overlapping responses [S64; A]. These shares cannot be added to count distinct savers, nor do they identify exposure to the modelled maturity. Whether current-account holders lost more or less than the illustration depends on current-account remuneration, which we did not read (open). We make no statement about how many savers lost how much.

The household gross saving rate was 12,32 % in 2025 against 14,31 % in the EU27 [S20; A-c]; it was about 7,0 % in 2019 [S20; A] (we use tec00131 throughout; nasa_10_ki gives 12,27 %, conflict g). In 2023, 21 % of Portuguese had no emergency savings against 16 % in the EU27 [S52; B].

## 4.7 Youth pay and emigration

Emigration fell from 40 377 people in 2015 to 25 079 in 2021 [S22; A], then rose to 33 916 in 2024 [S22; A-c]. The age queries returned totals only or no readable response; an age split and the INE or Observatório da Emigração tables remain unread. Young workers' pay has risen faster than the average: the mean QP earnings of 18–24-year-olds rose from 65,8 % of the all-ages mean in 2014 to 75,3 % in 2024 (1 191,12 € against 1 582,75 €) [S27; A] computed. Young people leave the parental

home at 28,8 years on average, against 26,3 in the EU27 (2025) [S25; A-c], and youth unemployment (15–24) was 19,5 % in 2025 [S52; B]. The motive for emigration, and whether emigrants are disproportionately young and qualified, were not measured.

# 5. Why: causes ranked by strength of evidence

We rank candidate causes by how directly the evidence links them to the outcome. "Strong": official Portuguese data point clearly the same way and the mechanism is well established. "Moderate": consistent data, but other explanations fit. "Descriptive": a pattern or accounting split that cannot attribute cause. "Not tested": no usable Portuguese evidence. No ranking comes from a causal model of ours.

**Table 5. Candidate causes of low pay and of the 2021–23 real-pay loss, ranked**

| Rank | Candidate cause | Evidence | Strength |
|---|---|---|---|
| 1 | Low productivity per hour | 66,7 % of EU27 (2025); pay per hour 64 % [S9; A] | Strong (level) |
| 2 | Energy and food price shock (2022) | Energy HICP +23,8 % in 2022 [S1; A]; food +24,3 % in 2021–23 [S1; A] computed | Moderate: timing consistent; contribution to HICP not decomposed here |
| 3 | Tax and contribution wedge | OECD wedge 36,1 % at 67 % AW vs OECD 31,3 %, EU-22 37,3 % [S12; A] | Moderate (vs OECD); weak (vs EU) |
| 4 | Sector and firm-size mix | Not read at source | Not tested |
| 5 | Skills | Not read at source | Not tested |
| 6 | Profits in 2022–23 | Unit profits 48 % of the 2022 GDP-deflator rise, 19 % in 2025 [S8; A] computed | Descriptive (accounting split; cannot identify mark-ups or motives) |
| 7 | Statutory floor and bargaining | Base pay bunches at the RMMG in deciles 1–2 [S27; A]; agreement coverage 83,3 % (2023) [S70; A]; Portuguese distributional study [S85; A] | Moderate (floor's distributional effect); descriptive (coverage); not tested (scale/QP linkage) |
| 8 | Monetary policy | Deposit rate 4,00 % peak [S18; A]; variable-rate share 68,1 % of mortgage contracts [S52; B] | Moderate (disposable income of borrowers) |
| 9 | Housing costs | Rents HICP +20,9 % 2021→2025 [S1; A] | Moderate (for renters) |
| 10 | Informality | Estimates differ by a factor of 2,6 [S41, S42; D] | Not measured |

## 5.1 Productivity and capital per worker

Nominal labour productivity per hour in PPS was 66,7 % of the EU27 level in 2025, little changed from 67,6 % in 2000, with a low of 64,2 % in 2020 [S9; A]. Compensation per hour in PPS was 19,9 against 30,9 in the EU27, or 64 % [S9; A] computed. Pay relative to the EU thus sits close to productivity relative to the EU. Real productivity per hour grew 20,1 % from 2000 to 2025, against 27,7 % in the EU27 [S9; A] computed, and real pay grew 17,6 % (P31_S14).

The labour share suggests that the gap is not mainly distributional. The adjusted wage share was 56,9 % in 2025, equal to the euro area's, though it fell from 60,2 % (2000) to 53,5 % (2019) [S14; A], so part of the 2000–2019 stagnation reflects a falling labour share. Nominal unit labour costs reached 151,2 (2015 = 100) against 131,0 in the EU27 [S9; A]: pay has recently outgrown productivity, which limits catch-up from redistribution alone.

The pay–productivity match is an aggregate correlation. A competitive model predicts it, but so would a third factor, such as sector mix or small firm size, holding both down. Capital per worker, productivity dispersion and management quality are plausible deeper causes we did not test.

## 5.2 Sector and firm-size mix, and skills

Portugal's employment is often described as concentrated in low-value-added services and micro-firms, and its older cohorts as less educated than the EU average. Both are plausible contributors to low productivity, but we read no source on them (a local lead on micro-firm employment cites an OECD report we did not open), so they stay **not tested**.

## 5.3 The statutory floor, bargaining and the bunching of base pay

What the QP data show is bunching at the floor (§4.3). For at least a fifth of full-time employees, the statutory floor binds base pay. The data do not show what sets pay above the floor, nor whether collective agreements matter at the bottom. Three readings fit the same bunching: (i) the agreements' lowest scales sit at or below the RMMG, which overrides them; (ii) their scales sit just above it but cover few workers; (iii) firms outside any agreement pay the floor. Telling them apart needs bargaining coverage, the *portarias de extensão* (orders extending sectoral agreements to non-signatory firms) and each agreement's lowest scale, linked to QP records. DGERT reports agreement coverage of 83,3 % and an updating rate of 33,5 % in 2023 [S70; A]. Coverage does not show that pay scales are current. The report's prose and chart and its QP-availability footnote give inconsistent signals about the latest QP vintage; that conflict remains open. The agreement-scale/QP linkage remains unread, so bargaining's role in the bunching is **not measured**.

One narrower inference holds whatever the channel: when the floor rises faster than the median, the bottom and the middle converge. The median base pay was 27 % above the RMMG in 2014 (641,93 ÷ 505) and 16 % above it in 2024 (950 ÷ 820) [S27; A] computed.

A Portuguese study using administrative wage distributions attributes almost 40 % of mean wage growth during 2006–2019 to minimum-wage changes, with spillovers reaching percentile 54 [S85; A]. The floor's distributional role is **supported** for that period. The study's counterfactual-distribution method does not settle employment effects, which remain **not measured** here.

A hypothesis concerns migrant workers. The Banco de Portugal reports that 38,0 % of foreign-nationality full-time employees earned the minimum base wage in 2022, in a restricted QP sample [S38; A-i], against 21,4 % of Portuguese nationals (a chart label) [S38; C]; foreign employees registered with Social Security rose 22,6 % in 2024, to 653 thousand [S38; A-i]. **Data for** a contribution of migration to compression at the floor: the higher incidence and the fast growth. **Data against** a simple version: the share of all full-time employees at the RMMG fell from 23,9 % (2020) to 20,4 % (2024) while foreign employment grew [S27; A]. **Not measured:** whether the gap persists within the same sector, region, occupation, firm size and tenure. Our inputs hold no nationality-by-sector table, so we say nothing about where foreign workers are employed; sector, tenure and age are candidate confounders, and a within-sector comparison in QP microdata is the test. The hypothesis is open.

### 5.4 The tax wedge

The wedge is above the OECD average and below the EU-22 average (§4.4). For minimum-wage earners the monthly wedge is TSU, 34,75 points of gross pay (23,75 employer, 11 worker) [S61; A-i]; annual IRS is at most 250 € in the sole-earner example (Table 3a). Taxes plus social contributions were 37,1 % of GDP in 2025 against 40,7 % in the EU27 [S24; A-c]. The wedge explains part of the gap between labour cost and take-home pay, not why gross pay is 54 % of the EU median in PPS.

### 5.5 The energy and food shock, profits and monetary policy

In 2022 the GDP deflator, which prices domestic value added, rose 5,33 %, while HICP, which prices household consumption, rose 8,1 % [S8, S1; A]. The 2,8 pp gap is not an import-price contribution: the indices differ in basket (the deflator covers exports, investment and government output; HICP covers household purchases, including imports and tourists' spending), coverage and weights. The rise in energy prices (+23,8 % [S1; A]) is consistent with an imported shock, but we did not split Portuguese HICP into import and domestic parts, so for Portugal this is an interpretation, not a result.

Within the deflator, §6 assigns about half of the 2022 rise to unit profits, as in the euro area, and most of the rise from 2023 to unit labour costs. This describes how the value of output per unit was divided, not why (§6.4).

Monetary tightening reduced the disposable income of mortgage holders: 68,1 % of outstanding mortgage contracts were at variable rates at end-2025 [S52; B], and the cost of new house-purchase loans rose from 0,83 % (2021) to 4,13 % (2023) [S19; A]. Whether Portuguese families were hit harder than euro-area families was not measured.

### 5.6 Housing costs and informality

Housing is covered in the companion paper; rents (§4.1) weigh most on market-rate tenants and the young. Informality ("por fora" pay) could make measured wages understate true pay, but shadow-economy estimates range from about 13 % of GDP already imputed by INE [S42; D], through 24 % (CEPR model, 1999–2020 average), to 34,37 % (FEP/OBEGEF model, 2022) [S41; D]. They measure different concepts; none is "the" size (conflict e).

Portuguese envelope-wage prevalence remains **not measured**: the retrieved ELA chart numbers could not be assigned reliably to Portugal [S39; E].

## 6. The key evidence base: how was the 2022–2025 domestic price rise divided?

### 6.1 Why this figure

The evidence record recommended decomposing Portugal's GDP deflator into unit labour costs, unit profits and unit net taxes, rebuilt from Eurostat counts. It is about Portugal (the large minimum-wage tallies are about the United States), every input is an official count read by script on 2026-11-08, and it puts numbers on a live claim linking prices and pay: that "corporate greed" caused the inflation. Table 6 and Figure 1 are ours, from data file T6.

## 6.2 What is counted and how

From Eurostat nama_10_gdp (dataset updated 2026-11-05) [S8; A] we take, for Portugal and the euro area (EA20), 2018–2025, in million euro: nominal GDP (B1GQ, current prices), real GDP (B1GQ, chain-linked volumes, 2015 prices), compensation of employees (D1) and gross operating surplus plus mixed income (B2A3G). Net taxes on production and imports less subsidies are the residual: GDP − D1 − B2A3G. The GDP deflator is nominal ÷ real GDP. The contribution of each income component X to the deflator's growth is

contribution of X = (X_t ÷ realGDP_t − X_{t−1} ÷ realGDP_{t−1}) ÷ (GDP_{t−1} ÷ realGDP_{t−1}),

so the three contributions add up exactly to the deflator's growth. As a check, the Portuguese deflator from these counts is 111,73 in 2021 (216 493,7 ÷ 193 764,4) and 117,68 in 2022, matching the verification stage's spot-check [S8; A]; an independent reviewer recomputed all fourteen annual decompositions from the data file's counts and found them to match.

## 6.3 Result

**Table 6. Contributions to GDP-deflator growth, percentage points, Portugal and euro area**

| Year | PT deflator | PT labour costs | PT profits | PT net taxes | PT profits' share | EA20 deflator | EA20 labour costs | EA20 profits | EA20 net taxes | EA20 profits' share |
|---|---|---|---|---|---|---|---|---|---|---|
| 2019 | +1,83 % | +1,39 | +0,25 | +0,19 | 14 % | +1,67 % | +0,99 | +0,33 | +0,35 | 20 % |
| 2020 | +2,10 % | +4,01 | −0,20 | −1,71 | — | +1,82 % | +2,08 | +1,24 | −1,51 | — |
| 2021 | +2,02 % | +0,70 | +0,84 | +0,48 | 42 % | +2,06 % | −0,15 | +1,67 | +0,54 | 81 % |
| 2022 | +5,33 % | +1,12 | **+2,56** | +1,64 | **48 %** | +5,10 % | +1,62 | +2,47 | +1,00 | 48 % |
| 2023 | +7,49 % | **+3,95** | +2,59 | +0,95 | 35 % | +6,27 % | +3,10 | +2,95 | +0,23 | 47 % |
| 2024 | +4,87 % | +3,00 | +1,45 | +0,42 | 30 % | +2,93 % | +2,02 | +0,27 | +0,63 | 9 % |
| 2025 | +4,01 % | +2,41 | +0,76 | +0,84 | 19 % | +2,34 % | +1,57 | +0,36 | +0,41 | 15 % |

*Source: Eurostat nama_10_gdp [S8; A]; computed. Raw counts and results in data file T6. 2020 shares are not shown because subsidies and job-retention schemes distort the split.*

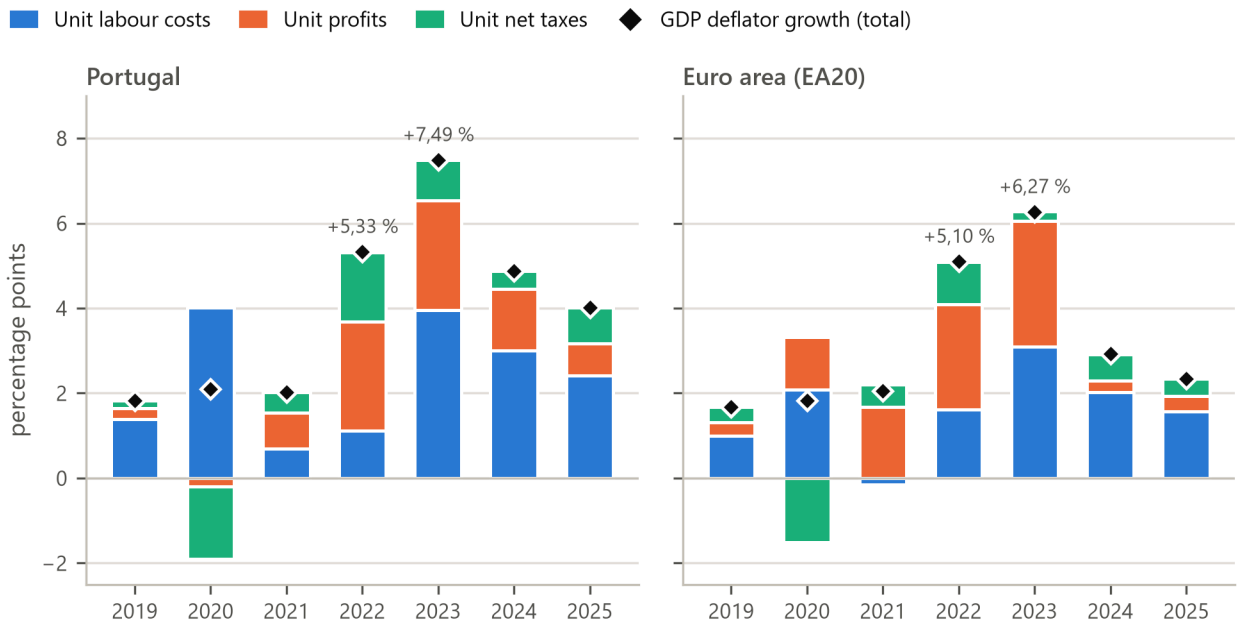



**Figure 1. Contributions to GDP-deflator growth, Portugal and euro area, 2019–2025.**

*Source: authors' calculations from Eurostat, November 2026 vintage [S8; A]; accounting decomposition, subject to §6.4. Exact values in Table 6.*

Three descriptive findings follow. First, in 2022 unit profits accounted for about half of the rise in Portugal's GDP deflator (2,56 of 5,33 pp, 48 %), as in the euro area. Second, from 2023 labour costs contributed most (3,95 of 7,49 pp in 2023; 2,41 of 4,01 pp in 2025), and profits' share fell to 19 %. Third, Portugal's deflator rose faster than the euro area's in 2023–2025 (7,49 % vs 6,27 %; 4,87 % vs 2,93 %; 4,01 % vs 2,34 %), led by labour costs, consistent with §4.2 and with unit labour costs outpacing the EU since 2015 [S9; A]. The unadjusted labour share (D1 ÷ GDP) went from 47,9 % (2021) to 46,6 % (2022) and 48,2 % (2025) (computed).

## 6.4 Limits, and comparison with the strongest single studies we read

This decomposition is an accounting identity, not a causal model. Its limits must be printed with it.

1. **"Profits" include mixed income and imputed rents.** B2A3G contains the income of the self-employed (partly a return to their labour) and the imputed rent of owner-occupied dwellings. In Portugal, where self-employment and owner-occupation are both substantial, part of "unit profits" is neither corporate nor profit in the everyday sense.
2. **Import prices are outside.** The deflator excludes 2022's energy and food import prices. A firm that passes on a higher import bill without raising its margin shows no rise in unit profits; one that raises its margin does.
3. **Unit profits are not mark-ups.** They can rise because prices outran unit costs, but also because volumes fell or the output mix changed. We compute only unit profits [S16; A].
4. **Annual data hide the peak.** The ECB measured the profit contribution quarterly and found larger shares at the turn of 2022–23 than annual averages show.
5. **Net taxes are a residual.** Eurostat's D2X_D3 item did not return in the query; temporary subsidies (2020, 2022) and the zero VAT on food (2023) pass through this residual.

6. **Vintage.** National accounts are revised. Our figures use the November 2026 vintage; studies written in 2023 used earlier data. The 9 November refresh returned no raw Eurostat response; the existing figures and labels are retained and their revision status remains open.

The two strongest single studies on the euro area that we read find larger profit shares. The ECB's blog of 30 March 2023 says that unit profits "contributed around one-third to the GDP deflator" over 1999–2022, "but over 2022 they contributed an average of two-thirds" [S15; A]. The ECB's Economic Bulletin box (4/2023) gives "roughly 60% of total growth in the GDP deflator" over the three quarters to early 2023, against a 42 % share of GDP for gross operating surplus and mixed income [S16; A]. Our annual euro-area 48 % for 2022 is lower; vintage, aggregation and frequency are plausible reasons, untested. A Banco de Portugal box on Portugal returned HTTP 403 (open).

Unlike a tally of published estimates, which depends on publication selection (Doucouliagos and Stanley found it to "contaminate" the US minimum-wage literature [S45; C]), the decomposition rests on official counts and one identity, so any reader can reproduce it.

**What the decomposition can and cannot say about "inflation was caused by corporate greed".** It can say, in the accounting sense, what §6.3 shows. It cannot say whether firms raised mark-ups, why, or what started the shock. "Greed" is a claim about motive, which no identity can test; we withdraw the verdict given in our earlier text. A test needs firm-level price and cost data by sector, as the ECB box separates them [S16; A].

# 7. Current law and policy: what exists versus what is proposed

## 7.1 What is in force (read at source)

**Minimum wage.** Decreto-Lei n.º 139/2025, de 29 de dezembro, art. 3.º: "O valor da RMMG a que se refere o n.º 1 do artigo 273.º do Código do Trabalho … é de € 920,00", with effect from 1 January 2026 under art. 7.º [S36; A]. Decreto-Lei n.º 112/2024 set 870,00 € from 1 January 2025 and records a "trajetória de aumentos anuais sucessivos de € 50,00, por forma a atingir uma RMMG de € 1 020,00, em 2028" [S53; A]. The autonomous regions are not covered.

**Income tax rates.** CIRS art. 68.º n.º 1, as amended by Decreto-Lei n.º 212/2026, de 4 de novembro, sets nine brackets from 12,20 % "Até 8 342" to 48,00 % "Superior a 86 634" [S28, S54; A]. The decree reduces "as taxas gerais aplicáveis aos primeiros seis escalões" and "entra em vigor no dia seguinte ao da sua publicação" [S54; A]. Its preamble states expressly that it applies to income obtained in 2026, with effect from January [S54; A].

**Withholding.** Despacho n.º 233-A/2026, Tabela I (single, no dependants) withholds 0,00 % "Até 920,00" [S33; A]. Despacho n.º 12523-A/2026 applies 50 % of ordinary withholding in November, subject to an upper-income exception [S76; A]. It covers relevant additional remuneration, restores the ordinary tables in December and permits correction by year-end [S76; A].

**Tax-free minimum, specific deduction and general expenses.** CIRS art. 70.º n.º 1: "O valor de referência do mínimo de existência é igual ao maior valor entre 12 880 € e 1,5 × 14 × IAS" [S29; A]; n.º 2 a) and d) as quoted in §4.4 [S29; A-i]. Art. 25.º n.º 1 a): the specific deduction is 8,54 × IAS [S30; A-i], or 4 587,09 € with the 2026 IAS of 537,13 € [S62; A]. Art. 78.º-B n.º 1: "35 % do valor suportado … com o limite global de € 250 para cada sujeito passivo" [S32; A-i].

**IRS Jovem.** CIRS art. 12.º-B: income of taxpayers "até 35 anos de idade" is partly exempt "nos 10 primeiros anos de obtenção de rendimentos"; the exemption, "com o limite de 55 vezes o valor do IAS", is "100 % no primeiro ano", "75 % do segundo ao quarto ano", "50 % do quinto ao sétimo ano" [S31; A] and 25 % from the eighth to the tenth year [S31; A-i]. Further eligibility conditions apply that we do not summarise. With the IAS at 537,13 € [S62; A-i], the cap is 29 542,15 € a year (computed).

**Social contributions.** Código Contributivo art. 53.º states the general TSU (*taxa social única*) rates: "34,75 %, cabendo 23,75 % à entidade empregadora e 11 % ao trabalhador" [S61; A].

**Corporate-tax incentive for pay rises.** The *Estatuto dos Benefícios Fiscais* (EBF, the tax-benefits statute) art. 19.º-B, in the wording of Lei n.º 73-A/2025, de 30 de dezembro, provides that eligible costs of pay rises "são considerados em 200 % do respetivo montante" for IRC (*imposto sobre o rendimento das pessoas coletivas*, the corporate income tax), in effect an extra deduction of 100 % on top of the ordinary one, where pay growth reaches a threshold of "no mínimo, de 4,6 %" [S60; A]. Both the company-average and the below-average-worker base-pay growth tests apply, alongside permanent contracts, a recently updated collective instrument and family or ownership exclusions; eligible costs are capped at five RMMG [S60; A]. N.º 5 excludes RMMG-update costs: "não sendo considerados os encargos que resultem da atualização desse valor" [S60; A]. RMMG pay enters company-pay calculations; applying the prior-year circular's principles to current law is our interpretation, and its threshold differs [S95; A].

**Income agreement.** The *Acordo Tripartido 2025-2028 sobre a Valorização Salarial e o Crescimento Económico*, signed by the government and the social partners on 1 October 2024, sets the RMMG path "920 euros em 2026, para 970 euros em 2027 e para 1.020 euros em 2028" and an average-wage objective of "1.890 euros em 2028" [S55; A]. Lei n.º 73-A/2025, art. 96.º, provides a conditional bonus exemption of up to 6 % of annual base pay, with exclusion from contributions [S68; A]. The page does not define which average wage the 1 890 € target refers to.

**Temporary price measures.** The IVA zero on a food basket (§4.5) has expired.

**Monetary framework and macroprudential limits.** The ECB sets interest rates for the euro area; Portugal has no national monetary instrument, but macroprudential tools are national. Banco de Portugal Recomendação Macroprudencial n.º 1/2026 recommends a DSTI limit of 45 %, applicable from 1 August 2026, with exceptions of up to 10 % of each institution's semester lending amount [S79; A]. Income is annual net income divided by 12; where applicable, a weighted retirement-income reduction of at least 20 % applies [S79; A]. The interest stress follows a cross-reference to Instrução 23/2023; its exact numerical shocks remain **open** [S79; A].

## 7.2 Proposed or agreed, but not yet law

- **RMMG 970 € in 2027 and 1 020 € in 2028.** Agreed [S55; A] and recorded in the 2025 decree's preamble [S53; A]; each year still requires its own decree. No 2027 decree was found (open).
- **Average wage 1 890 € in 2028.** An objective, not a legal entitlement [S55; A].

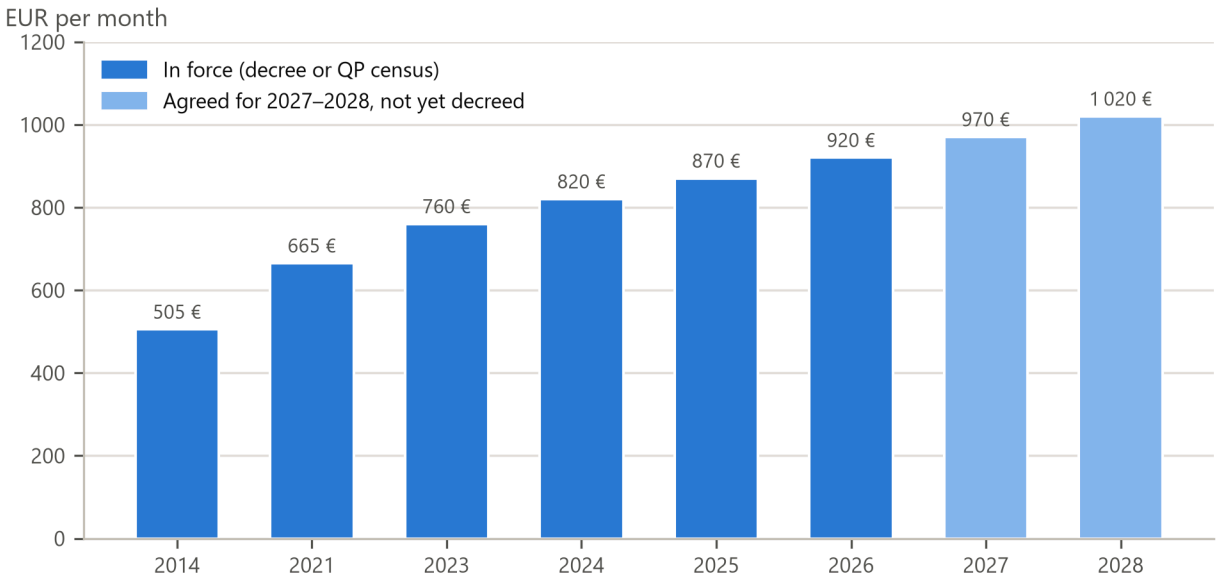



**Figure 6. The statutory minimum wage (RMMG), monthly amount paid 14 times, 2014–2028; 2027 and 2028 agreed, not yet decreed.**

*Source: [S27][S53][S36][S55].*

### 7.3 Two statutory conflicts examined

**Conflict (f), CIRS art. 68.º n.º 2.** The page shows n.º 2 as "quando superior a 8059 €" ("Redação da Lei n.º 45-A / 2024, de 31 de dezembro"), while n.º 1 starts at 8 342 € [S28; A]. Decreto-Lei n.º 212/2026 amends only n.º 1 and reproduces n.º 2 as "2 - [...]" [S54; A], so "8059 €" is unrevised legal text, not a transcription error. In our reading (not the tax authority's) it has no practical effect: between 8 059 € and 8 342 € no bracket limit fits within the income, so the whole amount is taxed at 12,20 %.

**Conflict (f), CIRS art. 70.º annotation.** The page annotates n.º 1 as "Redação da Lei n.º 73-A/2024, de 30 de dezembro", and the verification stage's read on 2026-11-08 shows the same annotation [S29; A-i], while the article's amendment list names "Lei n.º 73-A/2025 - 30/12" and no 73-A/2024 [S29; A]. Lei n.º 73-A/2025 reproduces the reference max(12 880 €, 1,5 × 14 × IAS) [S68; A]. The year in the tax authority's annotation is inconsistent with the enacted text; the amendment-year gap is closed.

## 8. Behavioural and field hypotheses: observations from the Mowei team

A member of the Mowei team, from experience as an employer, reported six observations. Each is a hypothesis with one of three verdicts: *supported*, *contradicted on average* (it can still hold for some groups or regions) or *not measured* (open, not false).

**Table 7. Field observations against the data**

| Observation | Data for | Data against | Verdict |
|---|---|---|---|
| Inflation eats savings | Real return on new ≤1-year deposits negative every year 2021–2025; illustrative 100 € → 88,1 € [S19, S1; A] computed | Euro area, same product: 88,5 € [S19; A]; savers' actual returns not read | **Supported** for the product modelled; savers' losses **not measured** |
| …and incomes cannot keep up | Real pay −1,5 % in 2022 [S7, S1; A] computed; food +24,3 % vs pay +16,8 % in 2021–23 | Real pay +4,2 %, +4,9 %, +2,6 % in 2023–2025; by 2025 pay and food both +31–32 % since 2021 | **Contradicted on average** after 2022; true in 2022 and for anyone without a raise |
| Incomes cannot rise | Real pay +0,9 % in 2000–2019 (OECD) [S13; A]; median 54 % of EU27 in PPS [S6; A] | Real pay +15,4 % in 2019–2025 (OECD) [S13; A]; median base pay 641,93 € → 950 € (2014–2024) [S27; A] | **Supported for 2000–2019; contradicted on average since 2019** |
| High taxes punish staying | Wedge 36,1 % vs OECD 31,3 % at 67 % AW [S12; A]; RMMG worker loses 28,1 % of employer cost to TSU [S61; A-i] computed | Below EU-22 OECD average (37,3 %) [S12; A]; RMMG sole earner: zero withholding [S33; A], at most 250 € IRS a year (Table 3a); under-35s partly exempt [S31; A]; tax burden 37,1 % of GDP vs 40,7 % EU27 [S24; A-c] | **Contradicted on average** against the EU; *supported* against the OECD |
| Many jobs pay an official wage plus cash "por fora" | 36 % of Portuguese know someone who works undeclared (EU 33 %) [S40; E] | EU27: 3 % of formal employees received envelope wages (2019) [S39; E]; Portugal's prevalence cell remains unresolved because the extracted chart values could not be aligned reliably to countries | **Not measured** (open) |
| Young people emigrate because the outlook abroad is better | Median earnings in PPS 1 303 vs 2 392 in the EU27 [S6; A]; 33 916 emigrants in 2024 [S22; A-c] | Emigration in 2024 below 2015 (40 377) [S22; A]; young workers' pay rose from 65,8 % to 75,3 % of the mean (2014–2024) [S27; A] computed; no age or motive data retrieved | **Not measured** for the motive |
| Most people save little | Saving rate 12,32 % vs 14,31 % EU27 (2025) [S20; A-c]; 21 % without emergency savings vs 16 % [S52; B] | Saving rate up from about 7,0 % in 2019 [S20; A] | **Not measured** for most people; the aggregate saving rate is below the EU27 rate, with a narrowing gap |

Two cautions apply. A national average can contradict an observation that is true in the observer's sector or region. And the "not measured" rows remain open where data could not be read or do not identify the claim; they cannot establish national facts. The original observations remain open pending the observer's own testimony.

Three behavioural mechanisms deserve testing; we tested none. Under **money illusion**, workers judge pay by nominal rises; that average real pay fell only in 2022 suggests that nominal pay adjusted within about a year. Under **present bias** or inertia, households may leave savings in current accounts: in the CNSF's 2023 survey, 84 % of savers reported keeping savings in current accounts [S64; A] and 33,9 % reported term deposits [S64; A], with overlapping responses. This cannot identify inertia: liquidity needs and distrust of banks remain possible explanations, current-account remuneration is unread, and saver-level losses remain **not measured**. Third, a minimum-wage earner who sees zero withholding all year may not expect a settlement of up to 250 € (§4.4), or know that invoices reduce it.

# 9. Projections: scenarios to 2028–2030

We give scenarios, not point forecasts. Each rests on a published projection or on an assumption that we state and label as ours. Throughout this section, RMMG amounts are monthly amounts paid 14 times a year, real changes deflate by projected HICP inflation, and "median" means the QP median base pay (October, mainland, full-time, 14-payment scheme).

**Table 8. Published projections for Portugal**

| Source (date) | Indicator | 2026 | 2027 | 2028 | Later |
|---|---|---|---|---|---|
| Banco de Portugal, Boletim Económico (October 2026) | HICP inflation | 3,1 % [S67; A] | 2,4 % [S67; A] | 2,0 % [S67; A] | — |
| Banco de Portugal (October 2026) | GDP growth | 2,3 % [S67; A] | 1,8 % [S67; A] | 1,8 % [S67; A] | — |
| Banco de Portugal (October 2026) | Employment growth | 1,7 % [S67; A] | 0,7 % [S67; A] | 0,3 % [S67; A] | unemployment 5,6 % [S67; A] |
| Conselho das Finanças Públicas (September 2026 update) | HICP inflation | 3,2 % | 2,6 % | 2,3 % | 2,1 % (2029); 2,0 % (2030) |
| European Commission, Spring 2026 forecast (21 May 2026) | HICP inflation | 3,0 % | 2,3 % | — | — |
| European Commission (May 2026) | Unemployment | 5,9 % | 5,8 % | — | — |
| Tripartite agreement (2024) | RMMG | 920 € | 970 € | 1 020 € | — |

*Sources: Banco de Portugal, Table I.1.1 (cutoff 30 September 2026) [S67; A]; CFP report, Table 2 [S63; A-i]; European Commission [S56; A]; agreement [S55; A]. Portugal's numerical wage projection and the Commission's Autumn forecast remain open. Data file T8.*

The ECB's September projections put euro-area HICP at 3,0/2,5/2,1 % and real compensation growth at 0,4/0,8/1,1 % for 2026–2028 [S66; A]. They do not supply a Portuguese median-pay forecast.

**Scenario A: the agreement and the central bank's inflation path.** The RMMG reaches 1 020 € in 2028 (+10,9 % on 2026, computed). With HICP of 2,4 % (2027) and 2,0 % (2028) [S67; A], prices rise 4,4 % and the real RMMG rises 6,1 % over the two years (computed). In 2026 itself, 920 € against 870 € (+5,7 %) with projected inflation of 3,1 % [S67; A] gives a real rise of about 2,6 % (computed). On the CFP's path (2,6 % and 2,3 %), the two-year real rise would be 5,6 % (computed).

**Scenario B: persistent energy inflation (our assumption).** Inflation of 3,0 % in both 2027 and 2028, above the CFP's 2,6 % and 2,3 % and in line with its view that inflation returns to 2 % only in 2030 [S63; A-i]. The real RMMG rises 4,5 % over 2026–2028 (computed). Workers without statutory or negotiated rises would lose 5,7 % of purchasing power over the two years (computed).

**Scenario C: beyond 2028 (our assumption).** No official path exists after 2028. If the RMMG kept rising by 50 € a year, it would reach 1 120 € in 2030; with 2 % inflation, that is +5,5 % in real terms over 2028–2030 (computed). This is an illustration, not a forecast.

**Bite of the minimum wage (our assumptions).** The QP median base pay was 950 € in 2024 [S27; A]. If it grows 4 %, 5 % or 6 % a year in nominal terms to 2028, the 2028 RMMG of 1 020 € would equal 91,8 %, 88,3 % or 85,0 % of the median, against 86,3 % in 2024 (computed; data file T9). To keep the ratio at its 2024 level, the median must grow as fast as the RMMG, 1 020 ÷ 820 over four years, or 5,61 % a year (computed). The agreement's own aim, that the minimum and the average wage "se distanciem" [S55; A], depends on median growth above that rate. These ratios use QP base pay; on the *ganho* basis of Table 2a they would be lower (by about 17 pp if the 2024 gap held, our assumption).

**A statutory side effect.** The *mínimo de existência* reference value is max(12 880 €; 1,5 × 14 × IAS) [S29; A], which equals 920 € × 14 with the 2026 IAS (Table 3a). If the reference stays unchanged, a 2027 RMMG of 970 € gives 13 580 € a year, above it, so the Table 3a formula would no longer apply to a sole minimum-wage earner. The above-reference *abatimento* rules in art. 70.º n.º 2 b)–d) and the household exclusions in n.º 4 were read [S29; A]; a worked 2027 IRS assessment remains open.

**Take-home in 2028 (scenario A).** If TSU stays at 11 % and withholding at 1 020 € is zero (our assumption: the 2028 withholding tables do not exist yet), a 1 020 € RMMG gives 907,80 € take-home per payment and costs the employer 1 262,25 € (computed).

# 10. Measures

Measures marked **(authors' proposal)** are our own; the others are existing policies that we assess. Cost figures are orders of magnitude; where the count of affected workers was not read, the cost is stated per worker.

## M1. Put the minimum wage on a published rule with an independent review (authors' proposal)

- **Mechanism.** The RMMG rises with expected inflation plus a share of productivity growth, with an automatic review if it exceeds a stated share of the median (for example 85 % of the QP base-pay median); an independent body publishes the evidence each autumn on stated bases (Table 2a).
- **Evidence.** The minimum is already 86,3 % of median base pay [S27; A] and could reach 85–92 % in 2028 (§9). The OECD recommends a permanent independent review [S78; A]; Portuguese evidence finds spillovers through percentile 54 during 2006–2019 [S85; A]. Employment effects remain not measured here.
- **Cost.** Small. **Risk.** A rule may lag a shock. **Sequence.** Commission in year 1; rule for the post-2028 path.

## M2. Cut the employee contribution at low wages instead of further IRS rate cuts at the bottom (authors' proposal)

- **Mechanism.** A tapered reduction of the 11 % employee TSU for gross pay near the RMMG, phased out by about 1 300 €, with the State compensating the Social Security budget.
- **Evidence.** RMMG take-home is 71,9 % of employer cost, and the monthly gap is all TSU [S33; A] / [S61; A-i]. Cuts to the first IRS bracket rate do not change the annual IRS of a sole minimum-wage earner (Table 3a, our arithmetic). The OECD discusses low-wage contribution relief and alternative pension financing [S78; A].
- **Cost.** A 3 pp cut at 920 € is 27,60 € a month, or 386,40 € a year per worker over 14 payments (computed); the total depends on the count of workers near the floor, not read. **Risk.** Pension financing needs compensation; incidence and taper effects remain unestimated. **Sequence.** After M8 provides counts; legislate in a budget law.

### M3. Evaluate the IRC incentive for pay rises before changing it

- **Mechanism.** EBF art. 19.º-B counts eligible pay-rise costs at 200 % in IRC, with a 4,6 % threshold for both company-average and below-average workers' base-pay growth [S60; A]. Permanent contracts, a recently updated collective instrument and family or ownership exclusions also apply [S60; A].
- **Evidence.** RMMG pay enters the growth tests, but RMMG-update costs are excluded from the enhancement [S60; A][S95; A]; applying the earlier circular's principles to current law is our interpretation. Take-up and additional wage rises remain not measured.
- **Cost.** Evaluation cost unquantified; historical scheme expenditure was provisionally 7,7 million € in 2024 [S87; A]. The tax authority's static estimate holds behaviour fixed; the current-regime cost remains open. **Risk.** Deadweight. **Sequence.** Publish take-up and cost by firm size and wage band first (authors' proposal); adjust only then.

### M4. Raise productivity through capital deepening and firm growth (authors' proposal)

- **Mechanism.** Pay tracks productivity in the aggregate (64 % and 67 % of the EU27 per hour [S9; A]). Incentives for equipment and scale-ups, and removing size thresholds that discourage growth, could raise output per worker.
- **Evidence.** The OECD reports that micro-firms account for 39 % of business employment and that R&D support approached 0,4 % of GDP in 2023 without a commensurate gain in innovation [S78; A].
- **Cost.** High, long-term. **Risk.** Capture and ineffective subsidies. **Sequence.** Medium term, linked to EU funds (the Banco de Portugal credits 2026 growth partly to PRR funds [S57; D]).

### M5. Measure bargaining coverage, then consider faster extension of agreements (authors' proposal)

- **Mechanism.** If agreement scales sit above the RMMG but remain unextended, faster *portarias de extensão* (extension orders) could reduce compression. If they sit at the floor (reading (i)), extension would change little.
- **Evidence.** DGERT reports 83,3 % coverage and a 33,5 % updating rate for 2023 [S70; A]; its prose and chart and its QP-availability footnote disagree on the vintage. The agreement-scale/QP linkage remains open.
- **Cost.** Administrative. **Risk.** Small firms with low productivity may be pushed out. **Sequence.** After the coverage study.

### M6. Target future price shocks at low-income households rather than cutting VAT (authors' proposal)

- **Mechanism.** A temporary transfer to first-quintile households reaches those with the highest food share; VAT cuts reach all buyers and depend on pass-through.
- **Evidence.** The estimated price effects of the IVA zero are in §4.5; food weighs more in low-income budgets [S52; B].

- **Cost.** Comparative cost unquantified. **Risk.** Exclusion and delivery delays: the OECD identifies 27 national means-tested benefits and overlapping administration [S78; A]. **Sequence.** Design now, use at the next shock.

### M7. Raise deposit competition and saver information (authors' proposal)

- **Mechanism.** Require banks to show, at each term-deposit renewal, their rate next to the euro-area average and the inflation rate, and simplify switching.
- **Evidence.** Portuguese banks paid 1,78 % against 2,68 % in the euro area on new short-term deposits (2023) [S19; A]; the illustrative 100 € rolled over in that product lost 11,9 % in real terms before tax [S19, S1; A] computed; 84 % of savers kept savings in current accounts and 33,9 % used term deposits in 2023, with overlapping responses [S64; A]. Saver-level outcomes were not measured.
- **Cost.** Low. **Risk.** Banks may raise fees elsewhere. Product mix and liquidity needs limit switching; information-policy effects remain unmeasured. **Sequence.** Short term, through the Banco de Portugal's conduct rules. This is a policy proposal, not financial advice to any person.

### M8. Build the missing measurements (authors' proposal)

- **Mechanism.** Publish a low-income price index (HICP reweighted with the IDEF first-quintile basket), real wages by decile from QP, the count of workers at and near the RMMG, bargaining coverage linked to QP, nationality-by-sector pay, IRS settlement outcomes for low earners, and emigration by age and education.
- **Evidence.** Remaining linked measurements are open (§11). **Cost.** Low. **Risk.** Access, linkage and confidentiality: INE confines sensitive tax records to its Safe Center [S86; A]. **Sequence.** First; M1, M2, M3, M5 and M10 need it.

### M9. Measure and reduce "por fora" pay (authors' proposal)

- **Mechanism.** Portugal-specific survey questions on cash supplements, published ACT and Social Security inspection findings, then enforcement linked to them.
- **Evidence.** Not measured: shadow-economy estimates range from about 13 % to 34 % of GDP [S41, S42; D]; the EU envelope-wage rate is 3 % [S39; E]. ELA's observational analysis finds no penalty-severity association, and detection loses significance with acquaintance controls [S39; A].
- **Cost.** Low to moderate. **Risk.** Enforcement without measurement may target the wrong sectors. **Sequence.** Measure, then enforce.

### M10. Evaluate IRS Jovem against emigration and fairness

- **Mechanism.** The exemption (100 % in year 1, falling to 25 % by year 10, capped at 55 × IAS) [S31; A] aims to keep young graduates in Portugal.
- **Evidence.** Emigration is below its 2015 level [S22; A], but we did not obtain the data needed to link it to the scheme (emigration by age, education and motive).
- **Cost.** Historical expenditure was provisionally 120,0 million € in 2024 [S87; A]; the current-regime cost and take-up remain open. **Risk.** Unequal treatment by age at equal pay; deadweight. **Sequence.** Evaluate with M8 data before any extension.

**Sequencing overall.** M8 first (data), then M7 and the M6 delivery design, then M1, M2 and the M3 evaluation in the 2027–2028 budget cycle, with M4, M5, M9 and M10 as medium-term work. **Opinion:** in our view, among these ten measures the largest durable gain in take-home pay comes from M4 (productivity) combined with M2 (the wedge at the bottom); the others protect purchasing power or improve information, but cannot by themselves close a 46 % gap to the EU median.

## 11. Limitations and open conflicts

**Limitations.** First, our real-wage series are averages; a low-income deflator was not built, so the real experience of the poorest households in 2022–23 is understated or overstated by an unknown amount. Second, we do not estimate causal effects of the minimum wage in Portugal after 2014. The US literature disagrees: Cengiz et al. find low-wage job numbers "essentially unchanged" after 138 state-level increases [S44; C]; Neumark and Shirley find "a clear preponderance of negative estimates" [S43; C]; Doucouliagos and Stanley find "little or no evidence" of a negative effect after correcting for publication bias [S45; C]. The Portuguese employment study (Centeno, Duarte and Novo, data 2002–2010) is known only from a snippet reporting a negative effect on low-wage workers' employment [S46; E]. Oliveira's directly read study supports wage-distribution spillovers and leaves aggregate employment effects *not measured* here [S85; A]. Third, the §6 decomposition and the §5.3 bunching are descriptive. Fourth, Table 3a is our arithmetic for one stylised taxpayer. Fifth, the official Banco de Portugal projection table has been read, but its deflator box remains open [S67; A]. Sixth, some data-file tables hold finished results only (Table 4 lacks the component index endpoints).

**Open conflicts (current status).**

| # | Conflict | Status |
|---|---|---|
| a | Kaitz basis: Eurostat 70,3 %, Banco de Portugal 68 %, QP 86 % (base) and 68,8 % (*ganho*), SES 64–75 % [S5, S27, S6; A] / [S38; A-i] | Partly settled (Table 2a); Eurostat numerator and OECD concept open. |
| b | Low-wage wedge: Eurostat 32,4 % (2024, break) vs OECD 36,3 % [S10, S12; A] | Open numerically; estimator transition read [S11; A]. |
| c | IPC vs HICP; 2025 food 2,9 % (HICP) vs 4,8 % (press, IPC) [S1; A] / [S47; D] | Open; HICP used; INE release not read. |
| d | Real wage by deflator: +17,6 % / +22,0 % / +16,4 % (2000→2025) | Settled by choice: P31_S14 main, others shown once (Table 2). |
| e | Shadow economy 34 % / 24 % / about 13 % [S41, S42; D] | Open; different concepts. |
| f | CIRS art. 68.º n.º 2 "8059 €"; art. 70.º annotation | n.º 2 **settled**: unrevised legal text [S54; A]. Art. 70.º annotation: **settled** against Lei n.º 73-A/2025; the tax authority's year conflicts with the enacted text [S68; A]. |
| g | Saving rate 2025: 12,32 % (tec00131) vs 12,27 % (nasa_10_ki) | Settled by choice: tec00131. |
| h | Share at the minimum: QP 20,4 % (October 2024), BdP 23 % (2022, restricted sample), government 22,9 % (March 2018) [S27; A] / [S38; B] / [S50; C] | Open by design: sample and month named each time. |
| i | "Por fora" prevalence; RMMG take-home 818,80 € | Por fora: **open** (Eurobarometer PT cell unread). Take-home: withholding [S33; A] and TSU values [S61; A-i] both read at source, so 818,80 € is **settled as a value**; the TSU verbatim span is now transcribed in the reading record. |

**Other open items** (full list in the verification record): exact DSTI interest shocks; applying prior-year EBF guidance to current law; above-reference IRS assessments and low-earner settlements; Table 4's index endpoints; current-account rates (§4.6); nationality-by-sector pay; the bargaining-vintage inconsistency and the agreement/QP linkage (§5.3); the Banco de Portugal deflator box; INE's IPC; the 2027 RMMG decree; emigration by age, education and motive; current-scheme costs and take-up. Failed statistical rereads retain their existing labels; retrieval gaps remain open.

# References

Evidence grades are explained in Appendix A. URLs as recorded. "A-i" marks a read at the official source on 2026-11-08 by an independent reviewer or by the verification stage.


[S1] Eurostat, HICP annual data (prc_hicp_aind), CP00, CP01, CP011, NRG, SERV, CP041; RCH_A_AVG and INX_A_AVG; 1996–2025; updated 2026-02-06. https://ec.europa.eu/eurostat/api/dissemination/statistics/1.0/data/prc_hicp_aind — A (CP00 index and rates 1999–2025 re-read 2026-11-08). Not read: the annual-rate and food/rent/energy endpoint attempts on 9 November 2026 (URLs inaccessible); retrieval gap, existing labels retained.

[S2] Eurostat, HICP ECOICOP ver. 2, monthly (prc_hicp_minr), 2025-10 to 2026-10, updated 2026-11-04. — A

[S3] Eurostat, Monthly minimum wages, bi-annual (earn_mw_cur), 2014-S1 to 2026-S2. — A (not read: the API refresh attempted 9 November 2026 returned no response body; retrieval gap, existing label retained)

[S4] Eurostat, Minimum wages, reference metadata (earn_minw_esms), updated 31 July 2026. https://ec.europa.eu/eurostat/cache/metadata/en/earn_minw_esms.htm — A (accessed 9 November 2026; partial reading of definitions, payment adjustment, earnings coverage and annex links)

[S5] Eurostat, Monthly minimum wage as a proportion of average monthly earnings (earn_mw_avgr2). — A (the drafting stage's read; the independent reviewer's retrieval failed, a gap, not a mismatch). Not read: the API refresh attempted 9 November 2026 returned no observations; retrieval gap, existing label retained.

[S6] Eurostat, Structure of earnings survey, monthly earnings (earn_ses_monthly), 2014/2018/2022. — A (not read: the API refresh attempted 9 November 2026 returned no observations; retrieval gap, existing label retained)

[S7] Eurostat, Average full-time adjusted salary per employee (nama_10_fte), 2000–2025, updated 2026-11-06. — A (re-read 2026-11-08). Not read: the API refresh attempted 9 November 2026 returned no observations or update timestamp; retrieval gap, existing label retained.

[S8] Eurostat, GDP and main components (nama_10_gdp): B1GQ, D1, B2A3G (CP_MEUR, CLV15_MEUR); deflators B1GQ and P31_S14 (PD15_EUR), updated 2026-11-05. https://ec.europa.eu/eurostat/api/dissemination/statistics/1.0/data/nama_10_gdp?geo=PT&geo=EA20&na_item=B1GQ&na_item=D1&na_item=B2A3G&unit=CP_MEUR&unit=CLV15_MEUR&sinceTimePeriod=2018&format=JSON&lang=en — A (re-read 2026-11-08). Not read: the refresh attempted 9 November 2026, raw response unavailable; retrieval gap, existing label retained.

[S9] Eurostat, Labour productivity and unit labour costs (nama_10_lp_ulc), 2000–2025. — A (not read: the API refresh attempted 9 November 2026, raw response unavailable; retrieval gap, existing label retained)

[S10] Eurostat, Tax rate on low wage earners: tax wedge (earn_nt_taxwedge), 2015–2025. — A (break flag seen at the enrichment stage C)

[S11] Eurostat, Net earnings and tax rates, metadata (earn_net_esms), update date unrecorded. https://ec.europa.eu/eurostat/cache/metadata/en/earn_net_esms.htm — A (accessed 9 November 2026; partial reading of the estimator transition, tax timing, gross-earnings definition and illustrative household cases. Previously (C). Numerical wedge reconciliation remains open)

[S12] OECD, Taxing Wages, comparative tables (DSD_TAX_WAGES_COMP@DF_TW_COMP), 2023–2025. — A (marginal wedges and couple case C)

[S13] OECD, Average annual wages (DSD_EARNINGS@AV_AN_WAGE), constant 2025 prices, USD PPP. — A

[S14] European Commission, AMECO, ALCD0 adjusted wage share. — A

[S15] Arce, Hahn & Koester, "How tit-for-tat inflation can make everyone poorer", ECB Blog, 30 March 2023. — A

[S16] ECB Economic Bulletin 4/2023, box "How have unit profits contributed to the recent strengthening of euro area domestic price pressures?". https://www.ecb.europa.eu/press/economic-bulletin/focus/2023/html/ecb.ebbox202304_03~705befadac.en.html — A (also read by an independent reviewer on 2026-11-08 for the distinction between unit profits, mark-ups and business-profit measures)

[S17] ECB Data Portal, Euribor 1-year, monthly average, 2021-01 to 2026-10. — A

[S18] ECB Data Portal, Deposit facility rate, dates of change. — A

[S19] ECB Data Portal, MFI interest rates, PT households' deposits with agreed maturity up to 1 year (new business) and cost of borrowing for house purchase; euro area equivalents; 2021-01 to 2026-09. — A

[S20] Eurostat, Household saving rate (tec00131). — A (2019 and earlier read 2026-11-08); A-c for 2025, read 2026-11-07 for the housing paper (H-S50). Not read: the API refresh attempted 9 November 2026 returned no observations; retrieval gap, existing labels retained.

[S21] Eurostat, Employment rates (lfsa_ergan), 20–64, 2008–2025. — A (context only; not cited in the text)

[S22] Eurostat, Emigration by age and sex (migr_emi2), PT, 2015–2024. — A (2015–2021 read 2026-11-08); A-c for 2022–2024, read 2026-11-07 (H-S48). Not read: the selected-age API request attempted 9 November 2026 returned no age-specific observations; retrieval gap, existing labels retained.

[S23] Eurostat, Purchasing power parities and price level indices (prc_ppp_ind), 2024. — A (consulted; not cited in the text)

[S24] Eurostat, Main national accounts tax aggregates (gov_10a_taxag), 2025. — A-c (read 2026-11-07, H-S46)

[S25] Eurostat, Average age of young people leaving the parental household (yth_demo_030), 2025. — A-c (read 2026-11-07, H-S49)

[S26] Eurostat, Average actual weekly hours (lfsa_ewhan2), 2025. — A-c (read 2026-11-07, H-S51; context only)

[S27] DGCP/MTSSS, Quadros de Pessoal, "Série 2014–2024" spreadsheet (released 2026-05-14). https://www.dgcp.mtsss.gov.pt/documents/10182/10928/seriesqp_2014_2024.xlsx/d0805880-6aef-4eb1-8602-56c1b8a989a1 — A

[S28] Portal das Finanças, CIRS art. 68.º (Taxas gerais). https://info.portaldasfinancas.gov.pt/pt/informacao_fiscal/codigos_tributarios/cirs_rep/Pages/irs68.aspx — A (re-read 2026-11-08; brackets also matched by an independent reviewer)

[S29] Portal das Finanças, CIRS art. 70.º (Mínimo de existência). https://info.portaldasfinancas.gov.pt/pt/informacao_fiscal/codigos_tributarios/cirs_rep/Pages/irs70.aspx — A (n.º 1 re-read 2026-11-08); A-i n.º 1, n.º 2 a) and n.º 2 d) read verbatim at the verification stage 2026-11-08. Accessed 9 November 2026; full reading of the article, including above-reference formulas, exclusions, definitions and the conflicting amendment annotation.

[S30] Portal das Finanças, CIRS art. 25.º n.º 1 a). https://info.portaldasfinancas.gov.pt/pt/informacao_fiscal/codigos_tributarios/cirs_rep/Pages/irs25.aspx — A-i (evidence-stage (A) confirmed by an independent reviewer 2026-11-08)

[S31] Portal das Finanças, CIRS art. 12.º-B (IRS Jovem). https://info.portaldasfinancas.gov.pt/pt/informacao_fiscal/codigos_tributarios/cirs_rep/Pages/irs12b.aspx — A (re-read 2026-11-08); A-i for the 25 % row and the 55 × IAS cap

[S32] Portal das Finanças, CIRS art. 78.º-B. https://info.portaldasfinancas.gov.pt/pt/informacao_fiscal/codigos_tributarios/cirs_rep/Pages/irs78b.aspx — A-i (n.º 1 read verbatim at the verification stage 2026-11-08; was C)

[S33] Portal das Finanças, Despacho n.º 233-A/2026, de 06/01 (retenção na fonte tables 2026, mainland), PDF. https://info.portaldasfinancas.gov.pt/pt/informacao_fiscal/legislacao/diplomas_legislativos/Documents/Despacho-233-A-2026.pdf — A (PDF read 2026-11-08; rows also matched by an independent reviewer)

[S34] Cofidis "Contas Connosco", retenção na fonte 2026, Tabela I rows. — D (superseded by [S33]; not cited in the text)

[S35] Informador, commentary on Código Contributivo art. 53.º (23,75 % + 11 %). https://informador.pt/?p=162306 — D (superseded by [S61]; not cited in the text)

[S36] Decreto-Lei n.º 139/2025, de 29 de dezembro, Diário da República n.º 249, 1.ª série (RMMG 2026). https://files.diariodarepublica.pt/1s/2025/12/24900/0001400016.pdf — A (PDF read 2026-11-08; matched by an independent reviewer). Accessed 9 November 2026; partial reading of arts. 2.º, 3.º, 4.º and 7.º and the public-contract cost discussion.

**[S37]** APCMC, "IAS para 2026 fixado em € 537,13" (Portaria n.º 480-A/2025/1). — D (superseded by [S62] for the value; kept for the Portaria number; not cited in the text)

**[S38]** Banco de Portugal, Boletim Económico, março 2025 (incl. Félix & Martins). https://www.bportugal.pt/sites/default/files/documents/2025-03/be_mar25.pdf — A-i for printed pp. 14 (foreign employees +22,6 %, 653 thousand), 55–56 (68 %, "highest in the euro area", no OECD ratio for Cyprus and Malta) and 58 (38,0 %, restricted QP sample), read by an independent reviewer 2026-11-08; B for other facts-database rows; 21,4 % for Portuguese nationals (C) (chart label). Not read: the attempt on 9 November 2026 returned HTTP 403; retrieval gap, existing labels retained.

**[S39]** Williams & Horodnic, ELA, November 2020, on Special Eurobarometer 498. https://www.ela.europa.eu/sites/default/files/2022-06/KE-02-20-972-EN-N_0.pdf — E (carried) for retained prevalence claims. (A) for the regression discussion recorded as read. Accessed 9 November 2026; partial reading of printed pp. 15–16 and 47–48, chart extraction and regression discussion. Portugal's chart values could not be reliably aligned to countries.

**[S40]** ELA, Factsheet on undeclared work – Portugal, 2023. — E (carried)

**[S41]** Portugal Global (AICEP), reposting Jornal Económico, 4 April 2025 (shadow-economy estimates). — D

**[S42]** Observador, on INE and the non-observed economy, 11 June 2014. — D

**[S43]** Neumark & Shirley (2022), Industrial Relations 61(4), 384–417, doi:10.1111/irel.12306. — C (abstract)

**[S44]** Cengiz, Dube, Lindner & Zipperer (2019), Quarterly Journal of Economics 134(3), 1405–1454, doi:10.1093/qje/qjz014. — C (abstract)

**[S45]** Doucouliagos & Stanley (2009), British Journal of Industrial Relations 47(2), 406–428. — C (abstract)

**[S46]** Centeno, Duarte & Novo (2011), Banco de Portugal, Boletim Económico, Outono 2011. — E

**[S47]** Press reports of INE IPC (Observador, 13 January 2026; HR Portugal/Lusa, 14 January 2025). — D / E

**[S48]** DN/Lusa citing INE, gross total monthly pay, Q2 2026 (14 August 2026). — D

**[S49]** IVA zero: Lei n.º 17/2023; Lei n.º 81/2023 art. 15.º; Governo, 7 September 2023; Observador, 27 July 2023. — C / E / D

**[S50]** Governo, note on minimum-wage coverage, 24 July 2018. — C

**[S51]** Euronews, 3 June 2025 (context only; not cited in the text). — D

**[S52]** Local facts database of sourced official statistics: Eurostat une_rt_a; Banco de Portugal RAMC 2025; INE/BdP ISFF 2024; Flash Eurobarometer 525; INE IDEF 2022/2023. — B

**[S53]** Decreto-Lei n.º 112/2024, de 19 de dezembro (RMMG 2025, 870,00 €; 2025–2028 path), Diário da República n.º 246/2024, Série I; copy on Portal das Finanças. https://info.portaldasfinancas.gov.pt/pt/informacao_fiscal/legislacao/diplomas_legislativos/Documents/Decreto_Lei_112_2024.pdf — A (read 2026-11-08)

**[S54]** Decreto-Lei n.º 212/2026, de 4 de novembro (amends CIRS art. 68.º), Diário da República n.º 214/2026, Série I; copy on Portal das Finanças. https://info.portaldasfinancas.gov.pt/pt/informacao_fiscal/legislacao/diplomas_legislativos/Documents/decreto-lei-212-2026.pdf — A (read 2026-11-08; the AT copy notes that it does not replace the Diário da República original). Accessed 9 November 2026; partial reading of the preamble, which expressly discusses application to income obtained during the year.

**[S55]** Governo de Portugal (XXIV Governo), "Governo e parceiros sociais assinam novo acordo de concertação social" (Acordo Tripartido 2025-2028), 1 October 2024. https://portugal.gov.pt/gc24/comunicacao/noticias/governo-e-parceiros-sociais-assinam-novo-acordo-de-concertacao-social — A (read 2026-11-08; an announcement, not law)

**[S56]** European Commission, DG ECFIN, "Economic forecast for Portugal" (Spring 2026), 21 May 2026. https://economy-finance.ec.europa.eu/economic-surveillance-eu-economies/portugal/economic-forecast-portugal_en — A (read 2026-11-08). Accessed 9 November 2026; partial reading of the dated Spring forecast table and introductory assessment. Autumn forecast retrieval remains open.

**[S57]** RTP, "Banco de Portugal revê crescimento da economia em alta para 2,3%", 7 October 2026, quoting the Banco de Portugal's release on the Boletim Económico of October 2026. https://www.rtp.pt/noticias/economia/banco-de-portugal-reve-crescimento-da-economia-em-alta-para-23_n1770055 — D (Banco de Portugal release returned HTTP 403)

**[S58]** ECO, "CFP revê inflação em alta para 3,2%. Meta do BCE só no final da década", 24 September 2026. https://eco.sapo.pt/2026/09/24/cfp-reve-inflacao-em-alta-para-32-em-2026-meta-do-bce-so-no-final-da-decada/ — D (superseded by [S63] for the figures; not cited in the text)

**[S59]** Local facts database, additional rows (all B): Eurostat prc_hicp_aind CP041 index (ctx-gap-markets-023); Banco de Portugal, Recomendação Macroprudencial n.º 1/2026 (DSTI limit 50 % → 45 %; ctx-credit-banks-010; operative text not read at source). The earlier rows for foreign employees and the CNSF survey are now cited from [S38] and [S64]. — B

**[S60]** Portal das Finanças, Estatuto dos Benefícios Fiscais, art. 19.º-B (Redação da Lei n.º 73-A/2025, de 30/12). https://info.portaldasfinancas.gov.pt/pt/informacao_fiscal/codigos_tributarios/bf_rep/Pages/ebf19b.aspx — A-i (read at the verification stage and by an independent reviewer 2026-11-08). Accessed 9 November 2026; full reading of the article, including eligibility tests, eligible costs, cap, exclusions and amendment notes.

**[S61]** Código dos Regimes Contributivos do Sistema Previdencial de Segurança Social (Lei n.º 110/2009), art. 53.º, consolidated text, Diário da República. https://diariodarepublica.pt/dr/legislacao-consolidada/lei/2009-34514575 — A-i (values read by an independent reviewer 2026-11-08; verbatim span not transcribed then). Accessed 9 November 2026; partial reading of art. 53.º in the consolidated version displayed 30 August 2026, with the contribution-rate span transcribed.

**[S62]** Portaria n.º 480-A/2025/1, de 30 de dezembro, fixing the 2026 IAS (537,13 €), art. 2.º, Diário da República, 1.ª série. https://files.diariodarepublica.pt/1s/2025/12/25001/0000200002.pdf — A-i (value read by an independent reviewer 2026-11-08; verbatim span not transcribed then). Accessed 9 November 2026; full reading of the complete page, including the IAS amount and effective date, with art. 2.º transcribed.

**[S63]** Conselho das Finanças Públicas, Perspetivas Económicas e Orçamentais 2026–2030 (atualização), report n.º 07/2026, September 2026, Table 2. https://www.cfp.pt/uploads/publicacoes_ficheiros/cfp-rel-07-2026_peo_2026-2030_atualizacao.pdf — A-i (read by an independent reviewer 2026-11-08)

**[S64]** CNSF, Relatório do 4.º Inquérito à Literacia Financeira da População Portuguesa, 2023, published April 2024. https://www.todoscontam.pt/sites/default/files/2024-04/relatorio4ilf2023.pdf — A-i (84 % read by an independent reviewer 2026-11-08). Accessed 9 November 2026; partial reading of printed pp. 11 and 30–31, saving incidence and overlapping saving methods, including the term-deposit share.

**[S66]** ECB, September staff projections, 10 September 2026. https://www.ecb.europa.eu/press/projections/html/ecb.projections202609_ecbstaff~8e340fc69d.en.html — A (accessed 9 November 2026; partial reading of Tables 1 and 3, wage outlook and alternative energy scenarios)

**[S67]** Banco de Portugal, Boletim Económico, October 2026, publication day unrecorded. https://www.bportugal.pt/publicacao/boletim-economico-outubro-2026 — A (accessed 9 November 2026; partial reading of projection Table I.1.1, data cutoff and unemployment-benefit analysis)

**[S68]** Diário da República, Lei n.º 73-A/2025, 30 December 2025. https://diariodarepublica.pt/dr/detalhe/lei/73-a-2025-993270096 — A (accessed 9 November 2026; partial reading of the amendment reproducing CIRS art. 70.º and art. 96.º on bonuses)

**[S69]** Eurostat, minimum-wage/earnings country annex, 2026, publication day unrecorded. https://ec.europa.eu/eurostat/cache/metadata/Annexes/earn_minw_esms_an_Monthly_minimum_wage_as_a_prop.pdf — A (accessed 9 November 2026; partial reading of Portugal's entry on PDF page 4 through extracted text. Screenshot retrieval failed)

**[S70]** DGERT, collective-regulation annual report for 2024, release date unrecorded. https://www.dgert.gov.pt/wp-content/uploads/2020/05/Relatorio-anual-RCT-2024-DGERT_final.pdf — A (accessed 9 November 2026; partial reading of coverage definitions, updating rates, extension discussion and conventional-pay section. Internal QP-vintage inconsistency remains open)

**[S72]** OECD, Taxing Wages 2026, effective tax rates on labour income in 2025, publication day unrecorded. https://www.oecd.org/en/publications/taxing-wages-2026_3a5169ef-en/full-report/effective-tax-rates-on-labour-income-in-2025_b7bb1854.html — A (accessed 9 November 2026; partial reading of Table 3.1, household columns and Portugal/OECD/EU-22 rows)

**[S76]** Autoridade Tributária, Despacho n.º 12523-A/2026, 14 October 2026. https://info.portaldasfinancas.gov.pt/pt/informacao_fiscal/legislacao/diplomas_legislativos/Documents/despacho-12523-a-2026.pdf — A (accessed 9 November 2026; partial reading of the preamble and operative paragraphs 1–10)

[S78] OECD, Economic Survey Portugal 2026, January 2026. https://www.oecd.org/content/dam/oecd/en/publications/reports/2026/01/oecd-economic-surveys-portugal-2026_0ea012e6/025b3445-en.pdf — A (accessed 9 November 2026; partial reading of PDF pages 41, 44–45, 49–52 and 73–74 on benefits, firms, minimum wages and evaluation)

[S79] Banco de Portugal, Recomendação Macroprudencial n.º 1/2026, 2 July 2026. https://www.bportugal.pt/sites/default/files/documents/2026-07/Recomendacao_Macroprudencial_n.1-2026.pdf — A (accessed 9 November 2026; partial reading of arts. 2.º–7.º and 9.º–11.º, income definition, exceptions and stress cross-reference. Referenced Instrução 23/2023 unread)

[S81] Eurostat, October inflation flash estimate, 4 November 2026. https://ec.europa.eu/eurostat/web/products-euro-indicators/w/2-04112026-ap — A (accessed 9 November 2026; partial reading of Portugal and euro-area observations, estimate flags and euro-area composition)

[S83] ECB, key interest-rate history, current displayed table, page update date unrecorded. https://www.ecb.europa.eu/stats/policy_and_exchange_rates/key_ecb_interest_rates/html/index.en.html — A (accessed 9 November 2026; partial reading of effective-date rows through September 2026)

[S85] Oliveira, study on minimum wage and wage distribution, published online 7 November 2023. https://research.unl.pt/ws/portalfiles/portal/78263253/1_s2.0_S0927537123001343_main.pdf — A (accessed 9 November 2026; partial reading of abstract, sample/method paragraphs, conclusion and appendix definitions. Full bibliographic title and publisher unrecorded in the reading log)

[S86] INE, INEWS 65, April 2026. https://www.ine.pt/ine_novidades/semin/INEWS65/index.html — A (accessed 9 November 2026; partial reading of the IPC rebasing/classification discussion and Safe Center access conditions)

[S87] Autoridade Tributária, Relatório Despesa Fiscal 2024, June 2025. https://info.portaldasfinancas.gov.pt/pt/dgci/divulgacao/Area_Beneficios_Fiscais/Despesa_Fiscal/Documents/Relatorio_Despesa_Fiscal_2024.pdf — A (accessed 9 November 2026; partial reading of Annex II rows, provisional-data footnote, static revenue-forgone method and unquantified-benefit annex)

[S95] Autoridade Tributária, Ofício-circulado n.º 20289/2026, 11 February 2026. https://info.portaldasfinancas.gov.pt/pt/informacao_fiscal/legislacao/instrucoes_administrativas/Documents/Oficio-circulado-20289-2026.pdf — A (accessed 9 November 2026; partial reading of paragraphs 6–15 and 18–27 separating employer tests from eligible costs. Applying prior-year calculation guidance to current law remains the paper's interpretation)

# Appendix A. Methods and evidence grades

**How the evidence was gathered.** The paper rests on an evidence record of numbered sources ([S1]–[S95], with gaps where a source was consulted and dropped) and on the data file data-v3-inflation-wage.csv, which holds every value behind the tables and charts with its source id and grade. The core series are Eurostat's HICP, minimum-wage, earnings, national-accounts and productivity datasets; OECD Taxing Wages and average wages; AMECO wage shares; ECB interest-rate series; the Quadros de Pessoal employer census published by DGCP/MTSSS; Portuguese statutes read on Portal das Finanças and the Diário da República; and the projections of the Banco de Portugal, the Conselho das Finanças Públicas, the European Commission and the ECB. Where a cross-checked local database of official statistics was used instead of the primary page, the grade says so.

**How it was checked.** Each figure was traced to its source and, where the source could be reached, compared with the official value; verbatim spans were recorded for statutory text. The evidence grades below say how each figure was read. An independent reviewer, working from a different model lineage, re-read a sample of sources and recomputed the arithmetic (for example all fourteen annual decompositions of Table 6). Where a value differed, the text was corrected and the correction logged; where a page could not be fetched, the item was marked as not read. The checker's fix log for this version is kept in the project's change file.

**What "computed" means.** A value marked computed is our arithmetic on the cited official series (a ratio, a cumulative change, a deflated level or an accounting decomposition). The formula is stated in the text, in the table note or in the data file, so that any reader can reproduce it. A computed value is only as good as its inputs; its grade is the grade of those inputs.

**Retrieval gaps.** A failed fetch (an HTTP 403 or 502, a page that returns only a script shell, an API that returns no observations) is a retrieval gap, not a finding about the source. In such cases the paper keeps the earlier reading and its grade, says that the refresh failed, and lists the item as open. No verdict is changed on the strength of a failed fetch.

**The three verdicts.** Claims heard in public debate, including the field observations of §8, are tested against the data and receive one of three verdicts: *supported* (the data point the same way as the claim), *contradicted on average* (the national data point the other way, although the claim may still hold for some groups, sectors or regions) or *not measured* (the data needed to test the claim could not be read or do not identify it; the claim is open, not false). Statements about groups of people are presented as hypotheses, with the data for and against them.

**Evidence grades.** Every source tag carries a grade code in the form [S#; code]. The codes mean:

| Code | Meaning |
|---|---|
| **A** | Read at the official source (API, legal text or official page) by the drafting or enrichment stage of this project |
| **A-i** | Read at the official source by an independent reviewer or verifier |
| **A-c** | Read at the official source on 7 November 2026 for the companion housing paper and carried without a new read |
| **B** | Official statistic taken from the sourced local facts database |
| **C** | Official page or journal abstract read through a summariser or by a sub-stage of the enrichment process |
| **D** | Press report, law firm, think tank or other secondary site |
| **E** | Working paper, search-result snippet or unofficial site |

A combined code such as C/E means that the entry draws on sources of both grades. The word *computed* after a tag means that the figure is our arithmetic on the tagged sources.

**AI assistance and independent checking.** Drafting, review and verification of this paper used AI language models under a written protocol: a drafting stage produced the text from the evidence record; a reviewer from a different AI model family checked it against the sources, re-reading the sources it could reach and recomputing the arithmetic; and an enrichment stage added further readings, recorded in the References. Items that no stage could reach are marked as not read and listed as open. The protocol fixes what each stage may change and requires every change that touches a figure, a date, a source tag or a verdict to be logged. The text was edited for publication by the company, which is responsible for its content. LusoAnalytica, Lda · Mowei.pt · press@mowei.pt.