Belgium-first European pilot

Independent calculations and model note | v2 | 9 October 2026

Completed: an executable occupation-based accounting model, frozen source bundle and sixteen reference/sensitivity calculations. Belgium is the detailed policy comparator; Germany and France supply comparable occupation and pay profiles. Open the dashboard.

Unit and scope: 10,000 standardized earning profiles per country. Employment mix is observed in 2025; annual pay means in 2022; policy is frozen at 2025. The model does not estimate national wage bills or national fiscal losses. Default results apply Belgian policy to all three workforces.

First independent results

Scenario	BE positions displaced by 2035	BE ten-year pressure	DE ten-year pressure	FR ten-year pressure
Slow reference	270	EUR 25.23m	EUR 23.59m	EUR 17.04m
Fast stress test	2,687	EUR 701.96m	EUR 649.16m	EUR 446.57m
Slow, no profit recapture	270	EUR 37.49m	EUR 34.93m	EUR 25.04m
Fast, no profit recapture	2,687	EUR 888.04m	EUR 821.14m	EUR 567.92m

Pressure is cumulative, undiscounted 2026-2035: lost employment-tax/contribution receipts plus benefits, minus modeled tax recapture. Positive values indicate pressure. These are conditional outputs, not forecasts. Country columns compare equal-size profiles, not countries of equal population.

What the scenarios assume

Input	Slow reference	Fast stress test
Automation path	0.5% to 10% by Dec 2035	20% to 99.5% by Dec 2030
Belgian-reference susceptible share / job substitution	27% / 100%	27% / 100%
Annual rehire / gross earnings loss after rehire	25% / 13%	10% / 40%
Employer-savings allocation	Compute 10%, price cuts 20%, employer-cost raises 10%, residual profit 60%	Same allocation
Tax recapture / benefits	Adopter profit: 75% domestic capture at 25% effective tax; eligibility 100%; frozen Belgian UI	Same tax/benefit assumptions

VAT, savings levy and benefit-tax adjustment are off by default. Synthetic within-occupation pay dispersion and source wage uplift are zero. Floor proxies apply to baseline and rehire pay. All behavioural assumptions are editable; the susceptible share is not measured by the ILO scores.

What to present and ask

Show the slow and fast cases, then set profit recapture to zero to demonstrate how much the result depends on it. Change the rehire probability next. Ask Pavel which labour response needs calibration first. Ask Antoine to verify the tax/benefit implementation and agree a dated Belgian policy baseline before any national scaling.

Inputs, methods and joint review

Source snapshot retrieved 9 October 2026 | primary sources and executable inputs included

Layer	Primary source	Use / limitation
Employee mix	Eurostat lfsa_eegais	2025 employee headcounts; eight common ISCO groups; within-core weights. France carries definition-difference flags.
Annual pay	Eurostat earn_ses22_28	2022 standardized full-time/full-year means; enterprises 10+; B-S excluding O. Coverage differs from LFS.
Technical exposure	ILO WP140 / author scores	427 four-digit occupations. Our equal-occupation group means shape relative risk; no national job-loss probabilities.
Employment taxes	OECD Belgium; Germany; France	Frozen 2025 single/childless profiles. Progressive PIT, work bonuses, contribution caps/reductions and low-pay provisions.
Benefits / floors	OECD Belgian TaxBEN; ONSS clipping	Frozen February 2025 Belgian UI in every workforce; phased, capped and open-ended. Source floor conversions are documented separately.
Design / scenario anchors	ADEN model note	Published Korean architecture and current preset consulted; European calculations rebuilt independently. Linear paths are our simplification.

How the calculation works

Eight occupation groups per country, optionally expanded to 24 synthetic wage cells. Risk weights are normalized to Belgium; a 27% assumed susceptible share yields 27.00% BE, 26.77% DE and 26.15% FR with each observed mix. Monthly worker states conserve 10,000 profiles. New displacements wait one month before rehire; rehired workers are not displaced again. Long-term exit is an explicit scenario.

Removed employer compensation is allocated once: levy first, then compute, price cuts, employer-cost raises and residual profit. Raised wages are solved through the contribution schedule. Only the domestic taxable share of residual adopter profit receives the assumed profit-tax offset. Imported AI services do not imply adopter profits are untaxed.

Validation and limits

Independent schedules reproduce rounded OECD average-worker wedges: 52.5% BE, 49.3% DE and 47.2% FR. Published/reference fixtures, worker conservation, firm budgets, fiscal identities, no-AI controls and scenario/page interfaces pass. These checks establish accounting consistency, not predictive accuracy.

Tax is annualized by monthly state; actual mixed wage/benefit annual assessment is omitted. DE/FR benefits, household transfers, measured eligibility, sectoral minima, natural attrition, robotics, endogenous adoption, demand/GDP feedback and national population scaling remain outside scope. The optional pure-benefit tax adjustment and VAT channel are illustrative sensitivities. Belgium UI is frozen pre-reform 2025, not current 2026 law.

Reproduce and combine contributions

Run: open dist/index.html from the downloadable package; no account is needed for local calculations. With Node.js, run validate-pilot.cjs, then run-model.cjs slow belgian --out results. The dashboard exports a reusable scenario. Raw observations, exact filters/flags, policy packs and all results are included.

Joint next step: Antoine reviews and updates policies/benefits; Anushka improves survey coverage and labour calibration; Pavel critiques the exposure-to-displacement mapping; Ayan tests a task/hours alternative using the same source bundle. This version supplies a common executable object for that work.