ISPOR EUROPE 2026 · HEALTH POLICY EVALUATION · SYNTHETIC CONTROL

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CO206

The Impact of Germany's 2008 Nationwide Skin Cancer Screening Program on Age-Standardized Melanoma Mortality: An Update Using Synthetic Control Methods

A synthetic control analysis of the 2008 program, 1990–2023

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KEY FINDING

Germany's melanoma mortality after 2008 is indistinguishable from a synthetic Germany without screening — far from the reductions projected before rollout.

–0.1%
Mean post-2008 gap vs synthetic Germany

Up to 45%
Long-run reduction projected by microsimulation[2]

15 yrs
Post-launch follow-up (2008–2023)

01 BACKGROUND

Since 2008, German statutory health insurance has covered a biennial whole-body skin examination for adults aged ≥35.[4]

Melanoma mortality fell ~48% after regional SCREEN pilot,[3] and a melanoma microsimulation projected long-run reductions of up to 45%.[2]

Earlier national evaluations had short follow-up[1] or compared trends without a constructed counterfactual.[4]

02 OBJECTIVE

Estimate the program's effect on age-standardized melanoma mortality over 15 post-launch years (2008–2023).

03 METHODS

Data. Global Burden of Disease age-standardized melanoma mortality per 100,000, 1990–2023.[7]

Design. Synthetic control[5]: Germany vs a convex combination of 15 European countries without national screening, matched on every pre-2008 year with uniform V.[6]

Robustness. Placebo permutation, leave-one-out donor removal, and a pre-window start-year sweep (1990–2002)

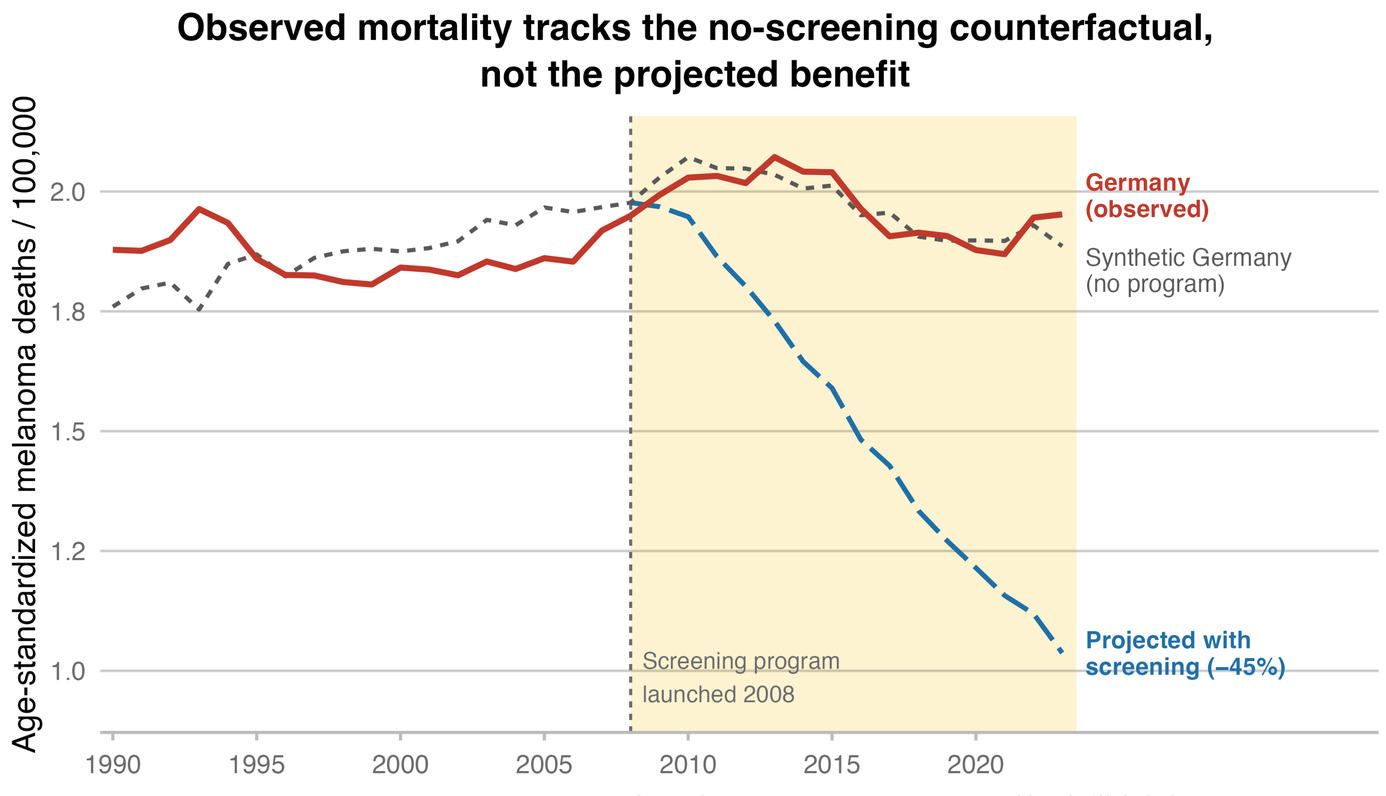

Figure 1. Observed German mortality tracks synthetic Germany after 2008. The projected path applies the long-run microsimulation reduction[2] to synthetic Germany, phased in linearly to 2023 (illustrative).

04 RESULTS

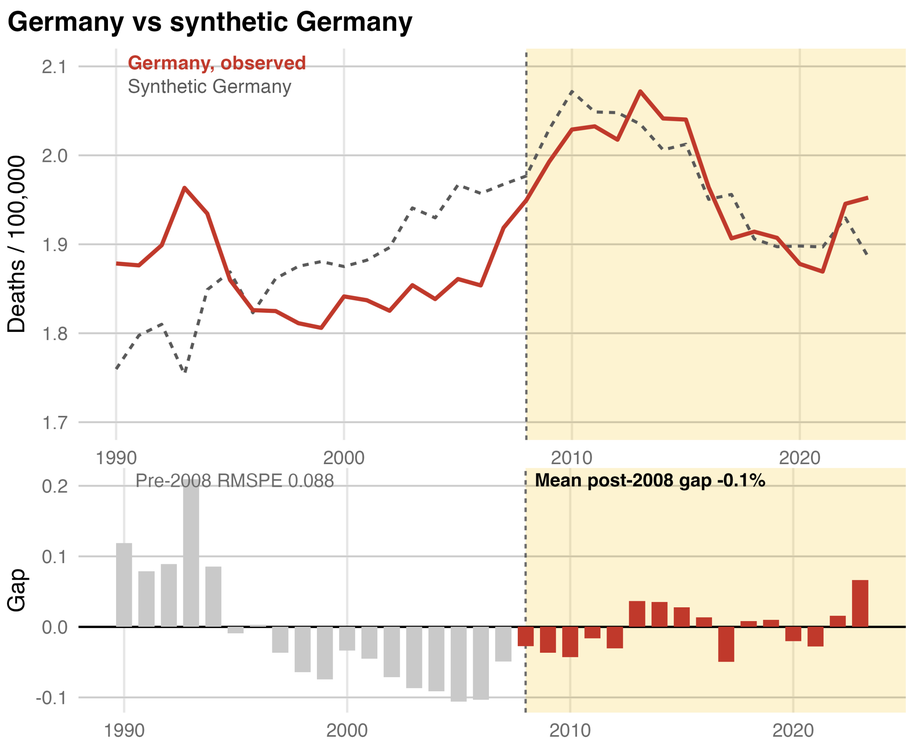

Figure 2. Synthetic Germany = Italy 0.45, Austria 0.35, Spain 0.19. Fit is weakest in the post-reunification years (pre-2008 RMSPE 0.088, 4.7% of mean mortality).

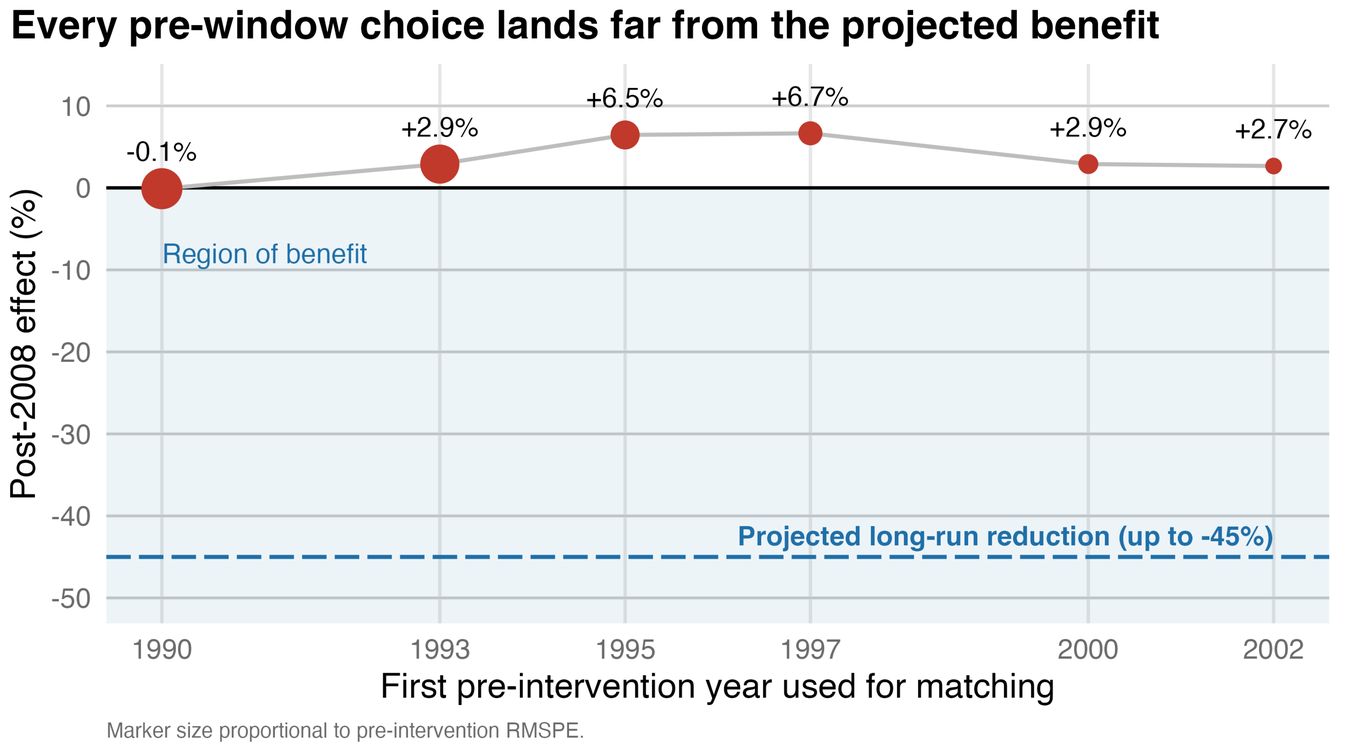

Figure 3. Re-estimating with each pre-window start year gives effects from −0.1% to +6.7%; none approaches the projected reduction.

Placebo permutation Reassigning the 2008 "treatment" to each of the 15 donor countries produces post-2008 gaps as large as Germany's. Germany's post/pre RMSPE ratio is the smallest of all 16 units (permutation p = 1.0), though its weak pre-2008 fit makes this test conservative.
Leave-one-out Dropping Italy, Austria or Spain never yields a reduction.

05 CONCLUSIONS

1 Fifteen years after launch, Germany's nationwide program shows **no detectable reduction** in age-standardized melanoma mortality.

2 The null holds across placebo, donor and pre-window choices, far from the projected benefit of up to 45%.[2]

3 Together with recent trend comparisons,[4] these results call the value of the program's current design into question.

Limitations: imperfect pre-2008 fit in the reunification era; modeled national GBD estimates may mask subgroup effects.

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