



Uncovering the Impact of
LAMaI 1994/96 on

Mortality Rates in Switzerland

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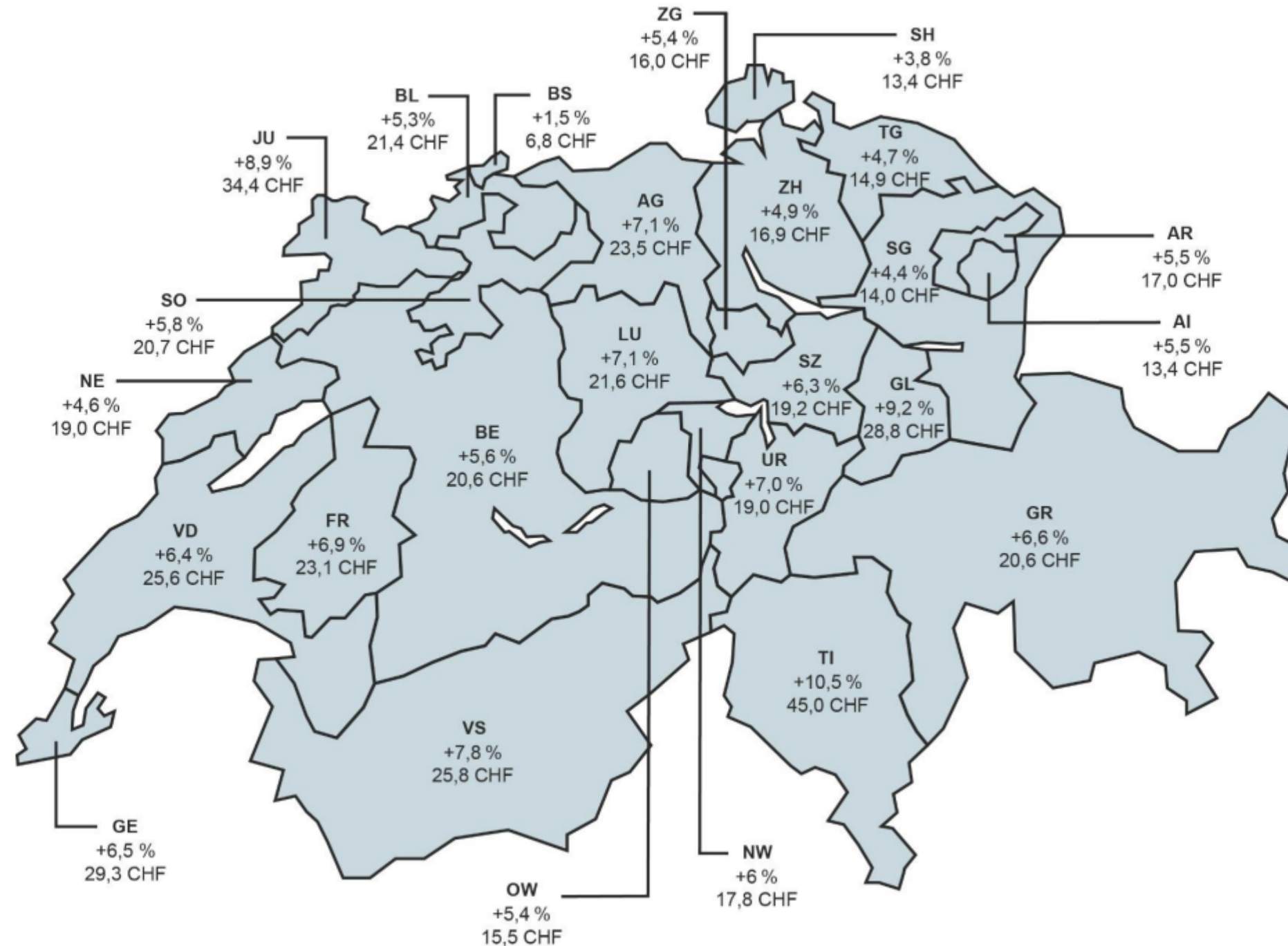


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**How much are you willing to pay
to save one life?**



In 2025, health costs keep going up



Source: FOPH, Premium Approval, 2025



Schweizer können ihre Krankenkasse nicht mehr zahlen

Die Corona-Pandemie bringt viele Schweizer in finanzielle Schwierigkeiten, da sie zu erheblichen Einkommensausfällen führt. Immer häufiger kommt es zu Verschuldungen. Schuldenberatungsstellen verzeichnen eine höhere Nachfrage nach Beratungen. Am stärksten sind Haushalte aus niedrigen Einkommensschichten betroffen.

SWI swissinfo.ch

Swiss perspectives in 10 languages

Swiss Politics >

Dramatische finanzielle Situation aufgrund der C



Eine Umfrage des D
finanzielle Lage viel
einer Zunahme der
stellen 27 Prozent f
durch Wegfall von Z

Schwierige Lage ir

Swiss can no longer pay their health insurance

"...62 percent of those in debt have debts to health insurance companies."
(March 2021)

Explainer: Swiss to vote on healthcare 'cost brake'



▲ As in many developed countries, an ageing population as well as (expensive) advances in medical technology partly explain the rise in health costs in Switzerland. Keystone / Christian Beutler

The Centre Party wants to curb spiralling healthcare spending with a proposed mechanism to limit cost increases – citizens will vote on June 9.

May 12, 2024 - 10:30

🕒 5 minutes

Swiss voters reject limits on healthcare spending



▲ Both healthcare initiatives come in response to spiralling healthcare costs that are putting significant strain on households in Switzerland. Keystone / Christian Beutler

Both initiatives came in response to spiralling healthcare costs that are putting significant strain on households in Switzerland. In the past 20 years health insurance premiums have more than doubled. In 2024 alone, healthcare premiums rose by 8.7% on average.

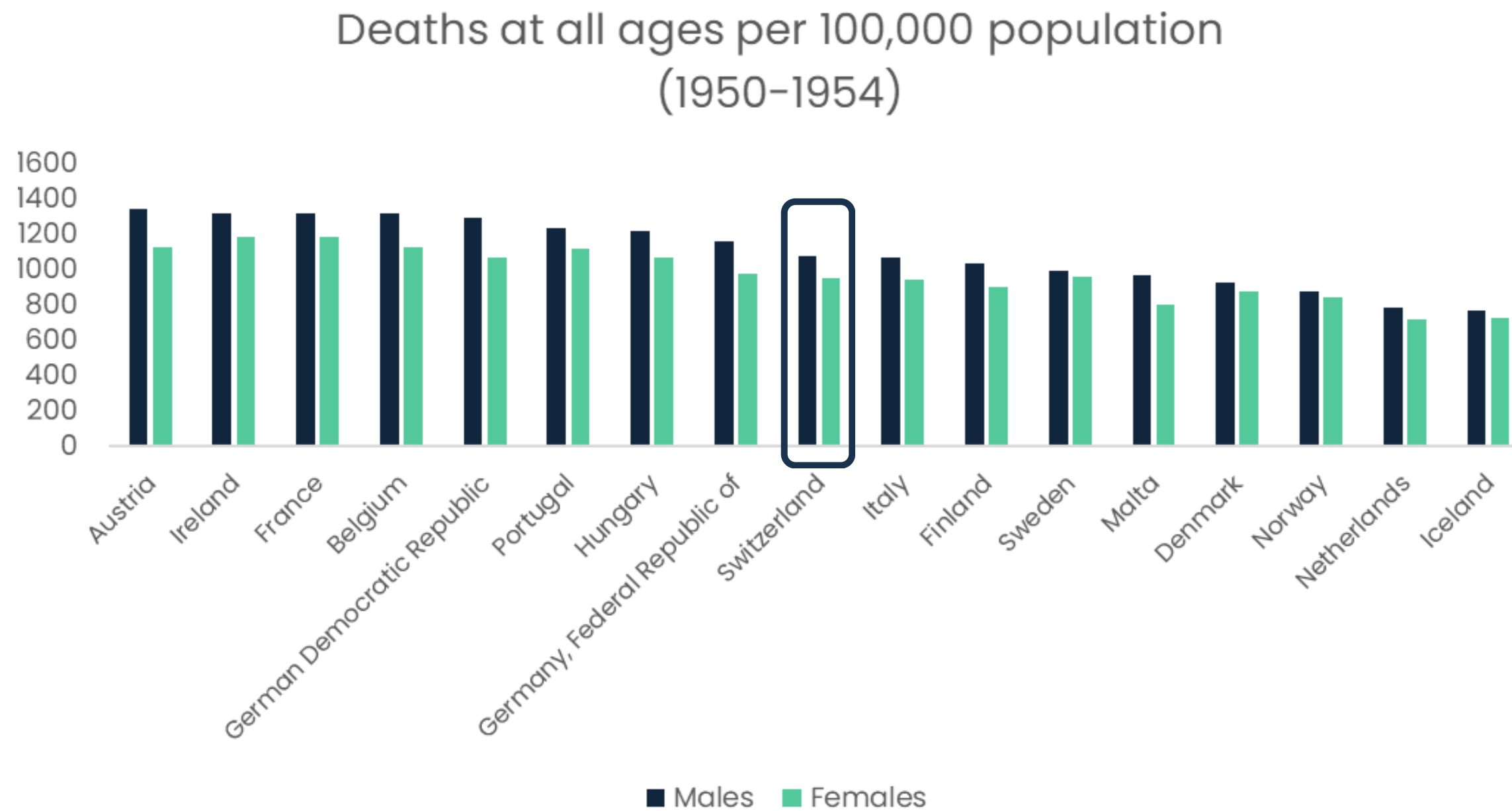
"Surveys have shown that **health costs are the biggest issue of concern for the Swiss population.**"
(May 2024)



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**In 2024, Switzerland's
health spending will
exceed 100 billion CHF =
11.8% of GDP**





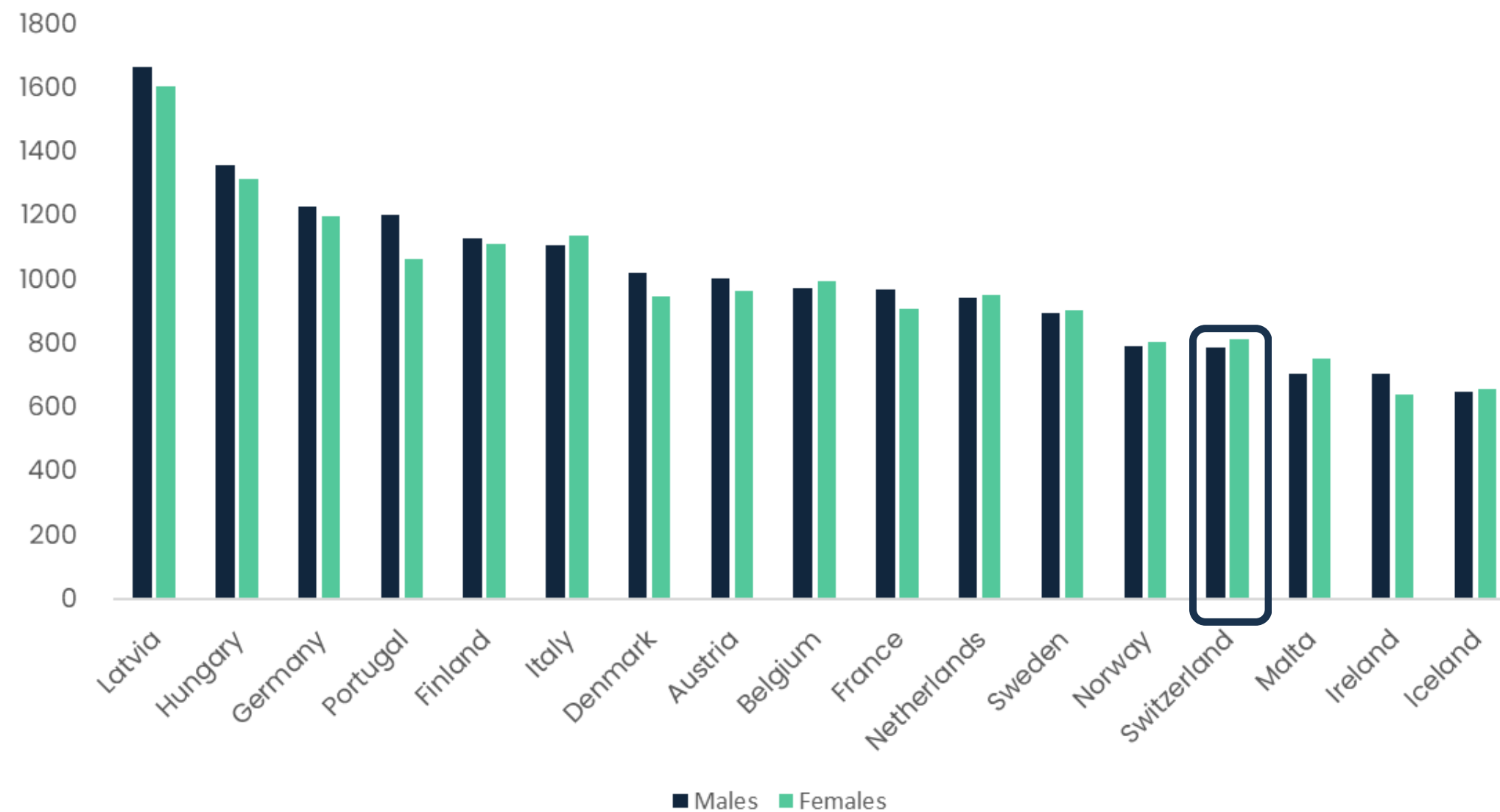
Source: UN and WHO (1982).

1950s

Swiss all-cause mortality rates were about the European average.



Deaths at all ages per 100,000 population
(2023)



**Swiss mortality
rates are among
the lowest
worldwide**

How did Switzerland get here?

Source: Dataset compiled by the authors using data from the World Bank
and national statistical offices



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Research Question



If and how compulsory health insurance (LAMal 1994/96) affected mortality rates in Switzerland?



DiD

Quasi-experimental design that incorporated data before and after LAMaI 1994/96 enactment in Switzerland.

Control group – all nine provinces of Austria, a comparable but untreated country.



26 Swiss cantons

Population, 2023: 8.962 mln
Area: 41,285 sq.km
GDP per capita, PPP
(current int'l \$): 93K



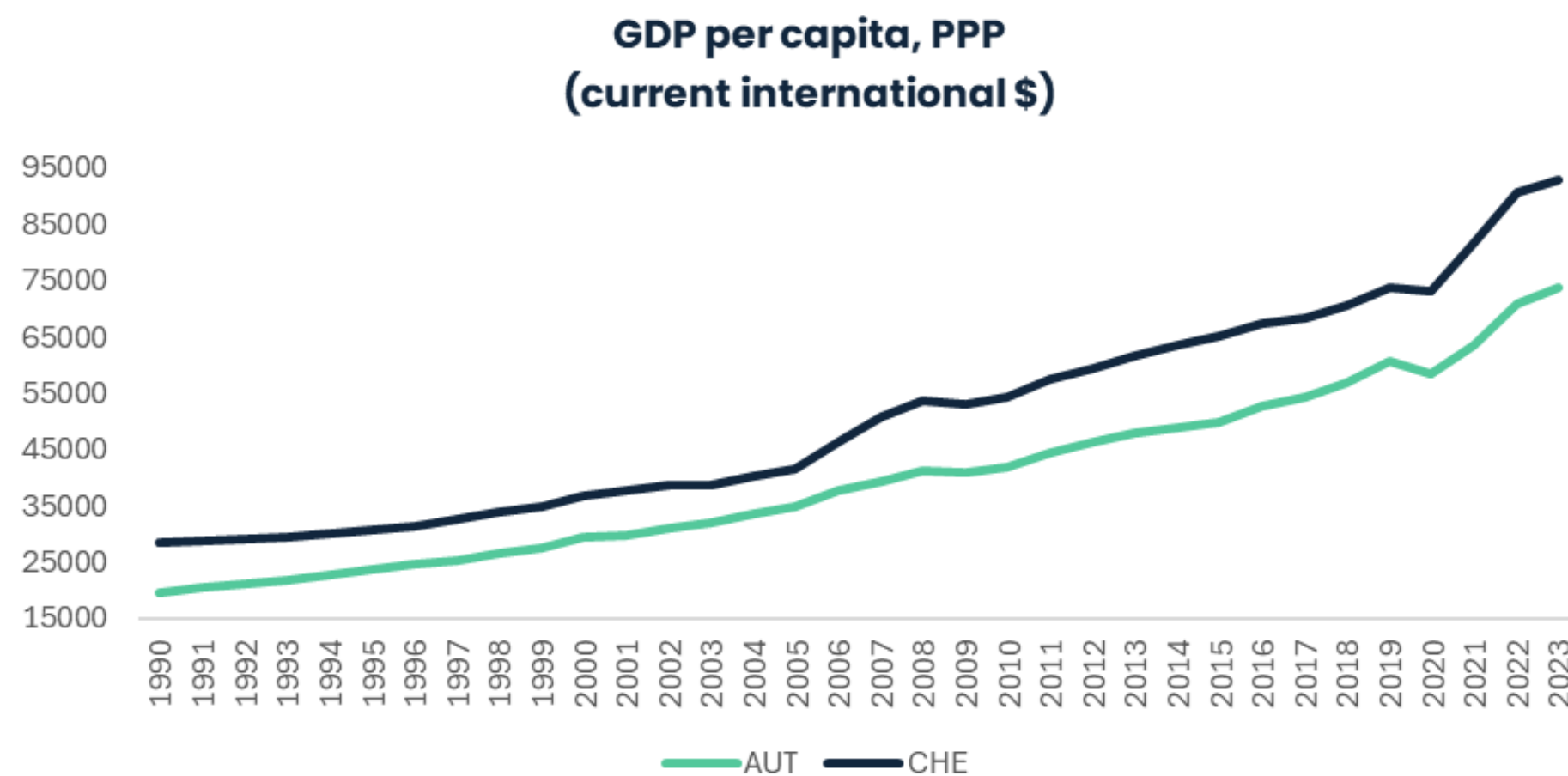
9 Austrian provinces

Population, 2023: 9,130 mln
Area: 83,871 sq.km
GDP per capita, PPP
(current int'l \$): 74K

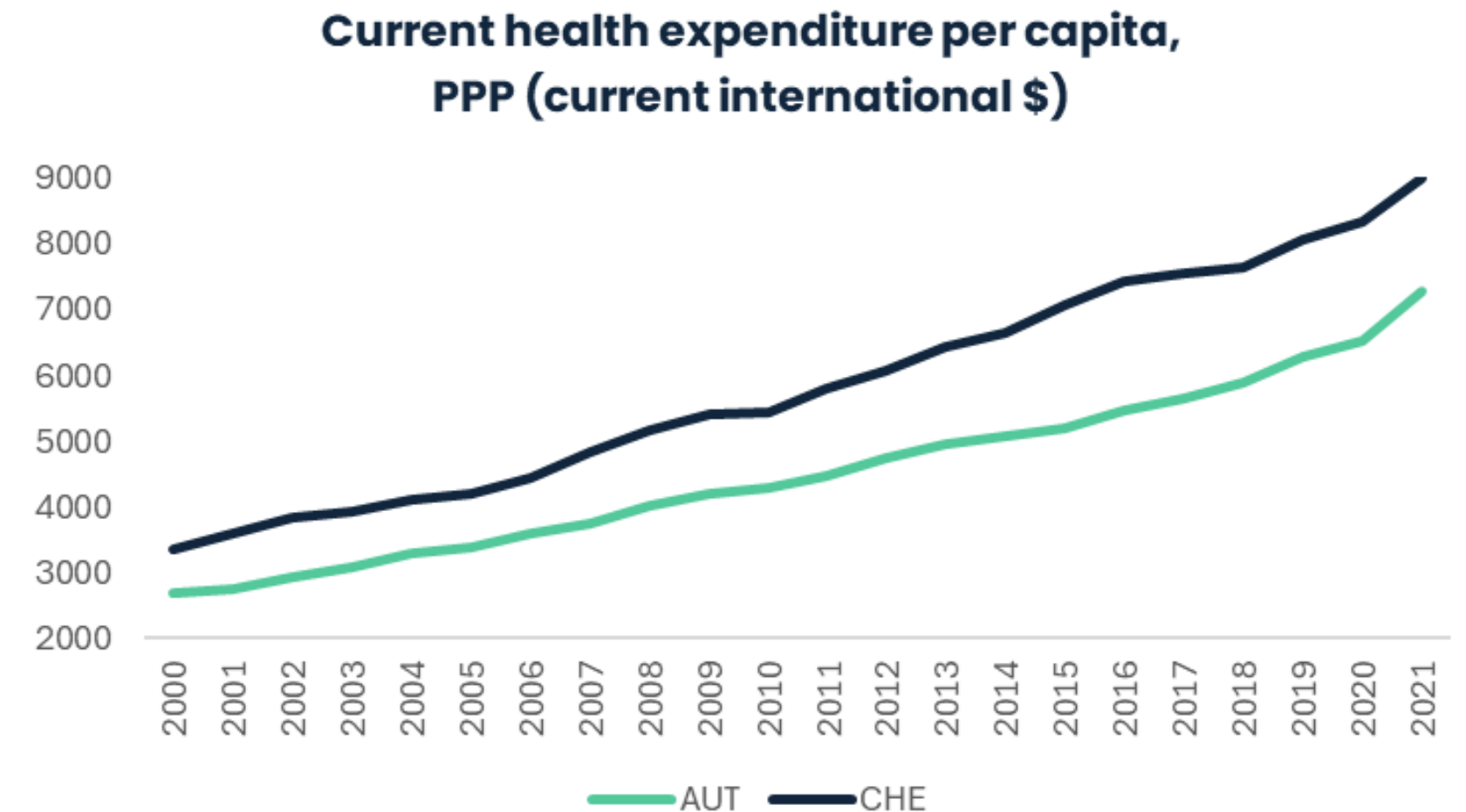
Source: World Bank. GDP per capita, PPP (current international \$).



Austria as a Control Group for Switzerland: Similar Trends in GDP and Health Expenditure per Capita



Source: data.worldbank.org, Indicator: NY.GDP.PCAP.PP.CD



Source: data.worldbank.org, Indicator: SH.XPD.CHEX.PP.CD



Similar Foundations, Distinct Approach to Health Insurance

Switzerland

- Various health insurers with free choice
- Universal coverage
- Market-based and compulsory

Austria

- Various health insurers without free choice
- Nearly universal coverage
- Employment-based, income-adjusted and compulsory (with the possibility of voluntary self-insurance)





Data

Mortality and population data by administrative units, gender, and age

- **Switzerland:** 1969–2023
- **Austria:** 1970–2023

Manually compiled from multiple sources

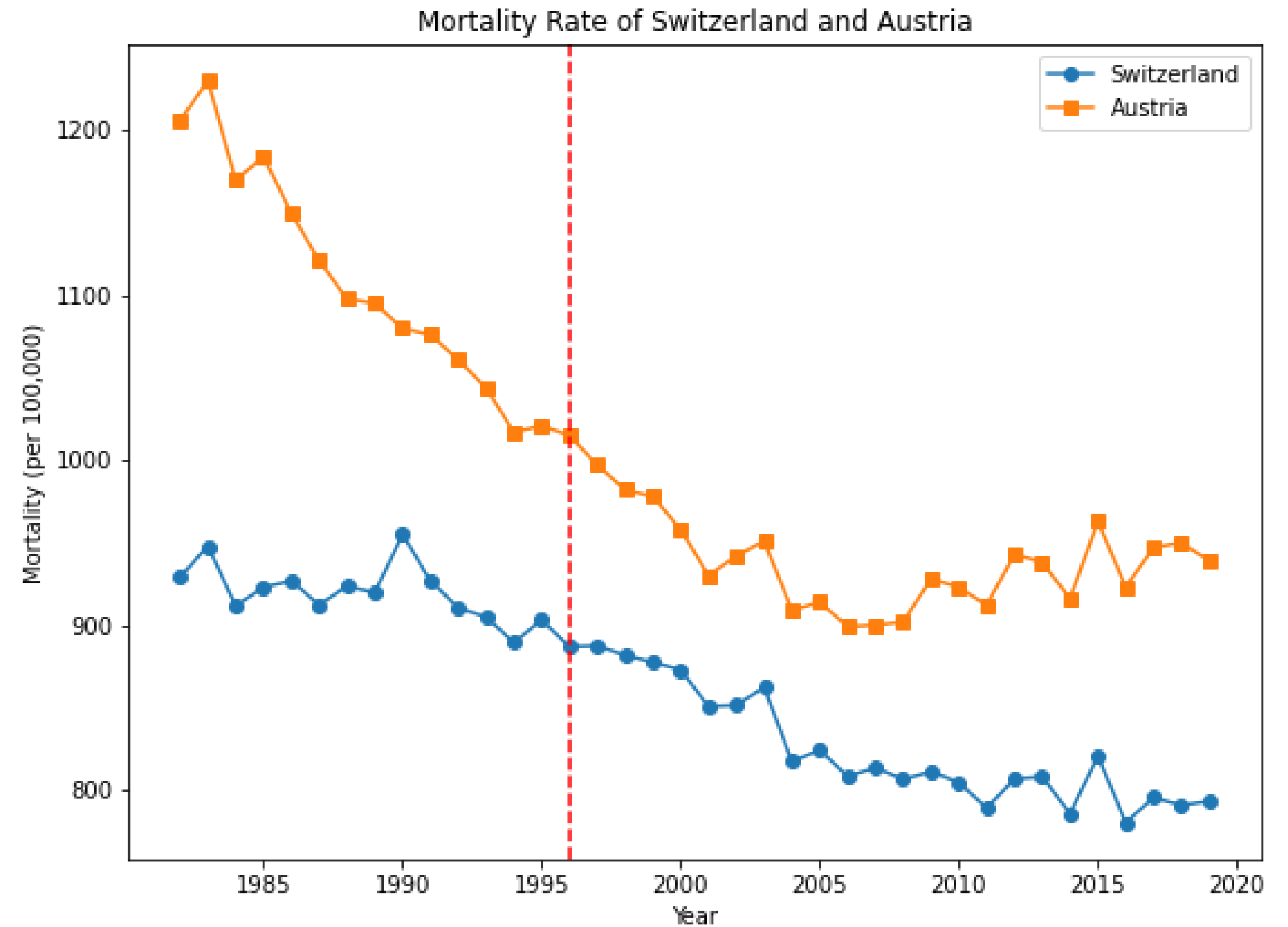
The Federal
Statistical Office,
Switzerland:
Database STAT-TAB



The National
Statistical Institute,
Statistics Austria:
Database STATcube



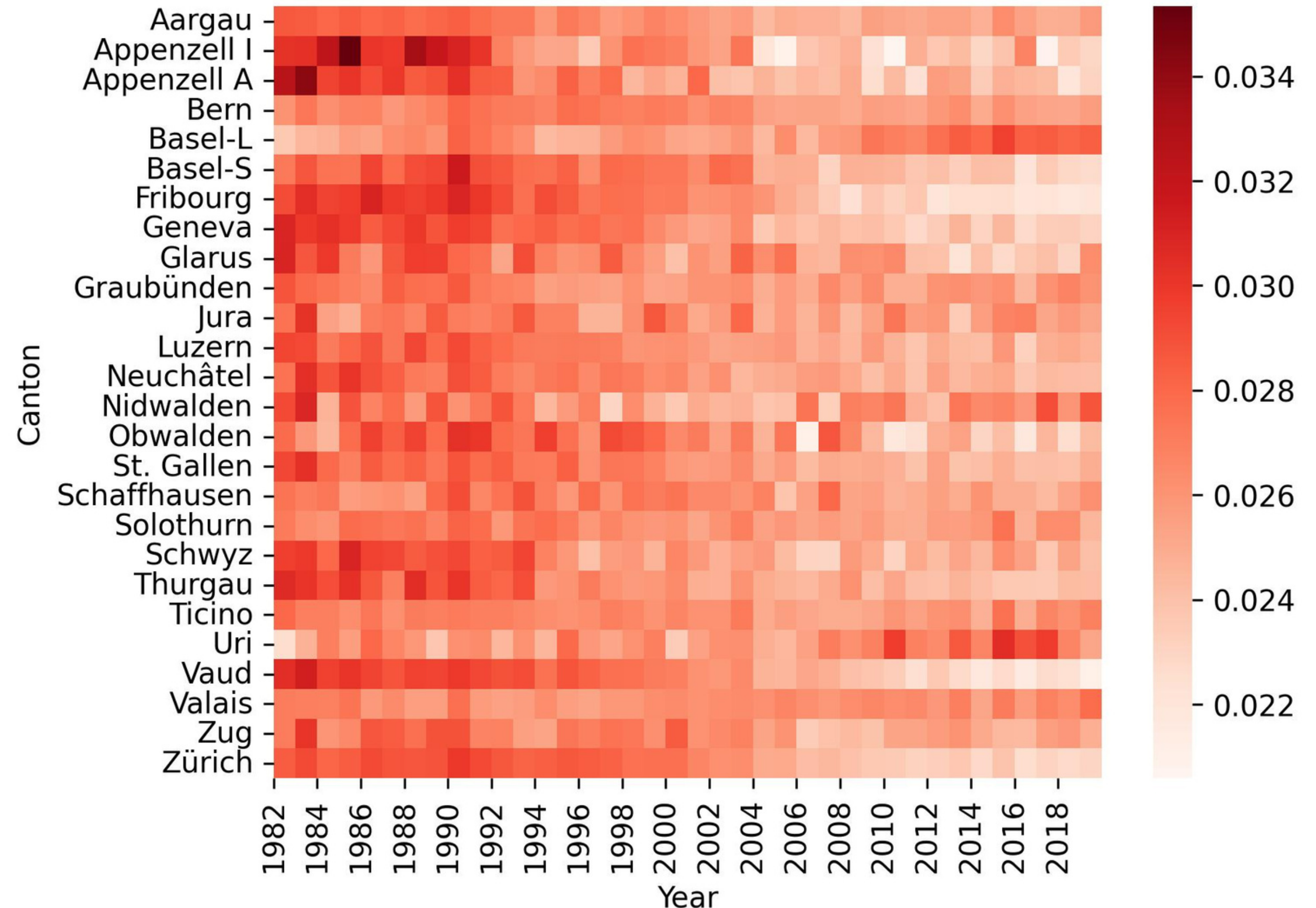
Mortality Rates: Higher in Austria but Moving almost in Parallel with Switzerland





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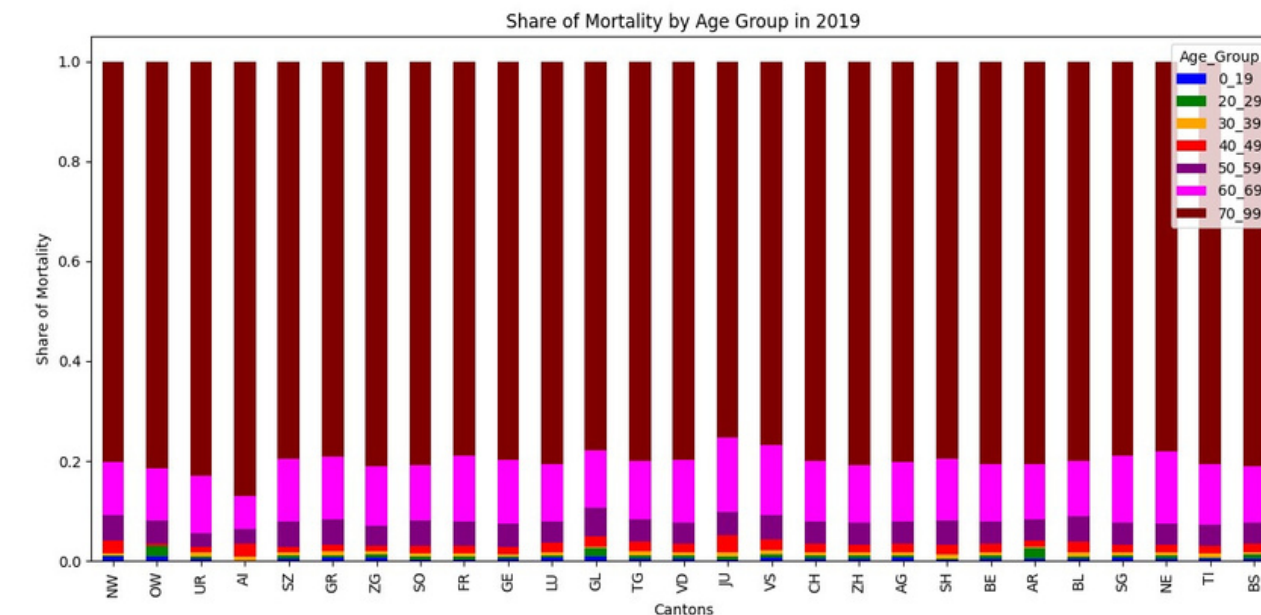
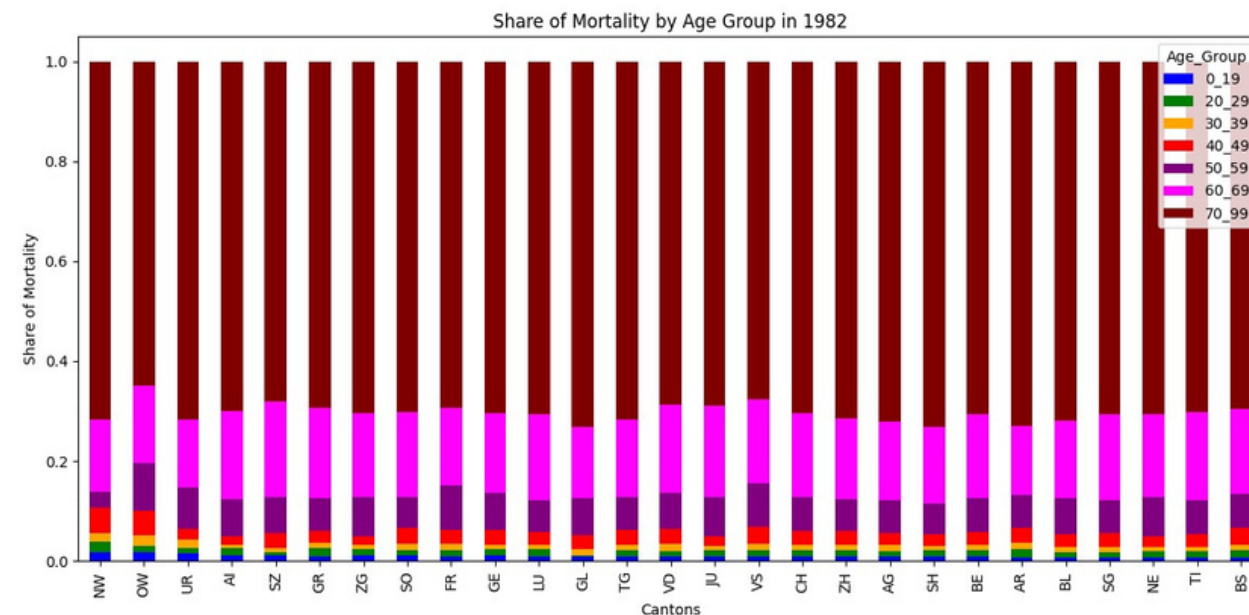
Declining Mortality Rates Over Time Across Cantons and Age Groups



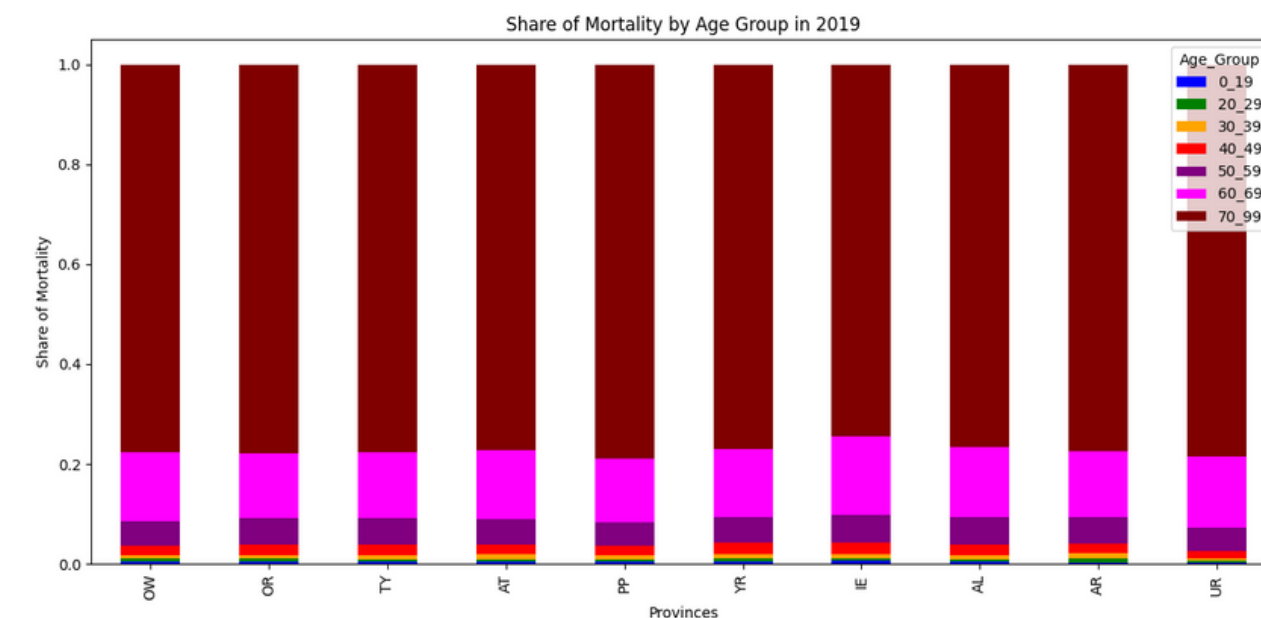
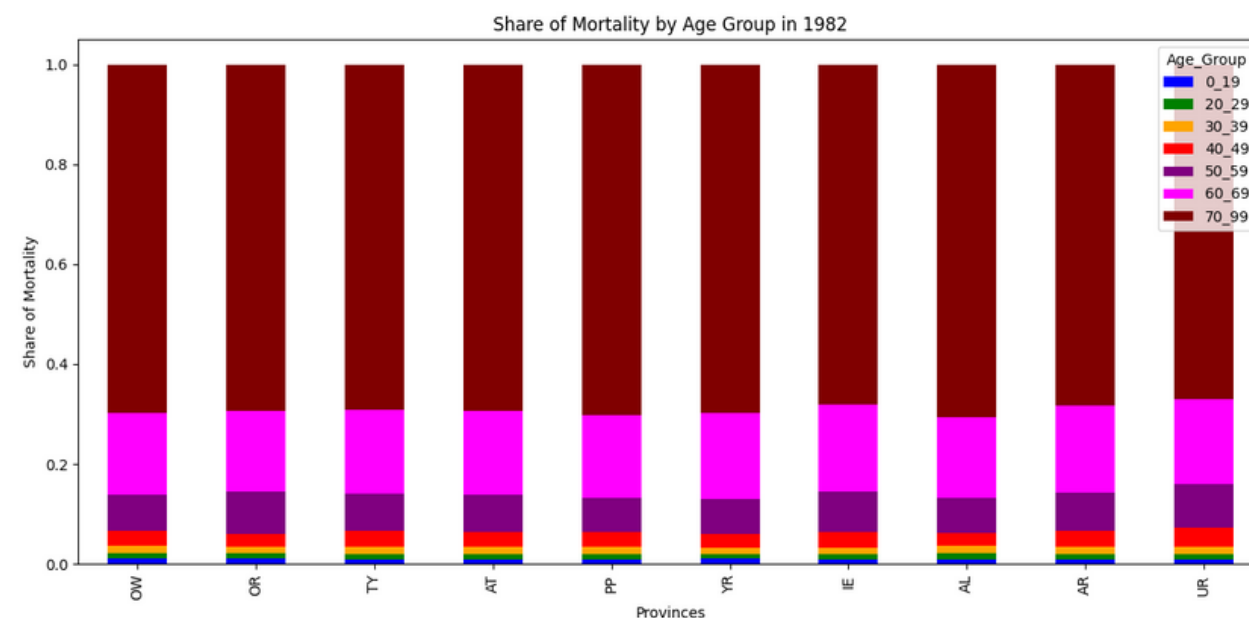


At the cantonal level, mortality rates for the 60–69Y and 70Y+ age groups exhibit the same downward trend: 1982 vs. 2019

Switzerland:

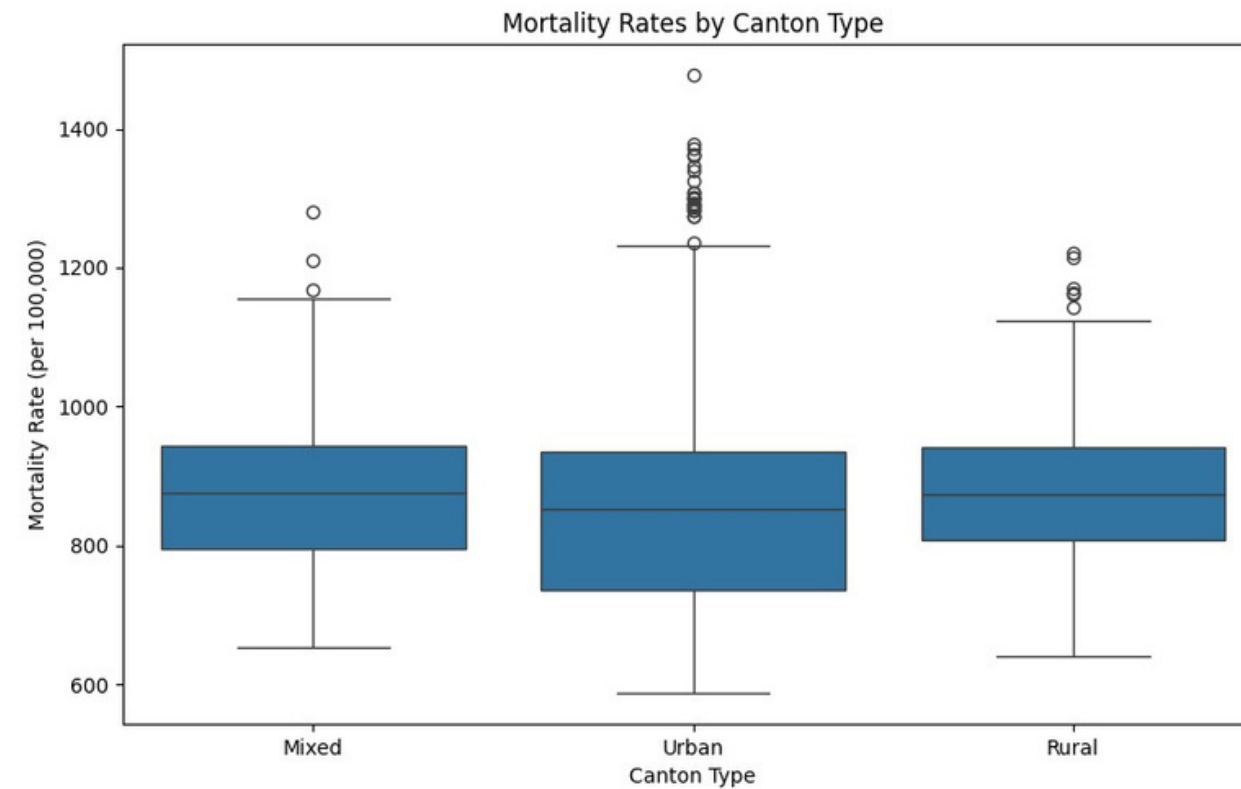


Austria:

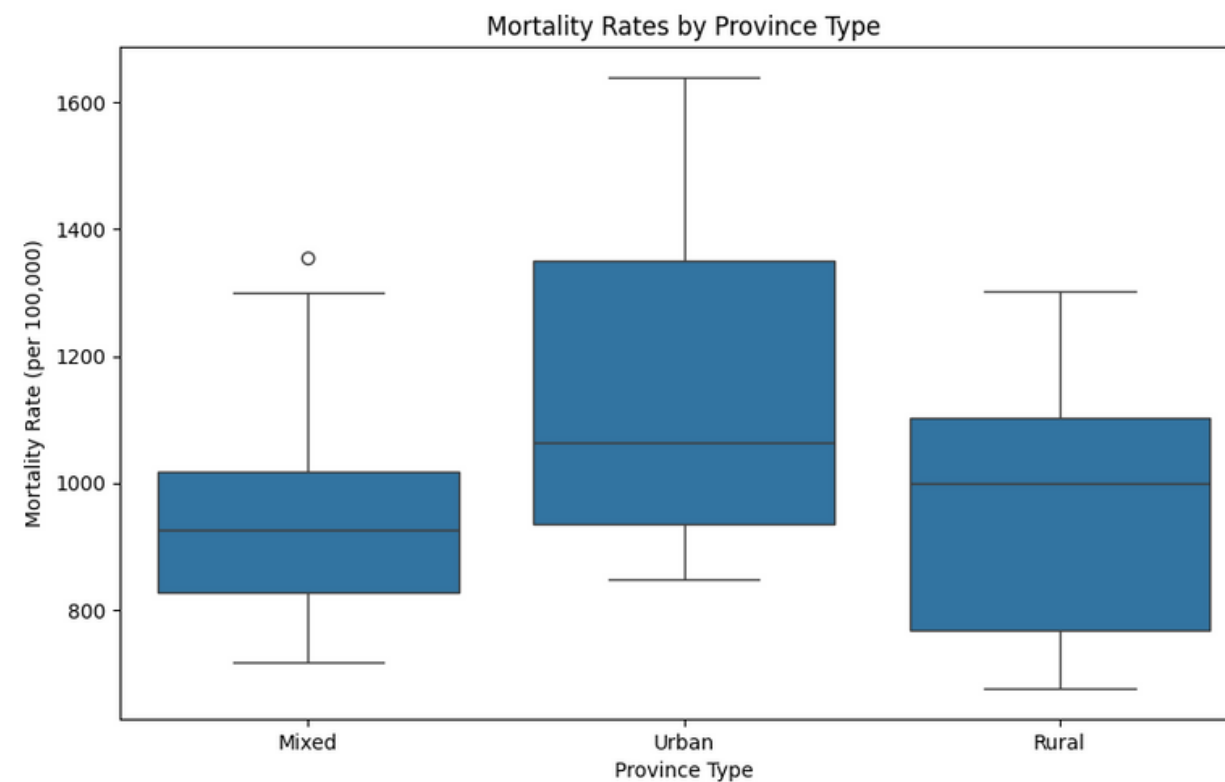




Switzerland:



Austria:



Regional comparisons of mortality rates

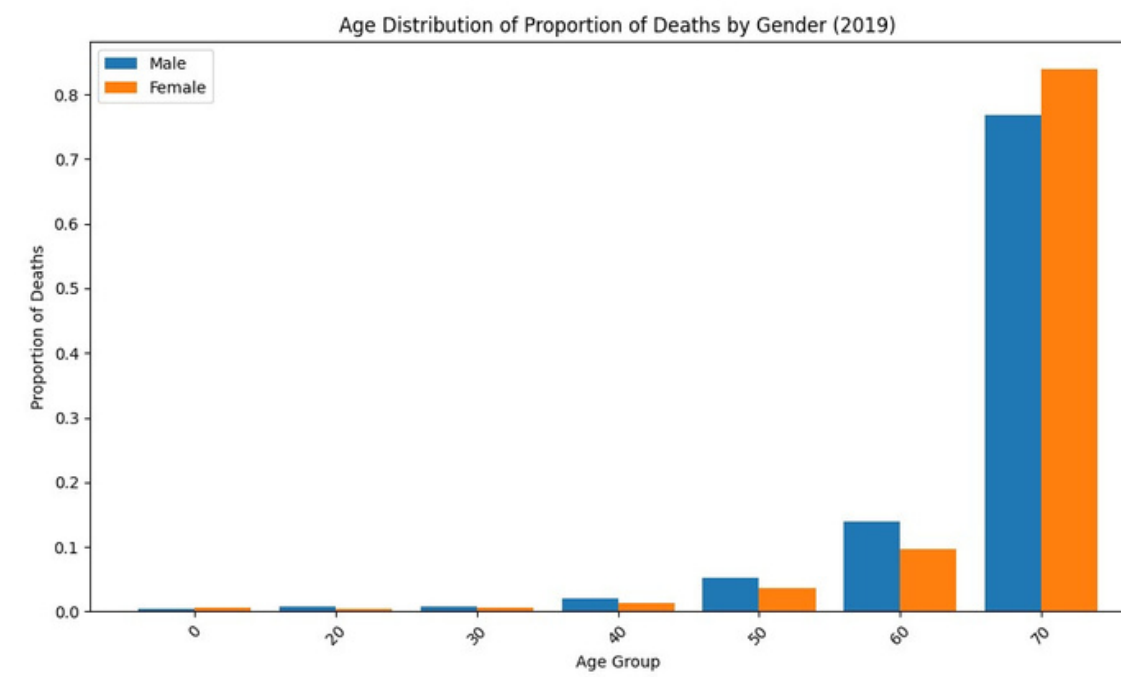
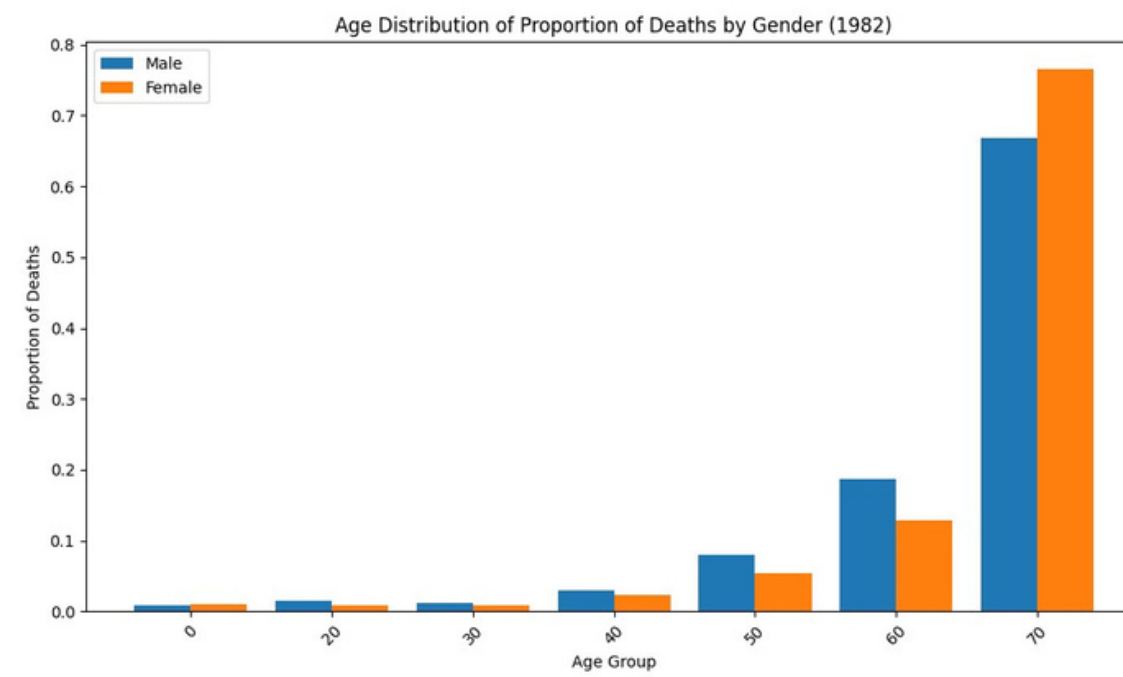
Switzerland

- 10 urban, 11 mixed, and 5 rural cantons
- FSO (2022). Cantonal differences. Demos 2/2022

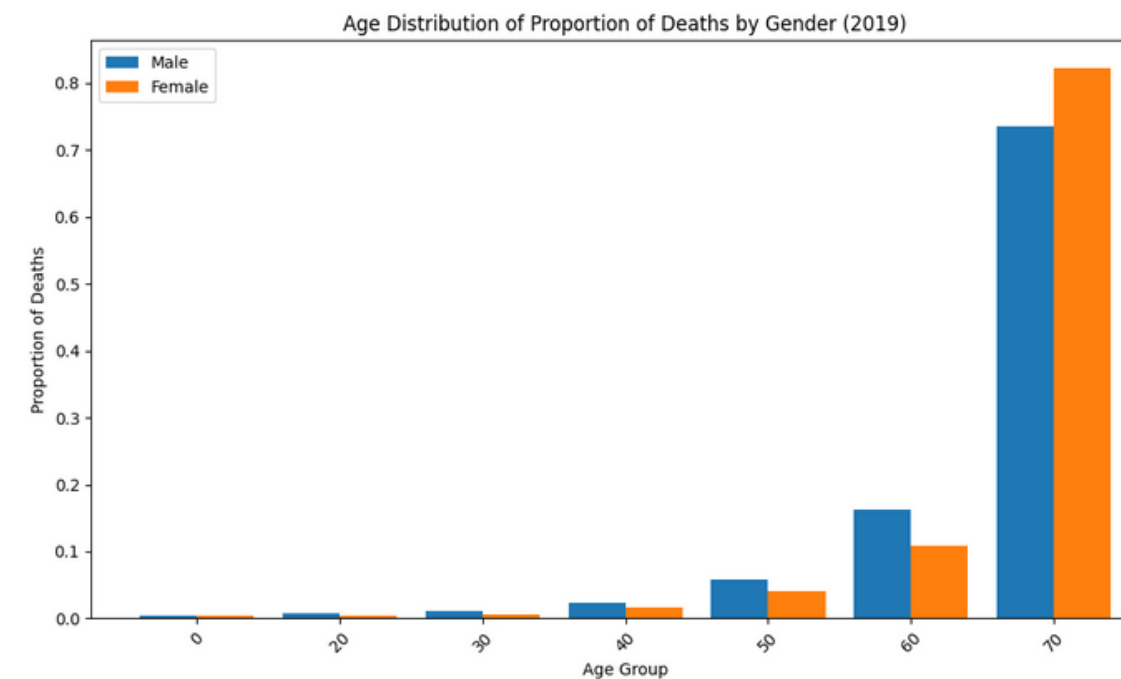
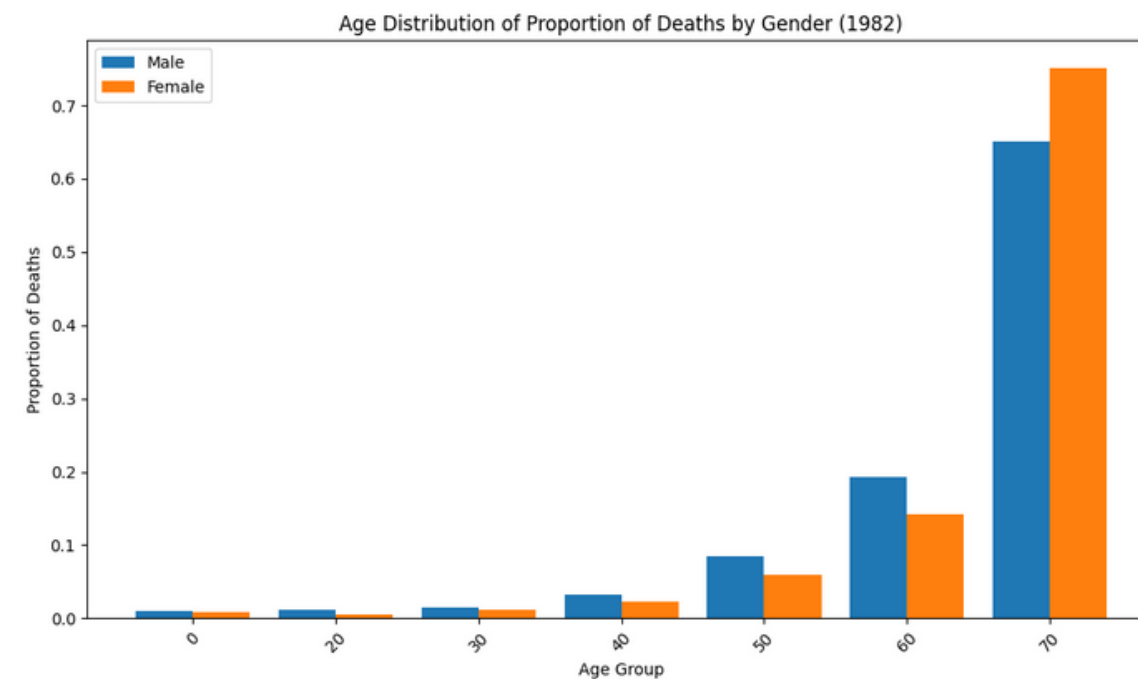


Persistent gender-based disparities in mortality trends: 1982 vs. 2019

Switzerland:



Austria:



Model Construction

Difference-in-Differences

- **Aim:** Evaluate the effect of the introduction of LAMal in 1996 on Swiss mortality rates.
- **Structure:** Compares the mortality rates in Switzerland against a comparable control group that does not receive the treatment (Austria).
- **Regression:** Strives to isolate the effect of LAMal ceteris paribus.



Model Formulation

MortalityRate_{*i,j,t*} =

$$\begin{aligned} & \beta_0 + \beta_1 \text{treatment}_i + \beta_2 \text{post}_t + \beta_3 (\text{treatment}_i \times \text{post}_t) + \sum_k \gamma_k \text{AgeGroup}_k + \sum_m \delta_m \text{Gender}_m + \\ & \sum_k \theta_k (\text{treatment}_i \times \text{post}_t \times \text{AgeGroup}_k) + \sum_m \lambda_m (\text{treatment}_i \times \text{post}_t \times \text{Gender}_m) + \\ & \sum_c \phi_c \text{Country}_c + \sum_t \psi_t \text{Year}_t + \epsilon_{i,j,t} \end{aligned}$$



Regression Results (1): Overall

Direct DiD Results

- **Treatment:** Pre-1996, Swiss regions had mortality rates **148.05 points lower** than Austrian regions
- **Post:** After the policy intervention, mortality rates for both countries **dropped by 414.69 points** on average
- **Treatment Post:** The policy intervention was followed by an additional **reduction of 159.91 points** in mortality rates compared to Austria

Findings are statistically significant (p -values < 0.001)



Regression Results (2):

The largest declines in Swiss mortality rates were amongst the elderly

Variable	Aggregated	Disaggregated
Intercept	1110.8901*** (11.216)	1242.1903*** (44.637)
National	-159.9092*** (13.737)	
Age Range 0-19		81.4082*** (25.718)
Age Range 20-29		70.0372*** (25.988)
Age Range 30-39		67.9980*** (24.726)
Age Range 40-49		29.2145 (21.452)
Age Range 50-59		-89.1879*** (16.594)
Age Range 60-69		-366.3773*** (13.9)
Age Range 70+		-979.7083*** (58.492)
Female		81.8628*** (5.140)
Male		-120.9725*** (5.440)
Country F.E.	N	Y



Limitations

Economic growth, healthcare advancements, and lifestyle changes could also affect mortality rates

- Economic indicators:
 - Income levels across different age and gender groups
- Healthcare indicators:
 - Healthcare spending per capita
 - Data on the density of hospitals or healthcare facilities
 - Healthcare professionals per capita
- Lifestyle indicators:
 - Smoking rates
 - Alcohol consumption
 - Obesity rates



Literature Context

Our results align with studies on similar reforms

- Health insurance expansion reduced elderly mortality & for vulnerable groups
 - Chang (2012): Taiwan NHI
 - Sommers et al. (2012): US Medicaid
- Public insurance or lack of insurance linked to higher mortality (US)
 - Franks, Clancy, Gold (1993);
 - Sorlie et al. (1994);
 - Wilper et al. (2009);
 - Song et al. (2020)



Our study's contribution to the literature:

- **Switzerland as a country of interest**
- **Impact of the Swiss health insurance reform**



Key Takeaways

- The 1996 shock in Switzerland had a statistically significant and substantial negative impact on mortality rates for certain groups
- The effects were most pronounced for the older population
- The Swiss regions underwent changes not mirrored in the control Austrian regions



**Improving access to healthcare is
not just about the amount of
health spending,
but about **the lives saved.****



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Thank you for your attention!

04.12.2024





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