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## 1 War & hunger vs aging curves — Full Results

*Generated: 2026-02-05 22:46 UTC*

## 2 Methods

### 2.1 Study question

We test how **war** (conflict intensity) and **hunger** (food insecurity indicators) perturb the shape of age-specific adult mortality curves. In stable settings, adult mortality hazard increases approximately exponentially with age (Gompertz law). Crisis settings may instead add an age-independent hazard (Makeham term), introduce a young-adult “hump” (violence signature), or potentially change the adult aging slope.

### 2.2 Mortality data (outcome)

We use **UN World Population Prospects (WPP) 2024** age-specific death rates (`mx`) by country, year, sex, and age. These are used as a standard approximation to the hazard within age bins.

Implementation: `scripts/30_export_wpp_from_r.R` exports `data/raw/wpp_mx.csv` (and `data/raw/wpp_mx.parquet` if the R `arrow` package is installed) with columns `iso3`, `year`, `sex`, `age`, `mx`.

### 2.3 Conflict intensity (war covariate)

We use **UCDP Battle-Related Deaths (BRD)** as annual battle deaths by country-year. We aggregate battle deaths to country-year and scale by population to obtain `battle_deaths_per_100k`.

Implementation: place the downloaded BRD CSV/XLSX into `data/raw/ucdp/` and run `scripts/20_prepare_ucdp.py`.

### 2.4 Hunger / food insecurity (hunger covariates)

We fetch two World Bank WDI indicators: - `SN.ITK.DEFC.ZS`: prevalence of undernourishment (PoU, %) - `SN.ITK.MSFI.ZS`: prevalence of moderate or severe food insecurity (FIES, %)

Population for normalization is `SP.POP.TOTL`.

Implementation: `scripts/10_fetch_wdi.py`.

## 2.5 Mortality models

### 2.5.1 Gompertz–Makeham (adult fit)

On adult ages 40–89 we fit:  $\mu(x) = c + ae^{bx}$  where: - **b** is the aging slope ( $\text{MRDT} = \ln(2)/b$ ), - **a** shifts the Gompertz component, - **c** is an age-independent extrinsic hazard (Makeham).

### 2.5.2 Young-adult hump extension (war signature)

To capture disproportionate young-adult violent mortality, we extend:  $\mu(x) = c + ae^{bx} + h \exp\left(-\frac{(x-\mu_h)^2}{2\sigma_h^2}\right)$  with fixed hump center/width ( $\mu_h = 28$ ,  $\sigma_h = 10$ ) and estimated amplitude  $h \geq 0$ .

### 2.5.3 Estimation

We fit parameters by non-linear least squares minimizing the log-scale residual:  $\log(mx) - \log(\mu(x; \theta))$  with positivity enforced by log-parameterization.

## 2.6 Event windows

For each case country we define: - pre: t0-5 ... t0-1 - crisis: t0 ... t1 - post: t1+1 ... (if available)

Controls are selected a priori in `config/project.yml`.

## 2.7 Outputs

- **Panel (base):** `data/processed/panel_base.parquet`
- **Fitted params:** `data/processed/params.parquet`
- **Fit QC:** `data/processed/fit_qc.parquet`
- **Figures:** `reports/figures`
- **Tables:** `reports/tables`

## 2.8 Fit Summary

- Fits: **680** (rows in `data/processed/params.parquet`)
- Converged: **680** (100.0%)

### 2.8.1 Convergence Rate (sample)

iso3	sex	converged_rate
BGR	Female	1
BGR	Male	1
JOR	Female	1
JOR	Male	1
MAR	Female	1
MAR	Male	1
OMN	Female	1
OMN	Male	1
POL	Female	1
POL	Male	1
ROU	Female	1
ROU	Male	1
SYR	Female	1
SYR	Male	1
TUN	Female	1
TUN	Male	1

iso3	sex	converged_rate
UKR	Female	1
UKR	Male	1
YEM	Female	1
YEM	Male	1

## 2.9 Event-Window Summary (Cases)

case_group	iso3	sex	param	crisis_minus_pre
SYR_2011	SYR	Female	b	-0.004431
SYR_2011	SYR	Female	c	0.0002054
SYR_2011	SYR	Female	h	6.859e-05
SYR_2011	SYR	Female	mrdt	0.2909
SYR_2011	SYR	Male	b	-0.0137
SYR_2011	SYR	Male	c	-0.0001834
SYR_2011	SYR	Male	h	0.004174
SYR_2011	SYR	Male	mrdt	1.035
UKR_2022	UKR	Female	b	-0.003541
UKR_2022	UKR	Female	c	9.131e-05
UKR_2022	UKR	Female	h	-1.343e-05
UKR_2022	UKR	Female	mrdt	0.3101
UKR_2022	UKR	Male	b	-0.01378
UKR_2022	UKR	Male	c	8.71e-12
UKR_2022	UKR	Male	h	0.001508
UKR_2022	UKR	Male	mrdt	1.91
YEM_2015	YEM	Female	b	-0.0005103
YEM_2015	YEM	Female	c	-1.803e-05
YEM_2015	YEM	Female	h	-8.238e-05
YEM_2015	YEM	Female	mrdt	0.03672
YEM_2015	YEM	Male	b	-0.005231
YEM_2015	YEM	Male	c	-0.0005862
YEM_2015	YEM	Male	h	0.001992
YEM_2015	YEM	Male	mrdt	0.4172

Full CSV: reports/tables/event\_summary.csv

## 2.10 Figures

### 2.10.1 YEM\_2015 — YEM

#### 2.10.1.1 Female

#### 2.10.1.2 Male

### 2.10.2 SYR\_2011 — SYR

#### 2.10.2.1 Female

#### 2.10.2.2 Male

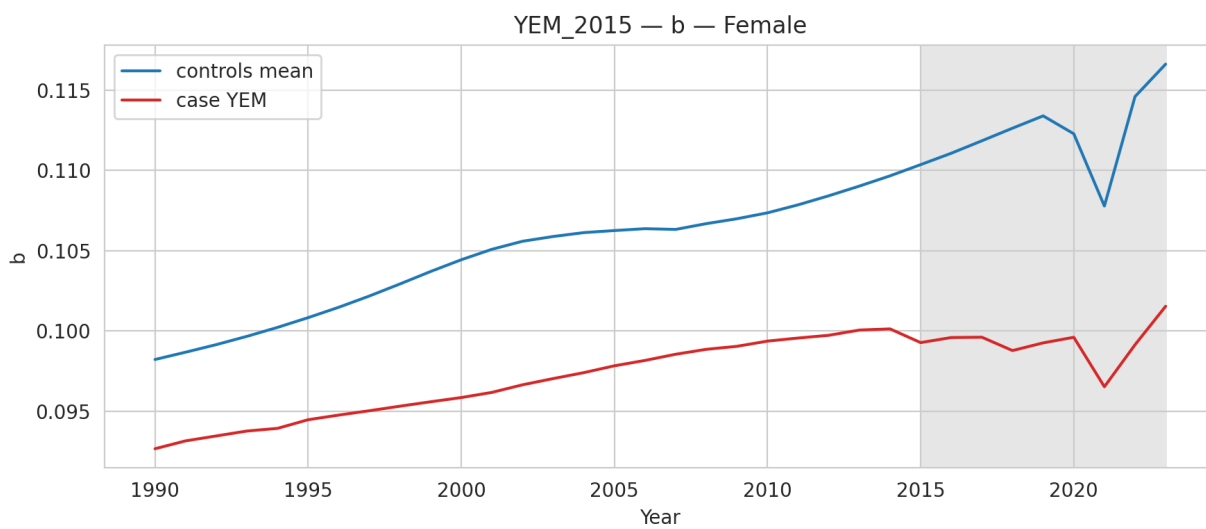


Figure 1: YEM\_2015\_YEM\_Female\_timeseries\_b

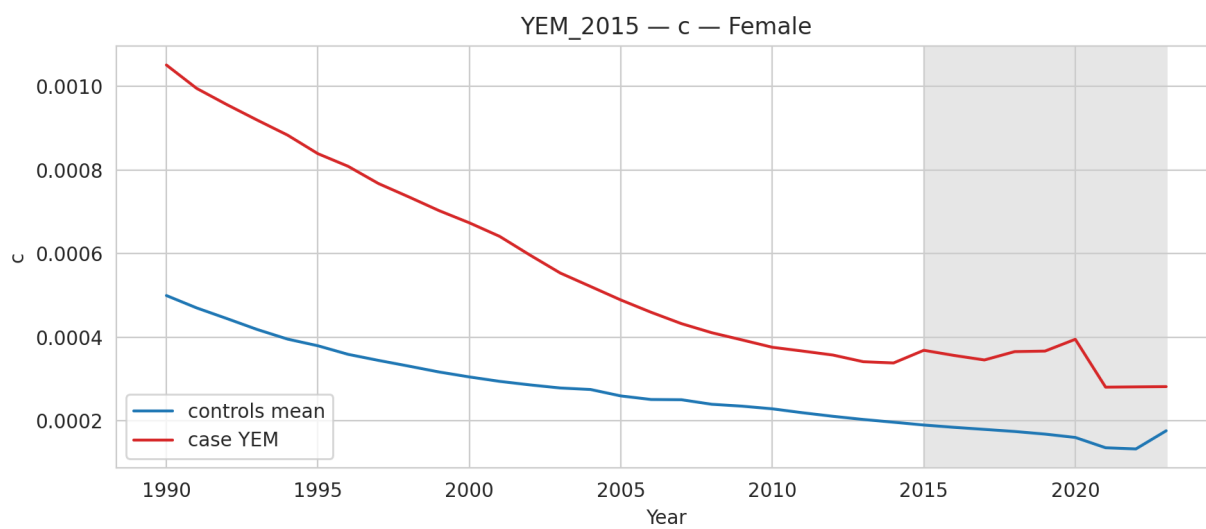


Figure 2: YEM\_2015\_YEM\_Female\_timeseries\_c

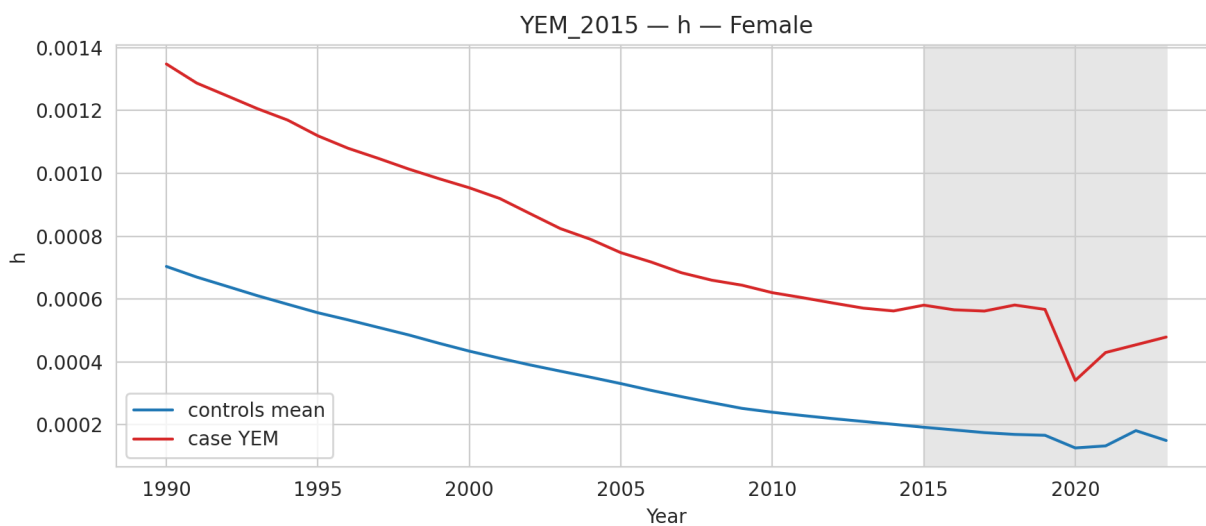


Figure 3: YEM\_2015\_YEM\_Female\_timeseries\_h

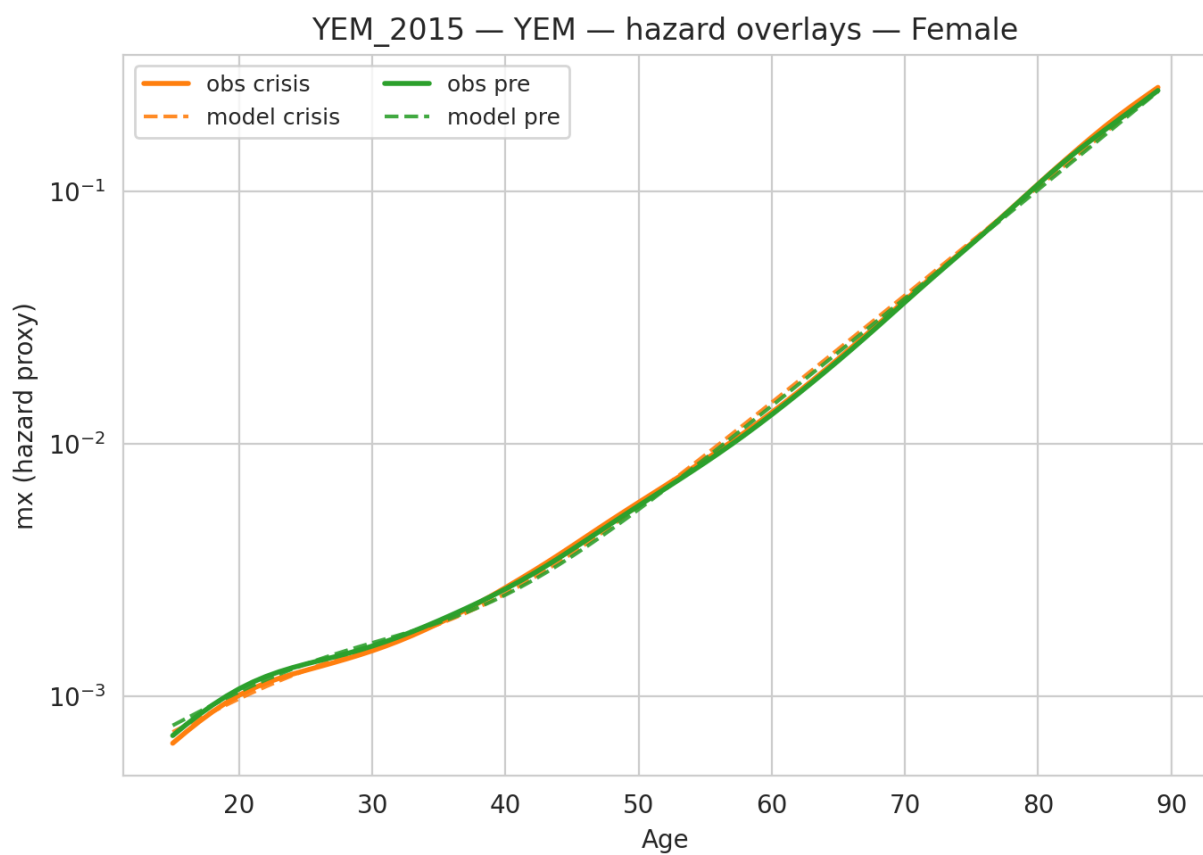


Figure 4: YEM\_2015\_YEM\_Female\_hazard\_overlays

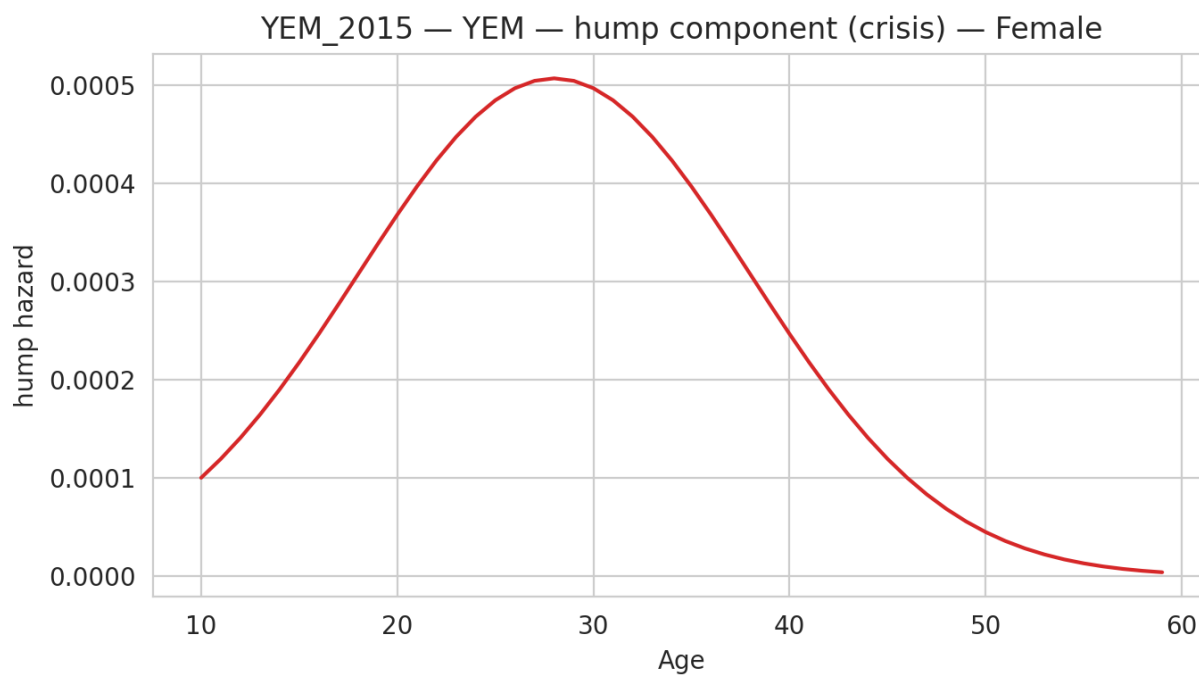


Figure 5: YEM\_2015\_YEM\_Female\_hump\_component

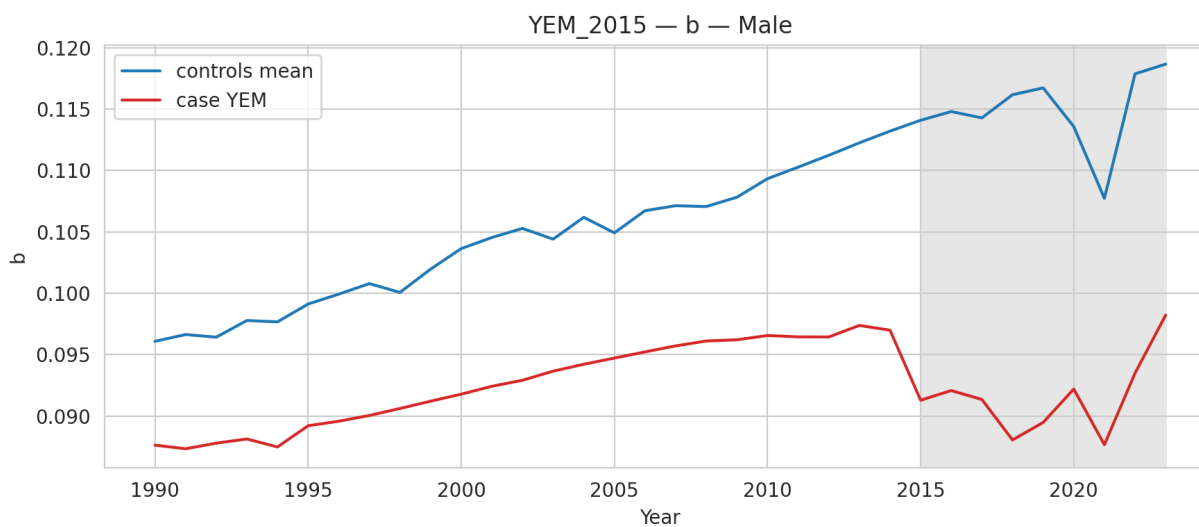


Figure 6: YEM\_2015\_YEM\_Male\_timeseries\_b

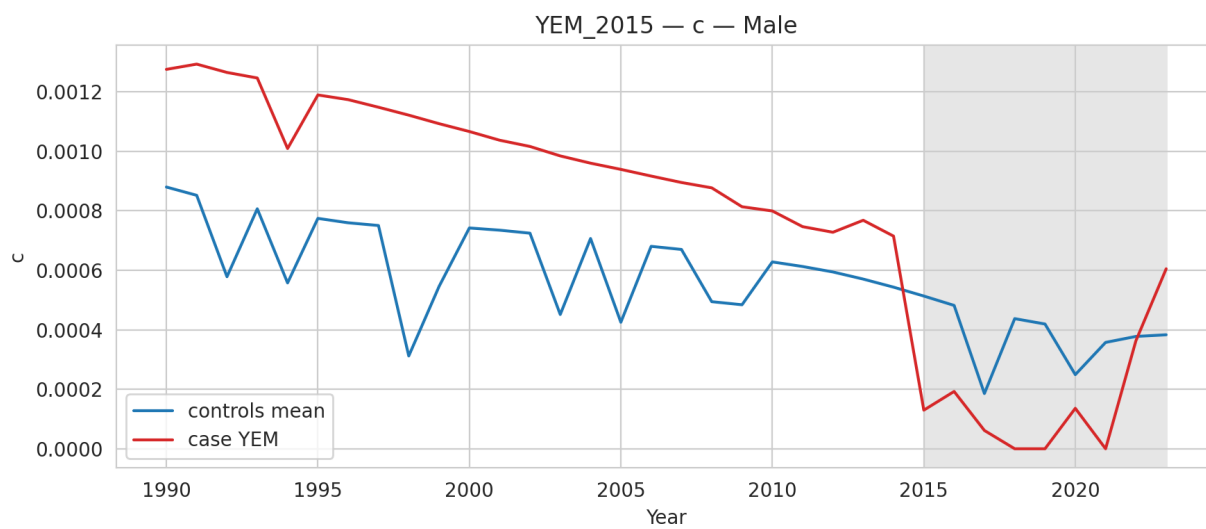


Figure 7: YEM\_2015\_YEM\_Male\_timeseries\_c

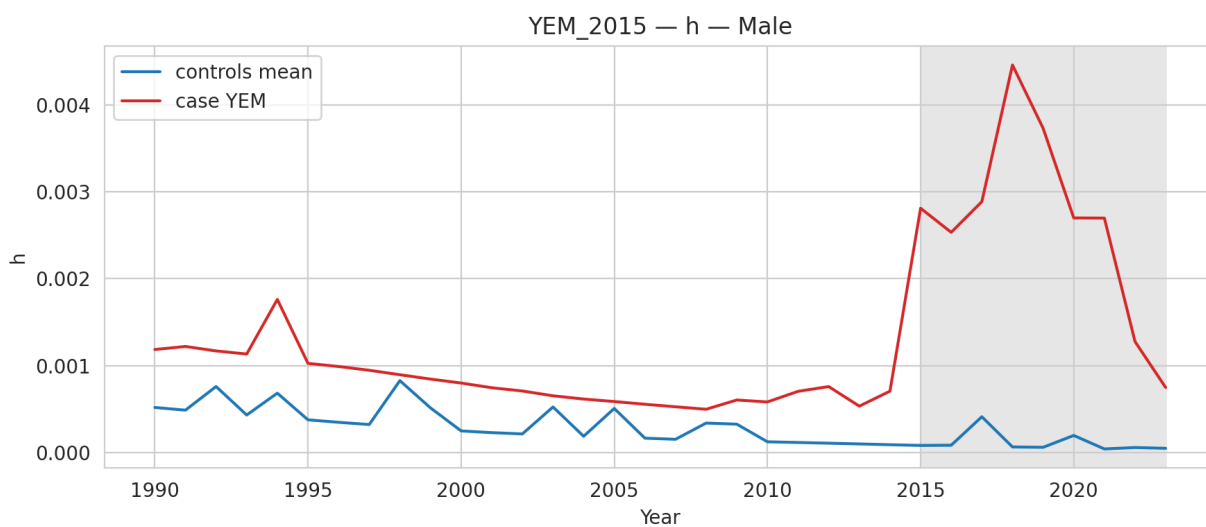


Figure 8: YEM\_2015\_YEM\_Male\_timeseries\_h

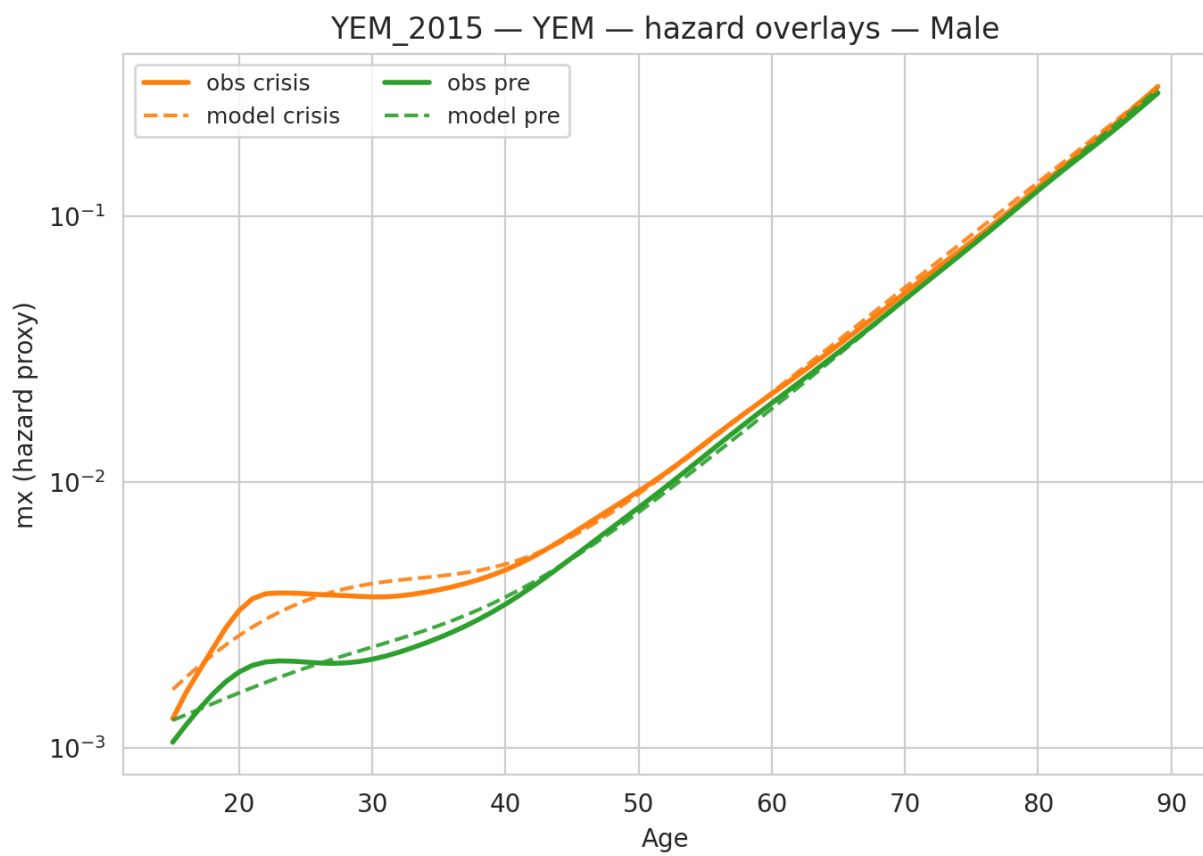


Figure 9: YEM\_2015\_YEM\_Male\_hazard\_overlays



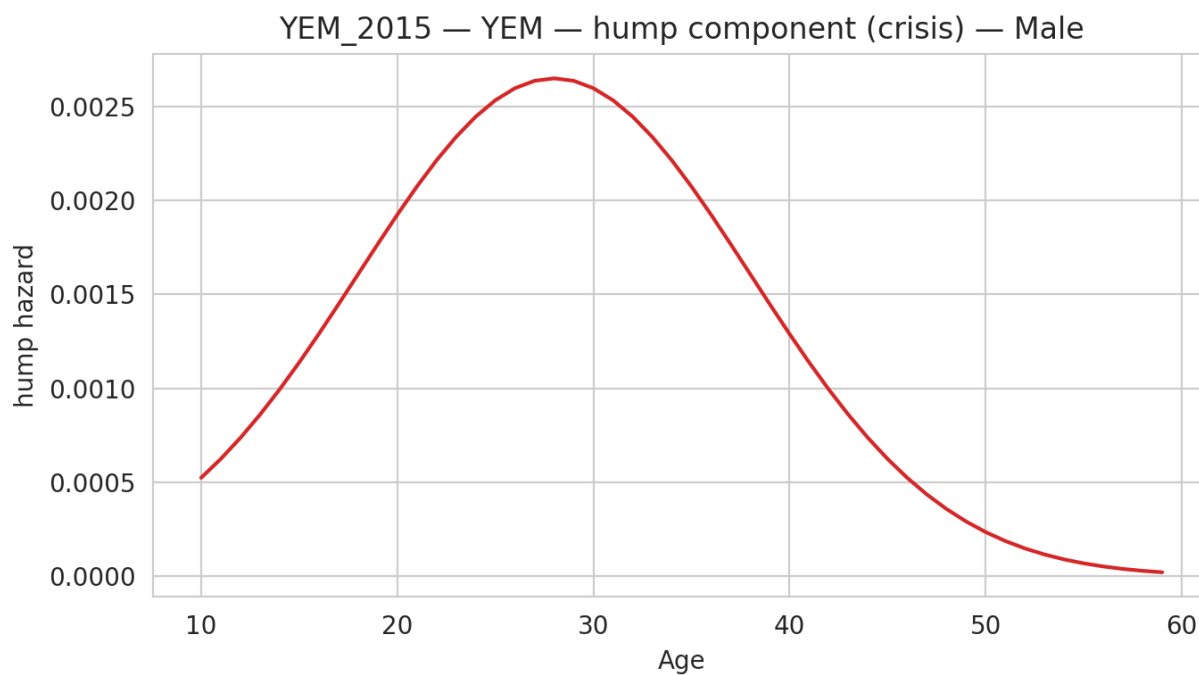


Figure 10: YEM\_2015\_YEM\_Male\_hump\_component

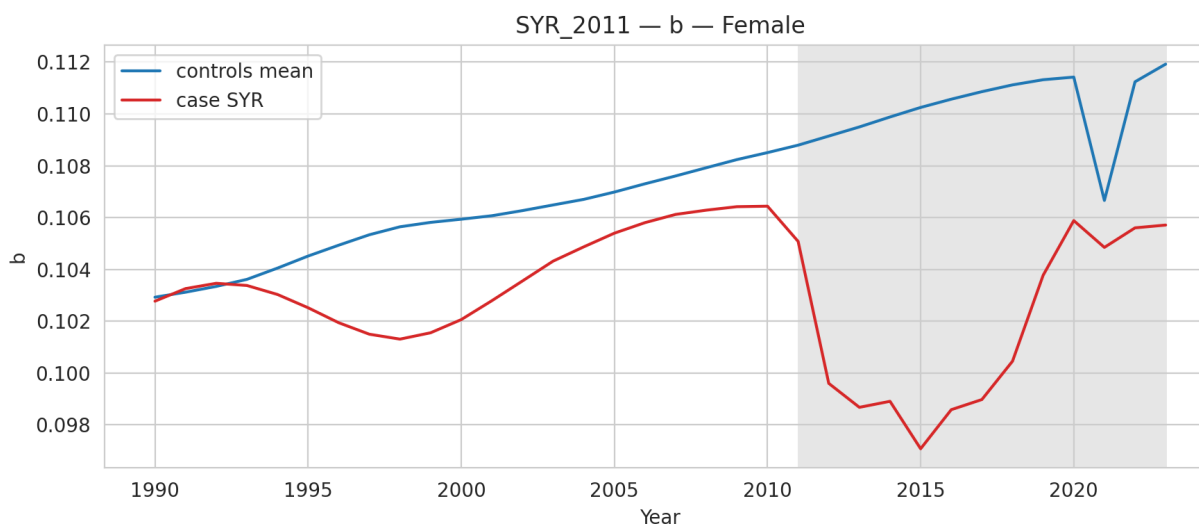


Figure 11: SYR\_2011\_SYR\_Female\_timeseries\_b

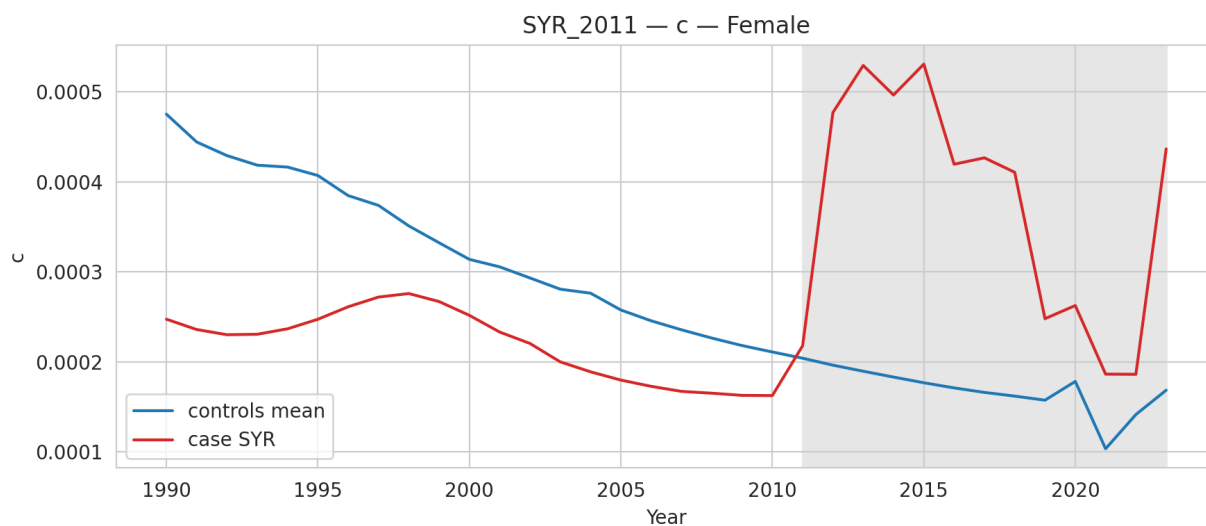


Figure 12: SYR\_2011\_SYR\_Female\_timeseries\_c

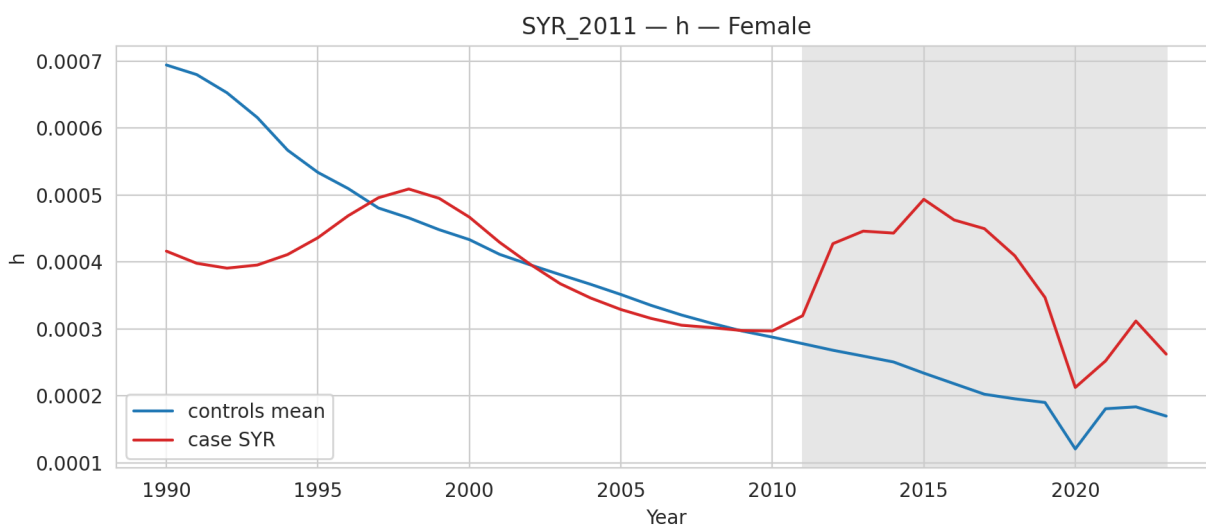


Figure 13: SYR\_2011\_SYR\_Female\_timeseries\_h

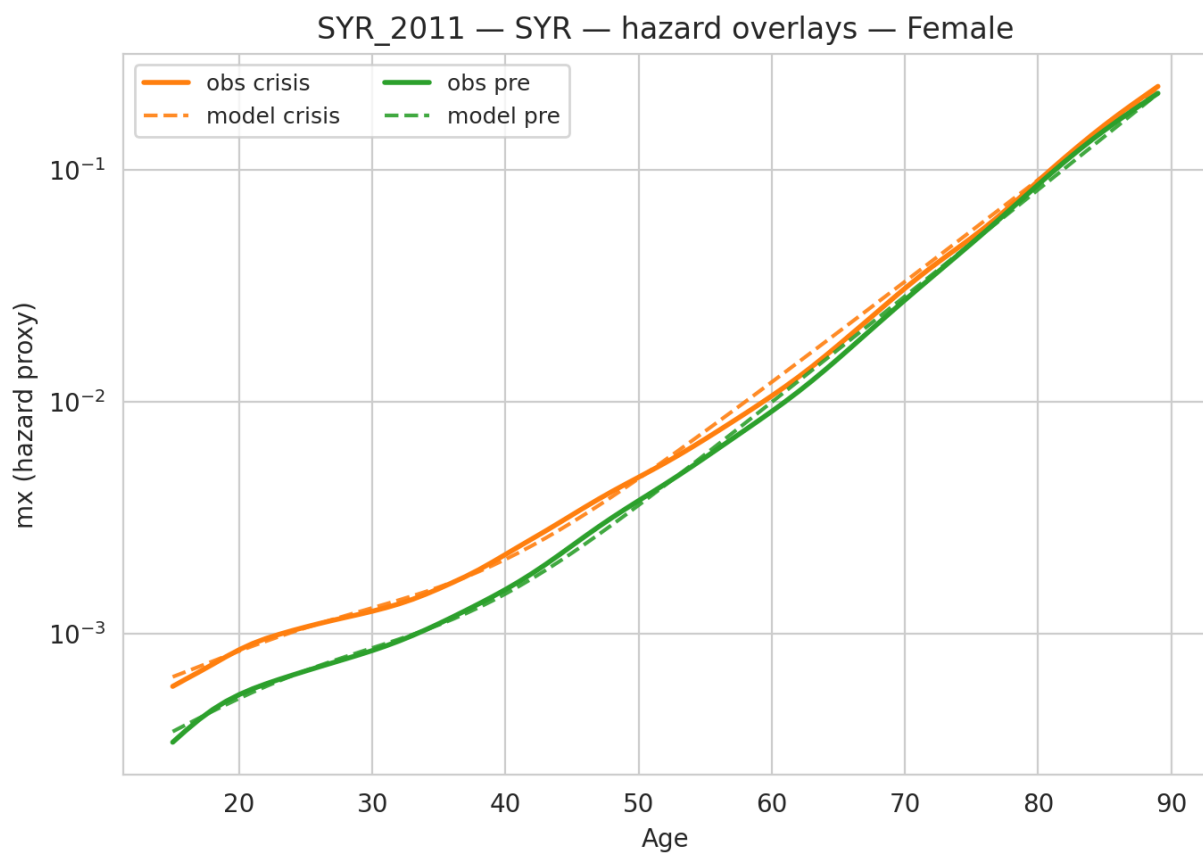


Figure 14: SYR\_2011\_SYR\_Female\_hazard\_overlays

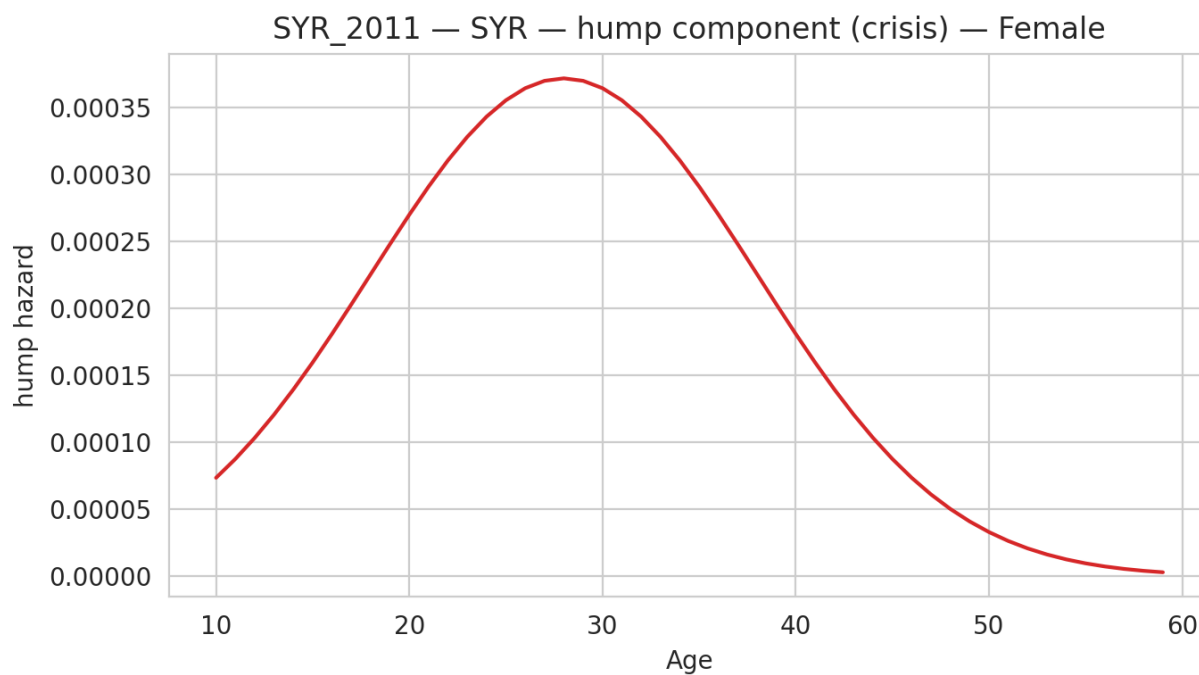


Figure 15: SYR\_2011\_SYR\_Female\_hump\_component

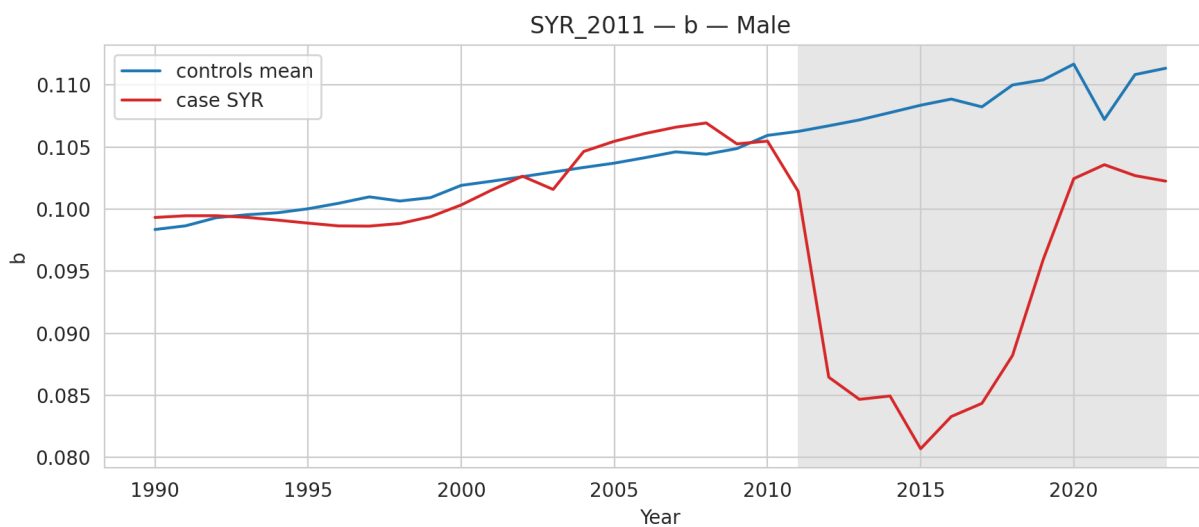


Figure 16: SYR\_2011\_SYR\_Male\_timeseries\_b

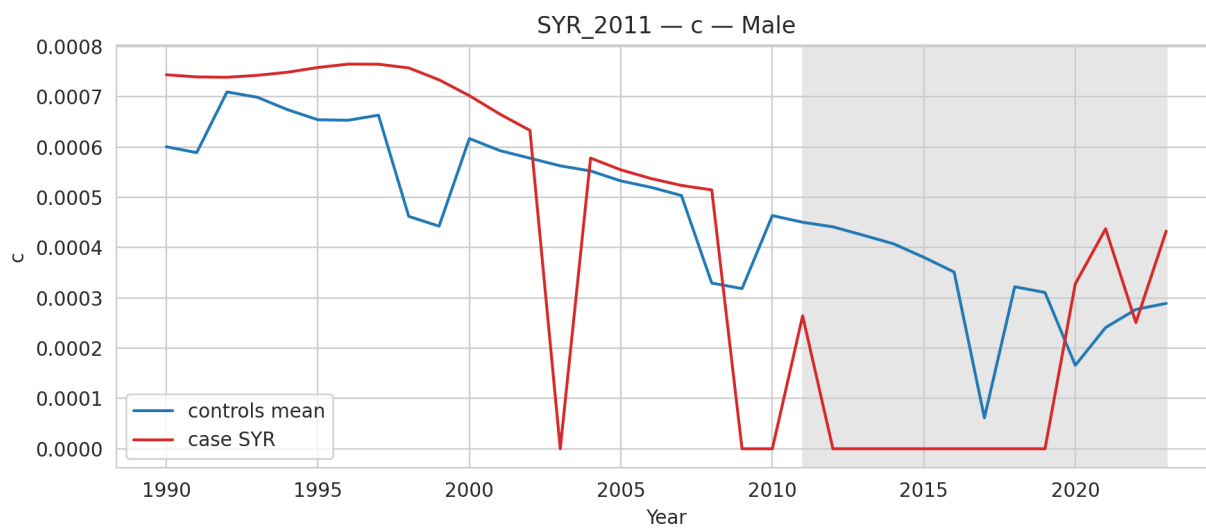


Figure 17: SYR\_2011\_SYR\_Male\_timeseries\_c

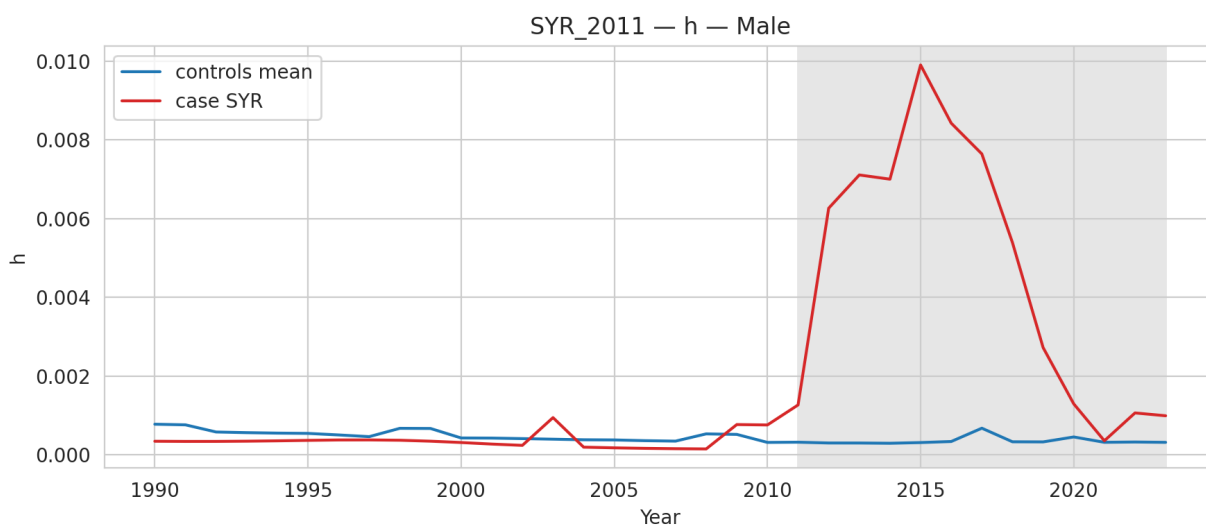


Figure 18: SYR\_2011\_SYR\_Male\_timeseries\_h

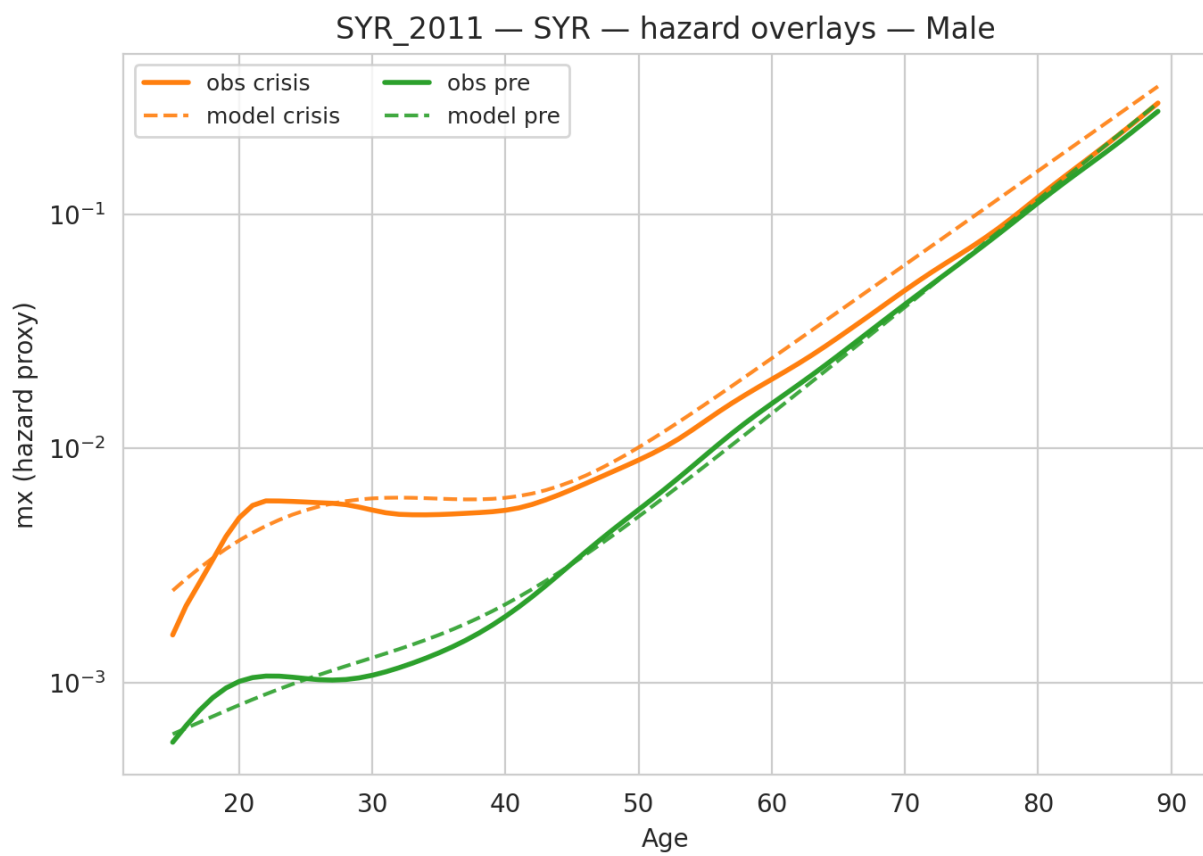


Figure 19: SYR\_2011\_SYR\_Male\_hazard\_overlays

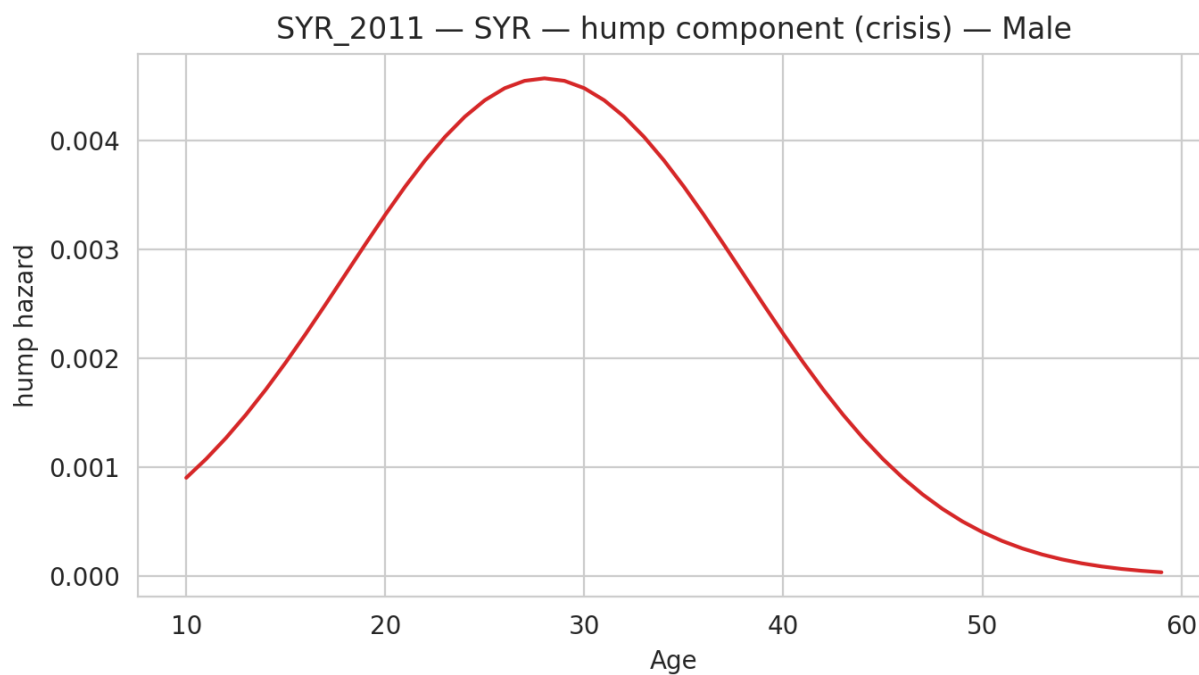


Figure 20: SYR\_2011\_SYR\_Male\_hump\_component

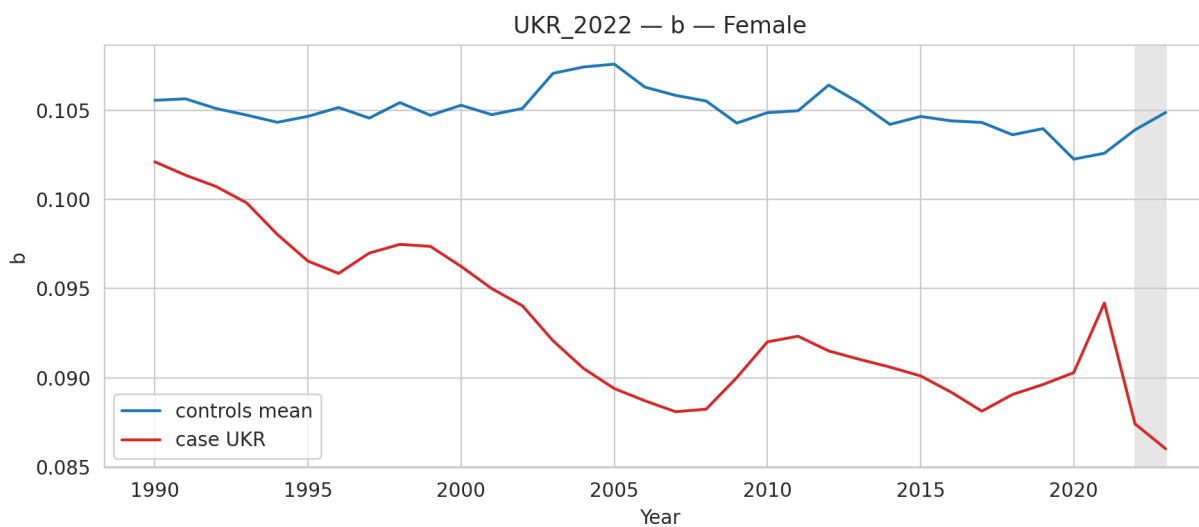


Figure 21: UKR\_2022\_UKR\_Female\_timeseries\_b

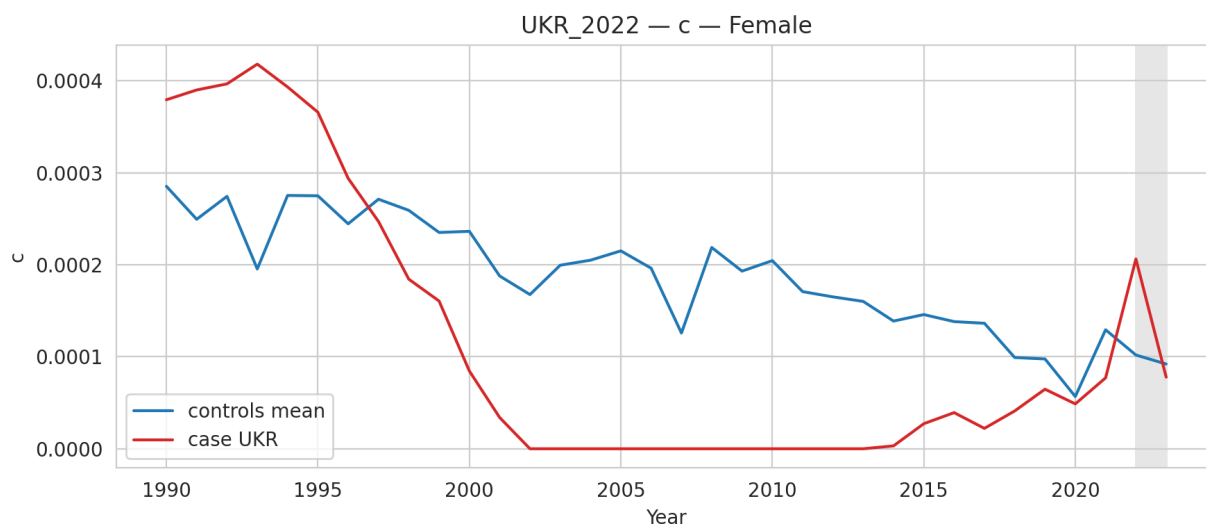


Figure 22: UKR\_2022\_UKR\_Female\_timeseries\_c

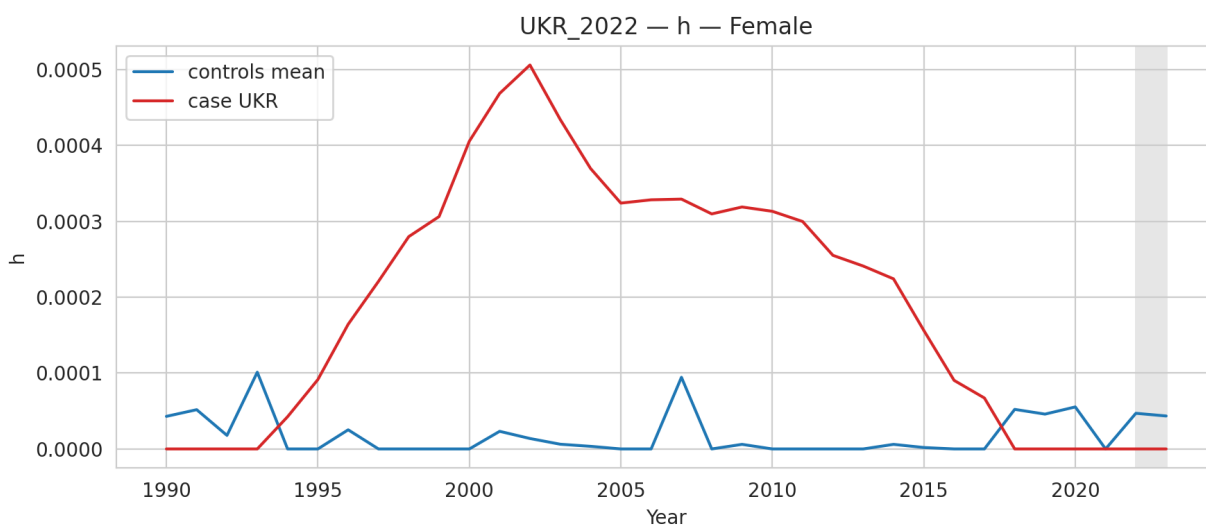


Figure 23: UKR\_2022\_UKR\_Female\_timeseries\_h



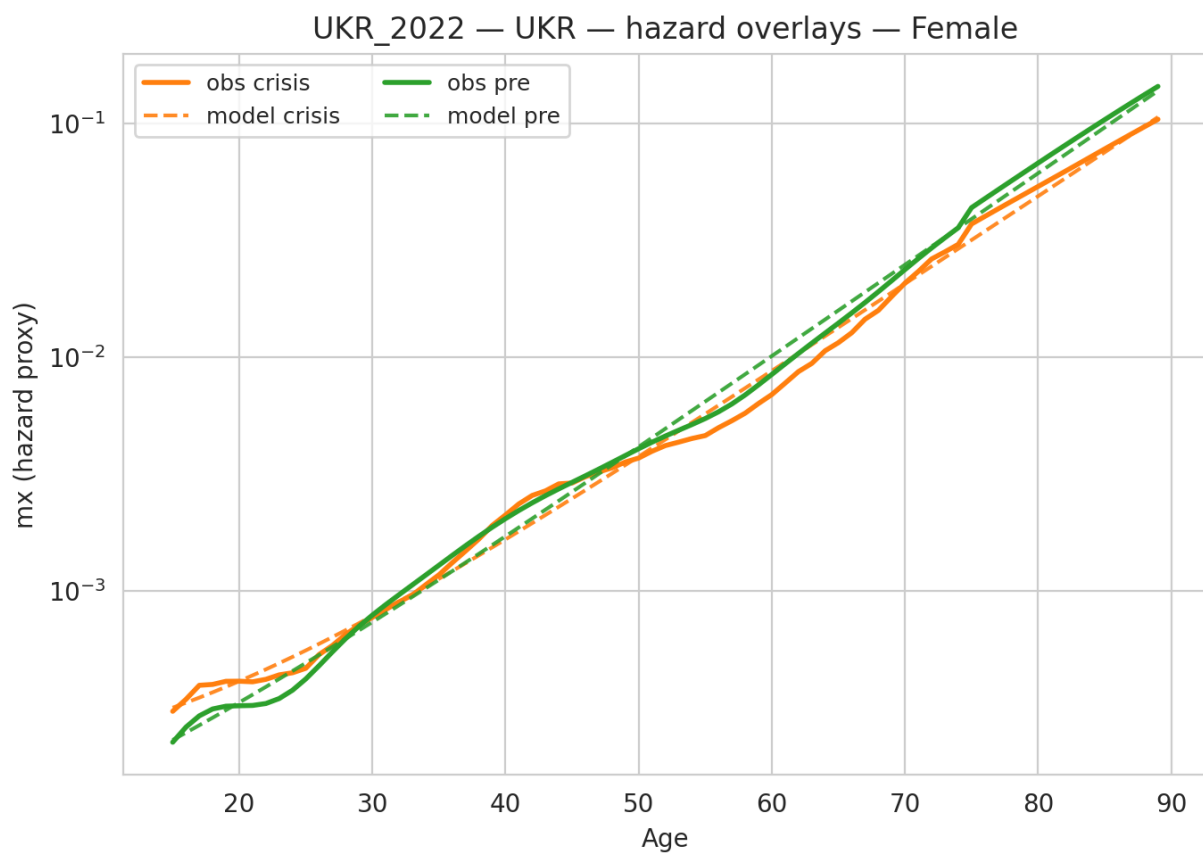


Figure 24: UKR\_2022\_UKR\_Female\_hazard\_overlays

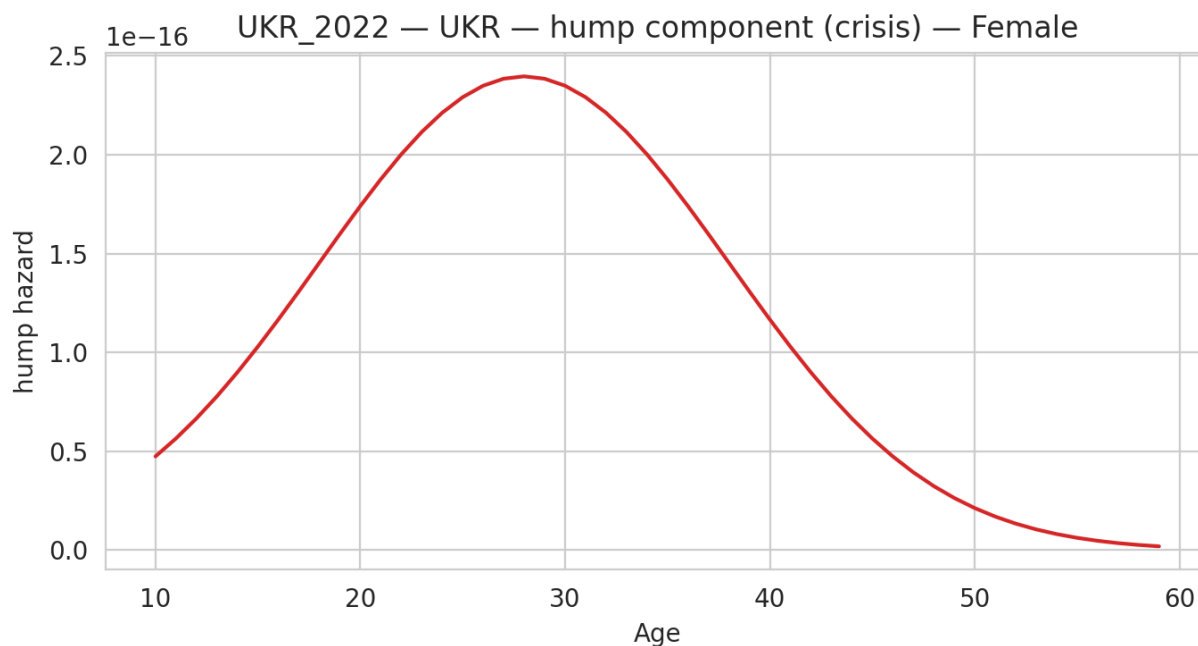


Figure 25: UKR\_2022\_UKR\_Female\_hump\_component

### 2.10.3 UKR\_2022 — UKR

#### 2.10.3.1 Female

#### 2.10.3.2 Male

## 2.11 Regressions

### 2.11.1 Female

#### 2.11.1.1 Outcome: c

#### OLS Regression Results

=====						
Dep. Variable:	c	R-squared:	0.772			
Model:	OLS	Adj. R-squared:	0.654			
Method:	Least Squares	F-statistic:	1.634			
Date:	Thu, 05 Feb 2026	Prob (F-statistic):	0.323			
Time:	22:21:29	Log-Likelihood:	400.40			
No. Observations:	45	AIC:	-768.8			
Df Residuals:	29	BIC:	-739.9			
Df Model:	15					
Covariance Type:	cluster					
=====						
	coef	std err	z	P> z	[0.025	0.975]
-----						
Intercept	9.418e-05	2.3e-05	4.103	0.000	4.92e-05	0.000
C(iso3)[T.POL]	-5.718e-05	1.35e-05	-4.226	0.000	-8.37e-05	-3.07e-05
C(iso3)[T.ROU]	7.685e-06	1.24e-05	0.619	0.536	-1.66e-05	3.2e-05

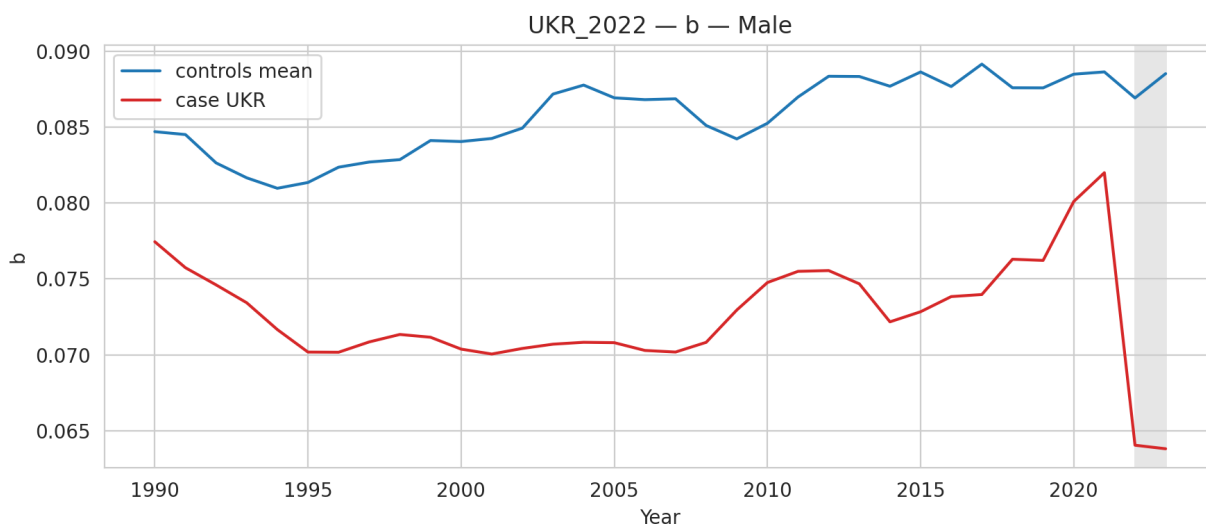


Figure 26: UKR\_2022\_UKR\_Male\_timeseries\_b

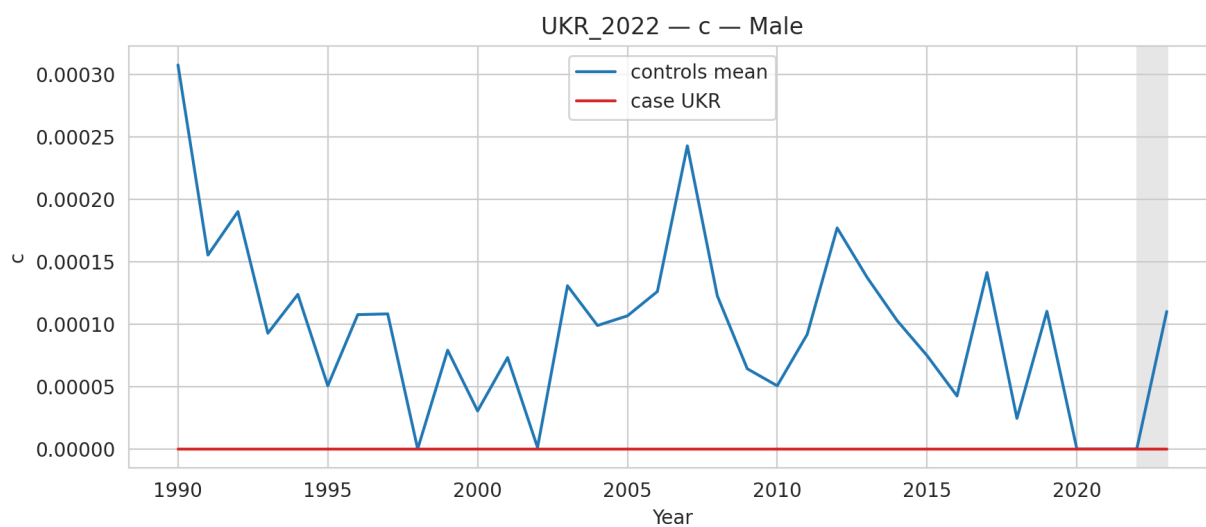


Figure 27: UKR\_2022\_UKR\_Male\_timeseries\_c

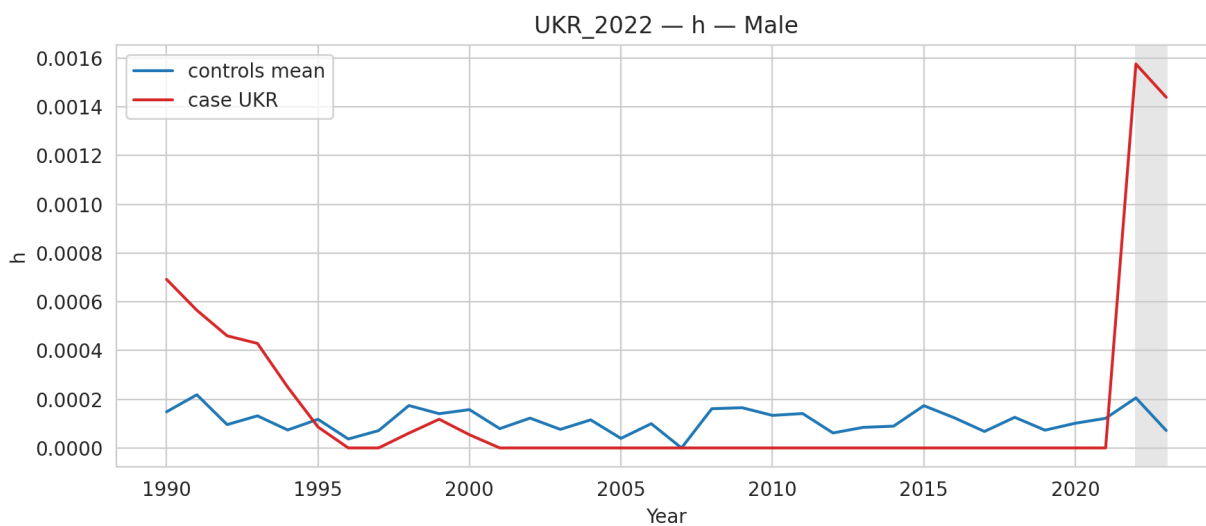


Figure 28: UKR\_2022\_UKR\_Male\_timeseries\_h

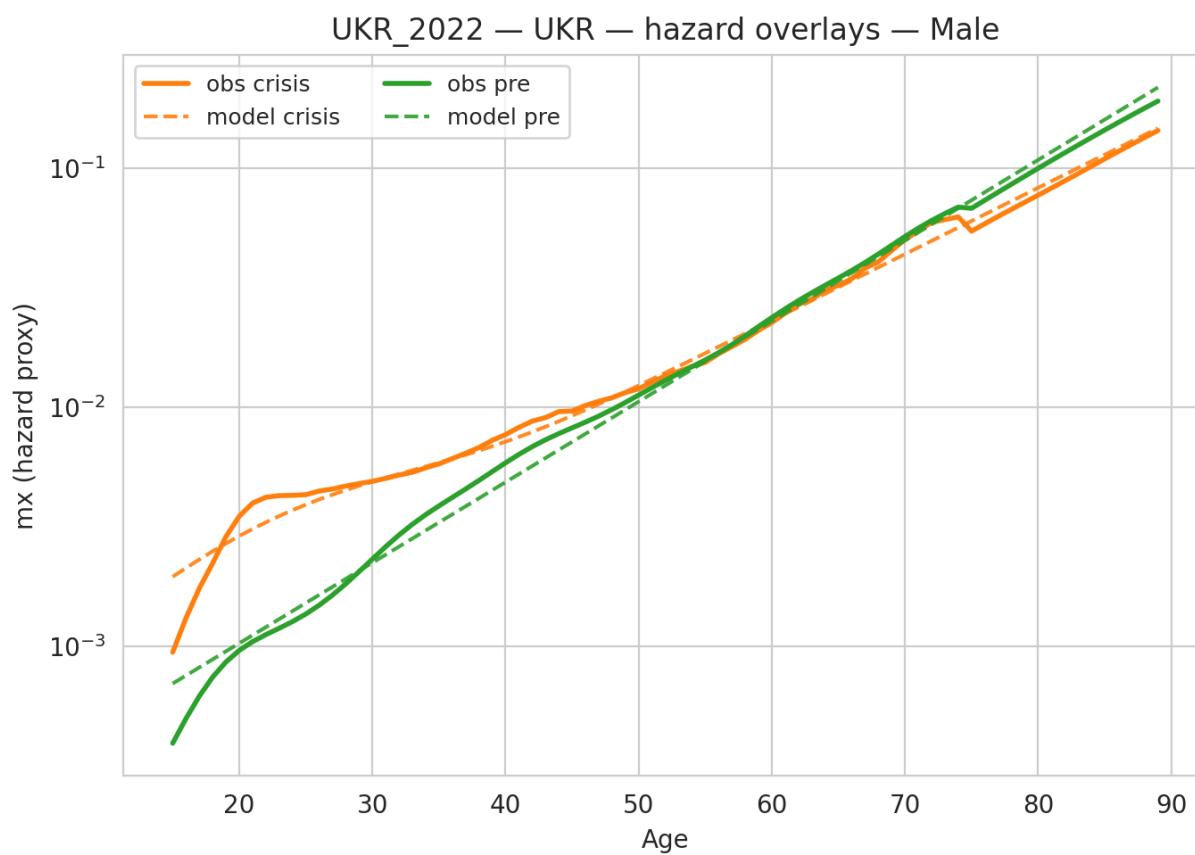


Figure 29: UKR\_2022\_UKR\_Male\_hazard\_overlays

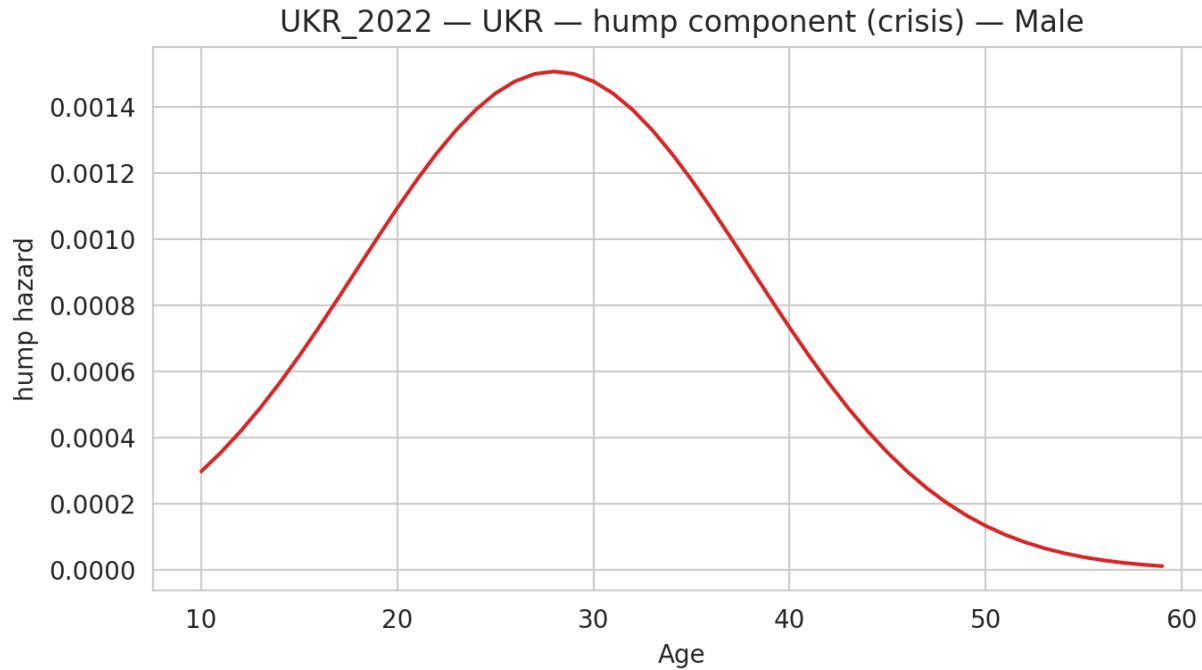


Figure 30: UKR\_2022\_UKR\_Male\_hump\_component

C(iso3) [T.TUN]	4.844e-05	2.6e-05	1.862	0.063	-2.55e-06	9.94e-05
C(iso3) [T.UKR]	-9.24e-05	1.51e-05	-6.112	0.000	-0.000	-6.28e-05
C(year) [T.2016]	-9.241e-06	7.51e-06	-1.231	0.218	-2.4e-05	5.47e-06
C(year) [T.2017]	-1.299e-05	1.35e-05	-0.960	0.337	-3.95e-05	1.35e-05
C(year) [T.2018]	-3.231e-05	2.55e-05	-1.266	0.205	-8.23e-05	1.77e-05
C(year) [T.2019]	-3.339e-05	2.87e-05	-1.162	0.245	-8.97e-05	2.3e-05
C(year) [T.2020]	-6.86e-05	2.04e-05	-3.362	0.001	-0.000	-2.86e-05
C(year) [T.2021]	-4.554e-05	3.11e-05	-1.464	0.143	-0.000	1.54e-05
C(year) [T.2022]	-2.297e-05	4.05e-05	-0.567	0.571	-0.000	5.65e-05
C(year) [T.2023]	-5.257e-05	3e-05	-1.752	0.080	-0.000	6.23e-06
battle_deaths_per_100k	-1.563e-05	8.32e-06	-1.879	0.060	-3.19e-05	6.78e-07
pou	1.237e-05	1.15e-05	1.080	0.280	-1.01e-05	3.48e-05
fies	2.538e-06	2.4e-06	1.058	0.290	-2.16e-06	7.24e-06

Omnibus:	3.085	Durbin-Watson:	2.165
Prob(Omnibus):	0.214	Jarque-Bera (JB):	2.312
Skew:	0.182	Prob(JB):	0.315
Kurtosis:	4.049	Cond. No.	252.

Notes:

[1] Standard Errors are robust to cluster correlation (cluster)

Coefficients CSV: reports/tables/regression\_c\_Female\_coef.csv

### 2.11.1.2 Outcome: b

#### OLS Regression Results

```

Dep. Variable:          b    R-squared:          0.969
Model:                  OLS  Adj. R-squared:       0.952
Method:                 Least Squares  F-statistic:       56.23
Date:                  Thu, 05 Feb 2026  Prob (F-statistic): 0.000905
Time:                  22:21:29  Log-Likelihood:    228.45
No. Observations:      45    AIC:              -424.9
Df Residuals:          29    BIC:              -396.0
Df Model:              15
Covariance Type:       cluster
=====
               coef      std err          z      P>|z|      [0.025      0.975]
-----
Intercept                0.1042      0.001     96.866      0.000      0.102      0.106
C(iso3) [T.POL]           0.0011      0.001      1.014      0.311     -0.001      0.003
C(iso3) [T.ROU]           0.0034      0.001      4.535      0.000      0.002      0.005
C(iso3) [T.TUN]           0.0147      0.002      7.786      0.000      0.011      0.018
C(iso3) [T.UKR]          -0.0117      0.001     -8.381      0.000     -0.014     -0.009
C(year) [T.2016]         -0.0004      0.000     -1.360      0.174     -0.001      0.000
C(year) [T.2017]         -0.0008      0.001     -1.268      0.205     -0.002      0.000
C(year) [T.2018]         -0.0011      0.001     -2.167      0.030     -0.002     -0.000
C(year) [T.2019]         -0.0007      0.001     -1.205      0.228     -0.002      0.000
C(year) [T.2020]         -0.0013      0.001     -1.228      0.220     -0.003      0.001
C(year) [T.2021]         -0.0015      0.002     -0.665      0.506     -0.006      0.003
C(year) [T.2022]         -0.0010      0.001     -1.947      0.052     -0.002     6.76e-06
C(year) [T.2023]         -0.0008      0.001     -0.702      0.483     -0.003      0.001
battle_deaths_per_100k -3.563e-05      0.000     -0.273      0.785     -0.000      0.000
pou                      0.0002      0.001      0.436      0.662     -0.001      0.001
fies                    -0.0001      0.000     -0.753      0.452     -0.000      0.000
=====
Omnibus:                15.104  Durbin-Watson:       1.855
Prob(Omnibus):           0.001  Jarque-Bera (JB):     42.831
Skew:                    0.603  Prob(JB):             5.00e-10
Kurtosis:                7.625  Cond. No.             252.
=====

```

Notes:

[1] Standard Errors are robust to cluster correlation (cluster)

Coefficients CSV: reports/tables/regression\_b\_Female\_coef.csv

### 2.11.1.3 Outcome: h

```

                                OLS Regression Results
=====
Dep. Variable:          h    R-squared:          0.684
Model:                  OLS  Adj. R-squared:       0.520
Method:                 Least Squares  F-statistic:       5.096
Date:                  Thu, 05 Feb 2026  Prob (F-statistic): 0.0719
Time:                  22:21:29  Log-Likelihood:    401.28
No. Observations:      45    AIC:              -770.6
Df Residuals:          29    BIC:              -741.7
Df Model:              15
Covariance Type:       cluster
=====
               coef      std err          z      P>|z|      [0.025      0.975]
-----

```

Intercept	-1.336e-05	2.34e-05	-0.570	0.569	-5.93e-05	3.26e-05
C(iso3) [T.POL]	7.005e-05	2.19e-05	3.199	0.001	2.71e-05	0.000
C(iso3) [T.ROU]	8.867e-07	2.07e-05	0.043	0.966	-3.97e-05	4.15e-05
C(iso3) [T.TUN]	0.0001	4.45e-05	2.259	0.024	1.33e-05	0.000
C(iso3) [T.UKR]	-1.142e-05	1.55e-05	-0.735	0.462	-4.19e-05	1.9e-05
C(year) [T.2016]	6.619e-06	2.05e-05	0.322	0.747	-3.36e-05	4.69e-05
C(year) [T.2017]	9.166e-06	1.99e-05	0.460	0.646	-2.99e-05	4.82e-05
C(year) [T.2018]	3.157e-05	4.57e-05	0.690	0.490	-5.81e-05	0.000
C(year) [T.2019]	2.733e-05	4.3e-05	0.636	0.525	-5.69e-05	0.000
C(year) [T.2020]	3.478e-05	4.92e-05	0.707	0.480	-6.16e-05	0.000
C(year) [T.2021]	1.904e-05	2.24e-05	0.851	0.395	-2.48e-05	6.29e-05
C(year) [T.2022]	3.901e-05	4.91e-05	0.795	0.427	-5.72e-05	0.000
C(year) [T.2023]	3.531e-05	4.32e-05	0.818	0.414	-4.93e-05	0.000
battle_deaths_per_100k	5.173e-05	1.52e-05	3.400	0.001	2.19e-05	8.15e-05
pou	2.243e-06	1.71e-05	0.131	0.896	-3.12e-05	3.57e-05
fies	-9.637e-07	4.14e-06	-0.233	0.816	-9.07e-06	7.14e-06
=====						
Omnibus:	0.386	Durbin-Watson:	1.730			
Prob(Omnibus):	0.824	Jarque-Bera (JB):	0.074			
Skew:	0.092	Prob(JB):	0.964			
Kurtosis:	3.074	Cond. No.	252.			
=====						

Notes:

[1] Standard Errors are robust to cluster correlation (cluster)

Coefficients CSV: reports/tables/regression\_h\_Female\_coef.csv

## 2.11.2 Male

### 2.11.2.1 Outcome: c

OLS Regression Results						
=====						
Dep. Variable:	c	R-squared:	0.660			
Model:	OLS	Adj. R-squared:	0.484			
Method:	Least Squares	F-statistic:	14.30			
Date:	Thu, 05 Feb 2026	Prob (F-statistic):	0.0123			
Time:	22:21:29	Log-Likelihood:	379.74			
No. Observations:	45	AIC:	-727.5			
Df Residuals:	29	BIC:	-698.6			
Df Model:	15					
Covariance Type:	cluster					
=====						
	coef	std err	z	P> z	[0.025	0.975]
-----						
Intercept	0.0001	3.94e-05	3.613	0.000	6.51e-05	0.000
C(iso3) [T.POL]	-8.88e-05	3.38e-05	-2.629	0.009	-0.000	-2.26e-05
C(iso3) [T.ROU]	1.051e-05	2.32e-05	0.453	0.651	-3.5e-05	5.61e-05
C(iso3) [T.TUN]	0.0001	5.41e-05	1.891	0.059	-3.75e-06	0.000
C(iso3) [T.UKR]	-4.75e-05	3.14e-05	-1.513	0.130	-0.000	1.4e-05
C(year) [T.2016]	-3.421e-05	2.91e-05	-1.178	0.239	-9.11e-05	2.27e-05
C(year) [T.2017]	1.606e-05	6.04e-05	0.266	0.790	-0.000	0.000
C(year) [T.2018]	-5.683e-05	3.92e-05	-1.448	0.148	-0.000	2.01e-05

C(year) [T.2019]	-4.194e-06	8.66e-05	-0.048	0.961	-0.000	0.000
C(year) [T.2020]	-6.852e-05	7.01e-05	-0.978	0.328	-0.000	6.88e-05
C(year) [T.2021]	-8.411e-05	7.8e-05	-1.078	0.281	-0.000	6.88e-05
C(year) [T.2022]	-6.963e-05	7.6e-05	-0.916	0.359	-0.000	7.93e-05
C(year) [T.2023]	-4.415e-06	9.04e-05	-0.049	0.961	-0.000	0.000
battle_deaths_per_100k	-1.571e-05	1.69e-05	-0.928	0.353	-4.89e-05	1.75e-05
pou	-5.572e-06	2.05e-05	-0.272	0.786	-4.58e-05	3.46e-05
fies	-9.396e-07	5.22e-06	-0.180	0.857	-1.12e-05	9.3e-06

Omnibus:	3.559	Durbin-Watson:	2.246
Prob(Omnibus):	0.169	Jarque-Bera (JB):	2.953
Skew:	0.627	Prob(JB):	0.228
Kurtosis:	3.018	Cond. No.	252.

Notes:

[1] Standard Errors are robust to cluster correlation (cluster)

Coefficients CSV: reports/tables/regression\_c\_Male\_coef.csv

### 2.11.2.2 Outcome: b

#### OLS Regression Results

Dep. Variable:	b	R-squared:	0.966
Model:	OLS	Adj. R-squared:	0.949
Method:	Least Squares	F-statistic:	14.93
Date:	Thu, 05 Feb 2026	Prob (F-statistic):	0.0113
Time:	22:21:29	Log-Likelihood:	215.52
No. Observations:	45	AIC:	-399.0
Df Residuals:	29	BIC:	-370.1
Df Model:	15		
Covariance Type:	cluster		

	coef	std err	z	P> z	[0.025	0.975]
Intercept	0.1003	0.004	28.613	0.000	0.093	0.107
C(iso3) [T.POL]	-0.0079	0.002	-3.335	0.001	-0.013	-0.003
C(iso3) [T.ROU]	-0.0013	0.001	-1.028	0.304	-0.004	0.001
C(iso3) [T.TUN]	0.0206	0.004	5.449	0.000	0.013	0.028
C(iso3) [T.UKR]	-0.0094	0.003	-2.827	0.005	-0.016	-0.003
C(year) [T.2016]	-0.0015	0.001	-1.435	0.151	-0.003	0.001
C(year) [T.2017]	-0.0015	0.001	-1.184	0.237	-0.004	0.001
C(year) [T.2018]	-0.0023	0.001	-1.564	0.118	-0.005	0.001
C(year) [T.2019]	-0.0016	0.001	-1.140	0.254	-0.004	0.001
C(year) [T.2020]	0.0007	0.002	0.339	0.735	-0.003	0.005
C(year) [T.2021]	0.0015	0.003	0.472	0.637	-0.005	0.008
C(year) [T.2022]	-0.0026	0.002	-1.491	0.136	-0.006	0.001
C(year) [T.2023]	-0.0020	0.002	-1.252	0.211	-0.005	0.001
battle_deaths_per_100k	-0.0018	0.000	-4.709	0.000	-0.002	-0.001
pou	-0.0012	0.001	-1.668	0.095	-0.003	0.000
fies	-0.0004	0.000	-1.101	0.271	-0.001	0.000

Omnibus:	18.038	Durbin-Watson:	1.727
Prob(Omnibus):	0.000	Jarque-Bera (JB):	37.550



Skew: 0.997 Prob(JB): 7.02e-09  
Kurtosis: 7.006 Cond. No. 252.

Notes:

[1] Standard Errors are robust to cluster correlation (cluster)

Coefficients CSV: reports/tables/regression\_b\_Male\_coef.csv

### 2.11.2.3 Outcome: h

#### OLS Regression Results

```
=====
Dep. Variable:          h      R-squared:          0.832
Model:                  OLS    Adj. R-squared:       0.746
Method:                 Least Squares  F-statistic:    2.164
Date:                   Thu, 05 Feb 2026  Prob (F-statistic): 0.237
Time:                   22:21:29  Log-Likelihood: 329.69
No. Observations:      45      AIC:             -627.4
Df Residuals:          29      BIC:             -598.5
Df Model:              15
Covariance Type:       cluster
=====
```

	coef	std err	z	P> z	[0.025	0.975]
Intercept	-0.0010	0.000	-2.784	0.005	-0.002	-0.000
C(iso3) [T.POL]	0.0005	0.000	2.412	0.016	8.69e-05	0.001
C(iso3) [T.ROU]	-3.766e-05	9.79e-05	-0.385	0.700	-0.000	0.000
C(iso3) [T.TUN]	0.0004	0.000	1.463	0.144	-0.000	0.001
C(iso3) [T.UKR]	-0.0004	0.000	-1.216	0.224	-0.001	0.000
C(year) [T.2016]	2.311e-05	6.55e-05	0.353	0.724	-0.000	0.000
C(year) [T.2017]	7.49e-05	8.66e-05	0.865	0.387	-9.47e-05	0.000
C(year) [T.2018]	0.0001	8.46e-05	1.494	0.135	-3.95e-05	0.000
C(year) [T.2019]	2.59e-05	5.54e-05	0.467	0.640	-8.27e-05	0.000
C(year) [T.2020]	-4.405e-05	0.000	-0.356	0.722	-0.000	0.000
C(year) [T.2021]	-0.0001	0.000	-0.546	0.585	-0.001	0.000
C(year) [T.2022]	0.0002	0.000	1.318	0.187	-9.89e-05	0.001
C(year) [T.2023]	0.0001	8.65e-05	1.178	0.239	-6.77e-05	0.000
battle_deaths_per_100k	4.846e-05	5.68e-05	0.853	0.394	-6.29e-05	0.000
pou	0.0002	7.89e-05	2.714	0.007	5.95e-05	0.000
fies	3.117e-05	2.69e-05	1.159	0.246	-2.15e-05	8.39e-05

```
=====
Omnibus:                8.358  Durbin-Watson:          1.684
Prob(Omnibus):          0.015  Jarque-Bera (JB):        16.281
Skew:                   -0.183  Prob(JB):                0.000291
Kurtosis:               5.924  Cond. No.                252.
=====
```

Notes:

[1] Standard Errors are robust to cluster correlation (cluster)

Coefficients CSV: reports/tables/regression\_h\_Male\_coef.csv

## 2.12 Notes

# 3 Results

This file is intentionally lightweight. Run the pipeline to populate: - `reports/figures/` for event-study figures - `reports/tables/` for regression outputs and summaries