# Mortality in Eastern Europe during the 20th century: the marks of political history

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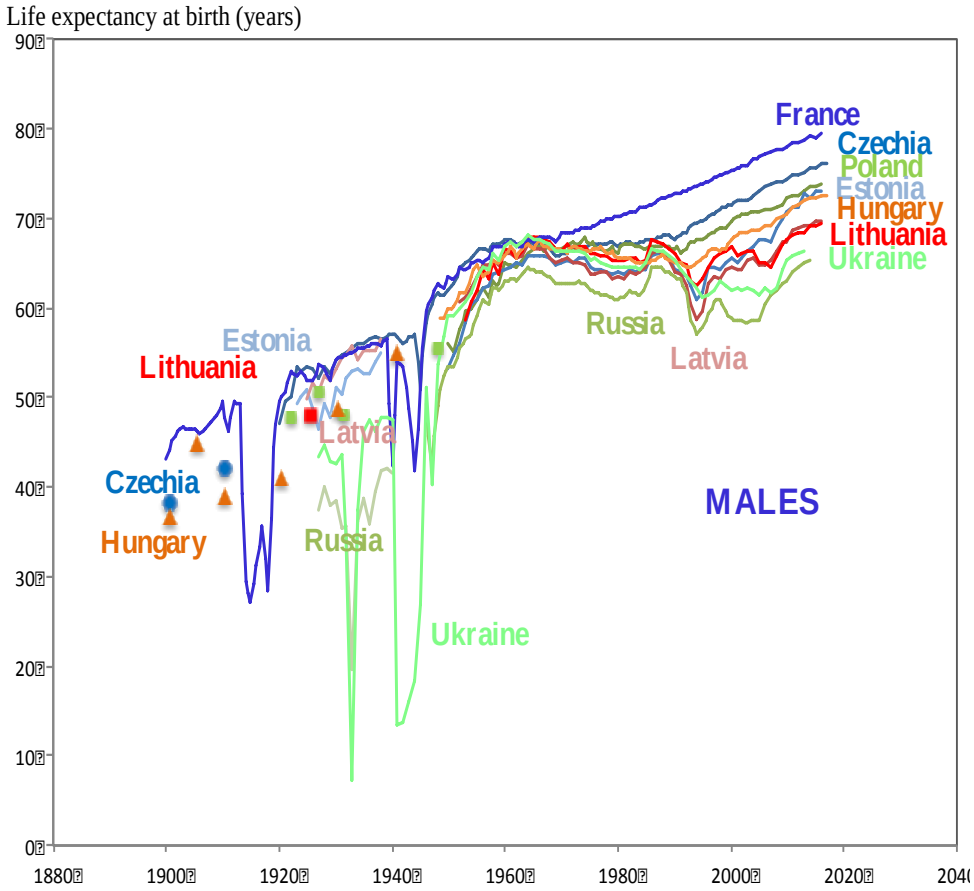
INED, Paris

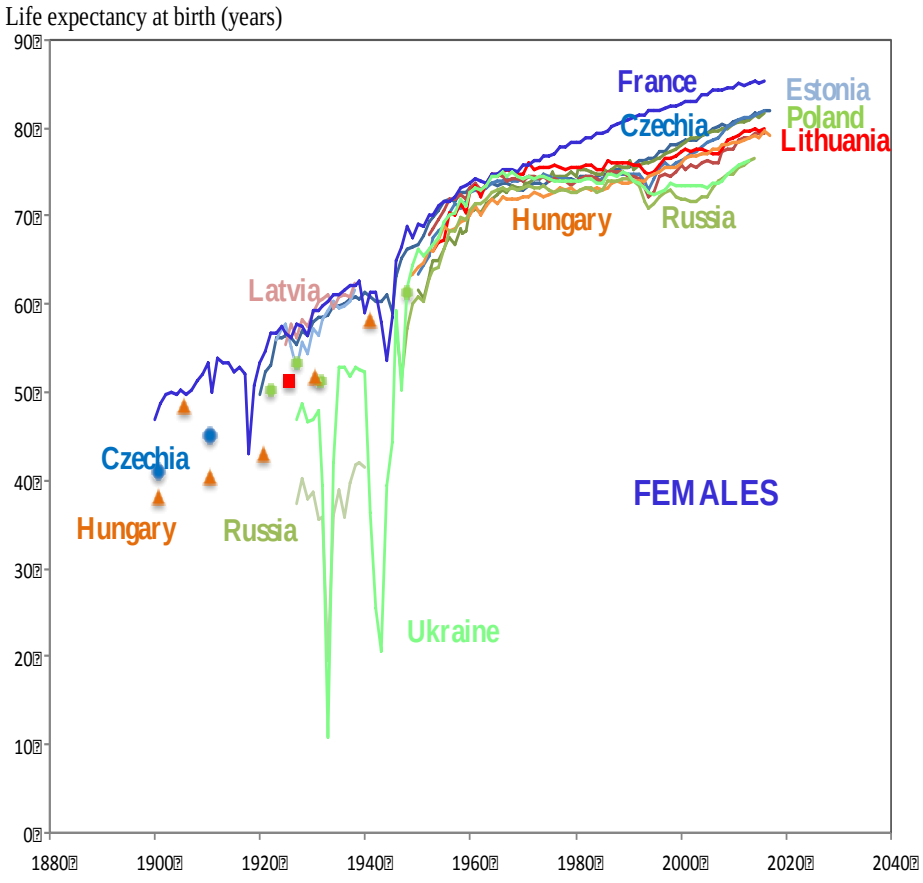
**Demographic trends in Russia: legacy of the soviet era or a new tendency?**
**Moscow, 21-22 November 2019**

# Central and Eastern Europe during the 20th century

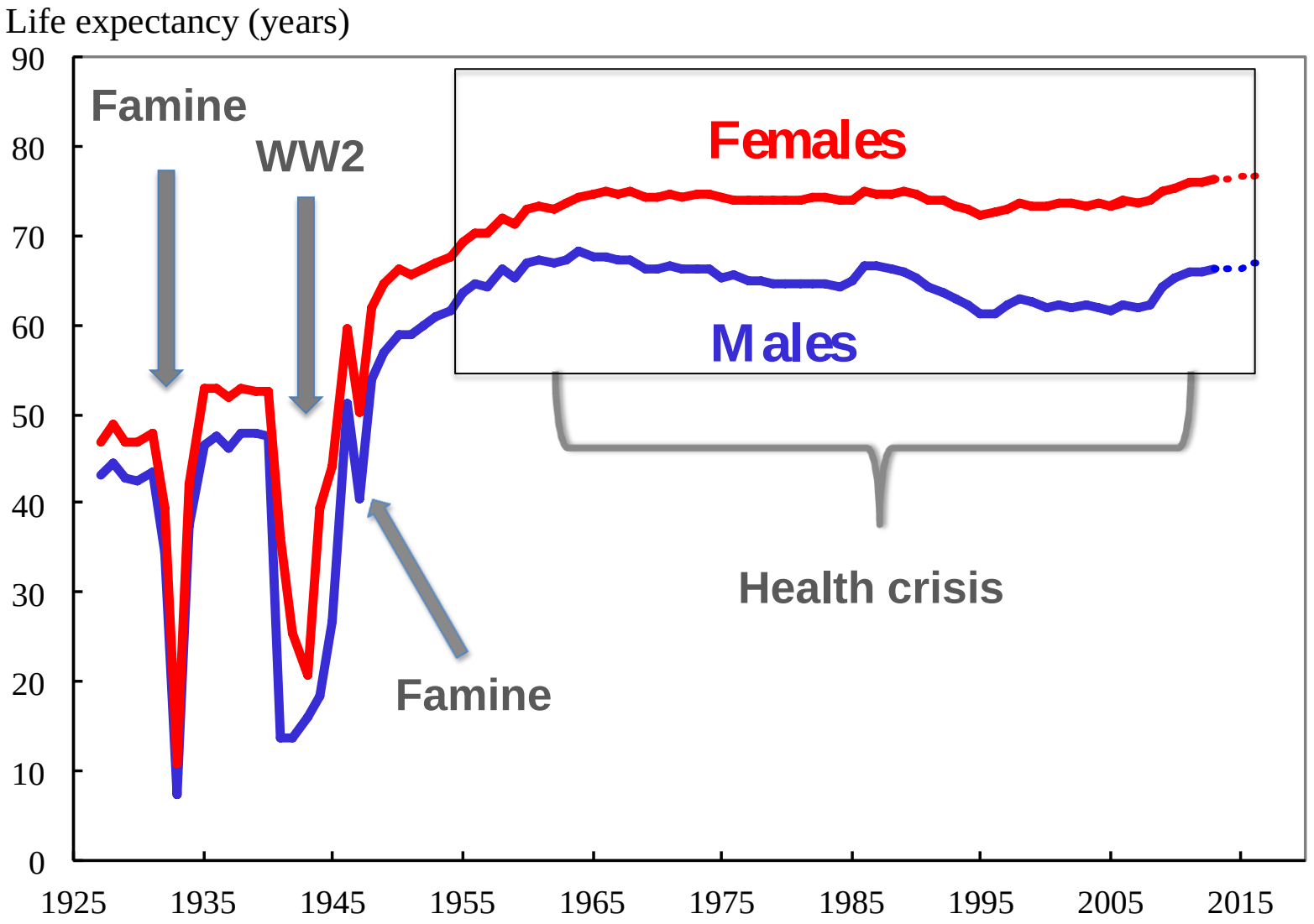
- A chaotic history impacting the health of populations:
  - → deadly events: famines, WWs, holocaust
  - → political disruptions : the split of the USSR, the German reunification
  - → long term trends (favourable or unfavourable) closely linked to the political regime
- Lacking, falsified or hidden data

# Convergences and divergences



# The emblematic case of Ukraine



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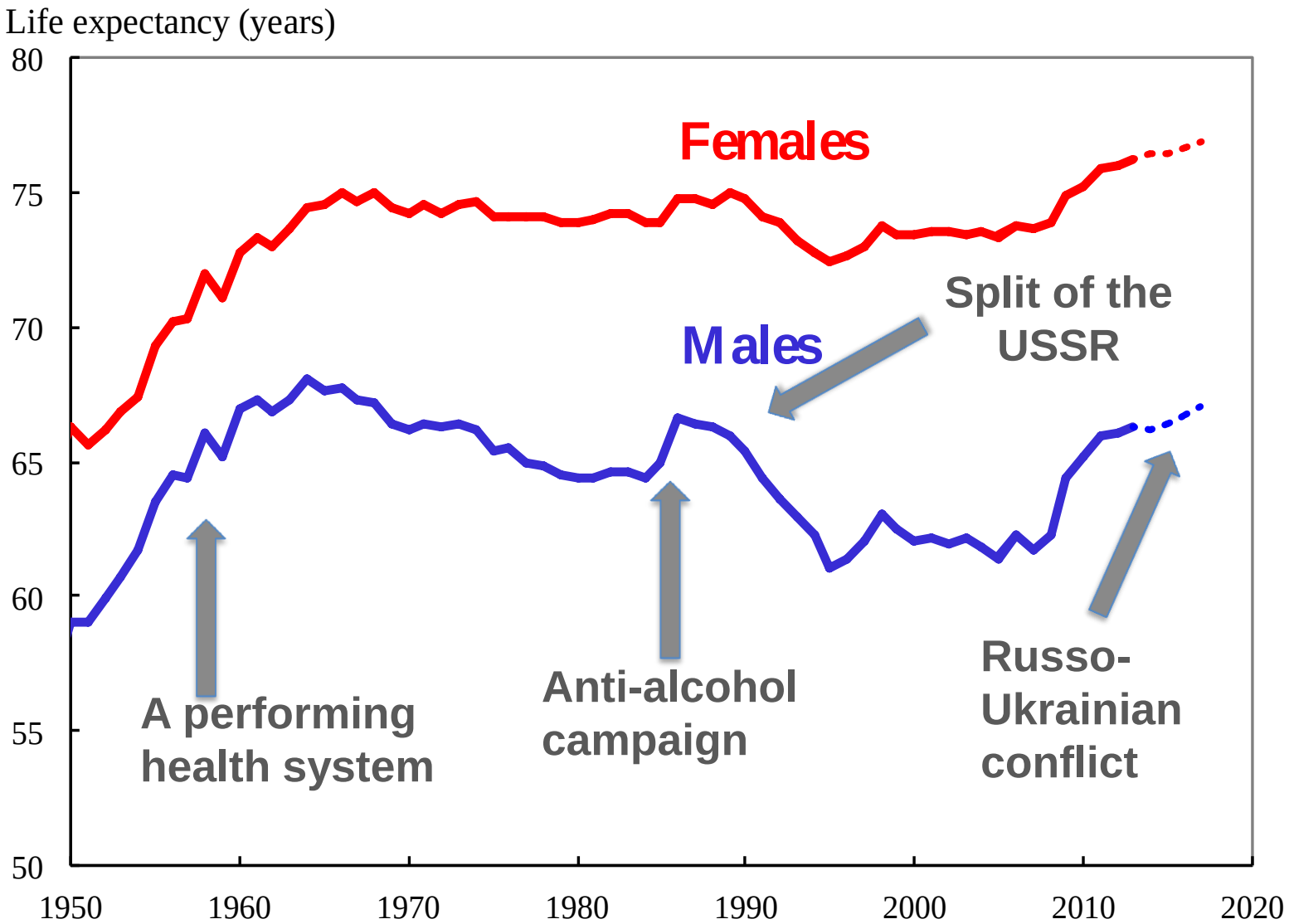


# I. The short-term impact of political events

# A. Ukraine: Estimating the toll of the Great Famine

# The Great Famine (1932-1934)

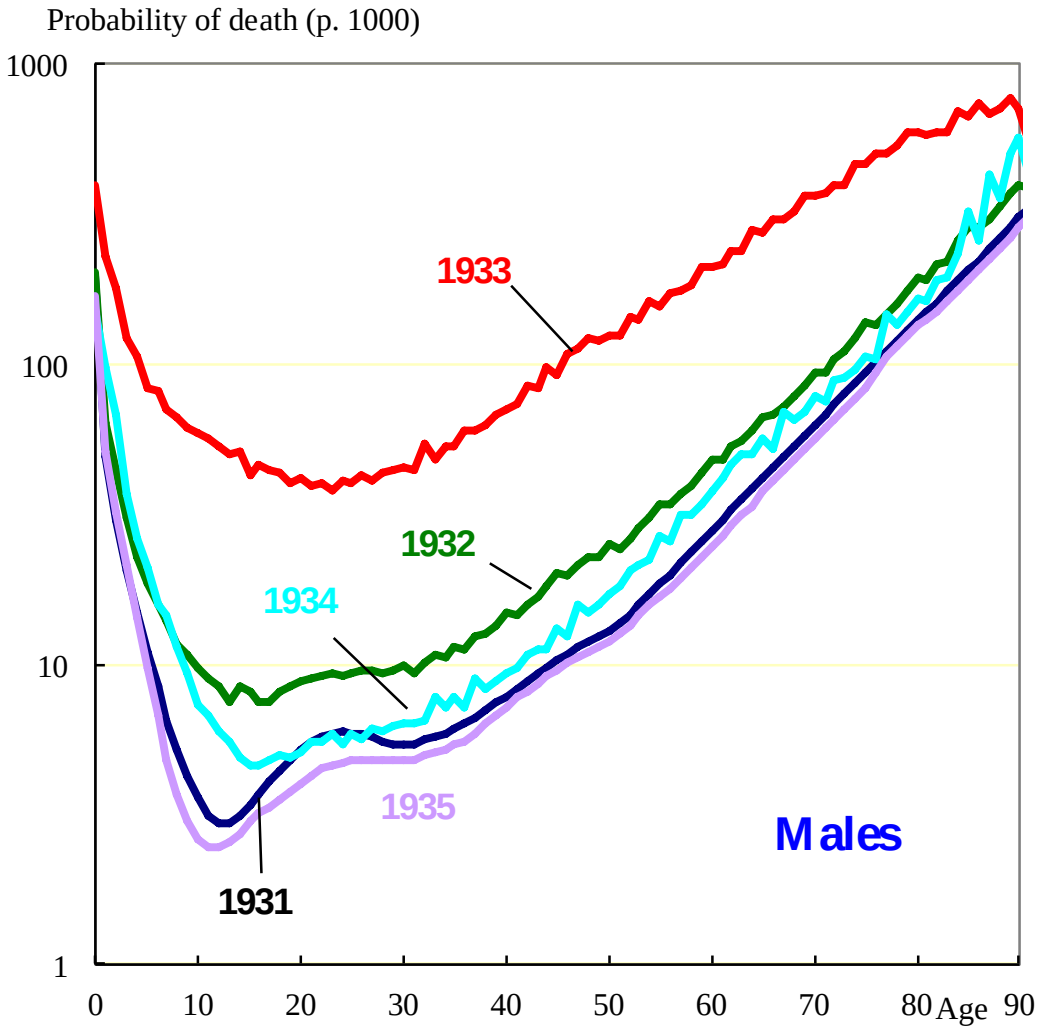
- A man-made famine in Soviet Union.
- The conjunction of a poor harvest and a systematic grain requisitioning, especially in Ukraine.
- In that country, the «  Holodomor » (Голодомо́р derived from морити голодом = to kill by starvation) is considered as a genocide.
- Long denied by the Soviet regime.

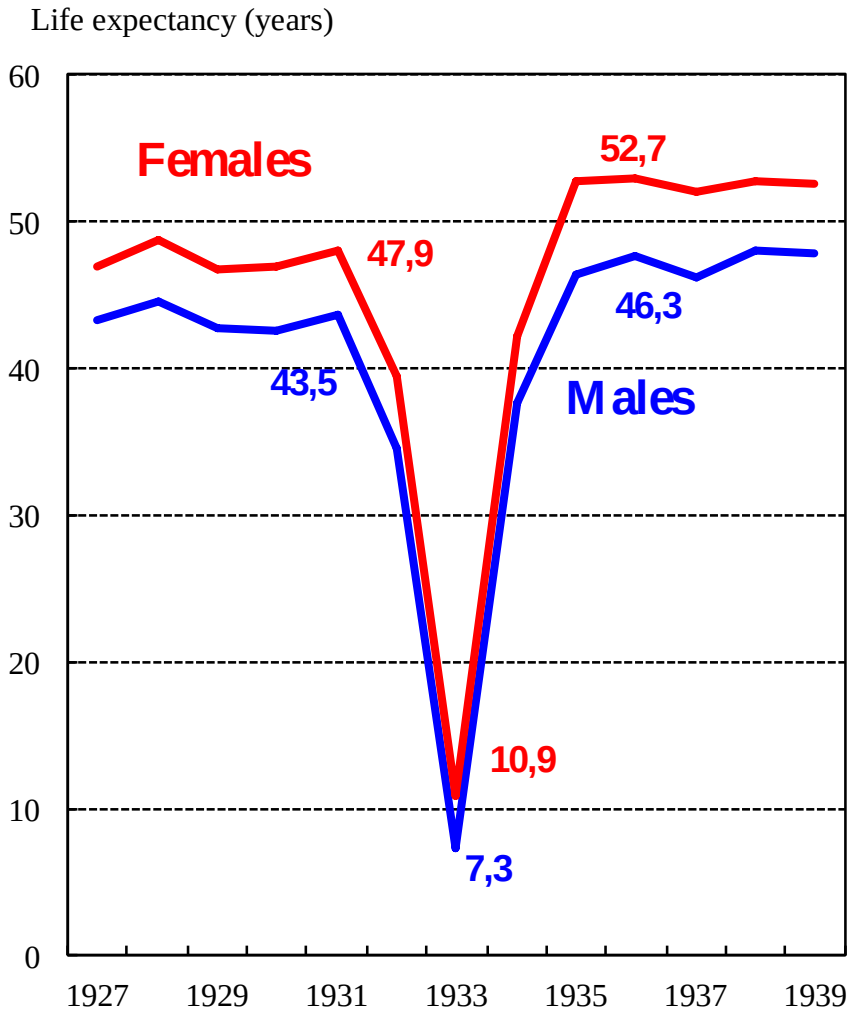
# How many deaths due to the famine in Ukraine ?

- Global losses (including deaths, birth deficit and net out-migration) range from 4 to 20 millions
- A few estimates restricted to the number of deaths, relying as much as possible on existing data (vital statistics, 1926 and 1939 census):
  → Vallin et al. (2002): 2.6 millions
  → Rudnytskyi et al. (2015): 4.6 millions

Source: Vallin Jacques, Meslé France, Adamets Serguei, Pyrozhkov Serhii, 2002, « A new estimation of Ukrainian losses during the 30's and 40's crises », *Population Studies,* 56(3), p. 249-264.

Rudnytskyi Omelian, Levchuk Nataliia, Wolowyna Oleh, Shevchuk Pavlo, Kovbasiuk Alla, 2015, "Demography of a man-made human catastrophe: The case of massive famine in Ukraine 1932–1933", *Canadian Studies in Population,* 42(1–2), p. 53–80.

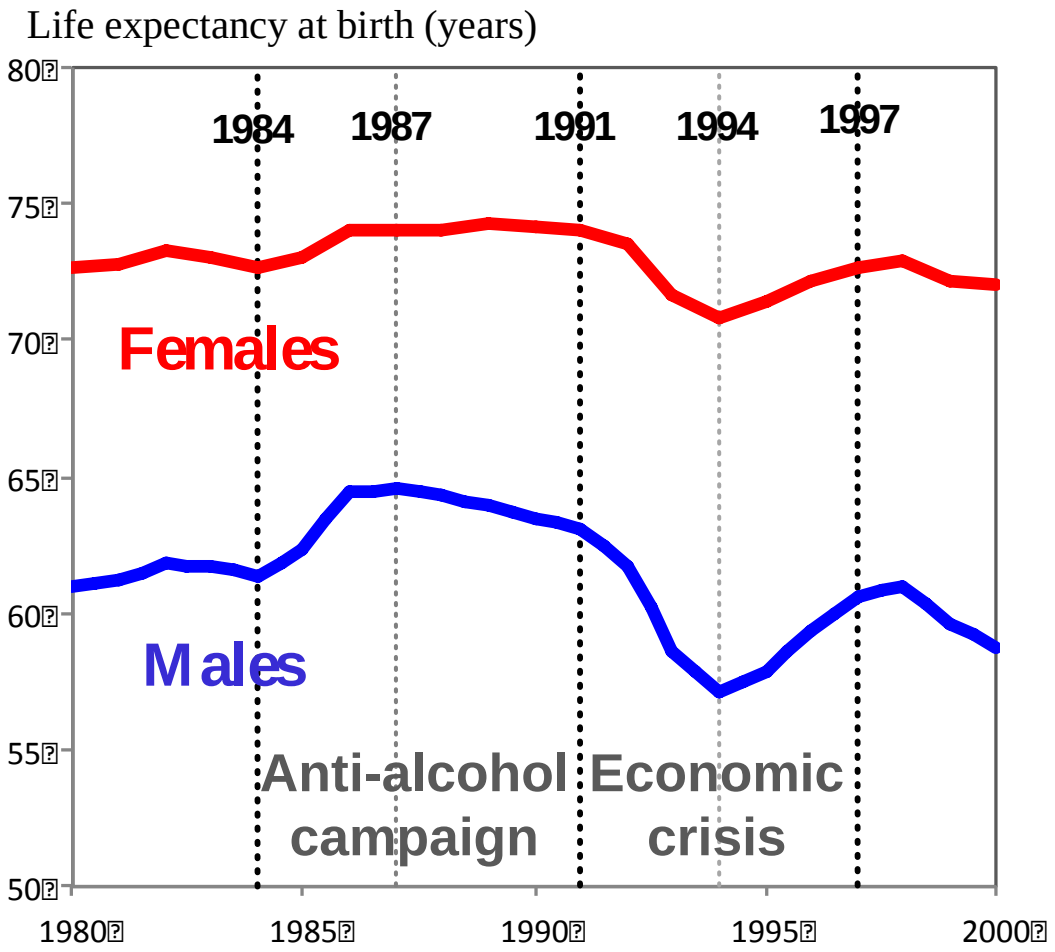



Source: Vallin Jacques, Meslé France, Adamets Serguei, Pyrozhkov Serhii, 2002, « A new estimation of Ukrainian losses during the 30's and 40's crises », *Population Studies,* 56(3), p. 249-264.

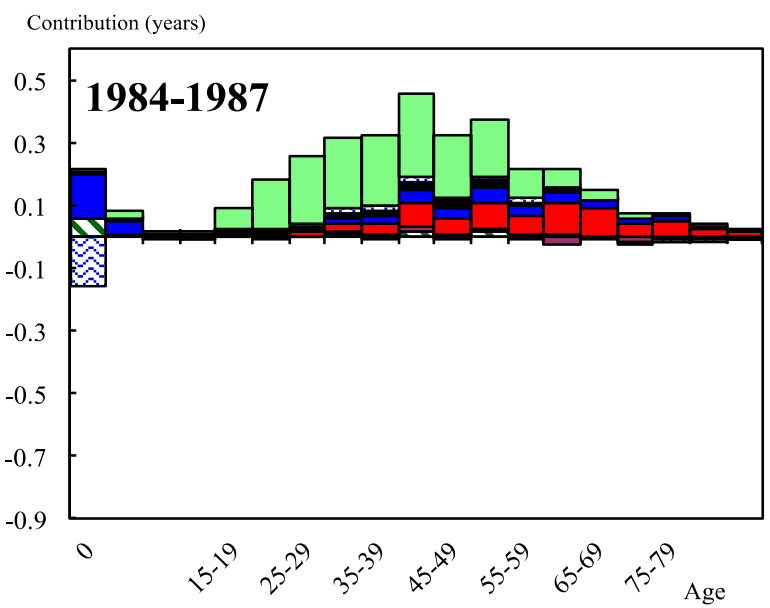
# B. Russia: antialcohol campaign and split of the USSR

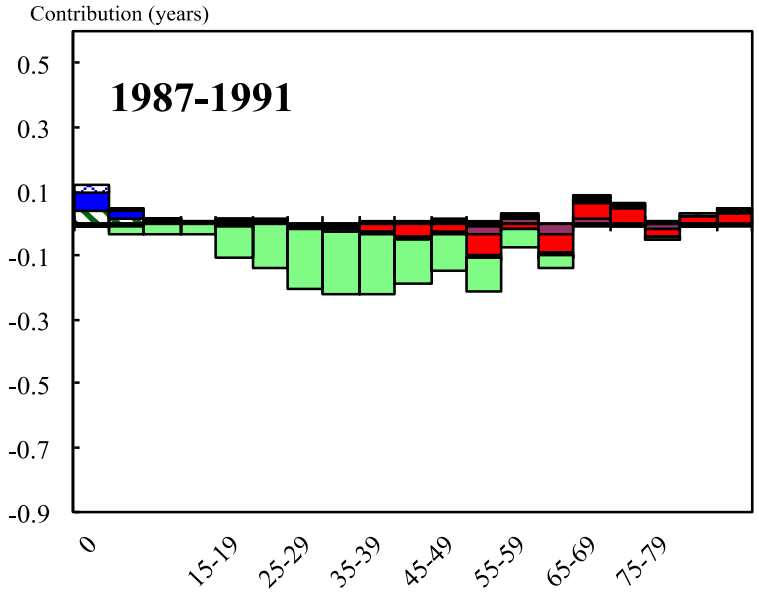
# Large fluctuations from 1984 to 1997



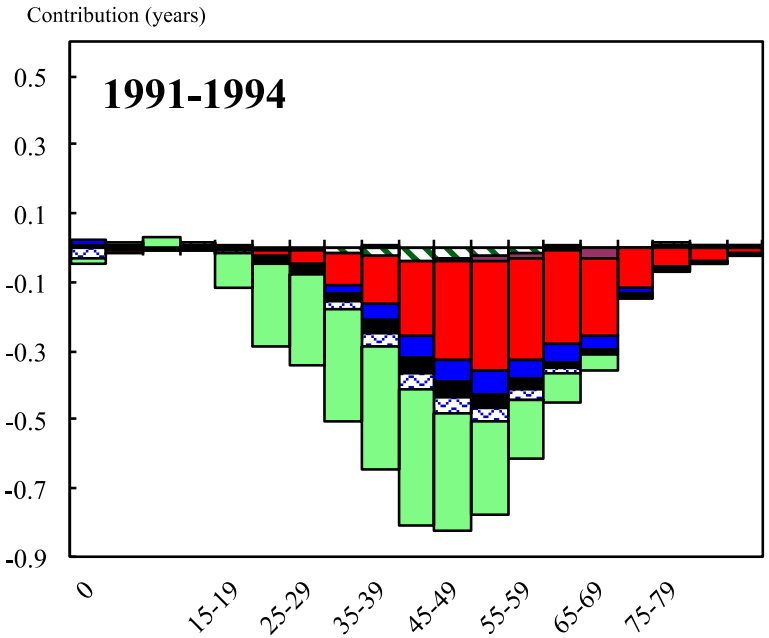

Source : Meslé France, Vallin Jacques, Shkolnikov Vladimir M., 1999, « Reversal of mortality decline : the case of contemporary Russia », *World Health Statistics Quarterly/Rapport trimestriel de statistiques sanitaires,* 51(2-3-4), p. 191-206.

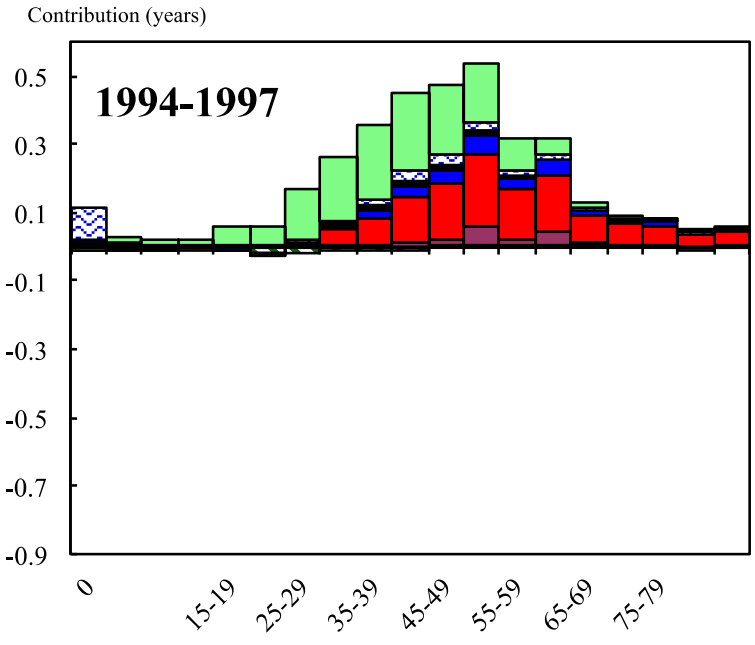
# The short lived effect of anti-alcohol campaign




# The strong impact of the economic crisis

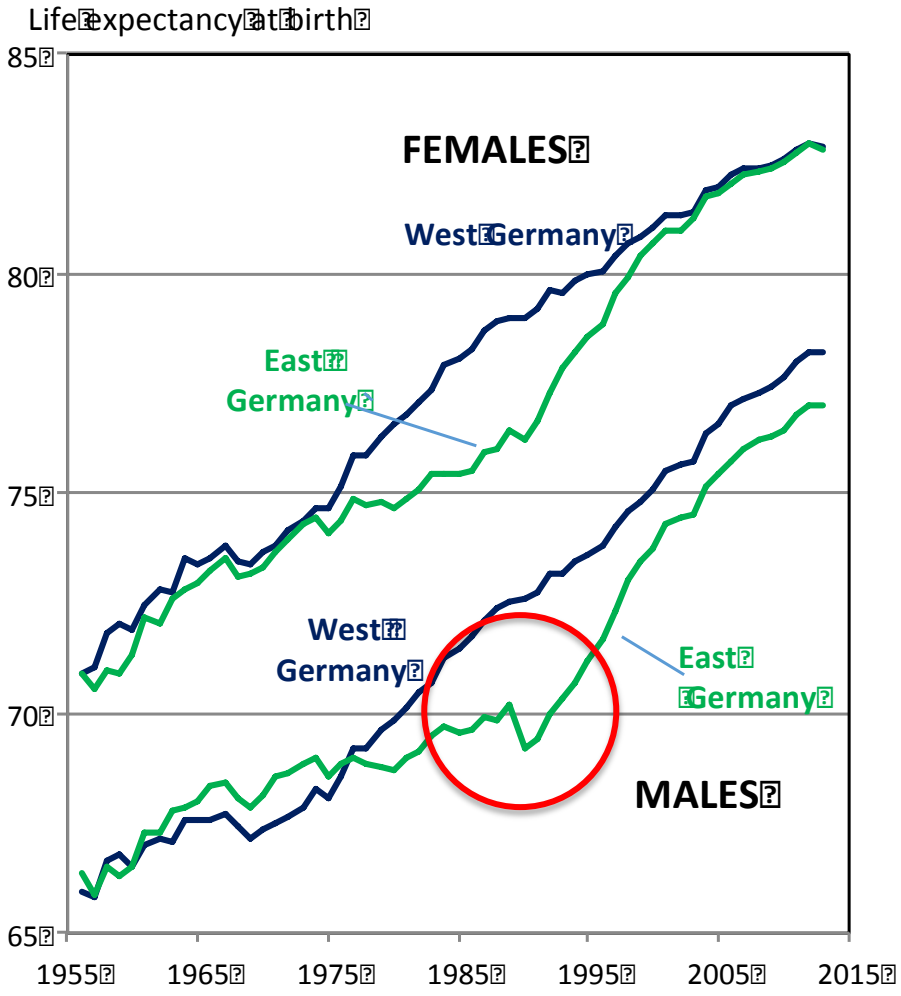


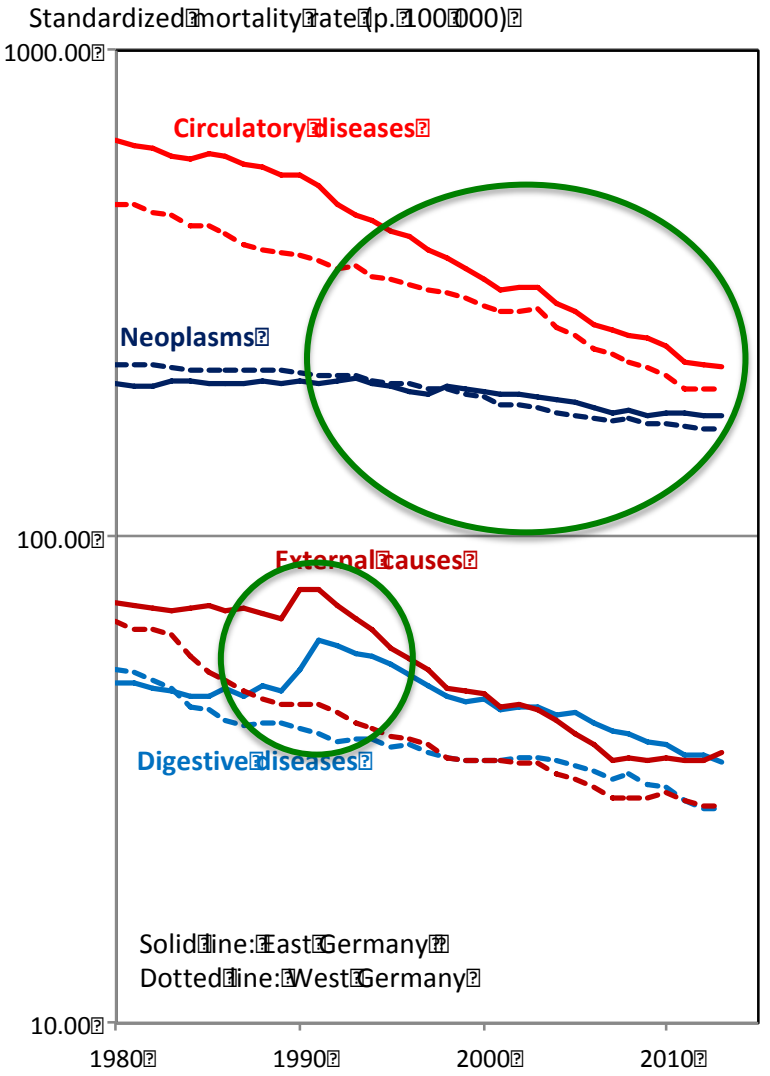




External causes
Other dis.
Digestive dis.
Respiratory dis.
Circulatory dis.
Cancer
Infectious dis.

# C. The fall of Berlin Wall and the German reunification

# Shock and catch-up



# Long-term trends and political history

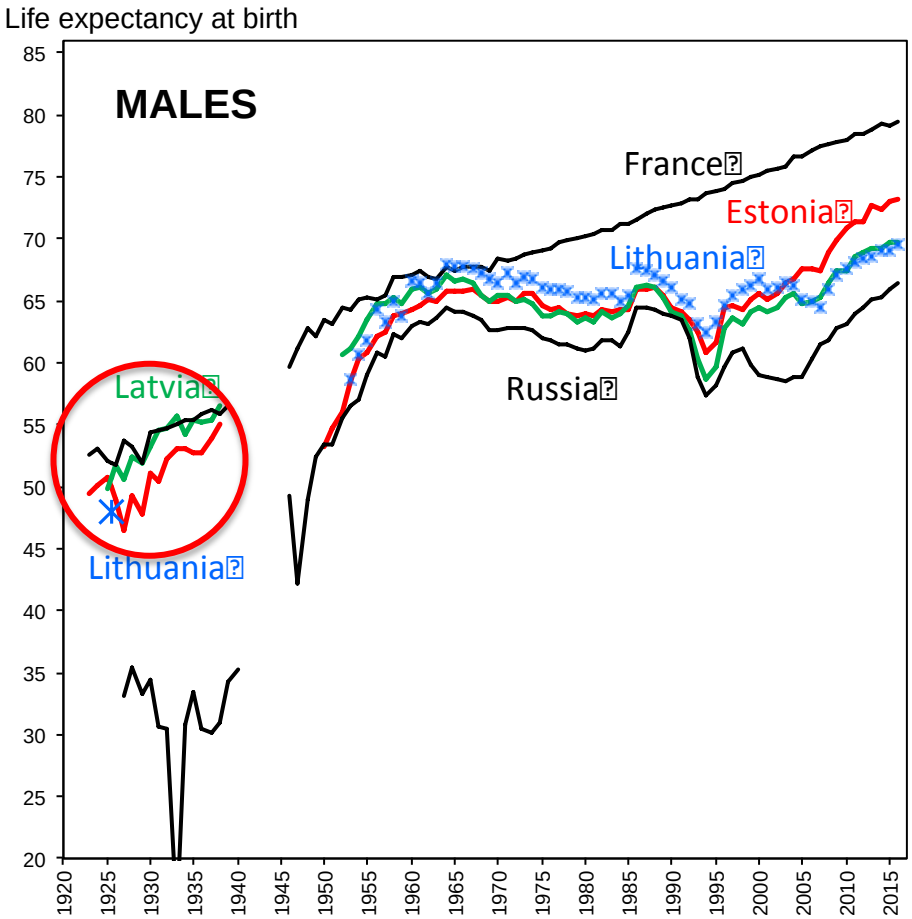
# The case of Baltic States

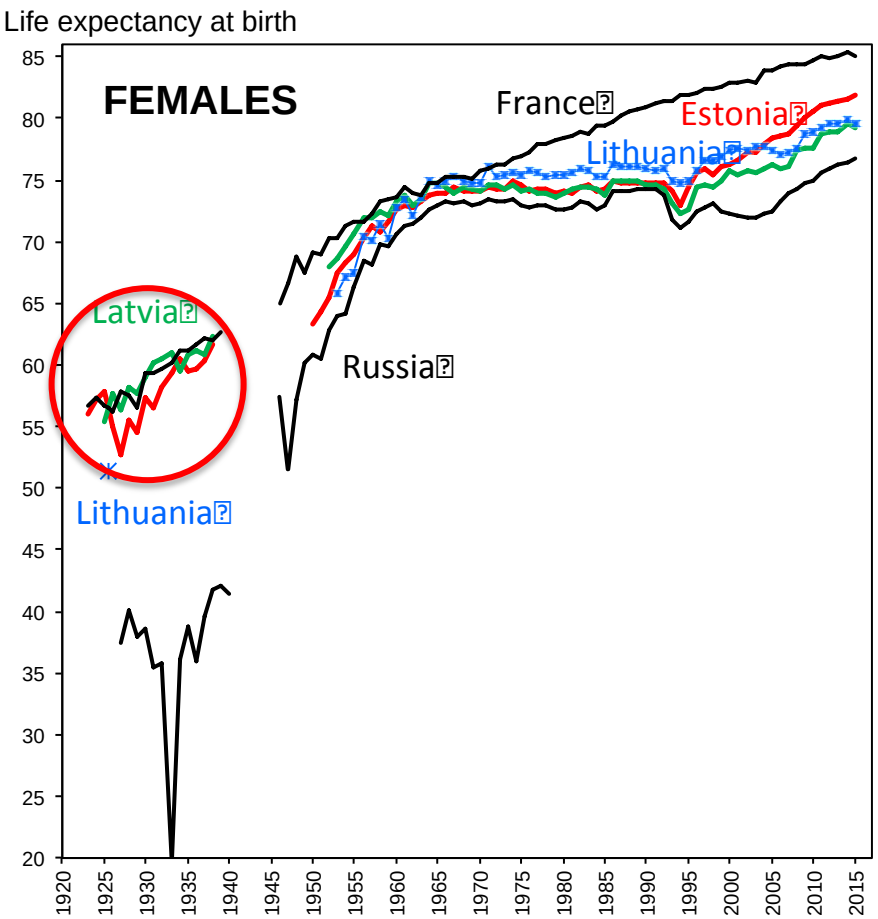
- First Independence after WW1
- Forced annexation by the Soviet Union, and German occupation (1941-1944), extermination of the Jewish population during WW2
- Inclusion in the USSR (1944-1991)
- New Independence and entrance in the EU

Source: Vallin Jacques, Jasilionis Domantas, Meslé France, 2017, « Does a turbulent history lead to turbulent life expectancy trends? Evidence from the Baltic States », *Historical Methods,* 50(4), p. 191-209.

# The case of Baltic states

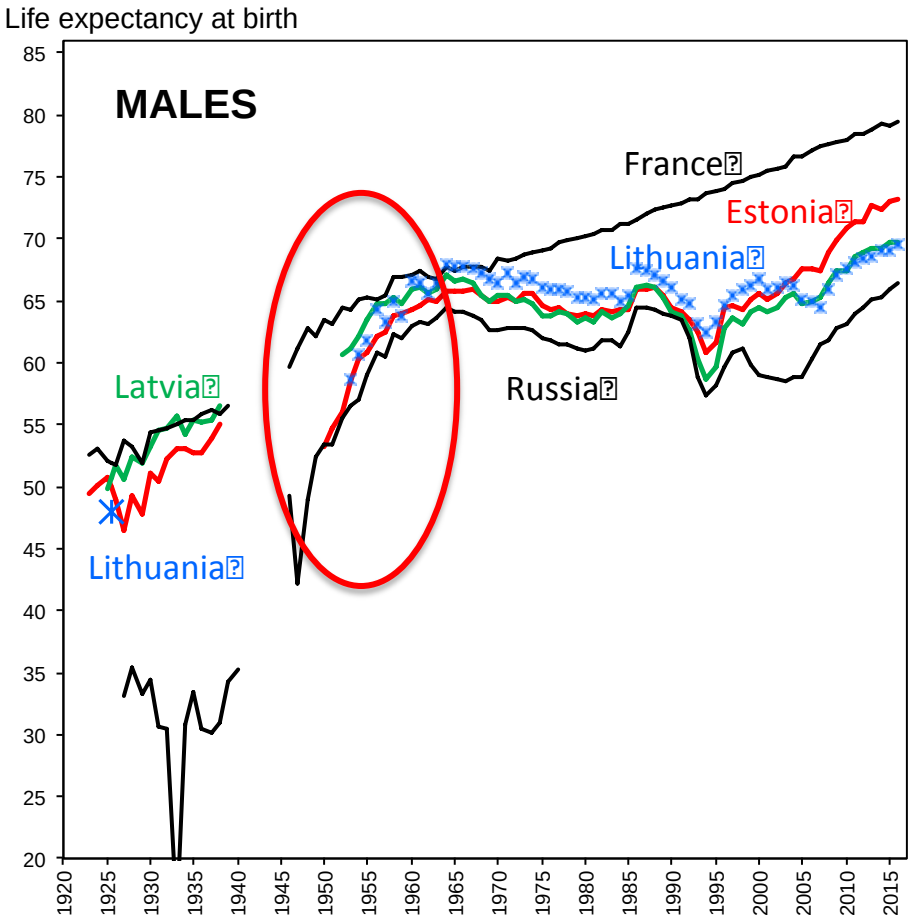
## In the 1930s, levels close to Western ones and much higher than in Russia

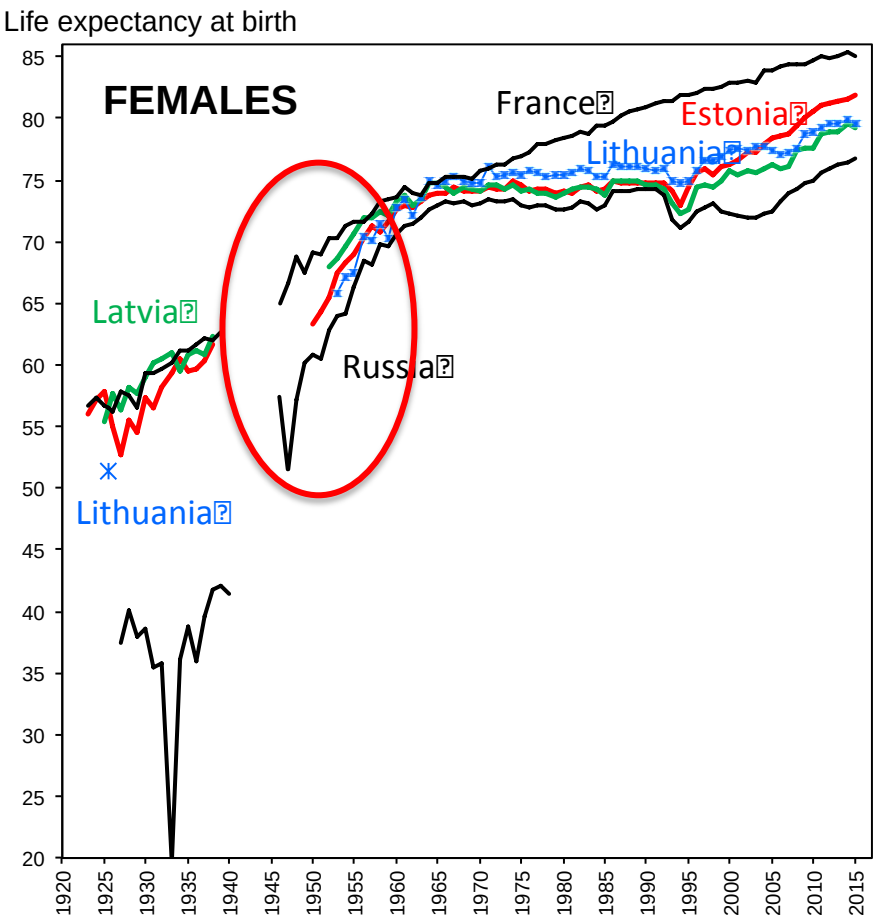


# The case of Baltic states

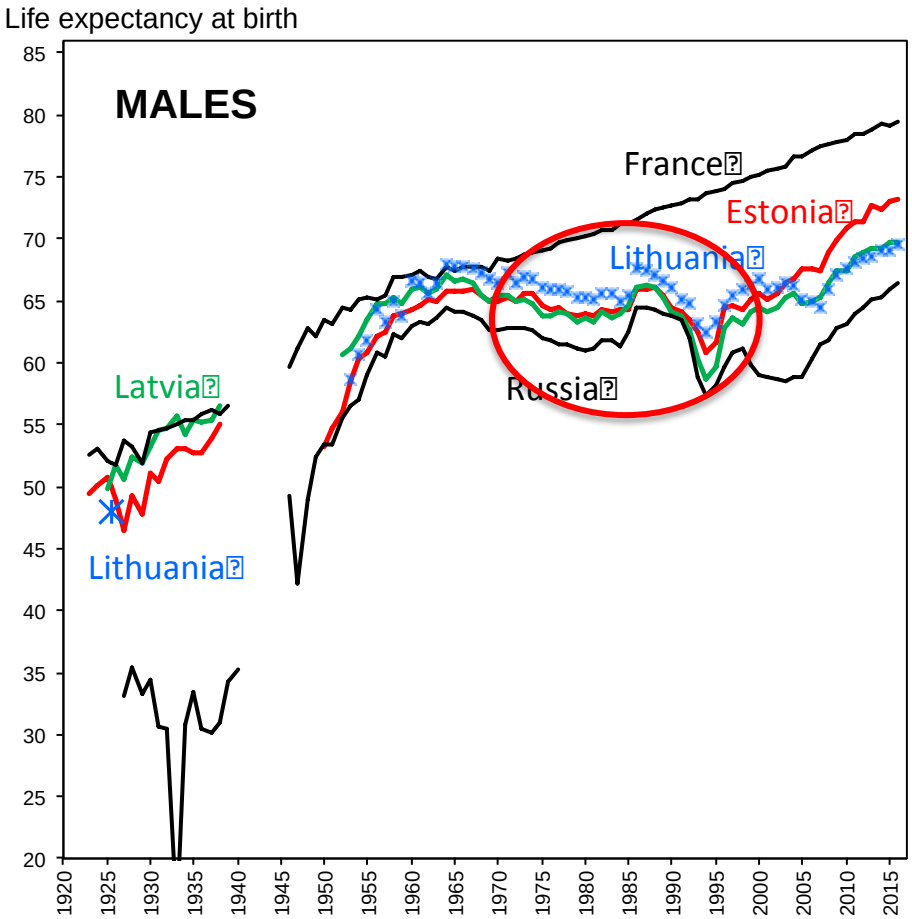
## In the 1950s, a rapid convergence thanks to the dramatic decline of infant mortality

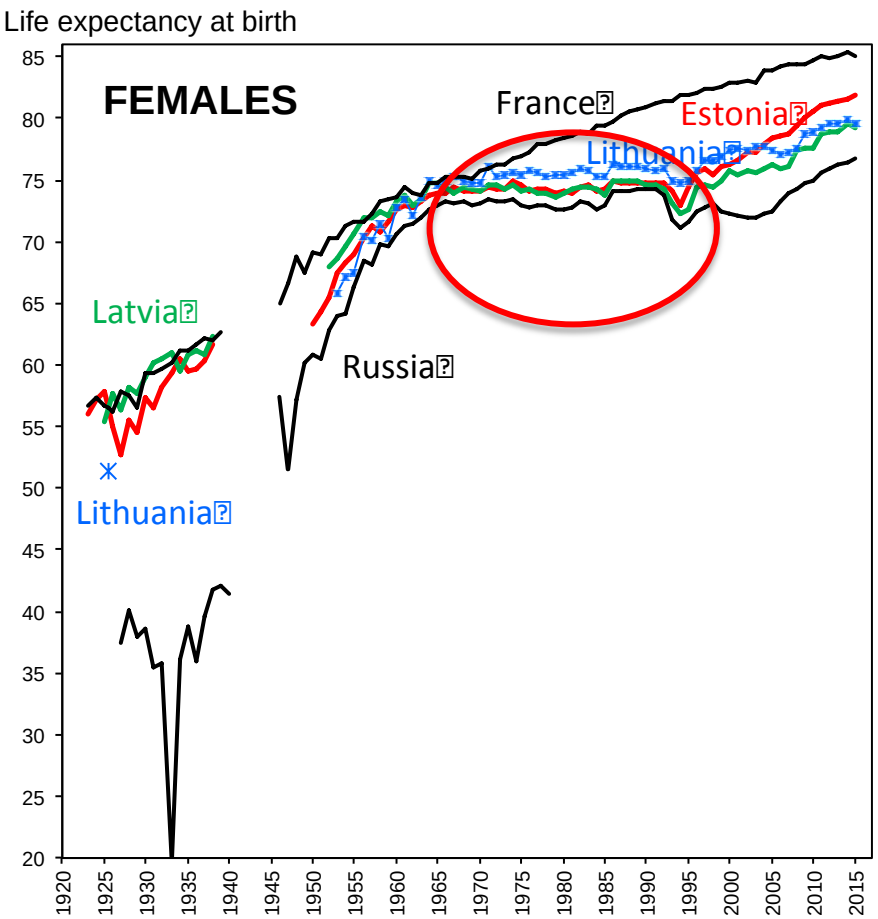


# The case of Baltic states

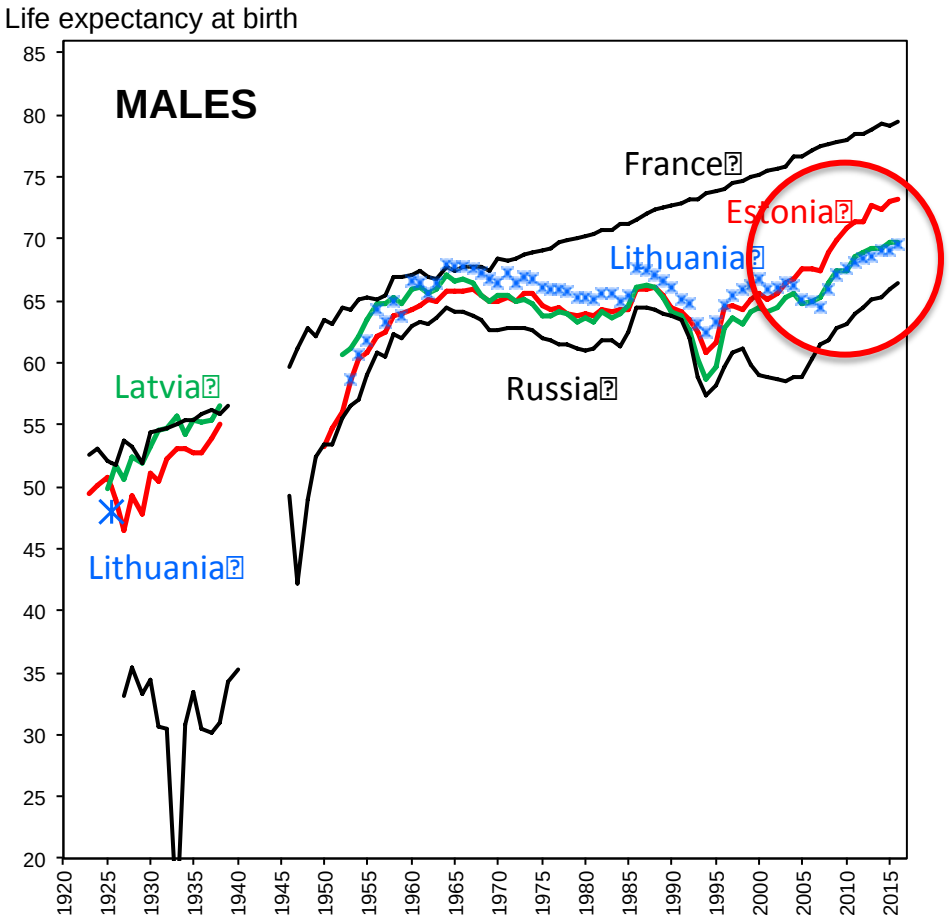
From 1965 to 1995, unfavourable trends common to all Soviet countries

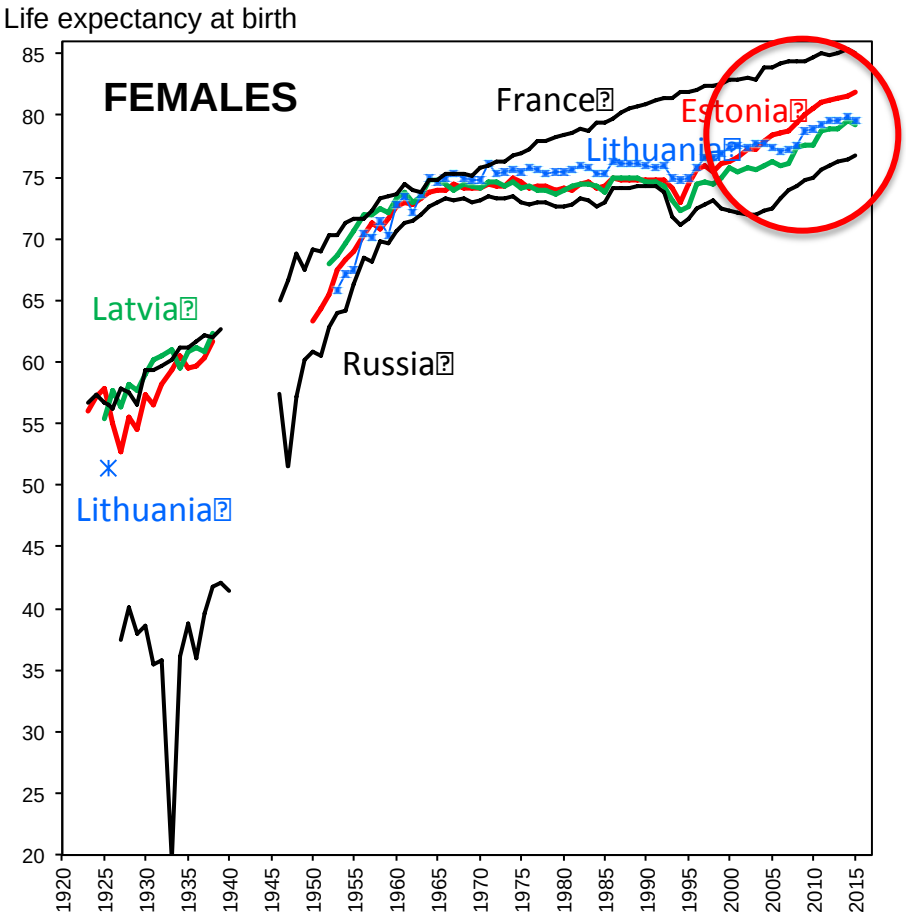


# The case of Baltic states

## From the late 1990s, a clear trend reversal



# A remarkable similarity of long-term trends during the political division East/West

Source: Meslé France. 2015. "Adult Mortality in Eastern Europe and the Former Soviet Republics." in *International Encyclopedia of the Social & Behavioral Sciences*, edited by Wright James: Elsevier.

# A general health crisis in Central and Eastern Europe

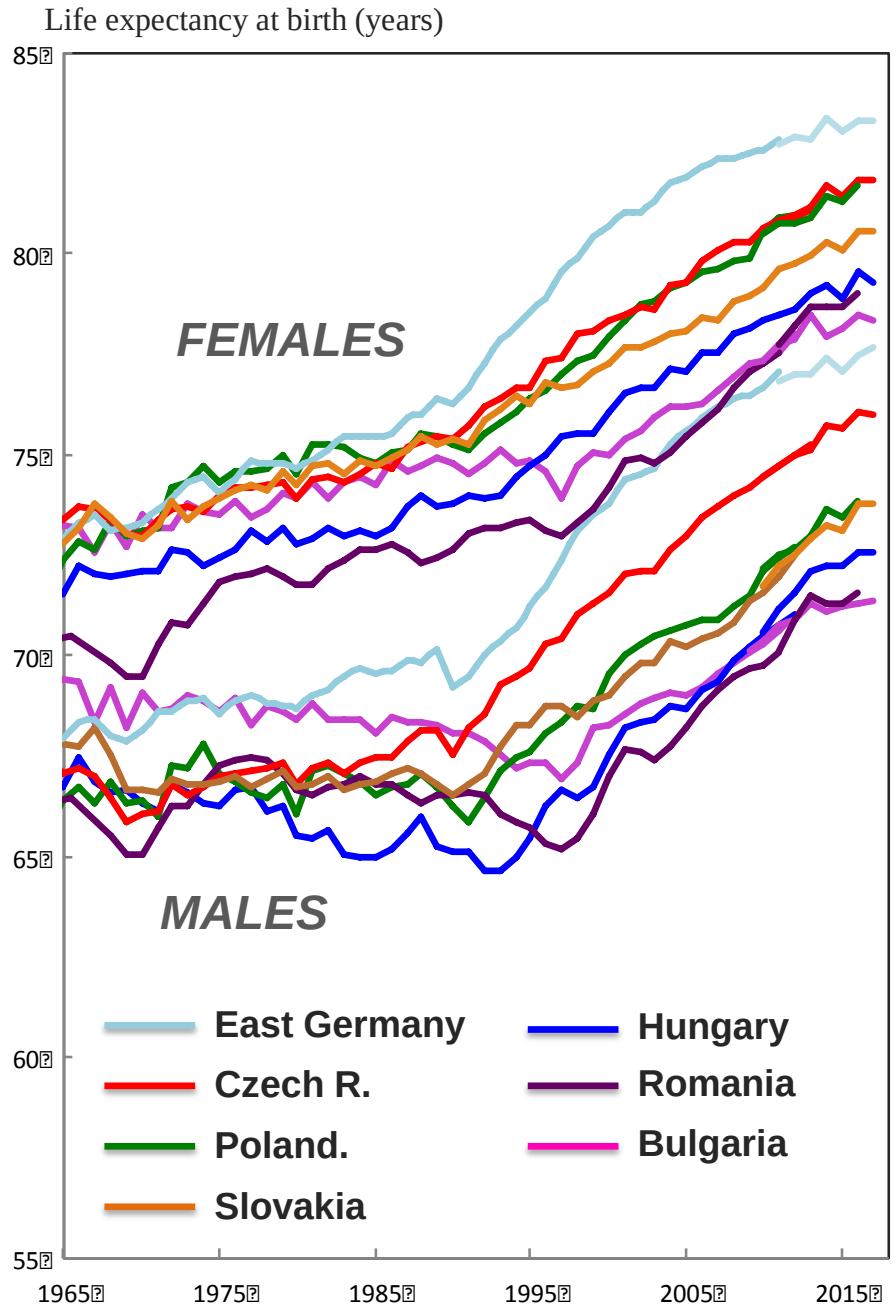
- More severe in countries of the former USSR than in Central Europe
- More serious for males than for females
- Particularly marked at adult working ages

**From 1965 to 1985, Russian men lost 1.6 years in life expectancy at birth, and 2.3 years in life expectancy at age 15**

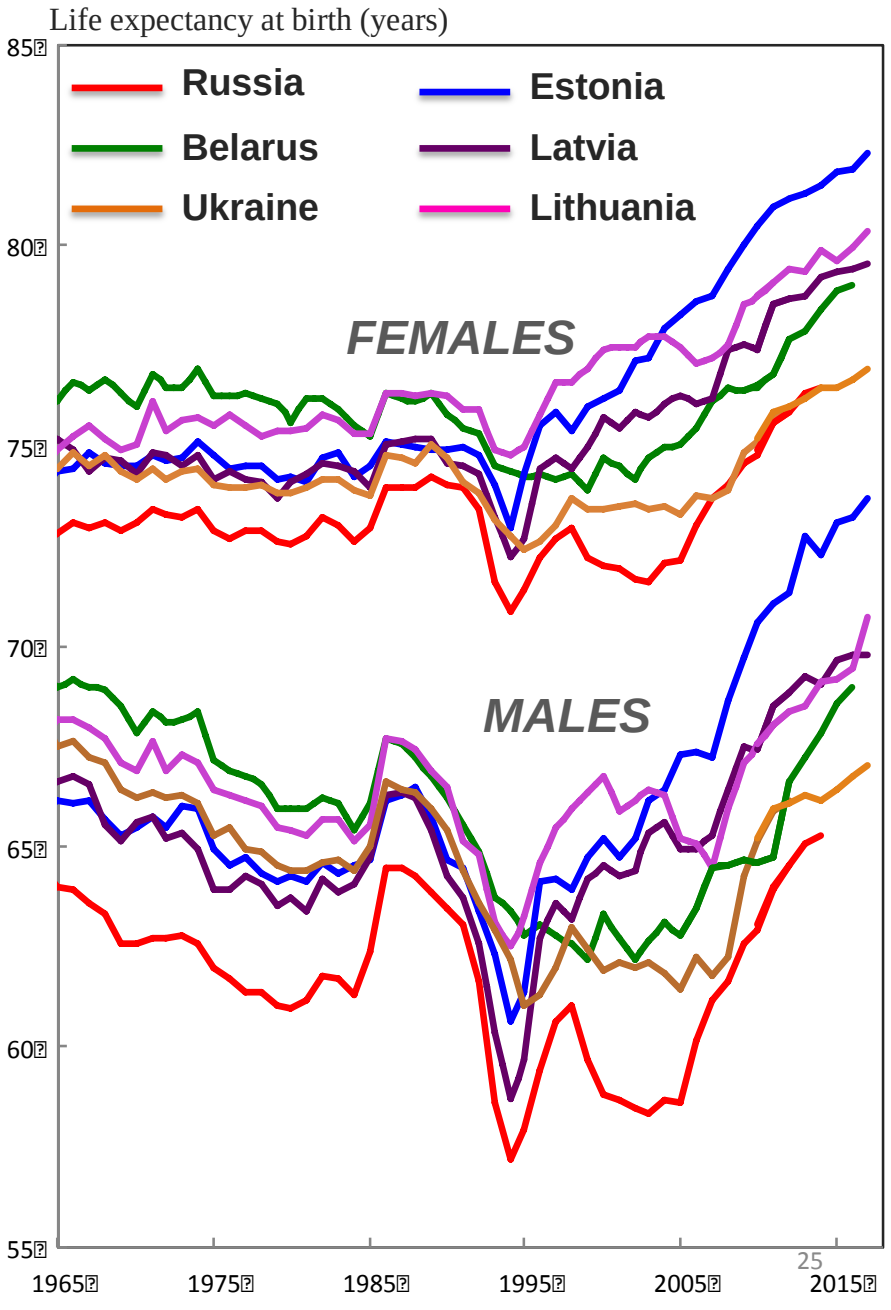
# In the early 1990s, diverging trends between Central and Eastern Europe

- After the fall of the Berlin Wall and the breakdown of the USSR, life expectancy in Central Europe began to progress again, one country after another
- Republics of the former USSR  entered a very chaotic period with huge fluctuations due to Gorbachev's anti-alcohol campaign, its subsequent loosening and the transition to a market economy
- Finally, in the 2000s, late-runners started catching up

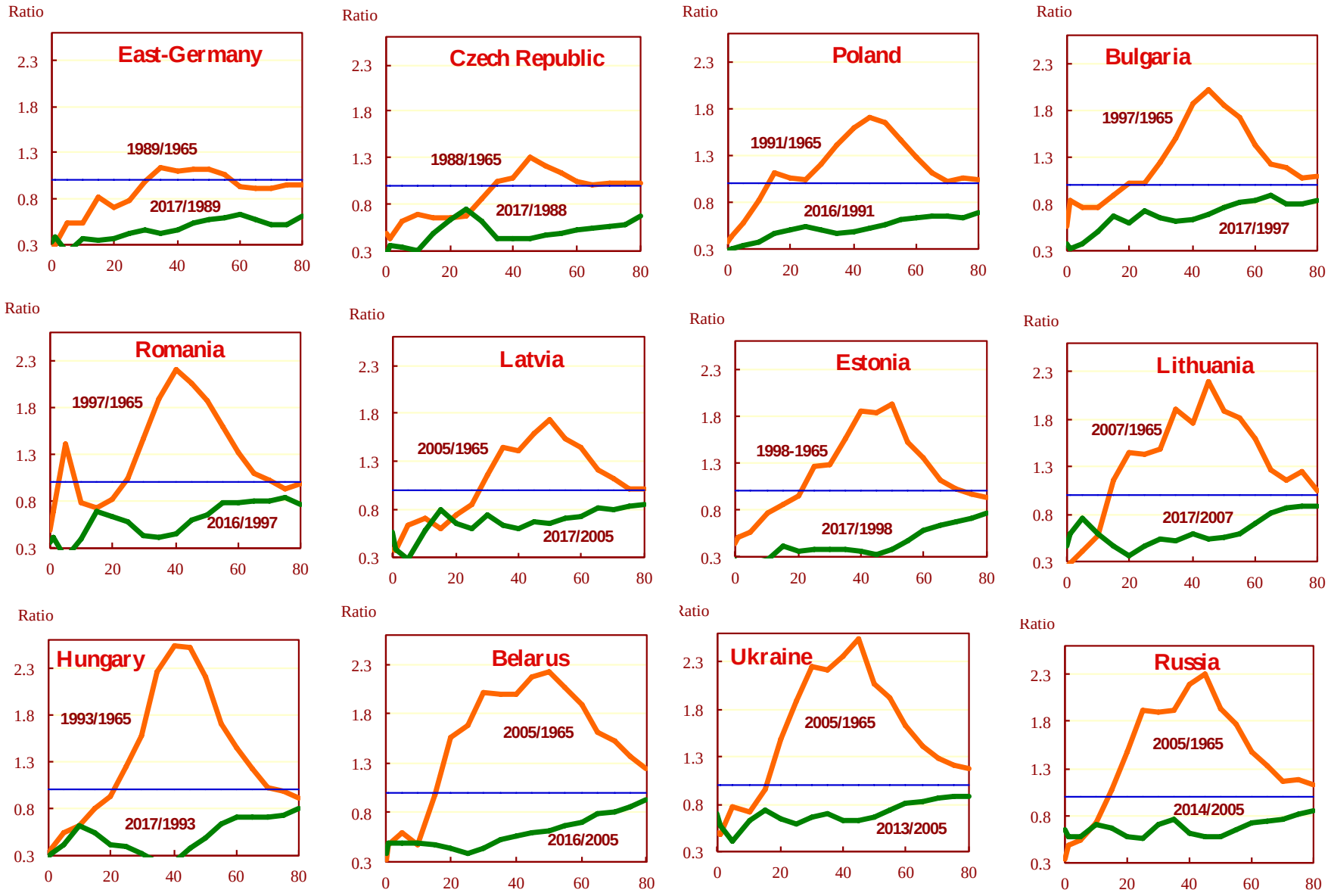
# Central Europe



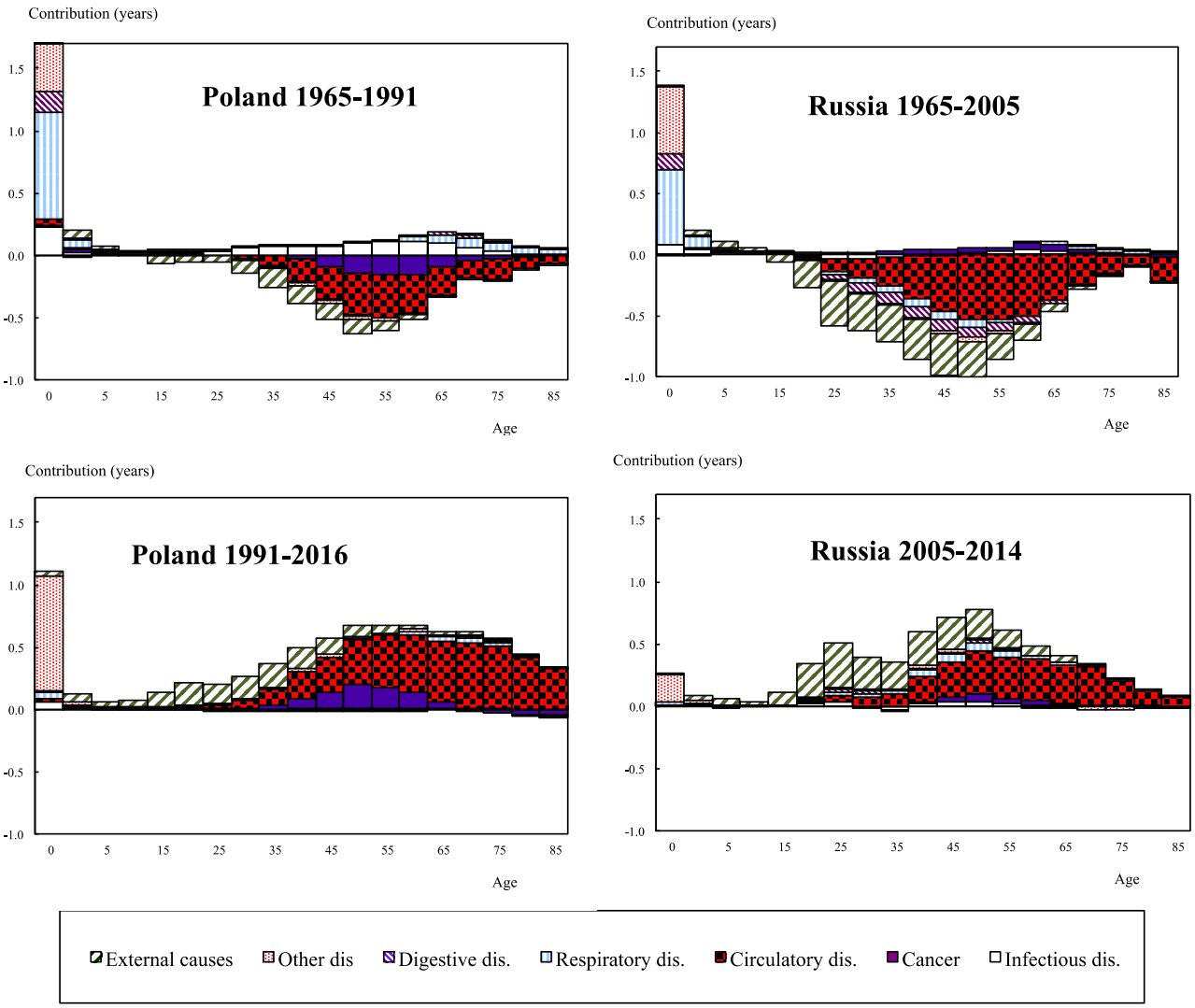

# Former USSR



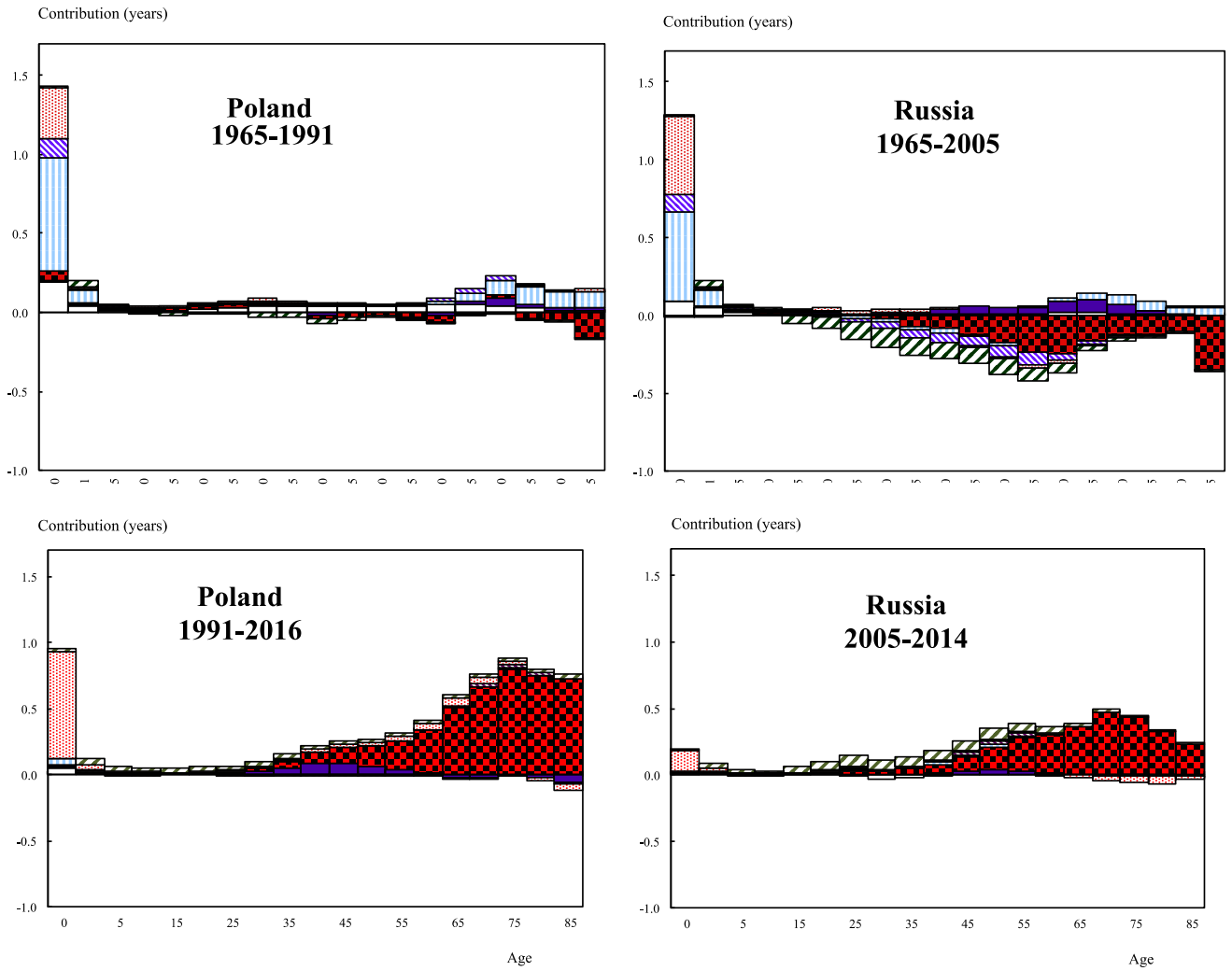
# A dramatic male mortality increase at working ages, followed by a reduction over a wider range of ages



# Changes in male life expectancy: circulatory diseases and external causes are the main contributors



# Notable progress at old ages for females



# Do these trends fit with the health transition theory?

- When divergence started in the mid-1960s, all European countries were completing their epidemiologic transition, as defined by Omran.
- They had entered the 3rd age of man-made and degenerative diseases.
- Western European countries were very rapidly able to control and reduce those diseases, especially circulatory diseases.
- Central and Eastern European countries, in contrast, did not succeed.

# Explaining the cardiovascular revolution

- A 4th age of the epidemiologic transition:
  - → *"Age of delayed degenerative diseases"* (Olshansky and Ault, 1986)
  - → "*The hybristic stage",* the age of diseases related to behaviour and lifestyle (Rogers and Hackenberg, 1987)
- Rethinking the whole perspective:
  - → The health transition (Frenk et al., 1991)
  - → A succession of divergence and convergence processes (Vallin and Meslé, 2004)

# The succession of divergence/convergence processes

- Any major factor of improvement in life expectancy results in a phase of divergence. After some time “laggers” catch up with the pioneers in a convergence phase.
- In the case of the cardiovascular revolution, factors of improvement were complex :
  - → Medical factors: prevention, systematic screening, new drugs, new surgery, emergency services, …
  - → Economic factors: curing chronic diseases costs a lot and requires a new organisation of the health system, …
  - → Social and behavioral factors: decrease in alcohol and tobacco consumption, improving diet quality, …
- It took Central and Eastern European countries much more time to enter this stage than most Western European countries, but the convergence is now occurring.

# What will be the future challenges?

ined

According to “Divergence-convergence” theory:

→ Sub-national trends may follow the same rule:

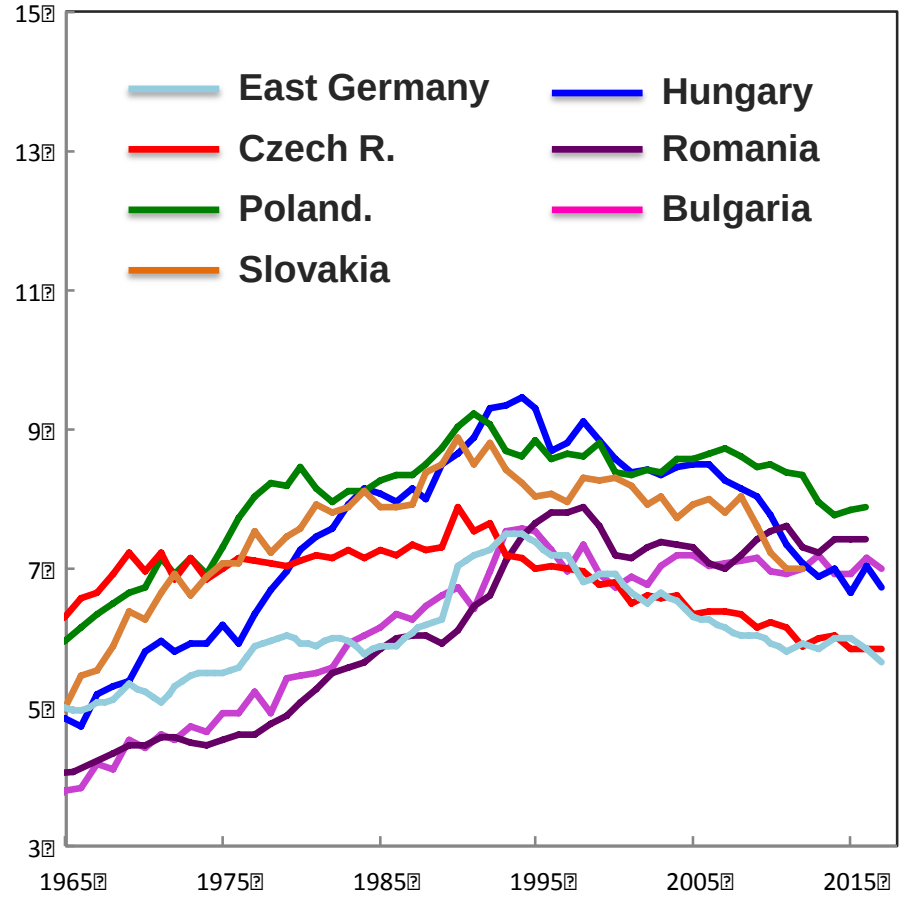
Gender gap? Regional differences? Social inequality?

→ New improvements cause new processes of divergence/convergence and a new process can start even if the previous one has not ended:

Moving to older and older ages

# A narrowing gap between males and females …

Difference in life expectancy at birth (years)

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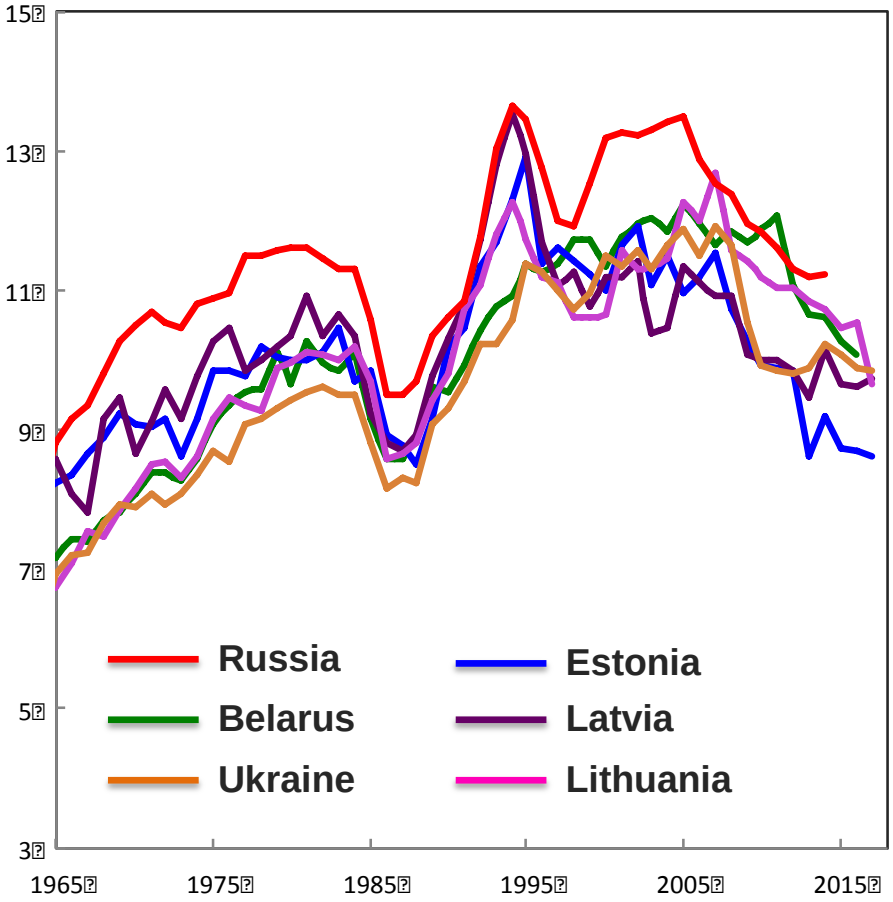
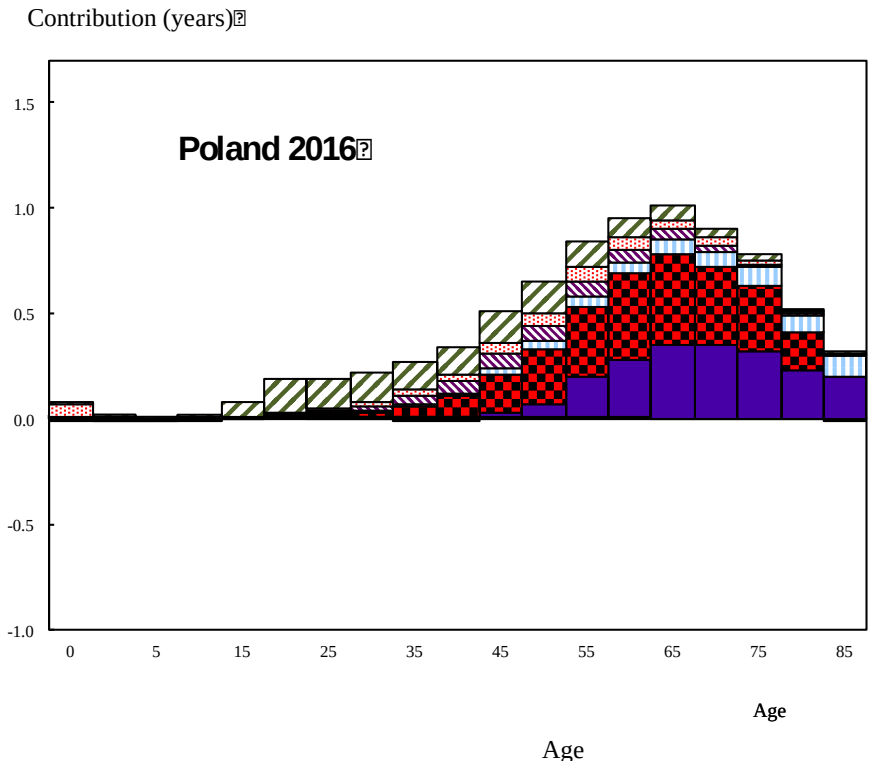
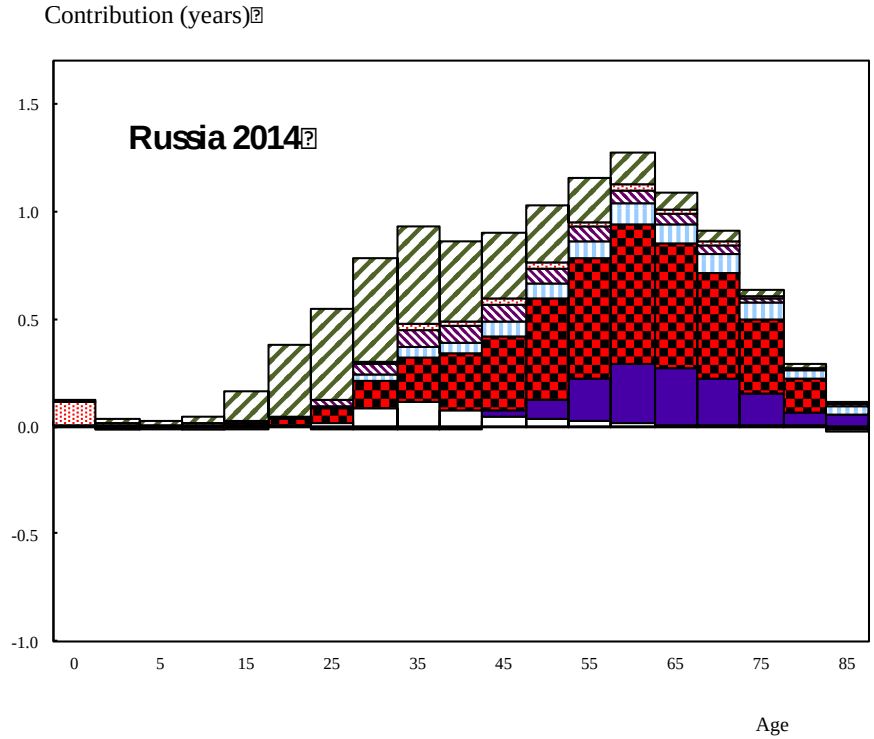


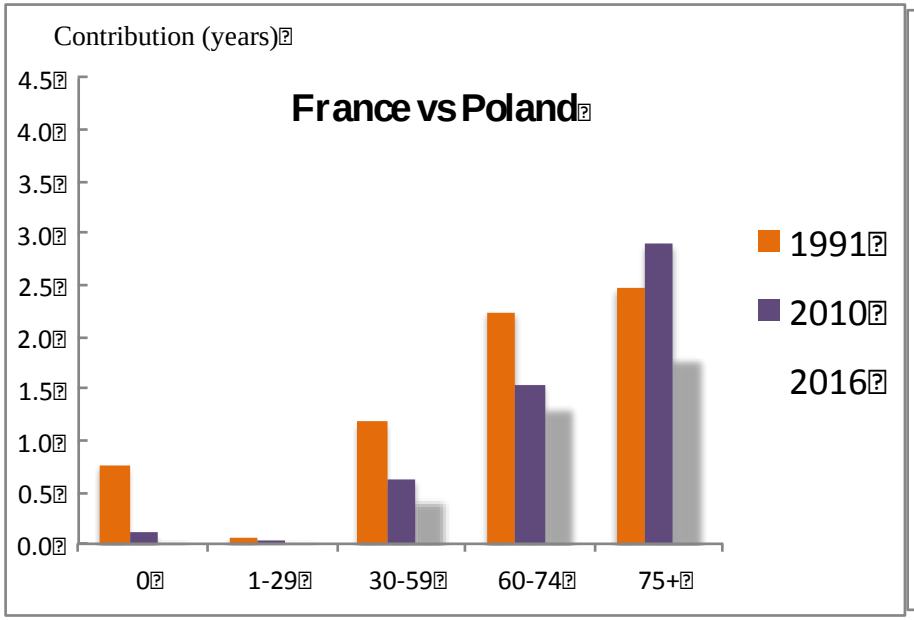
# But differences are still huge

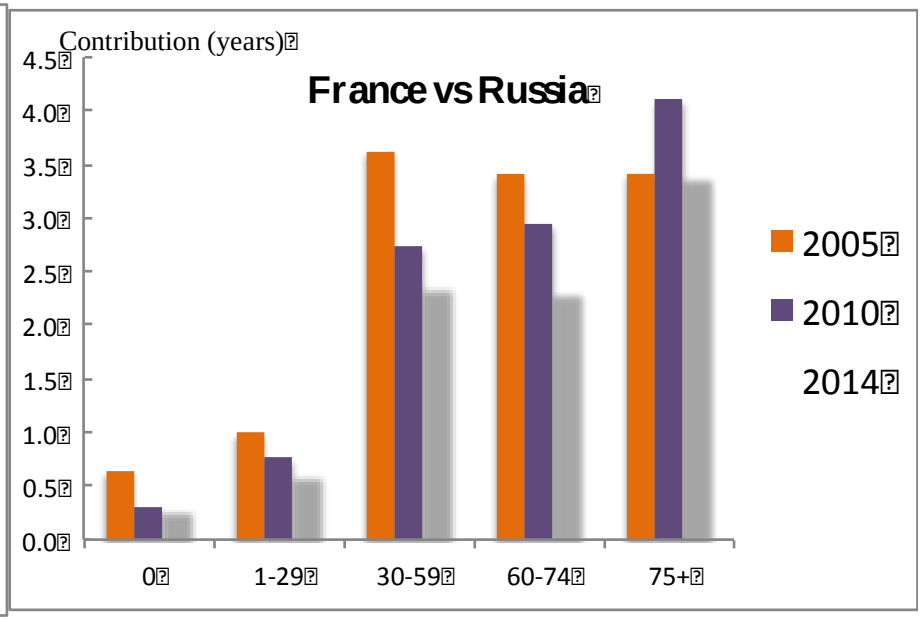



External causes | Other dis | Digestive dis. | Respiratory dis. | Circulatory dis. | Cancer | Infectious dis.

# For females, the gap with the most advanced countries is now decreasing at all ages



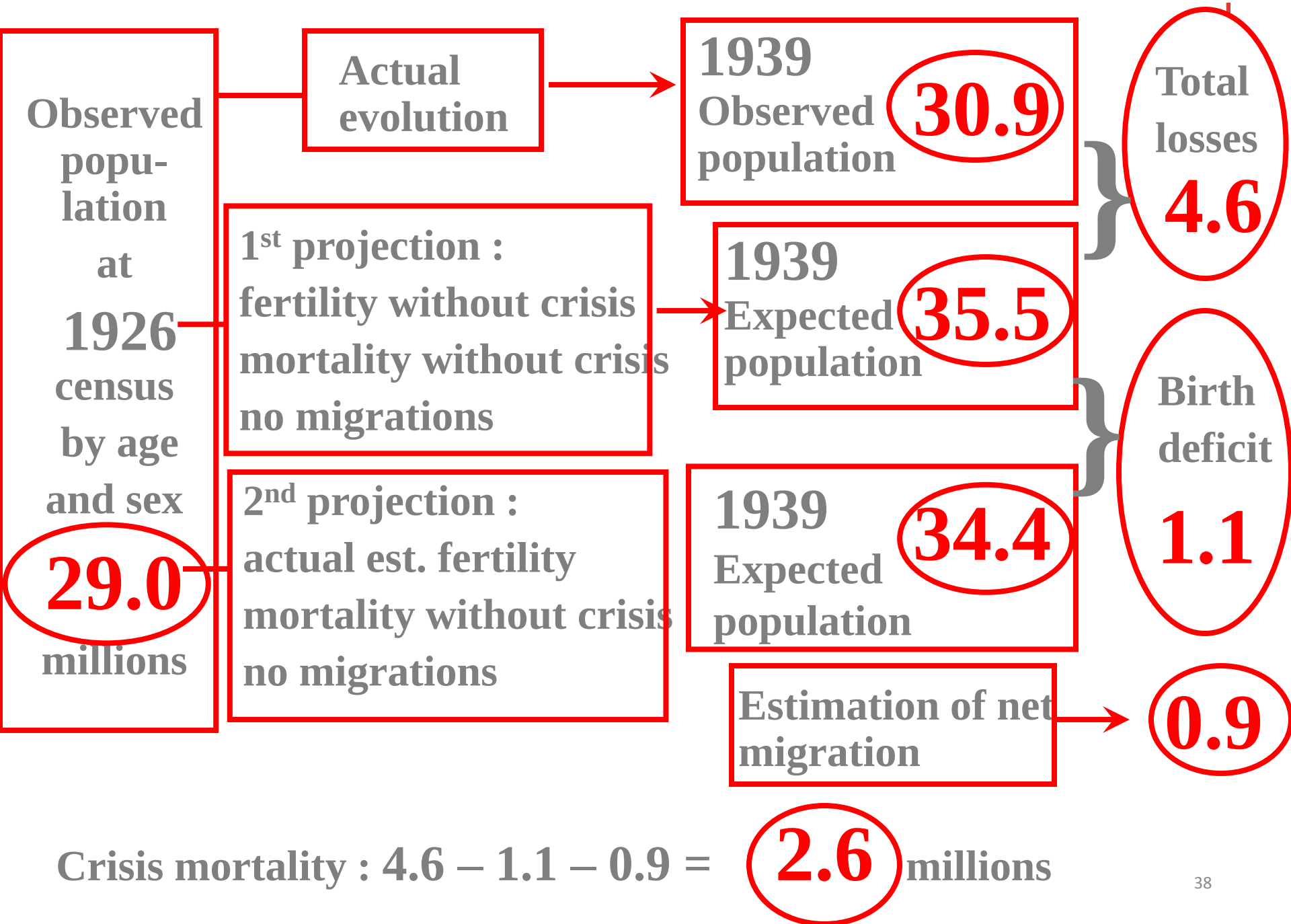
# Let’s be optimistic !

# Acknowledgements


- This presentation relies on joint works with:

Serguei Adamets, Evgeny Andreev, Agnieszka Fihel, Pavel Grigoriev, Domantas Jasilionis, Kalev Katus†, Juris Krumins, Markéta Pechholdova, Olga Penina, Svitlana Poniakina, Serhii Pyrozhkov, Pavlo Shevshuk, Vladimir Shkolnikov, Vlada Stankuniene.

- These works were mainly supported by INED, the MPIDR and three research grants:
  - → Ediccod: "European Divergence and Convergence in Causes of Death" Project ANR-07-FRAL-018-01
  - → Modicod: "Le projet AXA Mortality Divergence and Causes of Death"
  - → Dimocha: "From disparities in mortality trends to future health challenges", Project ANR-12-FRAL-0003-01 DIMOCHA


Observed population at 1926 census by age and sex
29.0 millions
Actual evolution
1939 Observed population
30.9
Total losses
4.6
1st projection : fertility without crisis mortality without crisis no migrations
1939 Expected population
35.5
Birth deficit
1.1
2nd projection : actual est. fertility mortality without crisis no migrations
1939 Expected population
34.4
Estimation of net migration
0.9
Crisis mortality : 4.6 – 1.1 – 0.9 =
2.6
millions