



# Demographic Resilience: Building a Platform for Ukraine's Demographic Future during Post-War Reconstruction

**Shushpanov Dmytro**

*Institute of Demography and Quality of Life Issues  
of the National Academy of Sciences of Ukraine*

*(Kyiv, Ukraine)*

*Doctor of Economics , professor*

# Question

- Why is it important to use the theory of resilience in demography?
- How did demographic processes develop in Ukraine before the war?
- What are the modern challenges and threats to the demographic situation in Ukraine?
- What are their regional characteristics?
- What are the demographic forecasts?
- Is the achievement of demographic resilience in Ukraine realistic in the coming years?
- What needs to be done?

**Answers**





# **Demographic Resilience: Objectives, Parameters, Factors**



The theory of demographic resilience is based on the general theory of resilience.

( Yates , TM, Tyrell , FA, Masten , AS, 2015 ) .

## Resilience

The ability of an entity - asset, organization, community, region - to anticipate, resist, absorb, respond to, adapt to, and recover from a disturbance.

(Carlson, JL, et al. 2012)

## Resilience

*the capacity of a dynamic system to adapt successfully to disturbances that threaten system function, viability, or development*

( Masten , 2014).

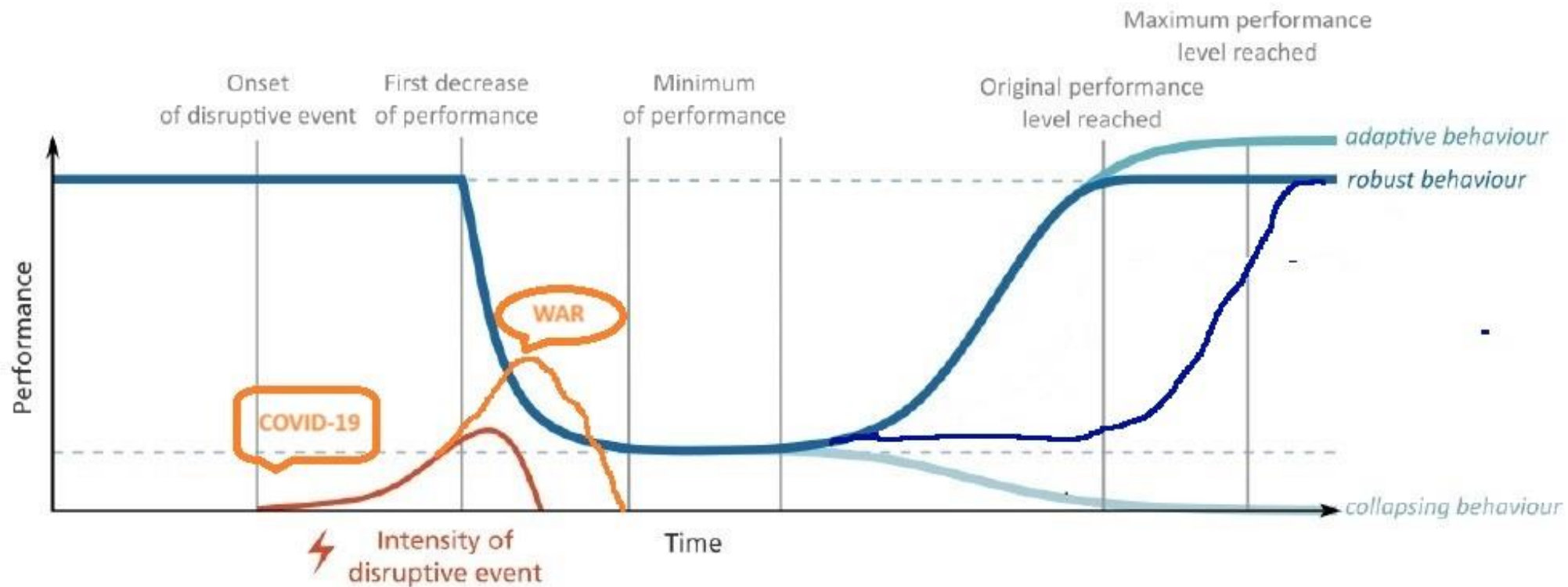
## Resilience

Resilience refers to the ability not only to withstand and cope with challenges but also to transform into a sustainable fair, and democratic manner.

(European Commission, 2021)

# Simplified scheme of system behavior under the influence of a crisis <sup>1</sup>

(adapted for Ukraine considering COVID-19 and the war)



<sup>1</sup> Mentges , Andrea, et al. (2023)

# Approaches to determining demographic resilience

## Biological

The ability of a population to withstand changes in its demographic structure and to recover from them, typically with a concurrent change in population size

• ( P. Capdevila et all . 20 20 )

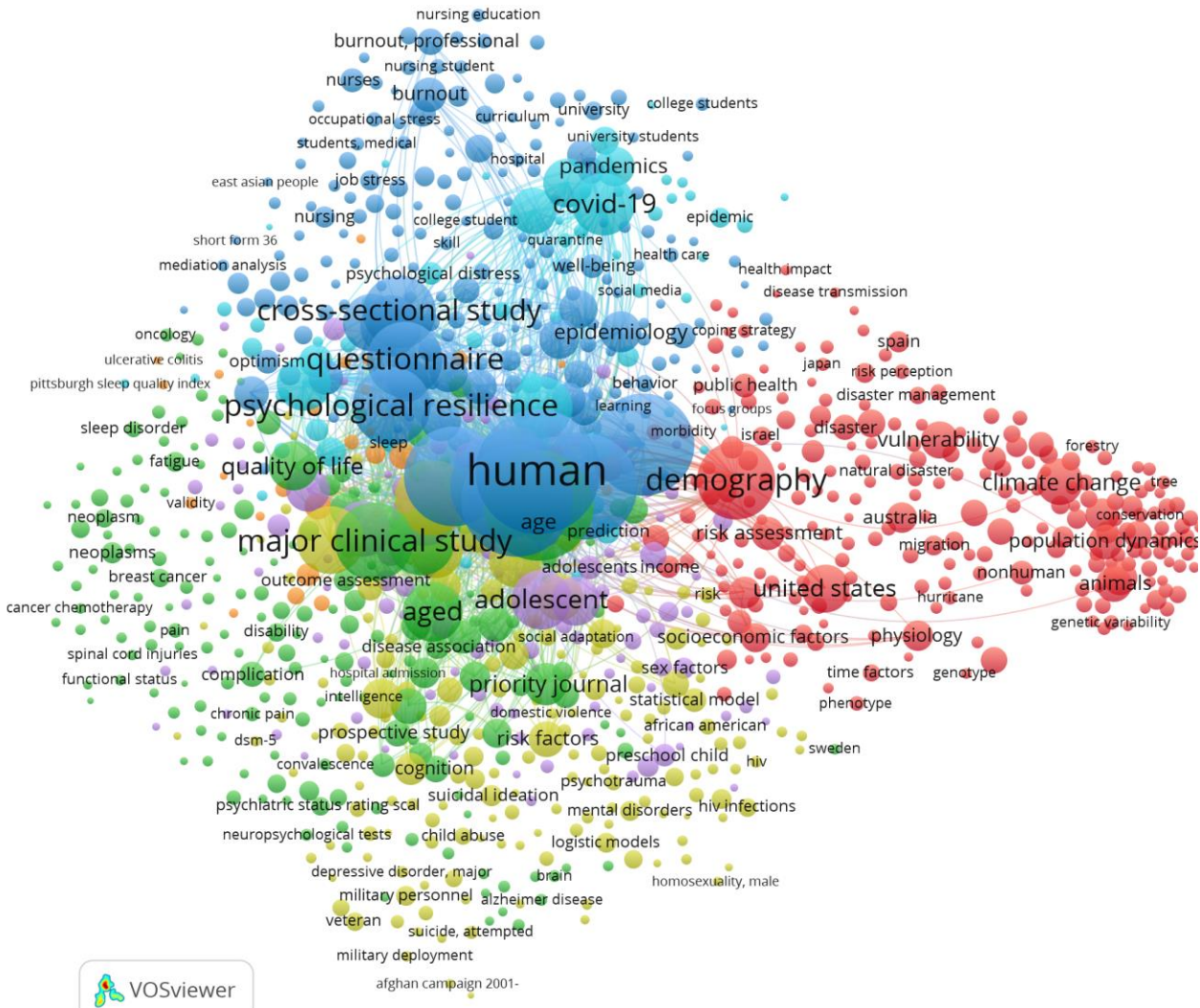
## Psychological

A set of inherent characteristics of an entity that enable it to overcome "stresses and difficult periods in a constructive way" ( PyrozHKov S., 2020)

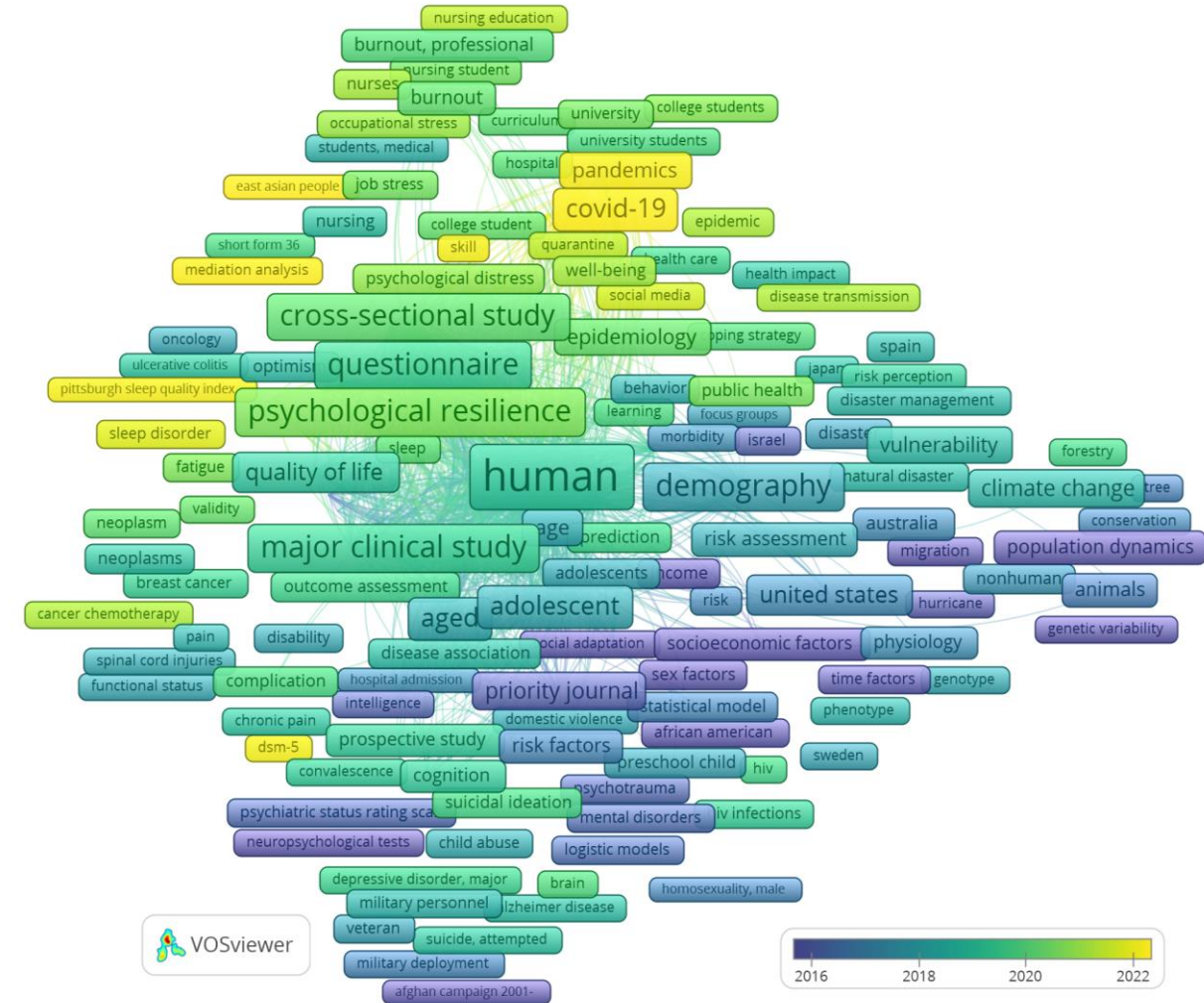
## Social

The ability of a population to maintain or restore a balanced and stable demographic structure in the face of challenges or shocks. ( UNFPA , 2020 ) .

# Map of demographic resilience links



# Map of demographic resilience links (by year)



Dmytro Shushpanov

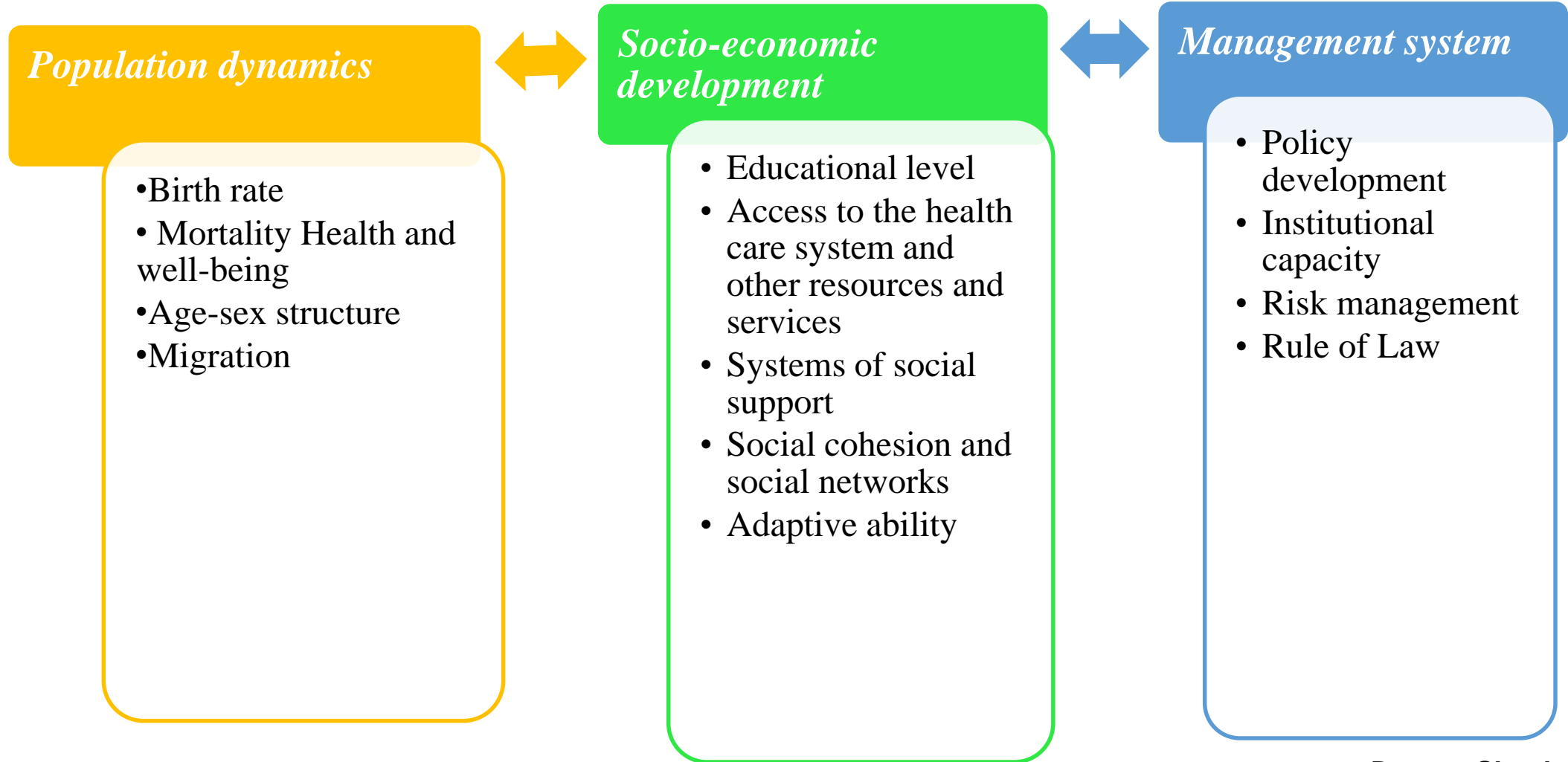
# Demographic resilience

Considering existing approaches, demographic resilience can be interpreted as:

*"the ability of a population or specific demographic groups to maintain their long-term reproduction despite adverse conditions (wars, epidemics, famine, socio-economic crises, environmental disasters, threats), adapting to changes (positive and negative), preserving or improving key demographic characteristics."*



# Parameters and elements of demographic resilience





# Demographic situation in Ukraine

- 1) before the war (until 2014)**
- 2) the period from 2014 to 2021**
- 3) 2022-2023**

# Ukraine

Area: 603550 km<sup>2</sup>

**46th place in the world**

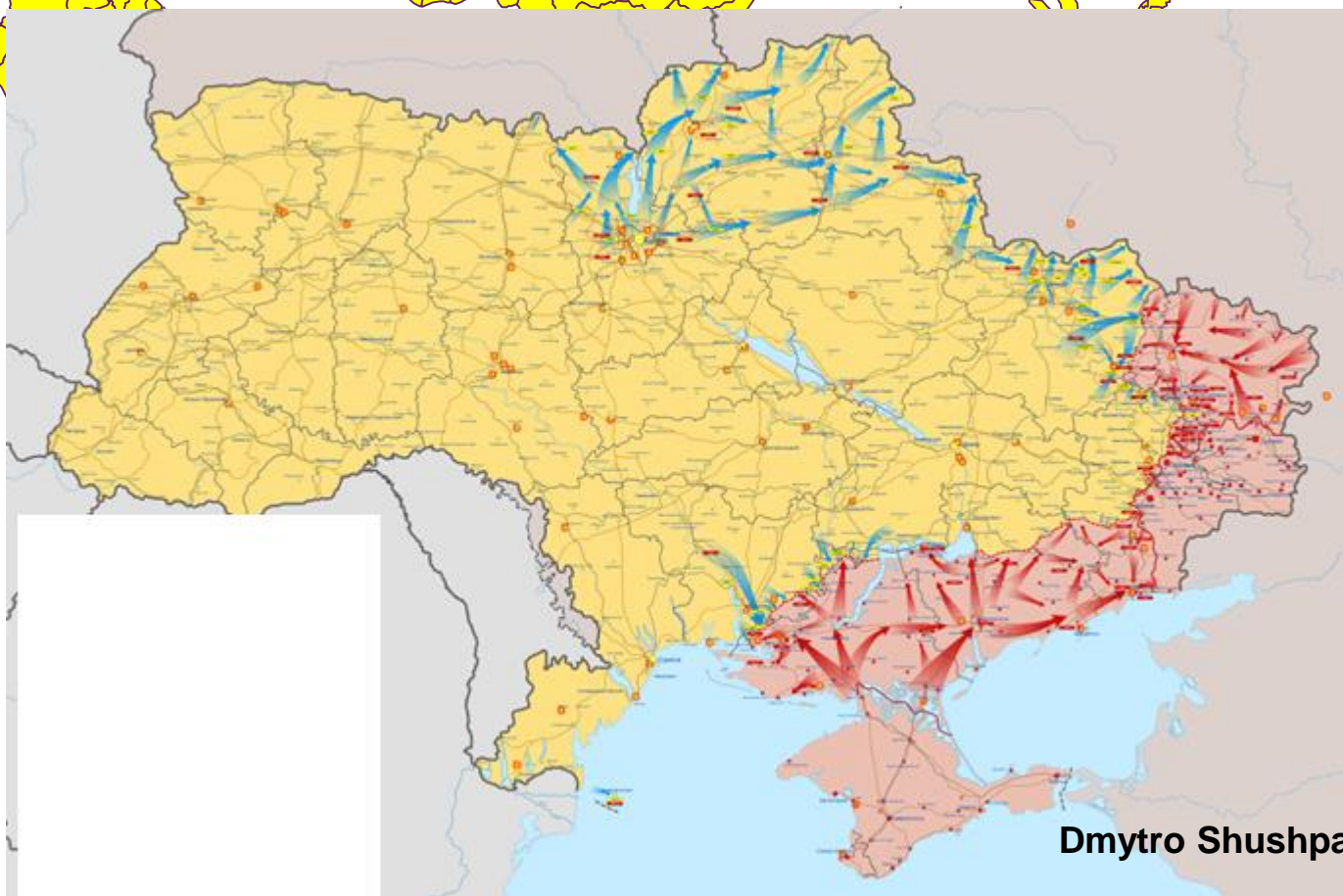
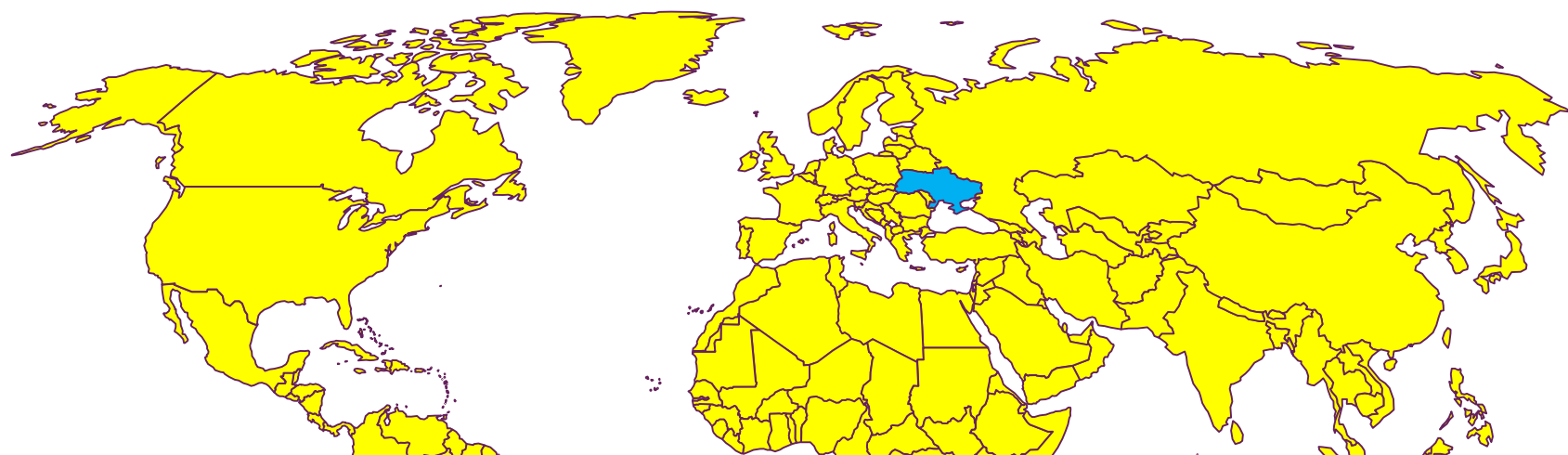
Russia captured about 115000 km<sup>2</sup>  
(18.9%) of the area

People:

45.4 million (January 1, 2014)

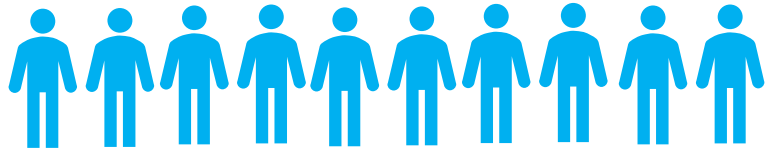
**33rd place in the world**

~ 31.6 million (within the controlled  
territory) (July 1, 2023)



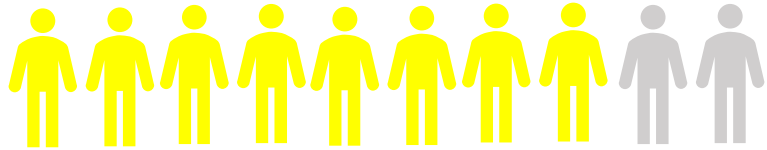
# Population of Ukraine

100  
%



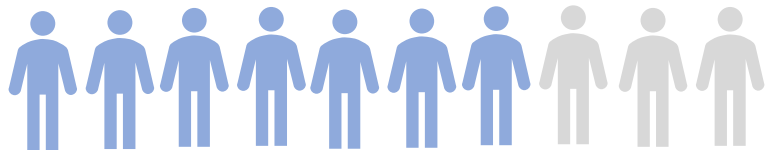
1991 - 54.0 million people

84%



2013 - 45.4 million people

76  
%



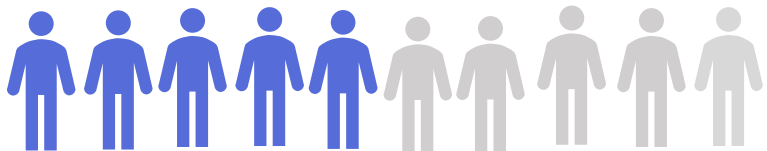
2021 - 41.1 million people

58  
%



2023 (July) – 31.6 million people  
( Ots Inca. On controlled territory )

54  
%



2050 (forecast, ID QLP )

Option 1 (if the war ends by the end of 2025) - 29.3 million people.

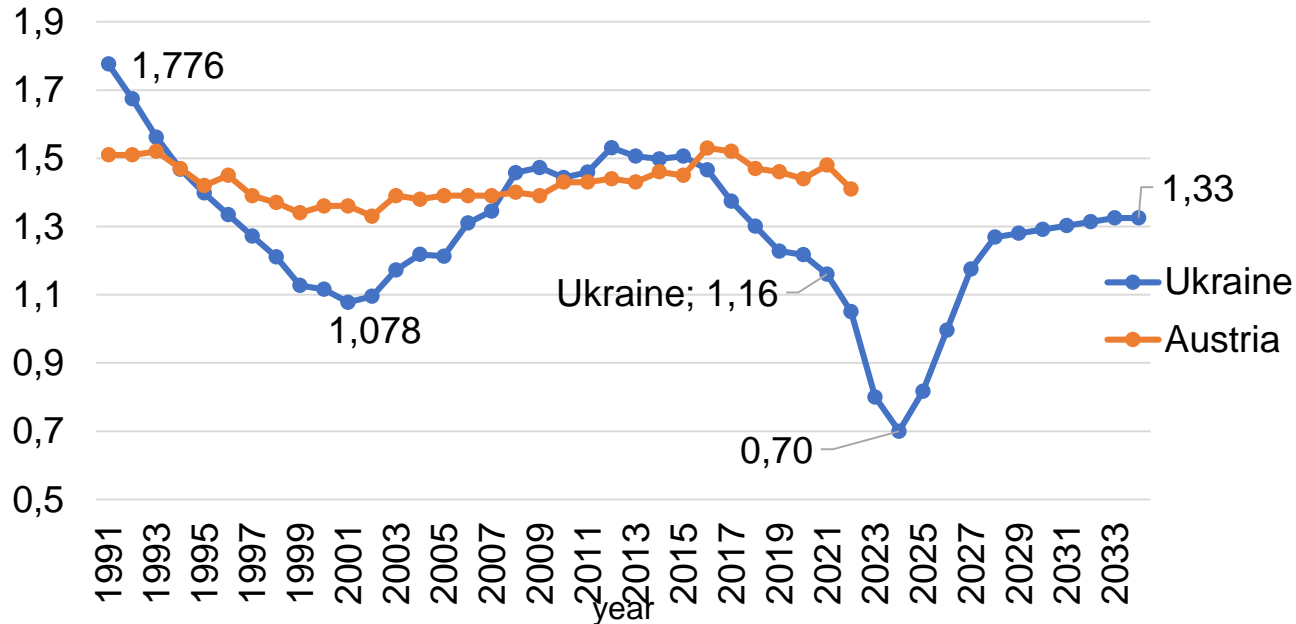
# Problems of demographic accounting

- Long-term absence of a population census (the last one was in 2001)
- Unavailability of accounting in temporarily occupied territories.
- No data on labor migrants abroad until 2022.
- Registration of births and deaths abroad
- Secrecy of data on dead soldiers

*Alternatives: use of population registers (tax, bank, medical, postal and other) + mobile operator data*

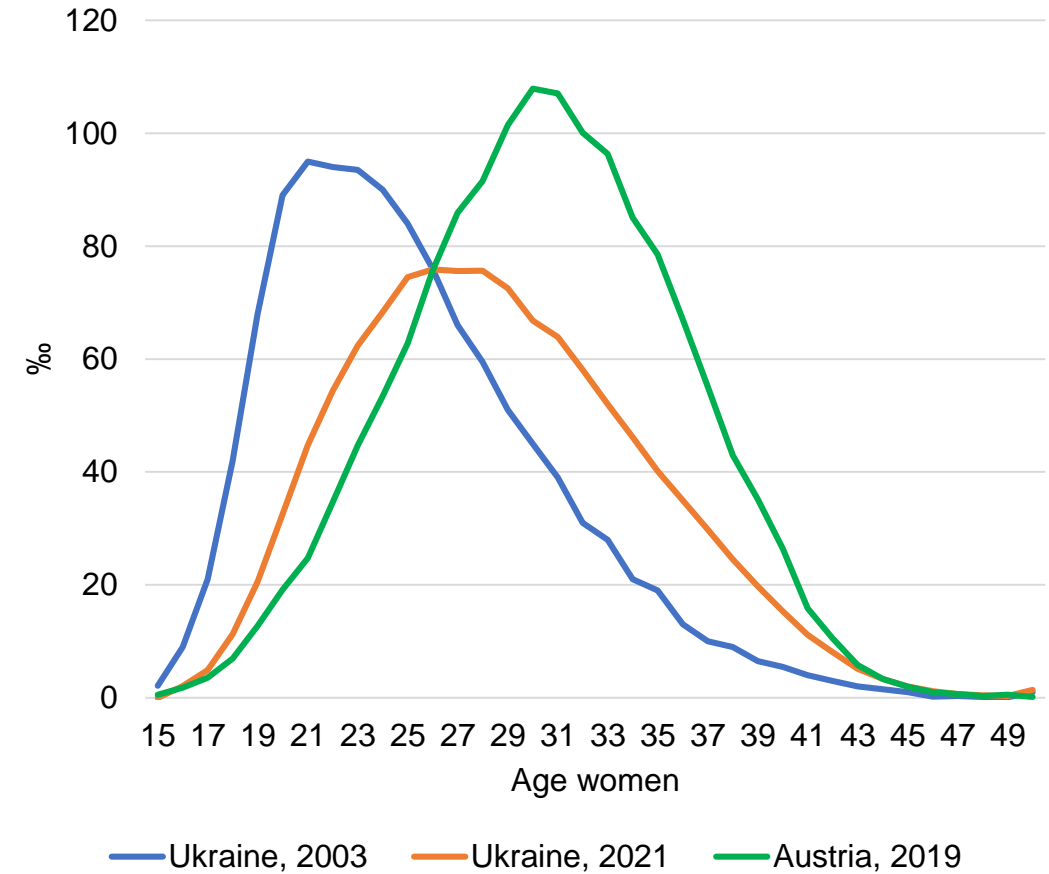
# TFR

(number of children born per woman of childbearing age)



- 1) For 1991-2021 - Data of the State Statistics Service of Ukraine (for 2015-2021 - excluding the temporarily occupied territory of the Autonomous Republic of Crimea and the city of Sevastopol)
- 2) For 2022-2035 – expert assessments of specialists of the Institute of Demography and Social Research named after MV . Birds of the National Academy of Sciences of Ukraine
- 3) Data on Austria - Eurostat

## Age-specific fertility rates in Ukraine, 2003 and 2021, and in Austria, 2019, per 1000 women of corresponding age



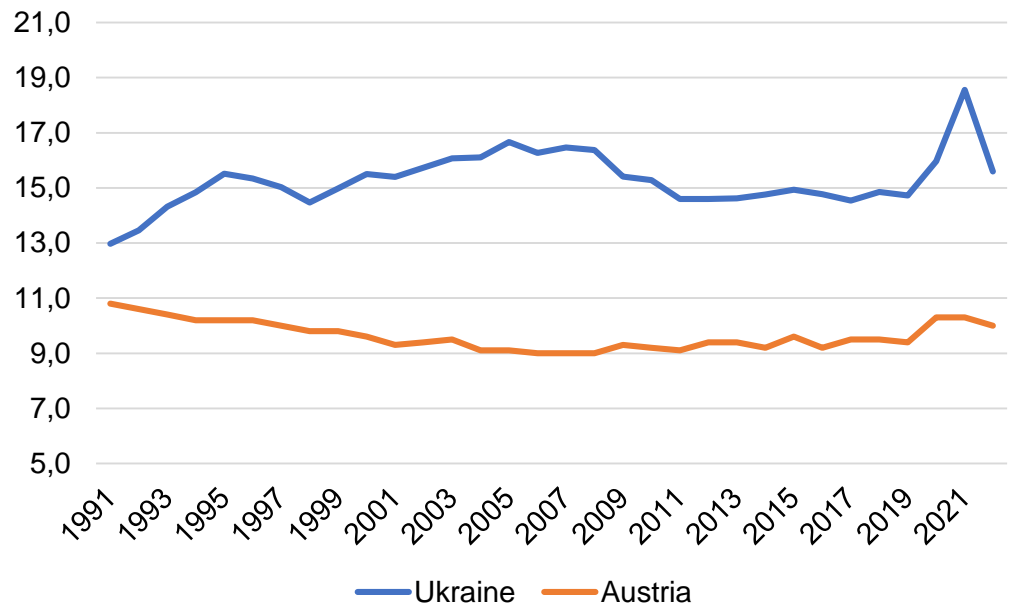
# Consequences of declining birth rates

Consequences for society:

- *Aging population.*
- *Economic impact.* Declining birth rates can have long-term economic consequences.
- *Increase in the dependency ratio.* A decrease in the birth rate leads to an increase in the dependency ratio, which is the ratio of non-working persons (children and the elderly) to the working-age population.
- *Load on social security systems.*
- *Cultural and social changes.* A reassessment of traditional family values and roles, as well as a change in attitudes toward raising children, marriage, and choosing a profession.

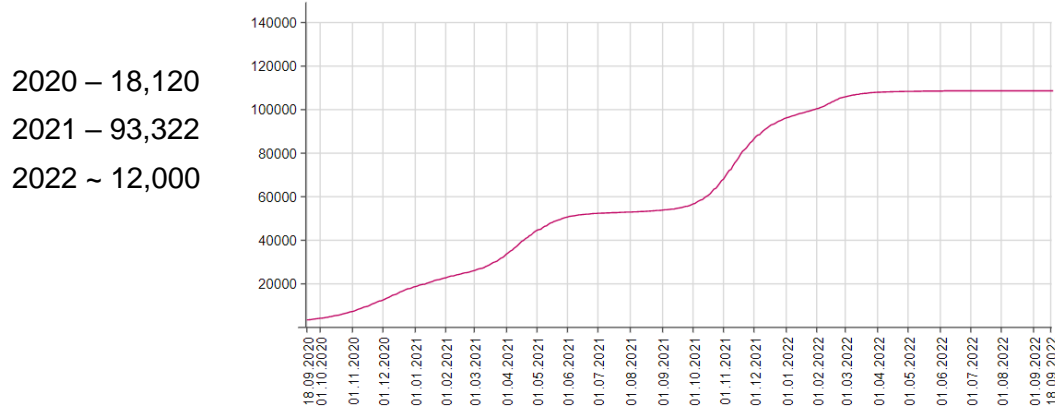


# Crude death rate per 1000 population

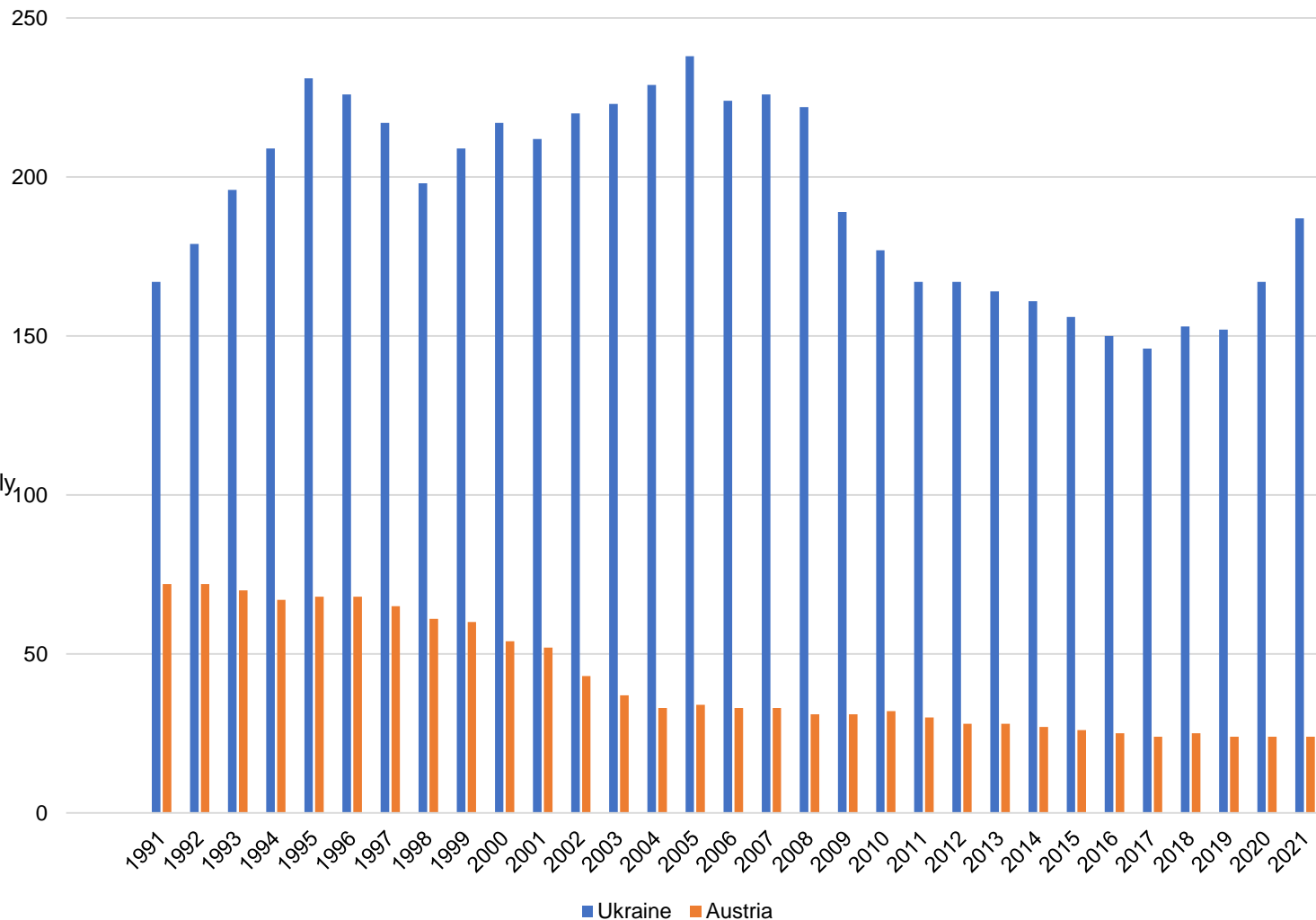


Data of the State Statistics Service of Ukraine (for 2015-2021 - excluding the temporarily occupied territory of the Autonomous Republic of Crimea and the city of Sevastopol)

## Dynamics of the number of deaths from COVID-19 in Ukraine, persons



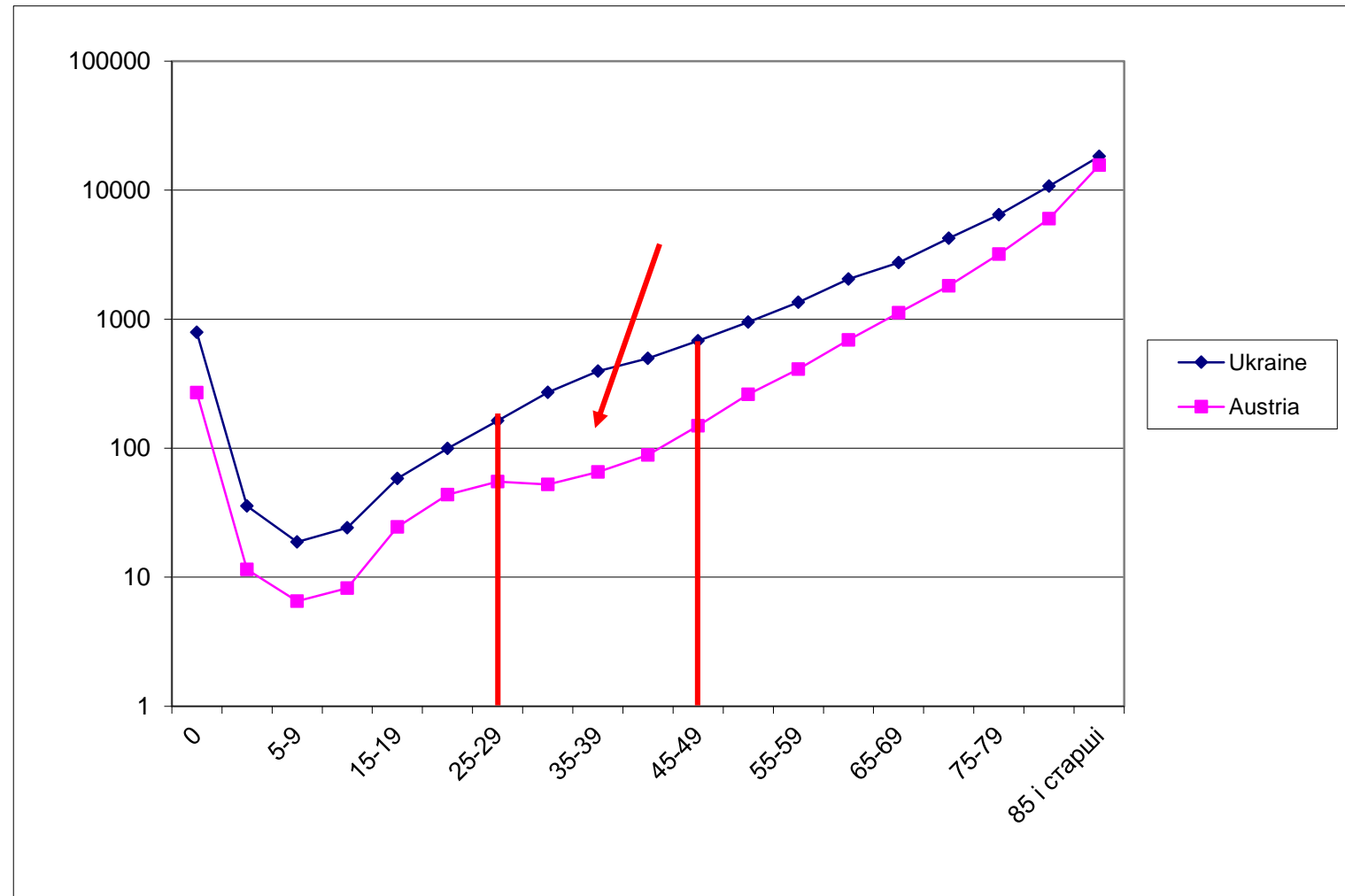
# SDR, all causes, 0–64, per 100,000



European Health for All database (HFA-DB)



# Age-specific mortality rates of Ukraine and Austria in 2019.



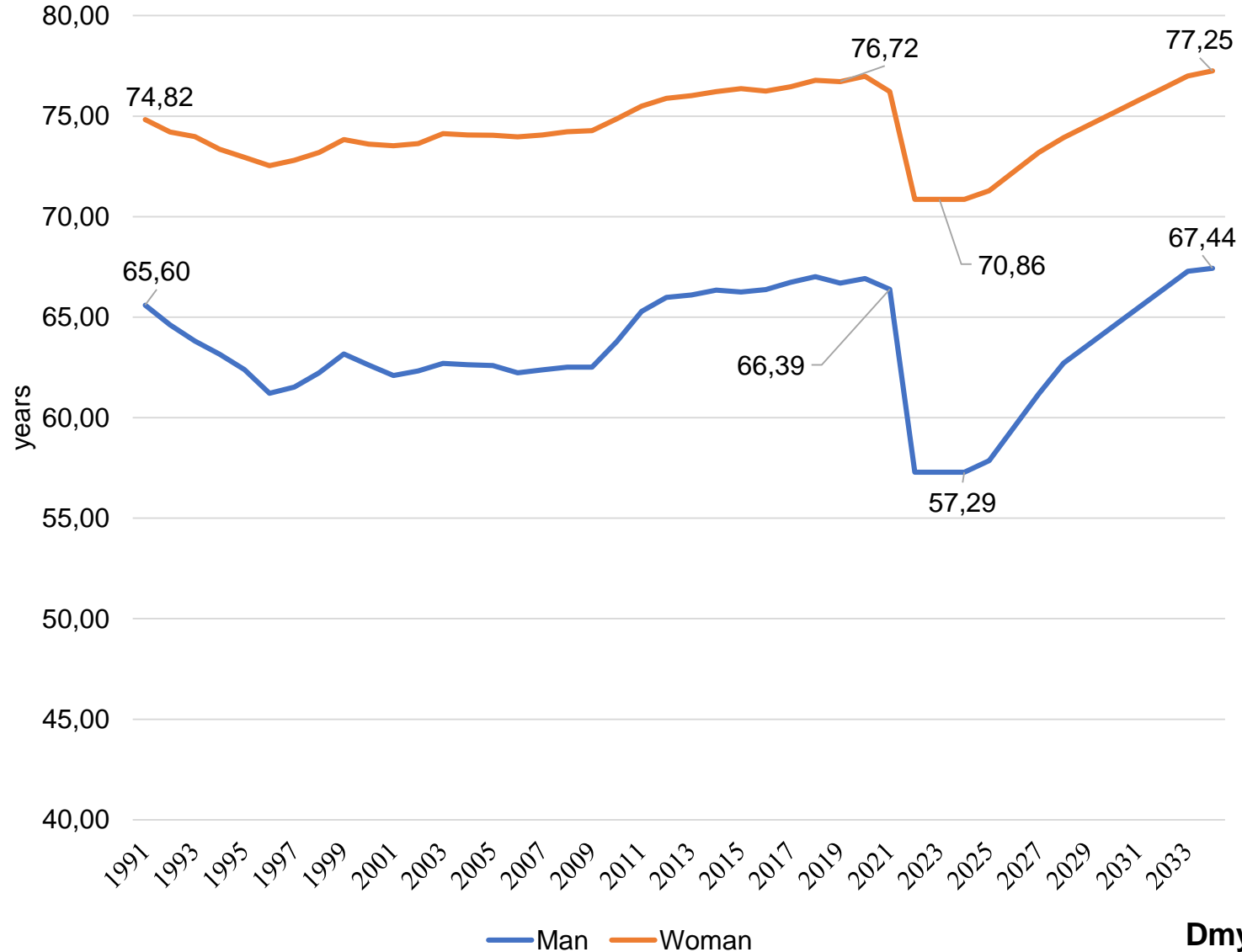
Dmytro Shushpanov



# Mortality of the population of Ukraine

- Mortality of the population during the war:
  - direct (murder, death due to bombing, unexploded ordnance, etc.);
  - indirect (due to lack of timely medical care or lack of medication);
  - causal (exacerbation of chronic diseases due to stress).

# life expectancy



1) For 1991-2021 - Data of the State Statistics Service of Ukraine (for 2015-2021 - excluding the temporarily occupied territory of the Autonomous Republic of Crimea and the city of Sevastopol)  
2) For 2022-2035 – expert assessments of specialists of the Institute of Demography and Social Research named after MV . Birds of the National Academy of Sciences of Ukraine

Dmytro Shushpanov

# development

The number of dead will depend on :

- from the scale of the war, i.e. from whether the conflict involves mainly the armed forces or the wider civilian population as well;
- duration of the war.

Some population groups are more vulnerable to the effects of war than others (higher morbidity and mortality rates):

- men aged 20-50, who make up the majority of the military;
- elderly people, pensioners;
- persons with disabilities;
- persons with chronic diseases (cardiovascular diseases, diabetes, etc.).

**The shock of war leads to both short-term and long-term effects on mental and physical health**

# Migration

- *Abroad*

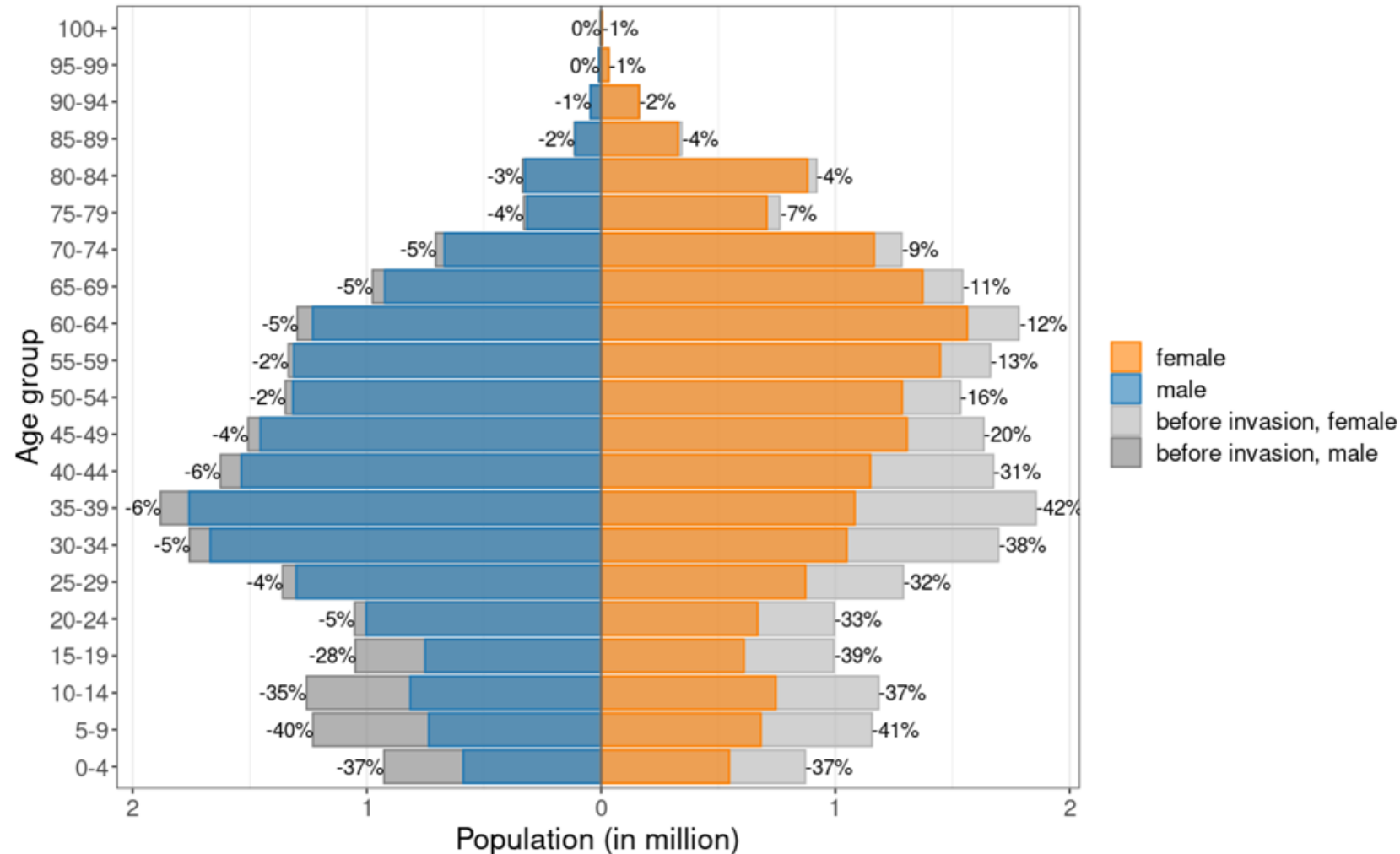
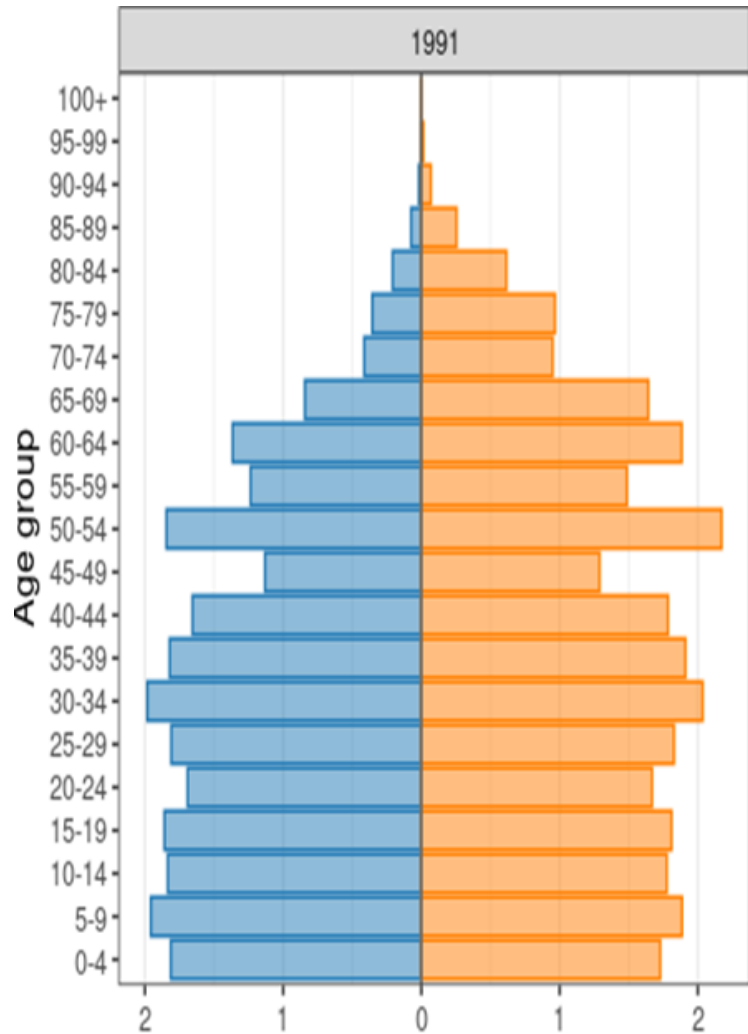
*According to UN data: 6479 thousand (28.02.2024)*

- Internally displaced persons:

More than 5 million people (January 2024 - Ministry of Social Policy of Ukraine)



# Impact of the war on Ukraine's population structure (grey shading shows losses of population by emigration, with percentages of losses)



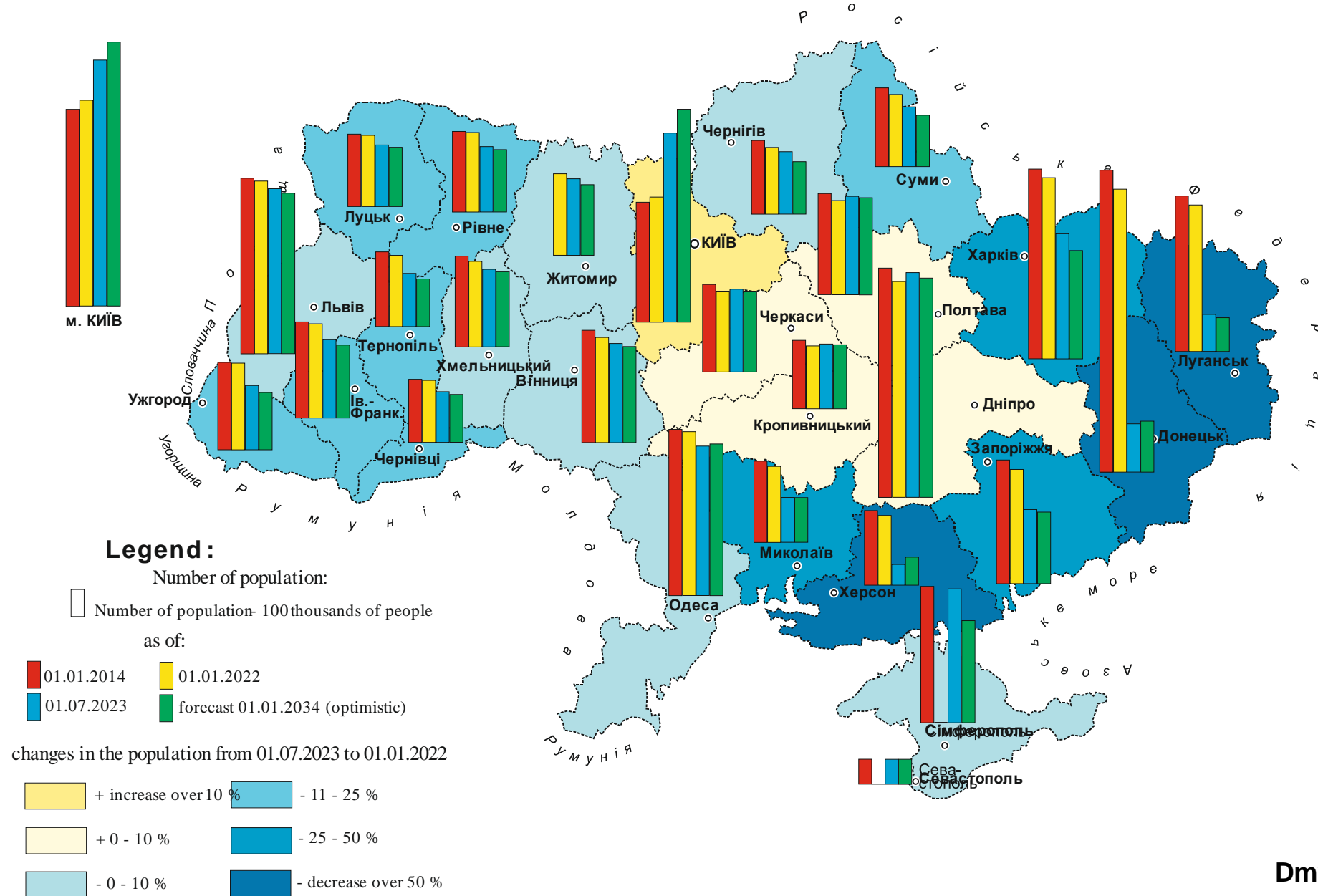
Ueffing P., Adhikari S., Goujon A., KC S., Poznyak O. and Natale F. (2023) *Ukraine's population future after the Russian Invasion*

**Dmytro Shushpanov**



# Regional demographic changes

# Changes in population size

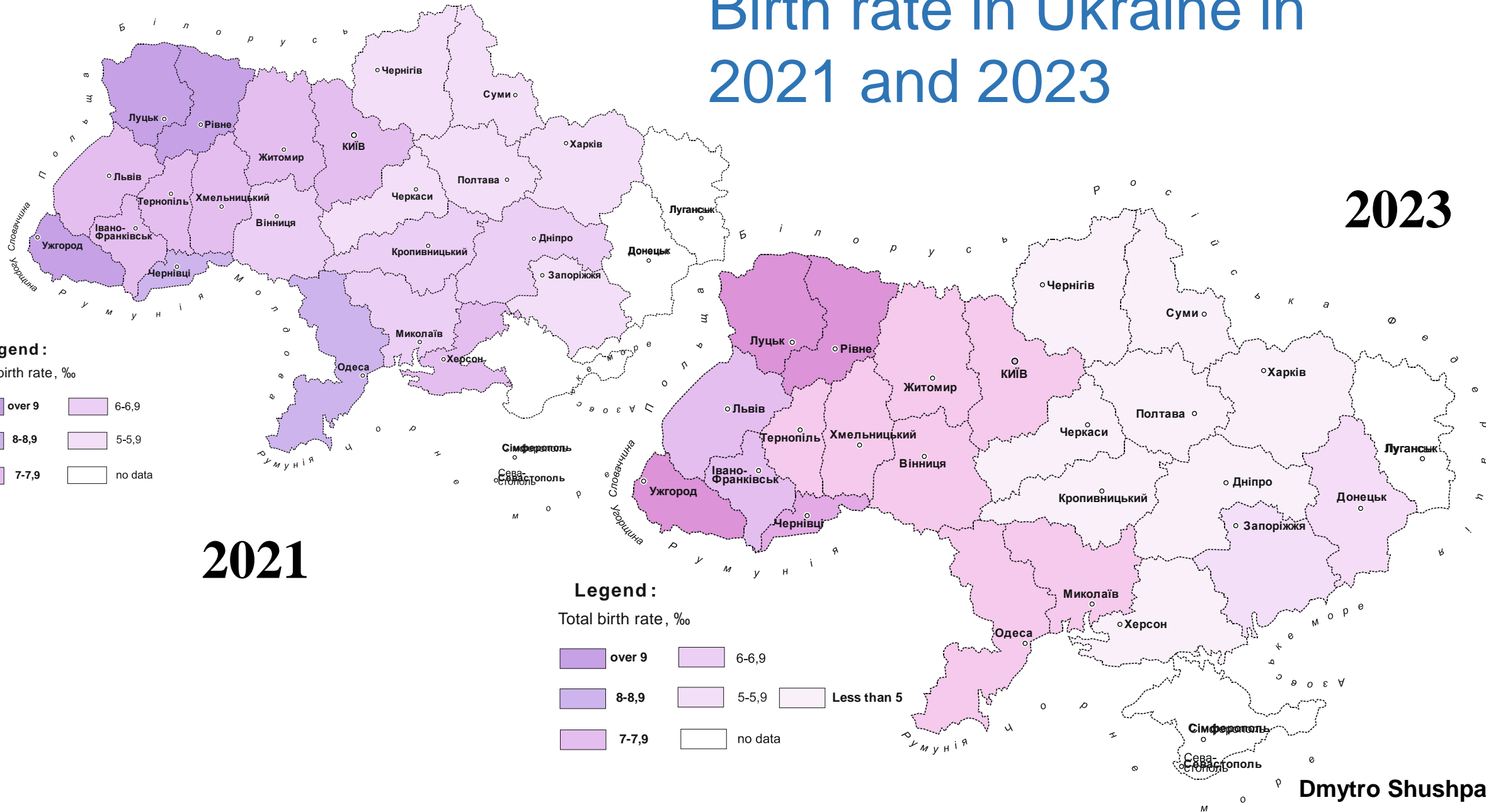
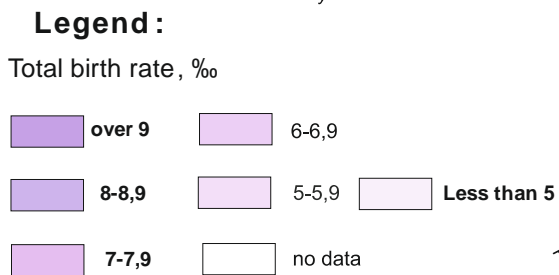
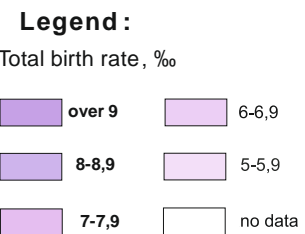




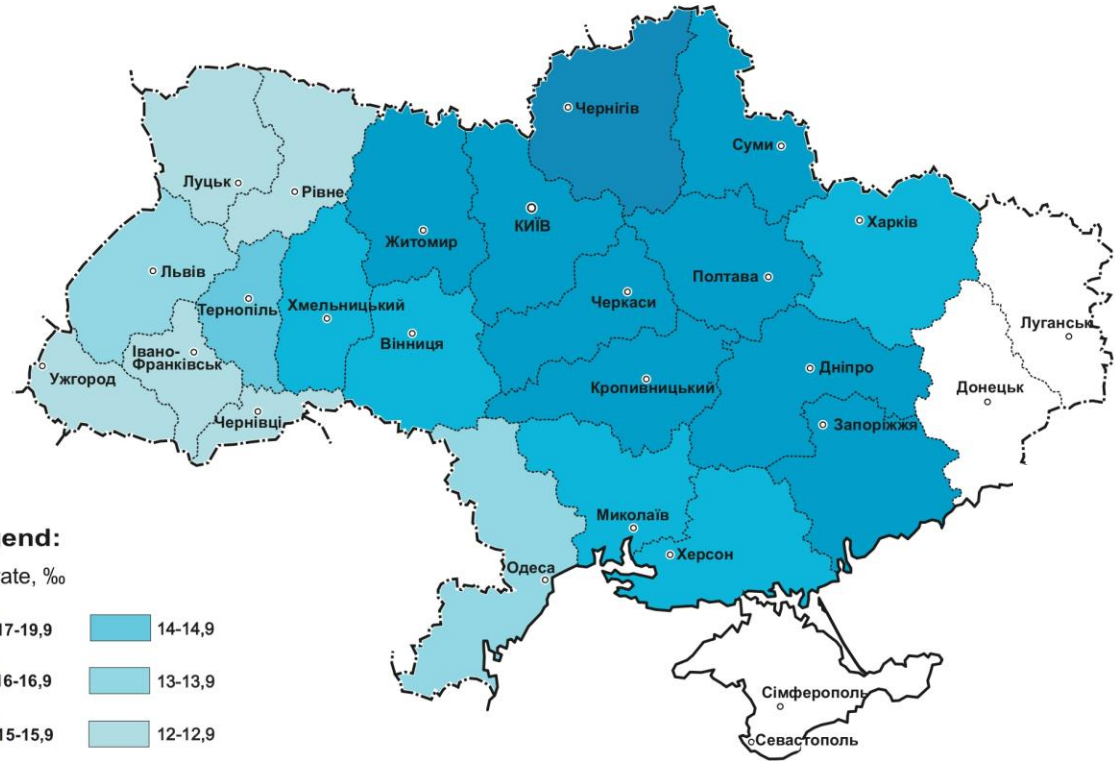
# Birth rate in Ukraine in 2021 and 2023

## 2023

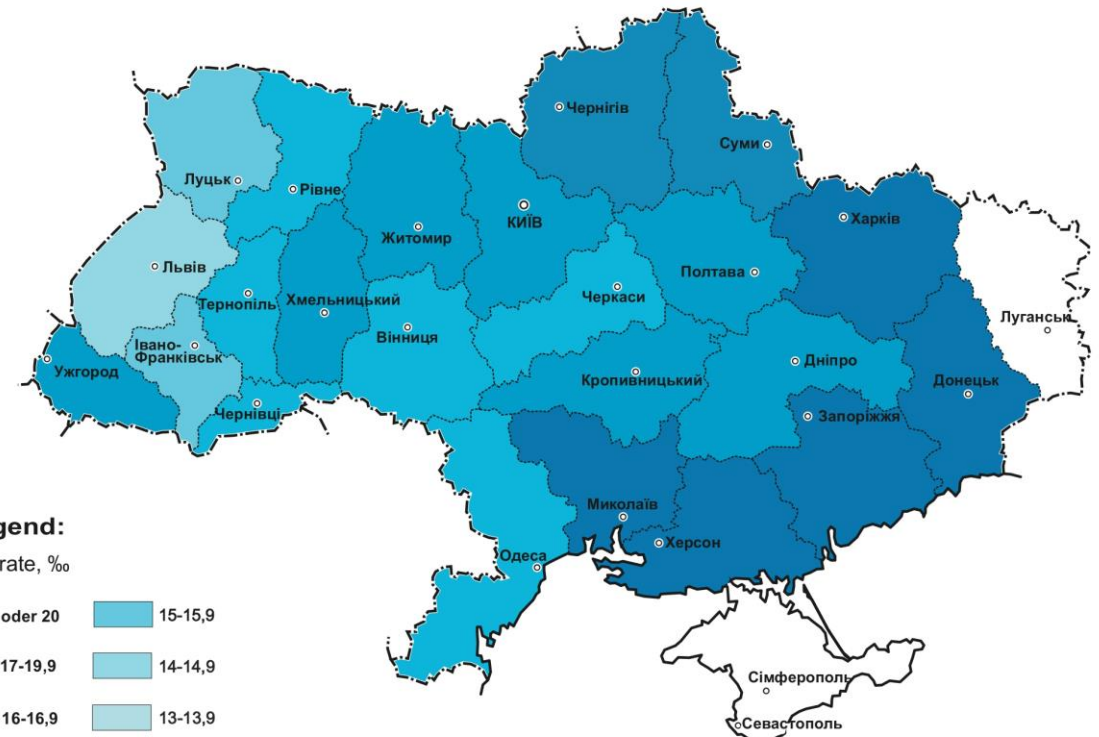
## 2021



# Mortality in Ukraine in 2020 and 2023



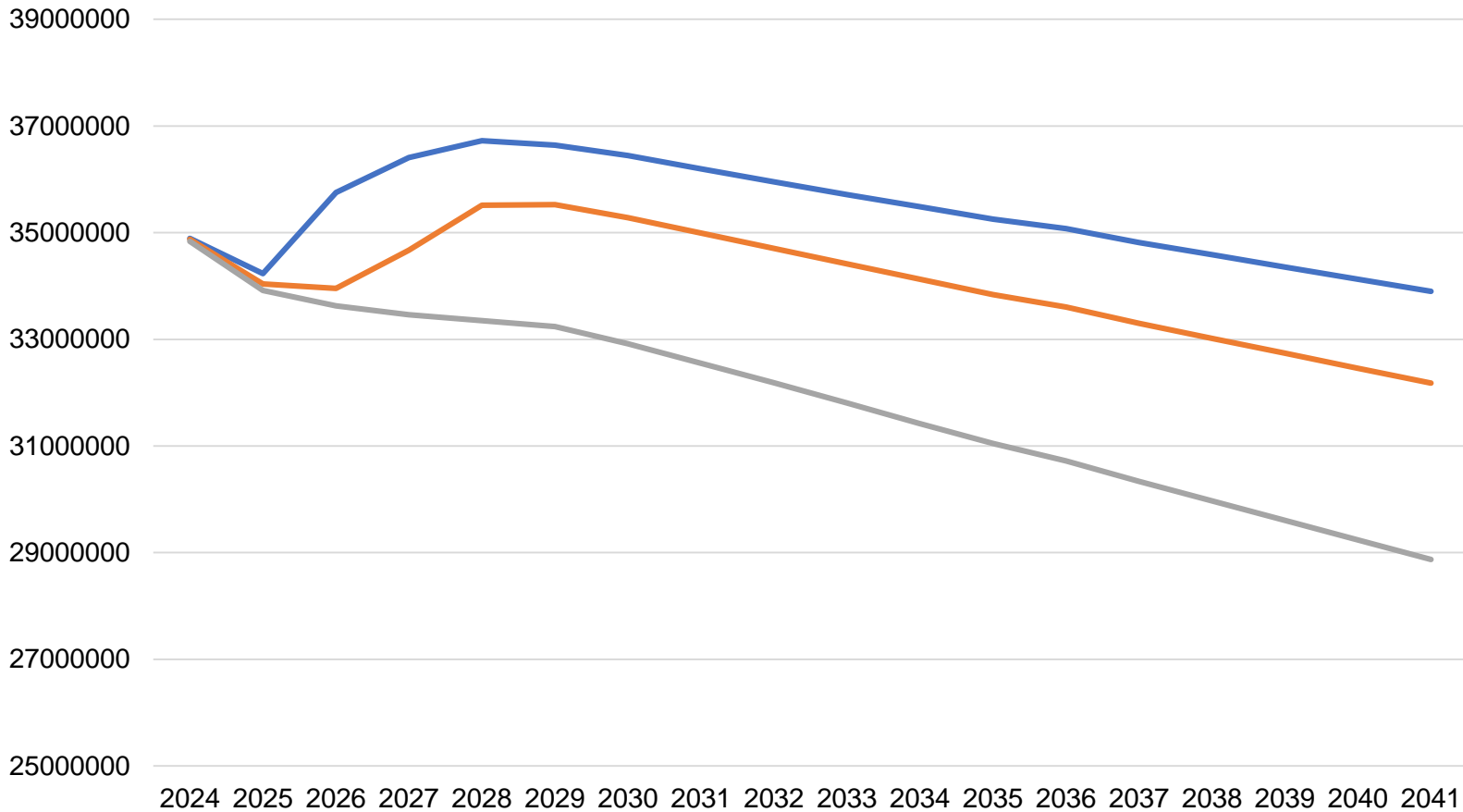
2020



2023

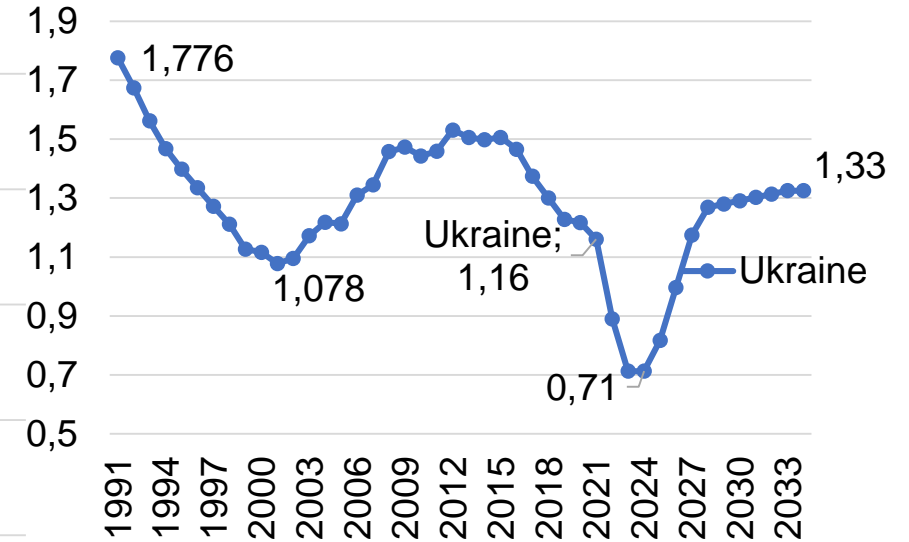
# Forecast

# Population forecast (in borders until 2014)

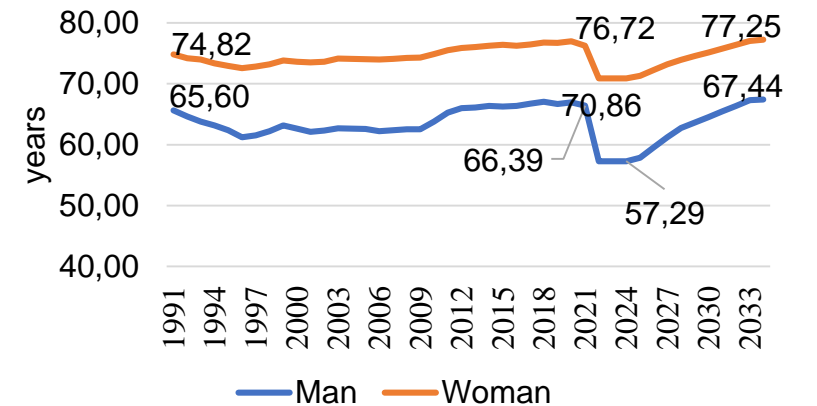


- Optimistic (end of war by the end of 2024)
- Medium (end of war by mid-2025)
- Pessimistic (the war will continue for another three years)

## TFR

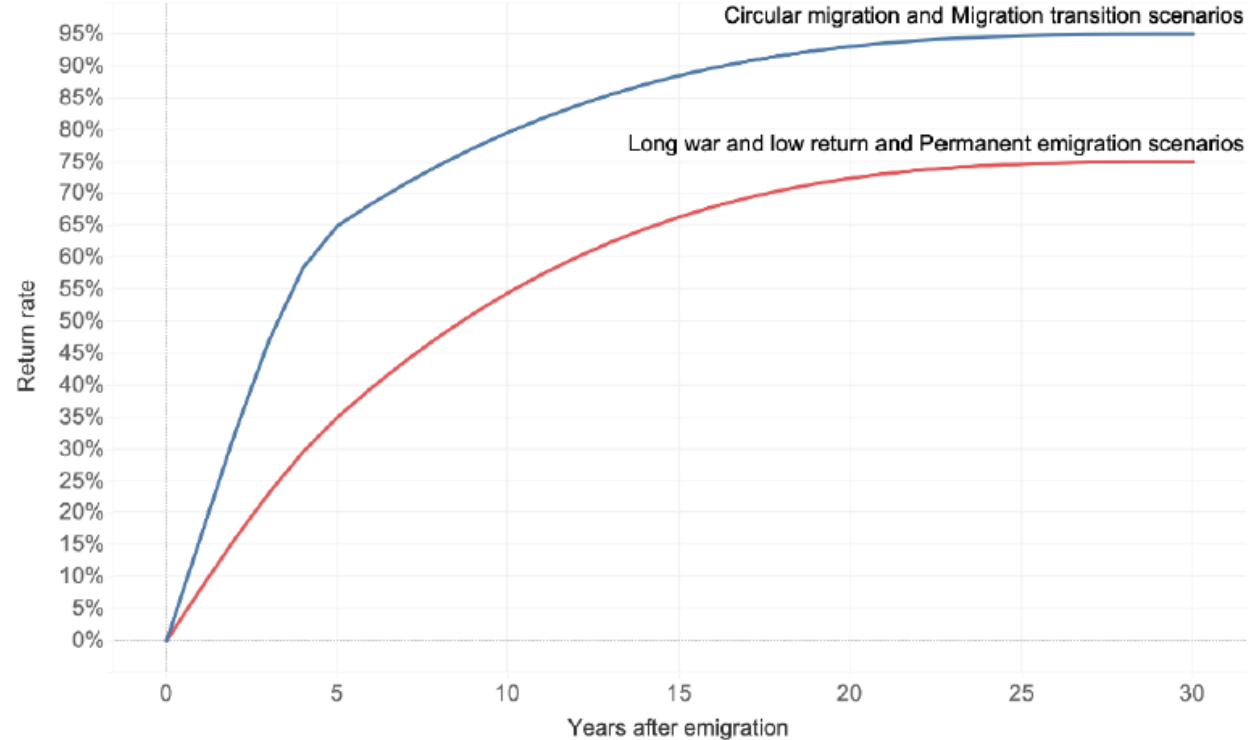


## life expectancy

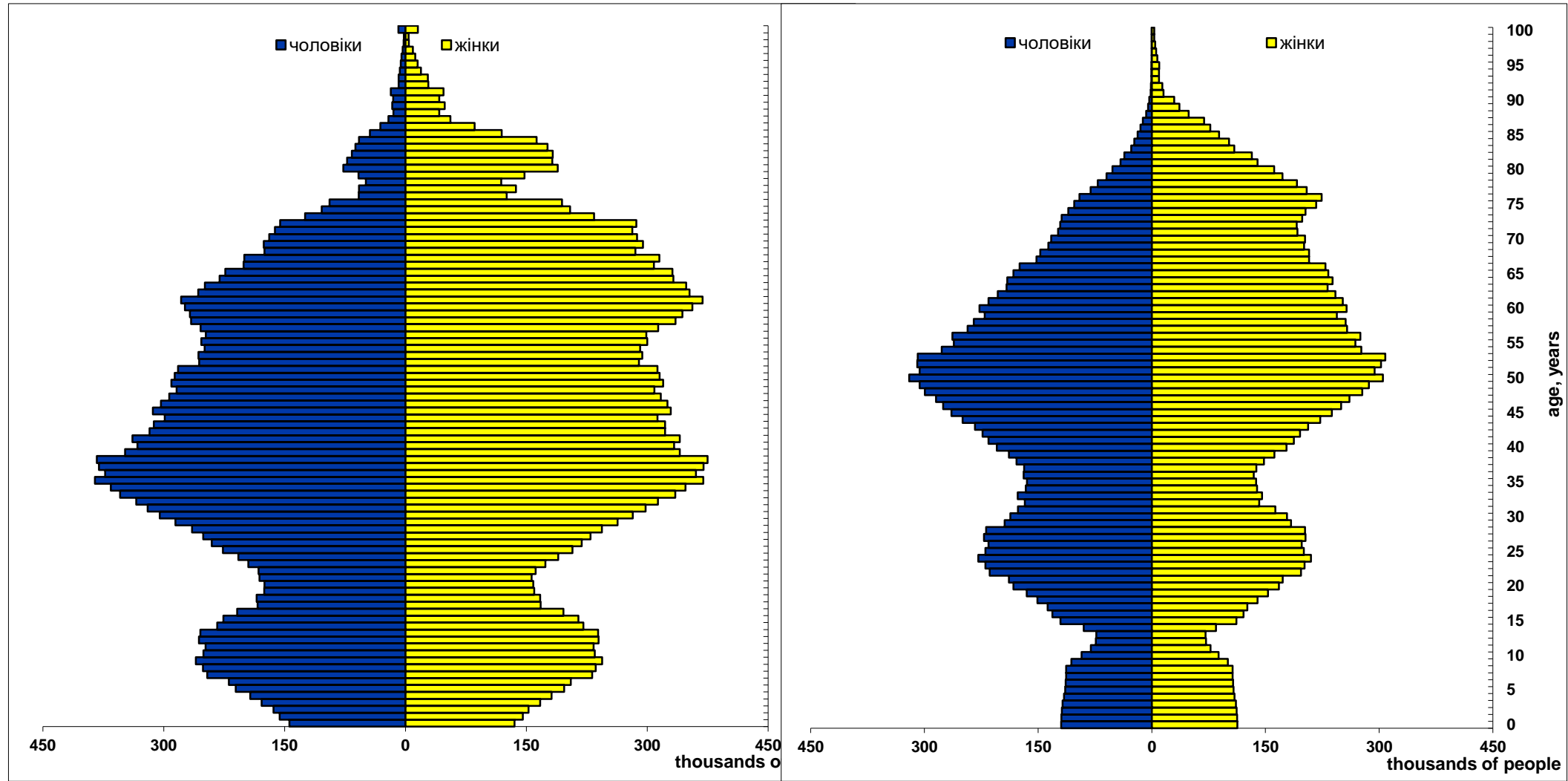


# Migration

- The return of migrants depends on the duration of the war.
- Analysis of opinion polls indicates that each month of war reduces the likelihood of migrants returning by 2%.
- There will be a risk of men leaving for their families when such an opportunity arises. For the return of migrants, basic needs must be ensured: safety, housing, and employment.



# Gender-age structure of the population ( forecast)



2022 - 42.0 million people

2037 - 30.5 million people



# Hypotheses regarding achieving demographic resilience

## Option 1. "30 million until 2055" <sup>1</sup>

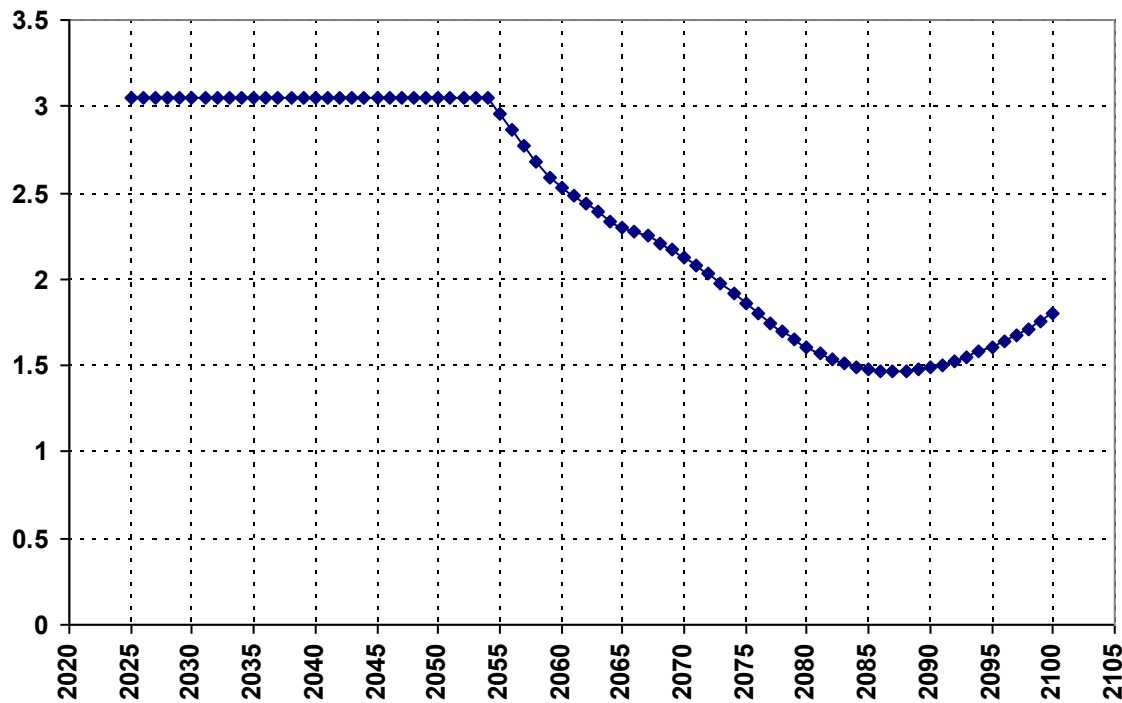
Main hypotheses:

**Birth rate** - selected constant until 2055. Then - such as to maintain a constant population size of 30 million.

**Mortality** - constant at the level of 2013.

**Migration** - absent.

**Population** - decreases to 30 million in 2055, after which it is maintained at a constant level



**Fig. 1.1** . The total birth rate (children per woman) necessary to achieve and maintain a population of 30 million.

Pavlo Shevchuk (SDQLP), 2023



**Fig. 1.1** . The total birth rate (children per woman) necessary to achieve and maintain a population of 30 million.

Dmytro Shushpanov



## Option 2. "Constant population size" <sup>1</sup>

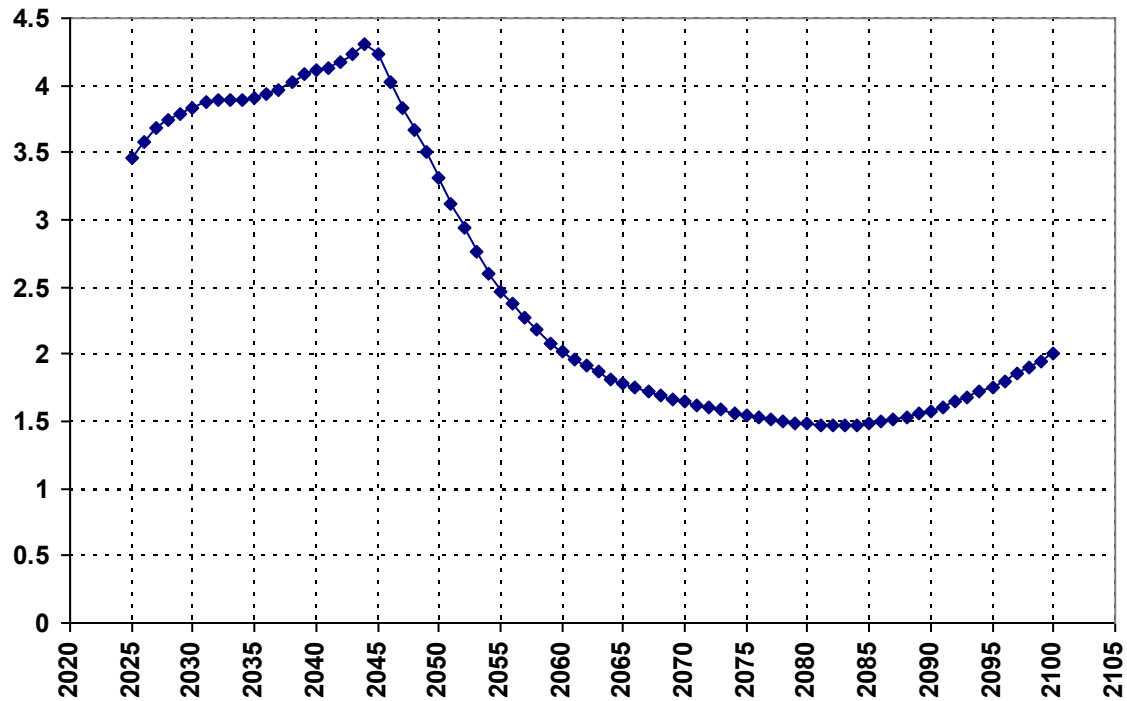
Main hypotheses:

**Birth rate** is such as to maintain a constant population size of 33.6 million.

**Mortality rate** is constant at the level of 2013.

**Migration** is absent.

**The population** is unchanged at 33.6 million.



**Fig. 2.1** . The total birth rate (children per woman) required to maintain a population of 33.6 million.



**Fig. 2.2** . Gender-age structure of the population of Ukraine at the beginning of 2055

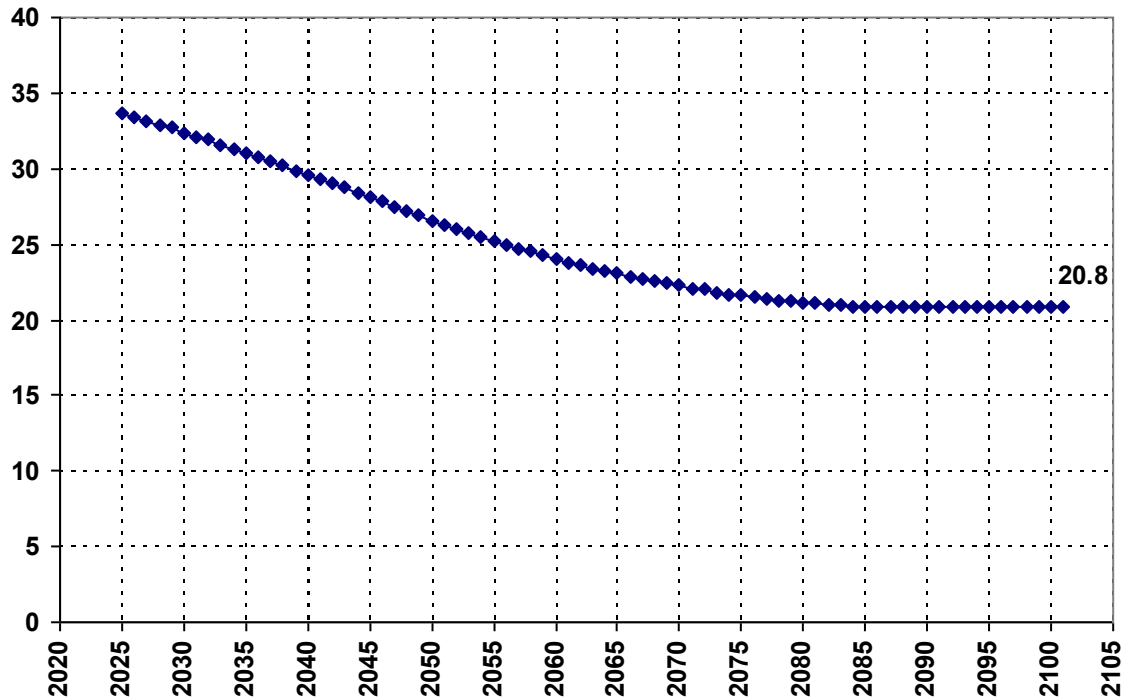
### Option 3. "Simple replacement" <sup>1</sup>

Main hypotheses:

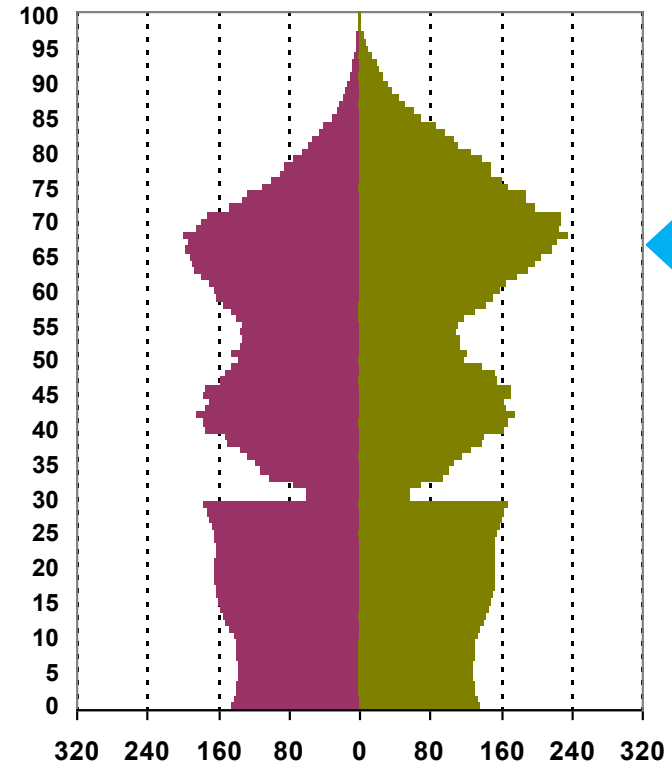
**Fertility** is at the level of simple replacement.

**Mortality** is constant at the level of 2013.

**Migration** is absent.



**Fig. 3.1** . Population size (millions of people) under the condition of immediate achievement and maintenance of the total birth rate of 2.101



**Fig. 3.2** . Gender and age structure of the population of Ukraine at the beginning of 2055.

## Option 4. "Necessary immigration" <sup>1</sup>

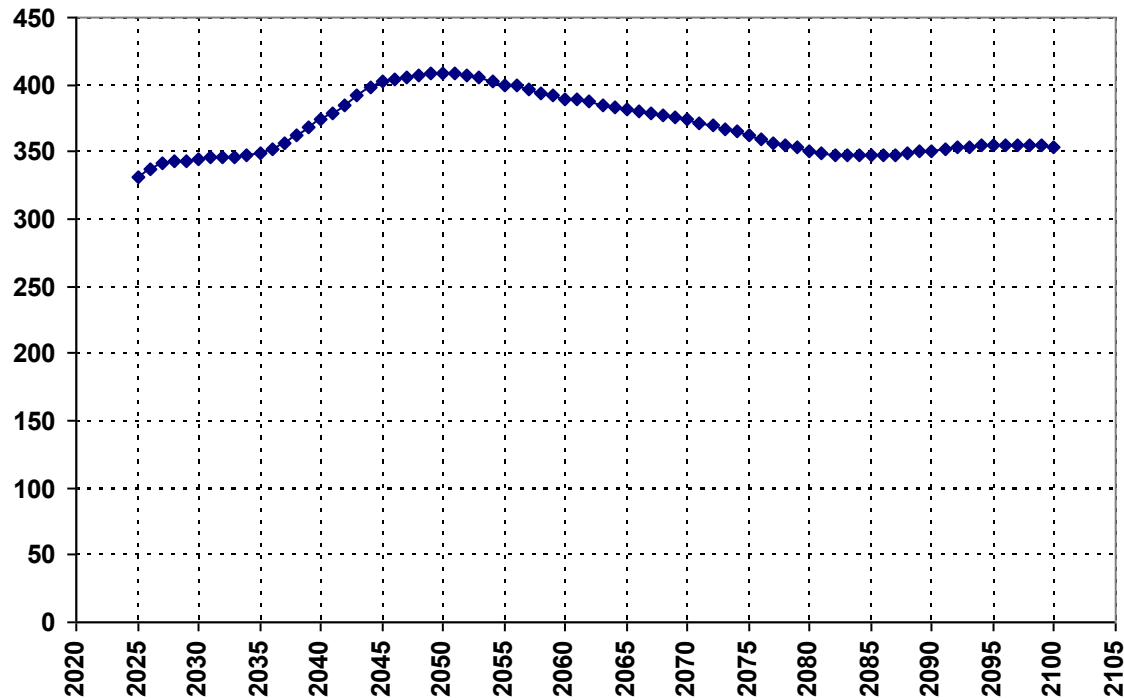
Main hypotheses:

**Birth rate** - constant at the level of 2013.

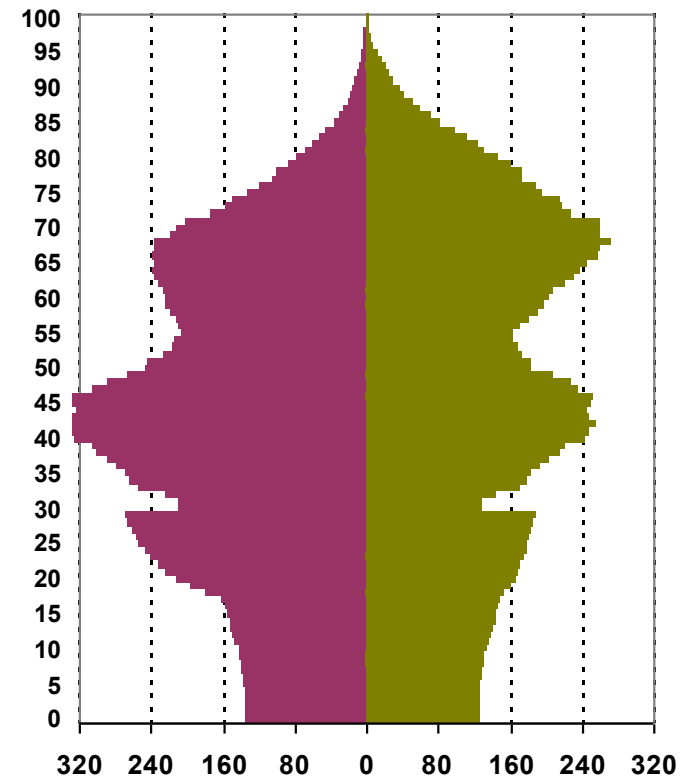
**Mortality** - constant at the level of 2013.

**Migration** - compensates for the natural loss (sex-age structure as for those who arrived in 2013).

**The population** is unchanged at 33.6 million.



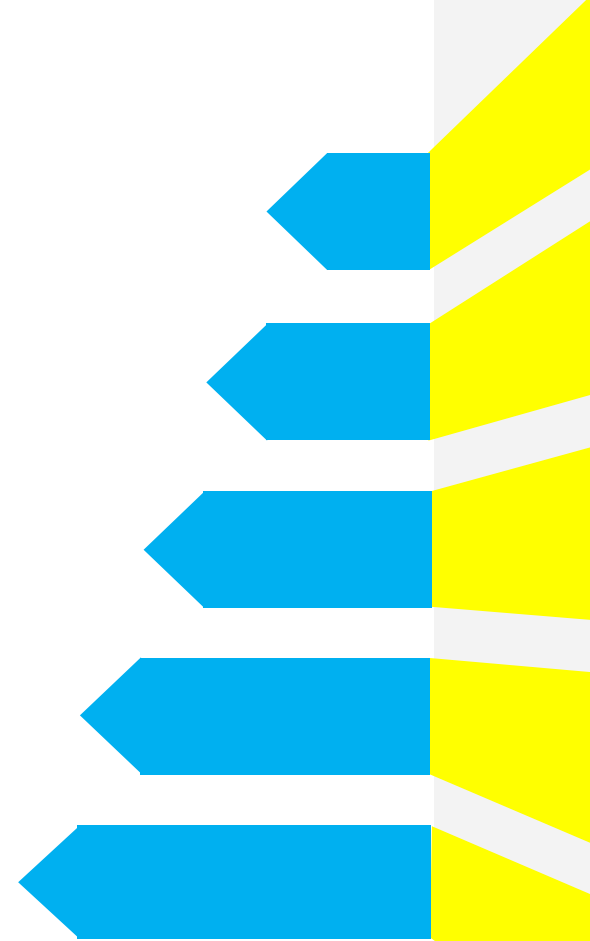
**Fig. 4.1** . Annual balance of migrations is required (thousands of people) to support the population of 33.6 million



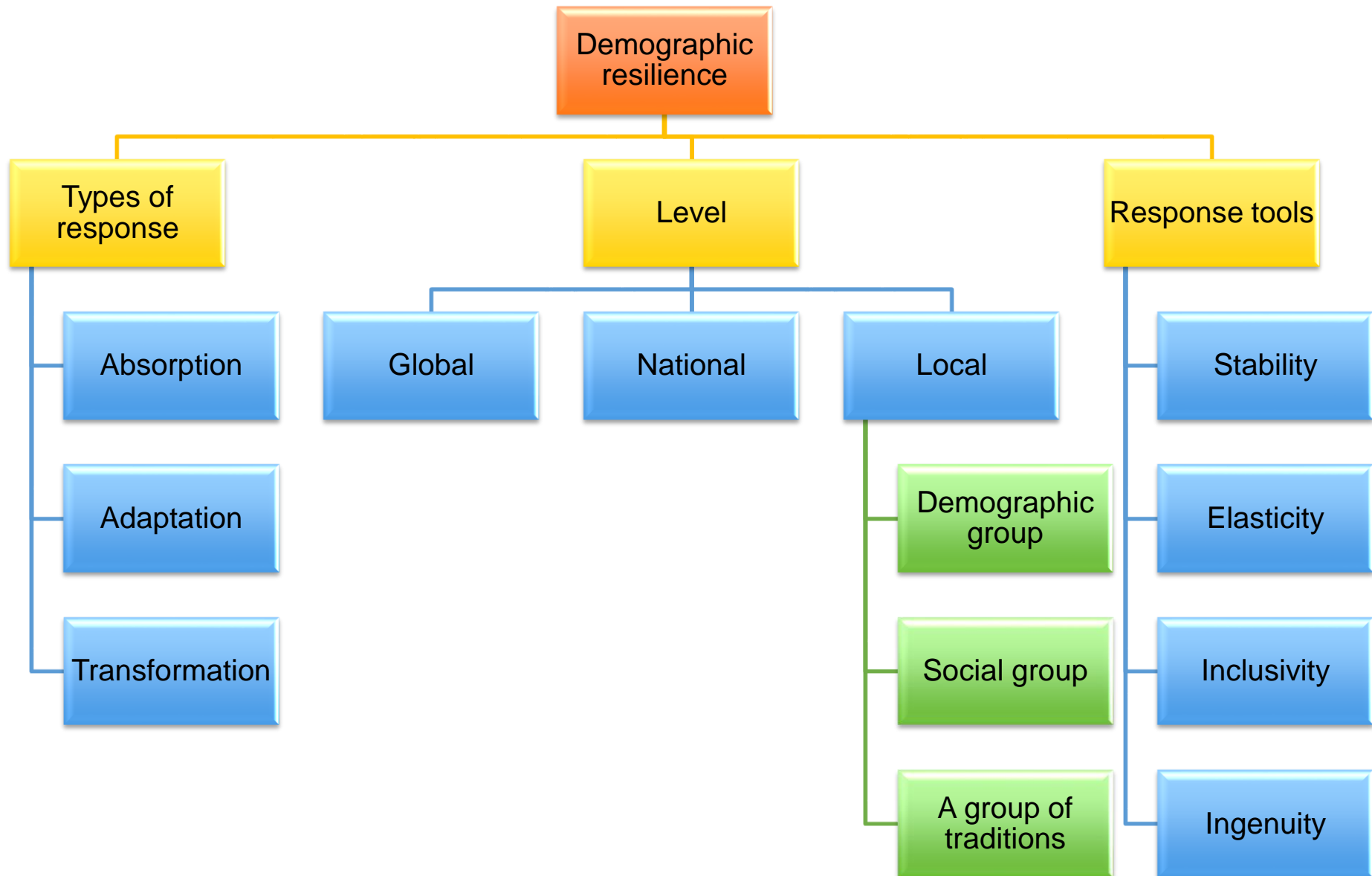
**Fig. 4.2** . Gender and age structure of the population of Ukraine at the beginning of 2055.



# **Directions for achieving demographic resilience in Ukraine**



# Formation of demographic resilience



# Means of achieving demographic resilience in Ukraine

1. THE END OF THE WAR IN THE SHORTEST POSSIBLE TIME

2. Provision of security guarantees

## Foundation Quality of life

(security, housing, labor market, ecology, infrastructure)

Creation of conditions for increasing birth rate, family support

Reduction of premature mortality

Ensuring migratory growth of the population

Ensuring optimal placement of the population in the territory of the country

Adaptation of society to demographic aging and formation of conditions for active longevity



# Institute of Demography and Quality of Life Issues of the National Academy of Sciences of Ukraine ( Kyiv , Ukraine)



[https://idss.org.ua/dir\\_en](https://idss.org.ua/dir_en)



<https://www.facebook.com/profile.php?id=100017165501378>



# Thank you !



[shdg2011@gmail.com](mailto:shdg2011@gmail.com)