



Faculty of Science
CHARLES UNIVERSITY IN PRAGUE

**Czech Statistical
Office**

The impact of population ageing on household structure: evidence from the Czech Republic

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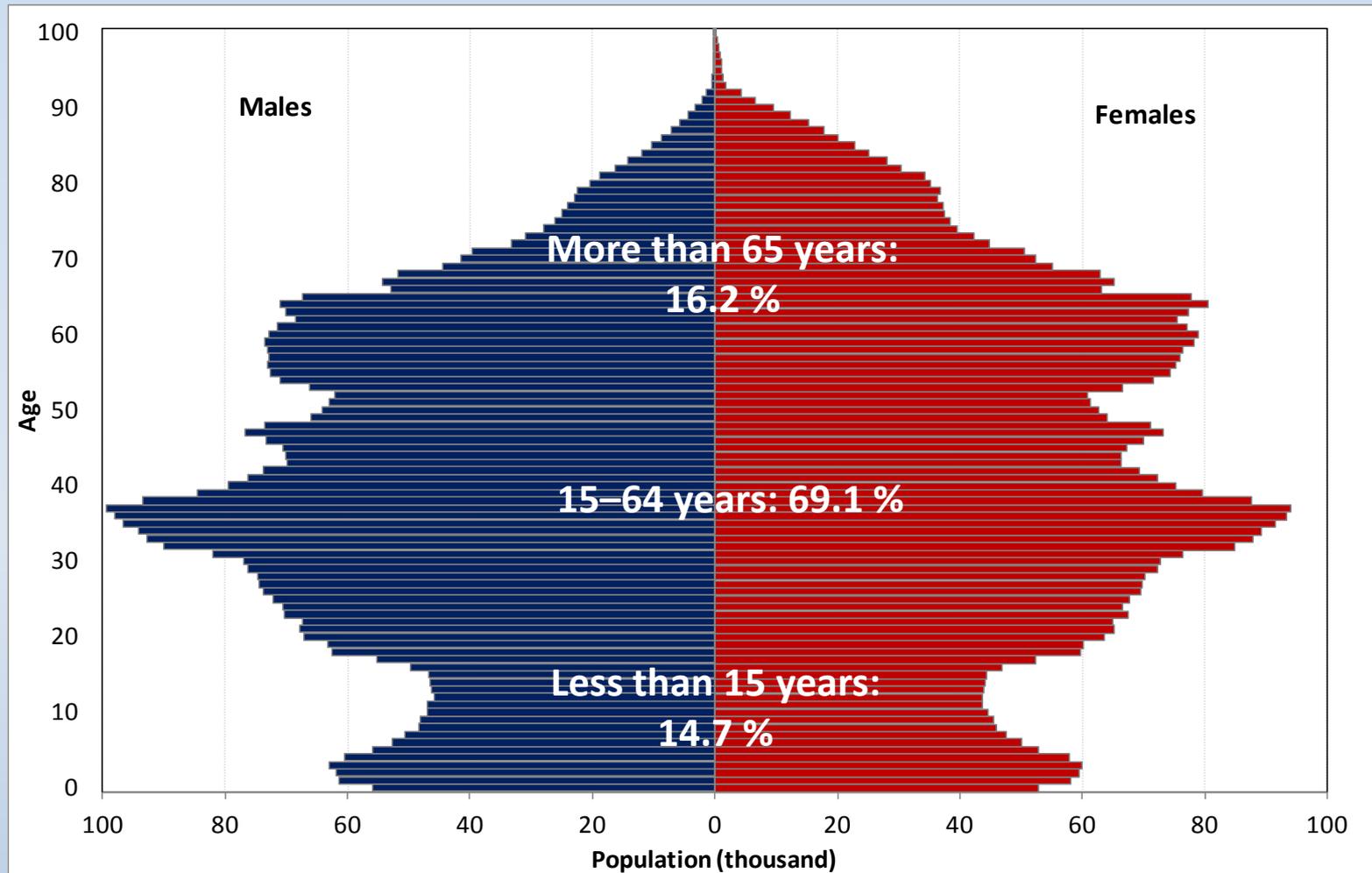
**Applied Demographic Conference, San Antonio,
TX, January 8-10, 2014**

Structure of the presentation

- Demographic ageing in the Czech Republic
- Data from the censuses
- General trends of development of households in the Czech Republic
- Population forecast
- Methodology and results of the forecast of households and their structure

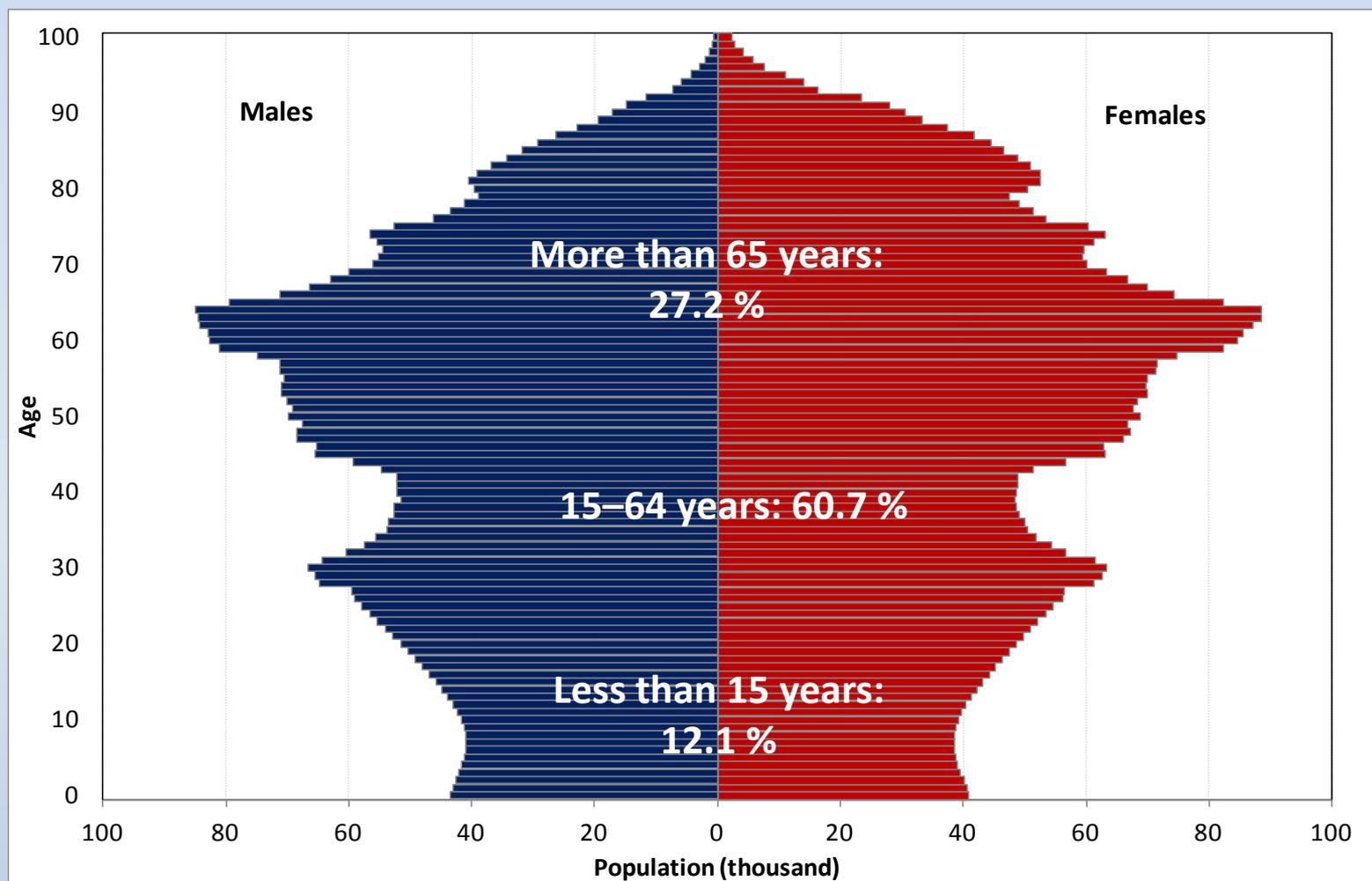
Population ageing

Age-structure of the Czech population 31. 12. 2011



Population ageing

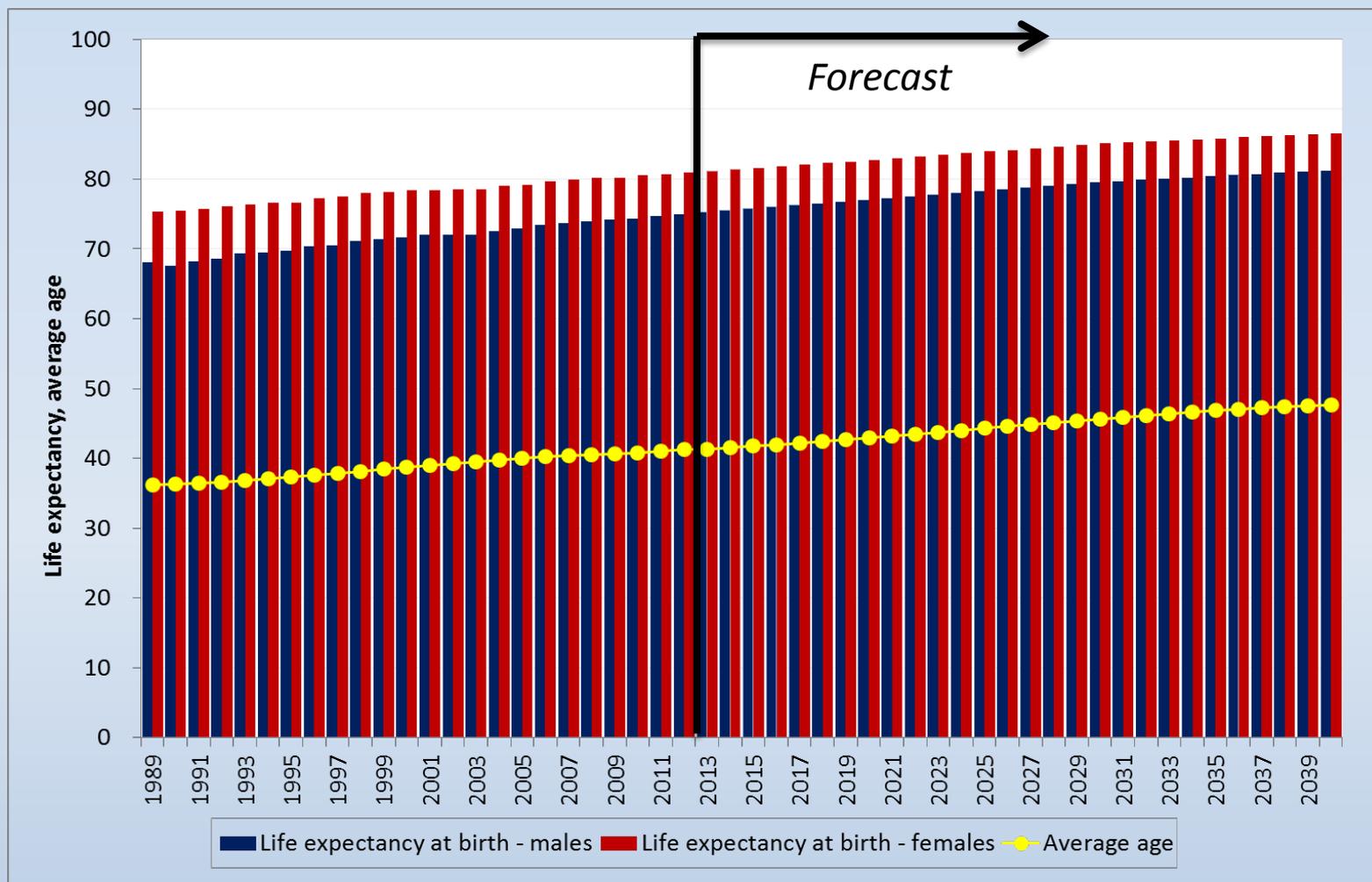
Age-structure of the Czech population 31.12.2040



Source: Czech Statistical Office, 2013c

Population ageing

Life expectancy by sex, Average age, Czech Republic, 1989-2040



Note: to 2012 real data, from 2013 population forecast

Source: Czech Statistical Office, 2013, 2013c



Households in Czech census

- Population census 1961–2001: data according to place of permanent residence
 - Dwelling household
 - Housekeeping household
 - Census household
 - family relationships among household residents
- Population census 2011: data according place of usual residence
 - only dwelling and housekeeping households

Households by 1961–2011 censuses

Census year	Housekeeping households	One-couple families	Lone-parent families	One-person households	One-couple families	Lone-parent families	One-person households
	In thousands			In % of Housekeeping households			
1961	3035	2405	250	515	79.2	8.2	17.0
1970	3365	2488	307	669	73.9	9.1	19.9
1980	3791	2557	325	939	67.5	8.6	24.8
1991	3984	2513	434	1090	63.1	10.9	27.4
2001	4216	2334	576	1276	55.4	13.7	30.3
2011 ^{*)}	4375	2193	612	1422	50.1	14.0	32.5

*) one-couple and lone-parent families without families in households consisting of three or more families

Source: Czech Statistical Office, 2013b



Forecast of selected housekeeping households

- Based on:
 - Population census 2011
 - Population projection till 2100
- Method
 - Headship rate
 - Modification of Ediev (2007)
- Projected housekeeping households by type and size
 - One-couple families, lone-parent families, one-person household

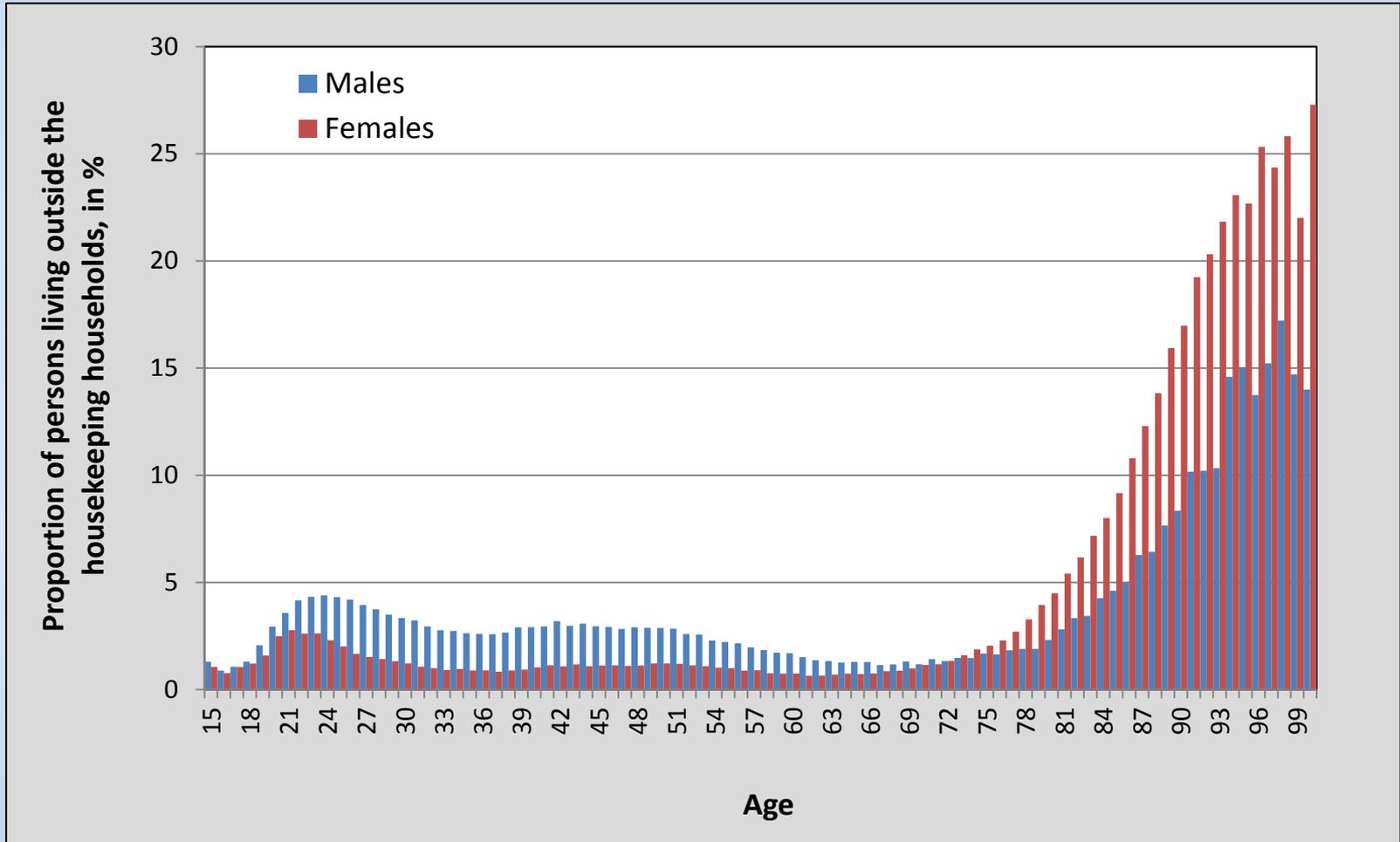
Forecast assumptions

- Population projection – assumptions

Year	Total fertility rate			Life expectancy at birth (males/females)			Migration balance		
	Low	Medium	High	Low	Medium	High	Low	Medium	High
2012*	1.45	1.45	1.45	75.0 / 80.9	75.0 / 80.9	75.0 / 80.9	10293	10293	10293
2015	1.45	1.45	1.45	75.6 / 81.4	75.8 / 81.6	75.9 / 81.8	-996	8934	18864
2030	1.45	1.50	1.52	78.2 / 83.8	79.5 / 85.1	80.6 / 86.1	2226	11659	21110
2050	1.45	1.56	1.61	81.1 / 86.2	83.0 / 88.0	84.6 / 89.3	5571	14384	23291
2100	1.45	1.56	1.61	84.2 / 88.8	86.6 / 91.1	84.4 / 92.9	10350	17671	25400

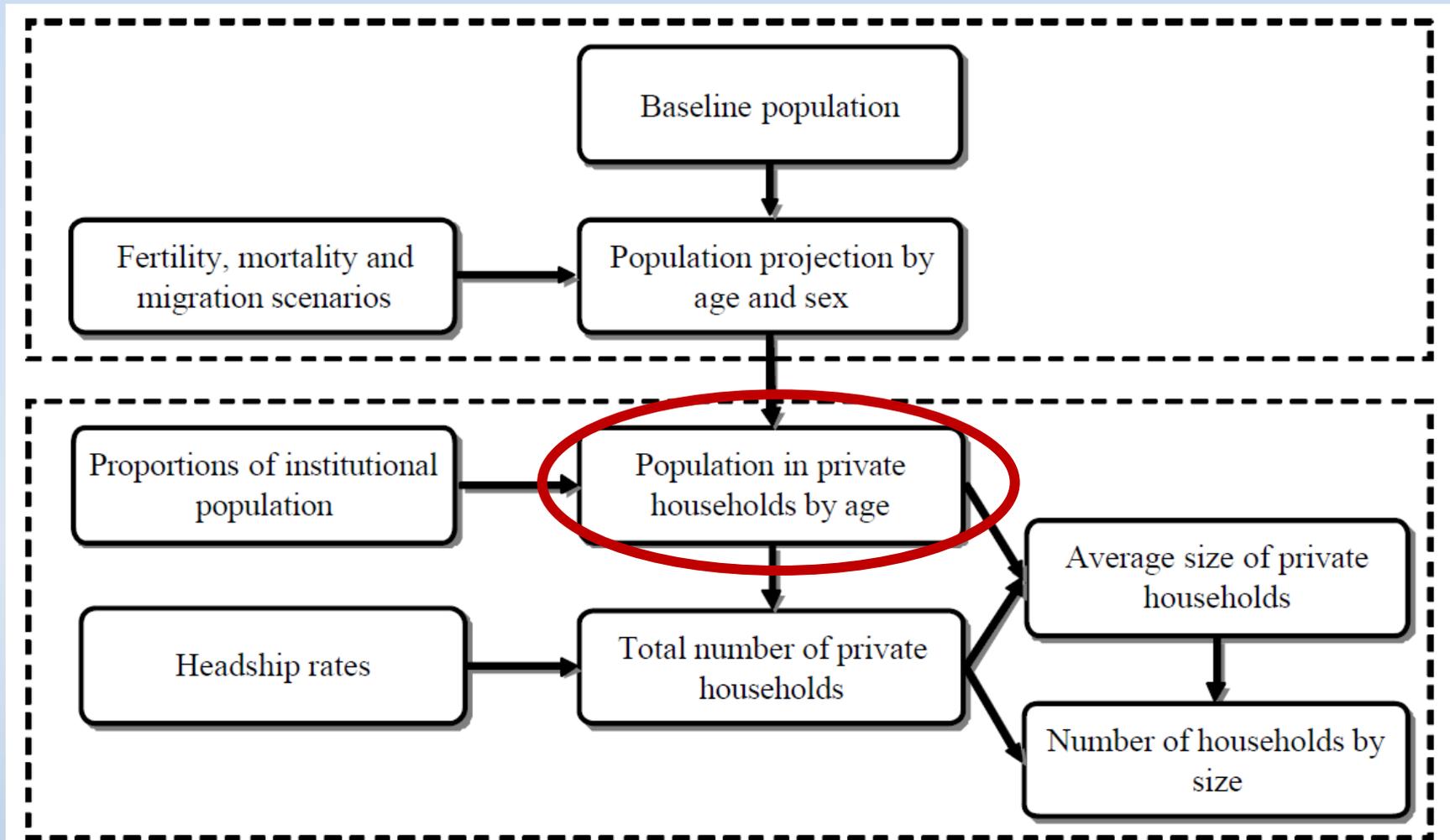
Source: Czech Statistical Office, 2013c

Population outside housekeeping households by sex and age, Population census 2011, the Czech Republic



Source: Czech Statistical Office, 2013a

Projection of the number of household





Projection of the household size by type

1. Household average size by type (n)
2. Conditional average size excess $\eta_k = n_{k+} - k$, where k is a household size

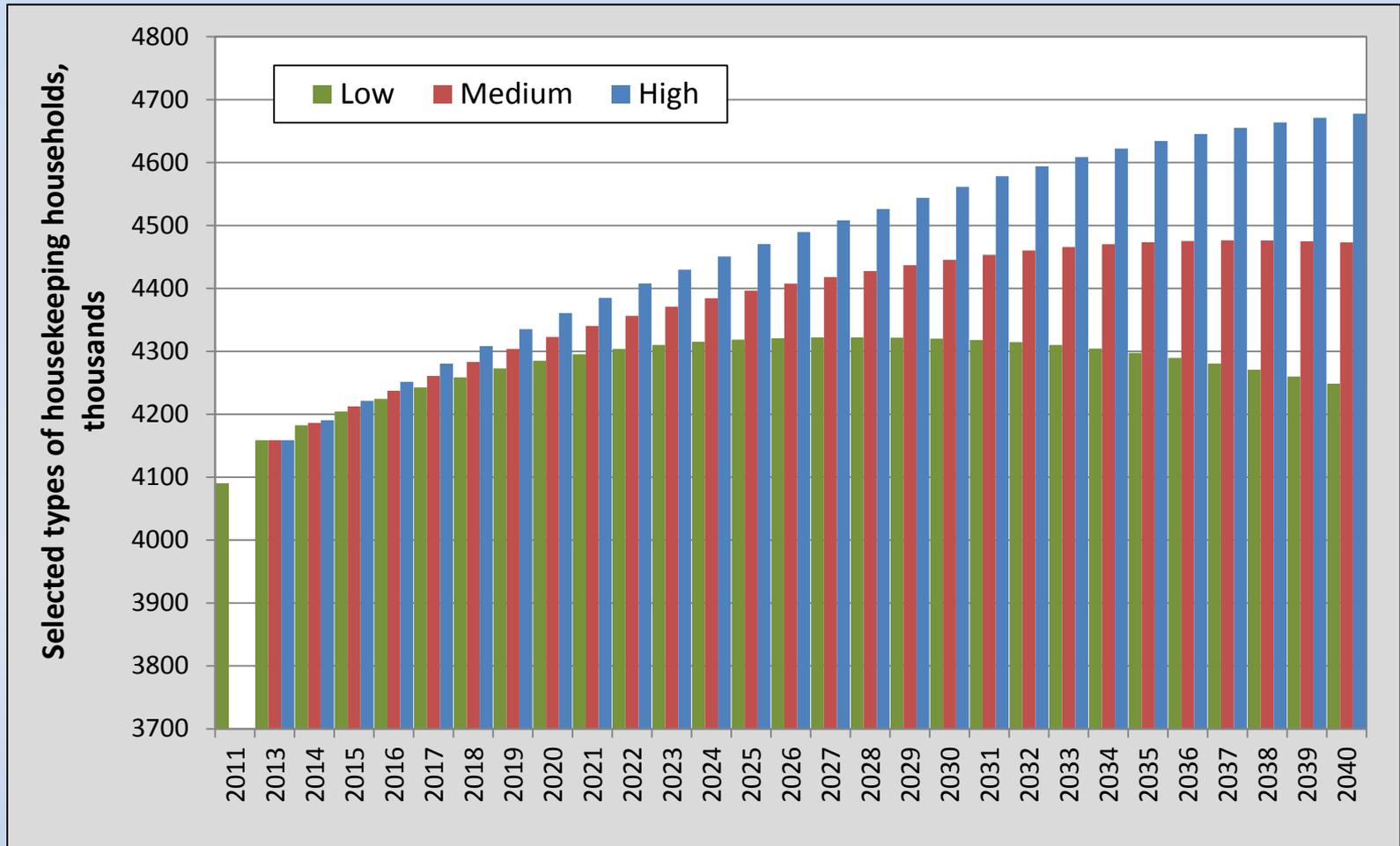
3. α - method

$\alpha_k = -\frac{\ln(\tilde{v}_{k/k+})}{\tilde{\eta}_k}$, where $\tilde{v}_{k/k+} = \frac{H_k}{H_{k+}}$ is a conditional share of private households with size equal to or higher than k

4. Correction $v_{k/k+} = \max(e^{-\alpha*\eta_k}; 1 - \eta_k)$
5. Afterwards: calculation of α_k , $v_{k/k+}$ and η_k to the highest values – recurrent procedure of calculation

Main assumption: distribution of households by size is a function of the average size of households

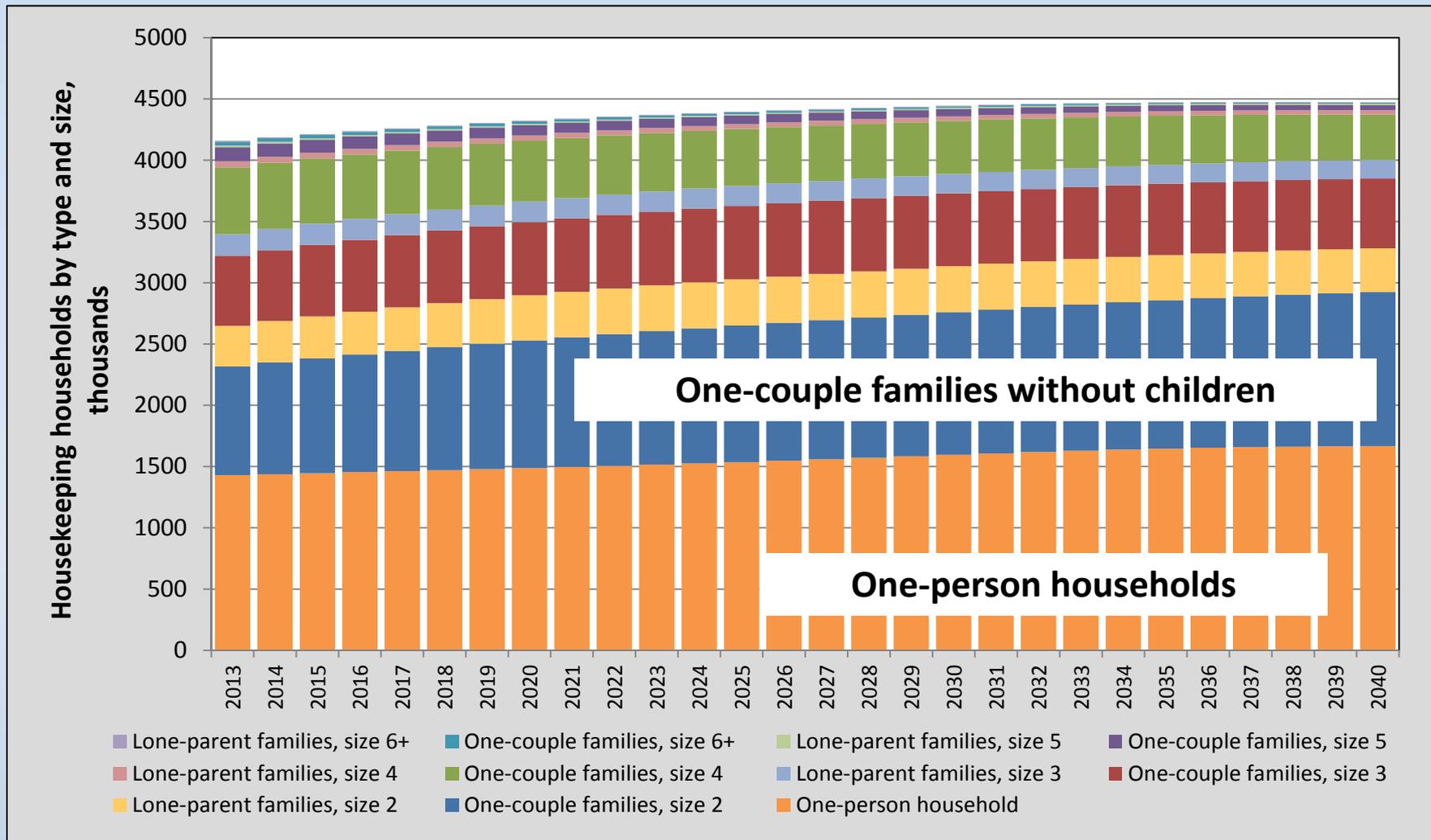
The overall number of selected housekeeping households by variants, the Czech Republic, 2011, 2013-40



Note: 2011 real data

Source: Authors' calculation

Projected housekeeping households by type and size, the Czech Republic, 2013-2040, medium variant



Source: Authors' calculation

Conclusion

- Impact of population ageing on household structure is significant in the Czech Republic
- The overall number of one-person households, one-couple families and lone-parent families will be most likely **higher in 2040** in comparison with the state 2011 in all projected variants
 - **One-person households are the main contributor**
 - Size of one-couple families shrinks
 - **Higher relevance of couples without children**
 - Size of lone-parent household also diminishes

Sources

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Thank you for your attention



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