

# Aging, Immigration and the Welfare State in Austria

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# Content

- ① **The challenge**
- ② The approach
- ③ Results

# Population aging in Austria

	1960	2010	2050
Life Expectancy at birth (Women)	73	83	90
Newborns (/1000)	37	22	18
Aged 15-64 / Aged 65+	5.5	3.9	2.1

Source: projections from Statistik Austria (2012)

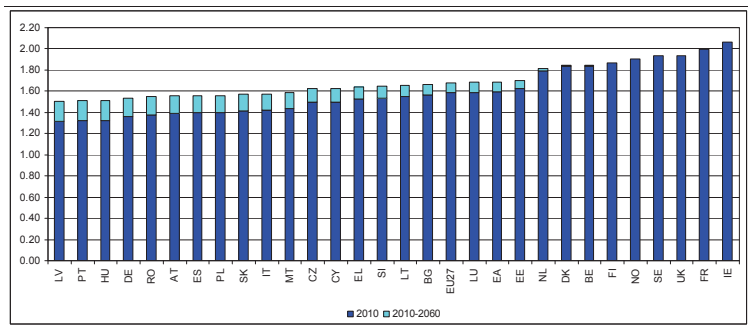
At constant policy, each worker is to support about 2x more retired persons over the next 40 years

# Options

- ① Family life and work policies
- ② Pension reforms
- ③ Immigration effects

# Family life and work policies

Fertility rates by country in Europe



Source: Eurostat in Ageing Working Group (2012)

Literature (Gauthier, 2007, review): mixed evidence on the effectiveness of family-friendly policies (public childcare, flexible work arrangements,...)

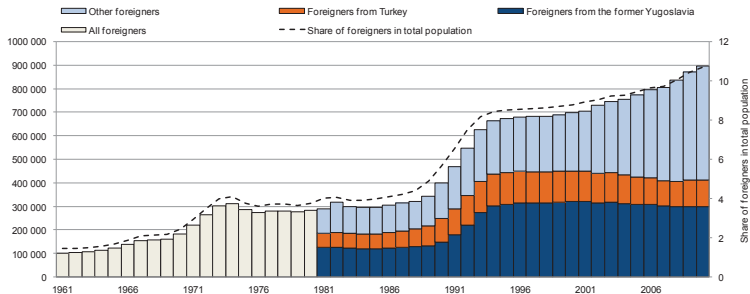
# Pension reforms

- Different reforms:
  - increase the retirement age
  - increase social security contributions (or taxes)
  - reduce pension payments
- Pension reforms are not popular

# Immigration effects: illustration of potential for Austria

Migrants are young: less than 15% are 40 or older (2010, Austria)

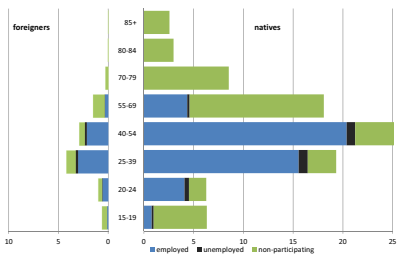
Figure 6. Evolution and composition of the foreign population in Austria, absolute numbers and share in the total population, 1961-2010



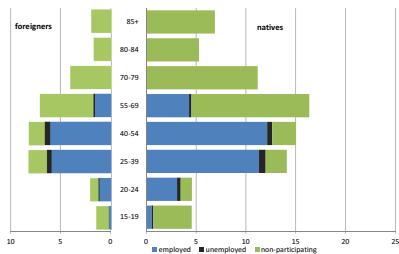
Source: OECD (2011)

...but, is it here to last? Will it matter?

Austria, 2010



Austria, 2070





# Scientific tools at hand and contribution

Börsch-Supan, Ludwig and Winter (2006): OLG and population aging analysis

- with endogenous labor supply:      agg. savings rate + 0.02
- with exogenous labor supply:      agg. savings rate + 0.03

Existing tools and contribution:

Analysis	OLG	Aging	Migration	End. labor supply Hours	Retirement
Storesletten (2000)	X		X	X	
Börsch-Supan & all (2006)	X	X		X	
Jaag & all (2010)	X	X		X	X
This paper	X	X	X	X	X

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# How OLG-CGE tools help economic analysis

- Incentive and general equilibrium effects
  - Incentives: an increase in taxes or social security contributions discourages household labor supply
  - GE: variations in labor supply trigger changes in wages
  - CGE: take both into account to assess increases in government revenue
- Realistic life-cycle
  - In OLGs: people are born, (study), work, retire, die
- Flexible framework
  - Easy to add and remove institutional features in OLGs
- If rich enough, useful for policy reform analysis
  - Here, quantitative answer to the question “is the migration effect here to last?”

## The price to pay (1/3): wage differentials assumptions

### 2010 wage differentials by skill class and origin

	natives			foreigners		
	low	medium	high	low	medium	high
15 to 19 years	1.00	-	-	0.87	-	-
20 to 24 years	1.11	1.53	-	1.11	1.37	-
25 to 39 years	1.24	1.73	2.53	1.24	1.49	2.46
40 to 54 years	1.41	2.07	3.21	1.41	1.77	2.96
55 to 69 years	1.35	2.04	3.29	1.25	1.61	3.43

We do not explain the gap now; we have to assume it will not change

## The price to pay (2/3): migration motivation

Barriers to migration are very different... hard to pin down in a model !

- Is there a maximum tolerance by destination countries ?
- If yes: what is the number ?; will it change over time ?
- Migrants take it into account, weighing (economic and non-economic) pro's and con's
- Simplification: we ignore the questions and rely on someone else's crystal ball (exogeneous migration flows in and out)

## The price to pay (3/3): migration outside options

How much better (wages, pension rights) is it for migrants leaving and how much worse was it for migrants coming ?

- Simplification: it's the same, if you leave the country (we don't know the cost of migration barriers anyway)
- For Austria: acceptable (2009 flows to Germany:12%; to ex-Yugoslavia:11%)
- Simplification: it's the same, if you arrive in the country
- For Austria: challengeable (2009, stock from Germany:15%; from ex-Yugoslavia:28%)
- We could avoid this simplification, but we lack the data (assets of immigrants at arrival)

Not to mention households only differ by age (or have little differences in skill), in particular have same gender

# Features of the OLG model

OLG basis:

$$\begin{aligned} \max_{C^y, C^o, L^y} \quad & u(C^y - \varphi(L^y)) + \beta u(C^o) \\ \text{s.t.} \quad & A^o = (1+r) ((1-\tau)wL^y - C^y) \\ & C^o \leq A^o \end{aligned}$$

- With more heterogeneity: more than 2 stages in life-cycle with different wages, unknown death
  - 3 skill classes    ×    8 generations
- Additional households decisions
  - Labor market: education, participation, effort to find a job, hours, **retirement**
  - Goods market: consumption versus saving
- Additional institutions
  - Taxes: on labor income, on capital income, on consumption
  - Social security contributions: worker side, firm side
  - Social insurances: UI, PAYG pensions, welfare benefits, ...
  - Subsidies: to investment, to training, ...

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# Simulation results

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	Social security contrib.	Pension per benef.	Empl. (hours/worker/ /year)	GDP / capita	Pension system deficit	Social security deficit
	( $\Delta\%$ )	( $\Delta\%$ )*		( $\Delta\%$ )*	(%GDP <sub>0</sub> )	(%GDP <sub>0</sub> )
<i>Initial state (2010)</i>	0.0	0.0	1587	0.0	4.5	6.8
<i>Demographic scenarios (2050)</i>						
Main	0.0	-7.9	1573	-17.7	9.7	14.7
High migration (+25%)	0.0	-8.8	1570	-17.5	9.0	13.9
<i>Selected policy reforms (2050)</i>						
- pension benefits (0.6% GDP)	0.0	-11.2	1573	-17.5	8.8	13.9
+ contributions (1.3% GDP)	6.7	-8.7	1571	-18.7	9.2	13.9
+ retirement age (1 year)	0.0	-6.2	1570	-14.4	9.0	13.9

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\* deviation from growth trend

## Simulation results - methodological bias

Assuming exogenous (constant) retirement age underestimates the benefits of pension reforms, such as decreases in pension payments

	Ret. age	Pension per benef. ( $\Delta\%$ )	Empl. (hours/ worker/ /year)	GDP / capita ( $\Delta\%$ )*	Pension system deficit (%GDP <sub>0</sub> )	Social security deficit (%GDP <sub>0</sub> )
<i>Initial state (2010)</i>	58.8	0.0	1587	0.0	4.5	6.8
<i>Selected policy reforms (2050)</i>						
<i>Endo ret. age:</i>						
– pension benefits (3% GDP)	59.6	-24.7	1569	-16.9	5.6	10.7
<i>Const ret. age:</i>						
– pension benefits (3% GDP)	58.8	-25.9	1571	-19.2	6.1	11.3

\* deviation from growth trend

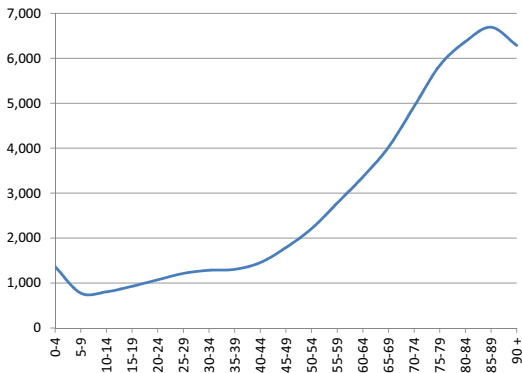
# Summary key findings and policy implications

- Immigration helps a little: +25% migration = +1 year retirement age
  - Reason: immigrants are young when they arrive, but they also age
- Health insurance is important: from 2010 to 2050, increases of at least ...
  - social security deficit: 6.8% to 14.7 % of GDP
  - pension deficit: 4.5% to 9.7% of GDP
- Assuming constant retirement age moderately bias the results
  - s.s. deficit if endogenous retirement decisions & cuts : 4.5% to 5.6% of GDP
  - s.s. deficit if exogenous retirement decisions & cuts : 4.5% to 6.1% of GDP
- Moderate to strong reforms are needed: to maintain social security deficit ...
  - +2.5 years increase in retirement age, -25% pensions, +15% SSC; or
  - +8 years increase retirement age (increase in life expectancy: 7 years)
- Retirement age increase is less damaging to economic growth than pension cuts, SSC increases

Thank you for your attention

## Appendix A. Pension financing is not the only challenge

Age-related public health expenditures per capita (EUR, 2007, Austria)



At constant policy, technology and use, mechanical increase in public expenditures due to population ageing

## Appendix B. Labor market elasticities in OLG Taxlab

	low skill	medium skill	high skill
elasticities of			
- hours worked	0.100	0.090	0.080
- retirement	0.108	0.090	0.050
- participation	0.092	0.085	0.050

## Appendix C. Main demographic scenario - details

	2011	2020	2050	2070
<i>absolute numbers</i>				
Population (15+)	100.00	104.69	112.80	112.69
Share of foreigners	10.73	14.09	24.42	30.79
Dependency ratio	26.66	33.39	50.58	52.83
Pensioners (in % of population)	29.16	33.85	41.86	42.81
Effective retirement age	58.80	58.93	59.14	59.04
Unemployment rate	5.90	5.98	6.32	6.63
Employment (yearly hours per worker)	1587	1583	1573	1565
Effective employment (yearly hours per capita)	815	766	662	642
<i>increase from basis in %</i>				
Labor costs	-	-0.56	-1.41	-2.98
Net wages	-	-0.51	-1.14	-2.53
Pension payment per beneficiary	-	-1.42	-7.94	-11.26
<i>increase from basis in %</i>				
GDP/capita	-	-4.91	-17.74	-21.59
Capital/capita	-	-6.33	-20.00	-24.24
Consumption/capita	-	-7.91	-16.49	-20.71
<i>in % of basis GDP</i>				
Health expenditure	7.96	8.88	10.97	11.13
Pension expenditure	17.53	18.88	22.94	22.89
Social security deficit	6.82	9.32	16.57	17.47
Social security deficit (constant population)	6.82	8.91	14.69	15.50
Pension deficit	4.57	6.08	10.89	11.36
Pension deficit (constant population)	4.57	5.81	9.66	10.08