



# Assessing long-term fiscal challenges in times of uncertainties

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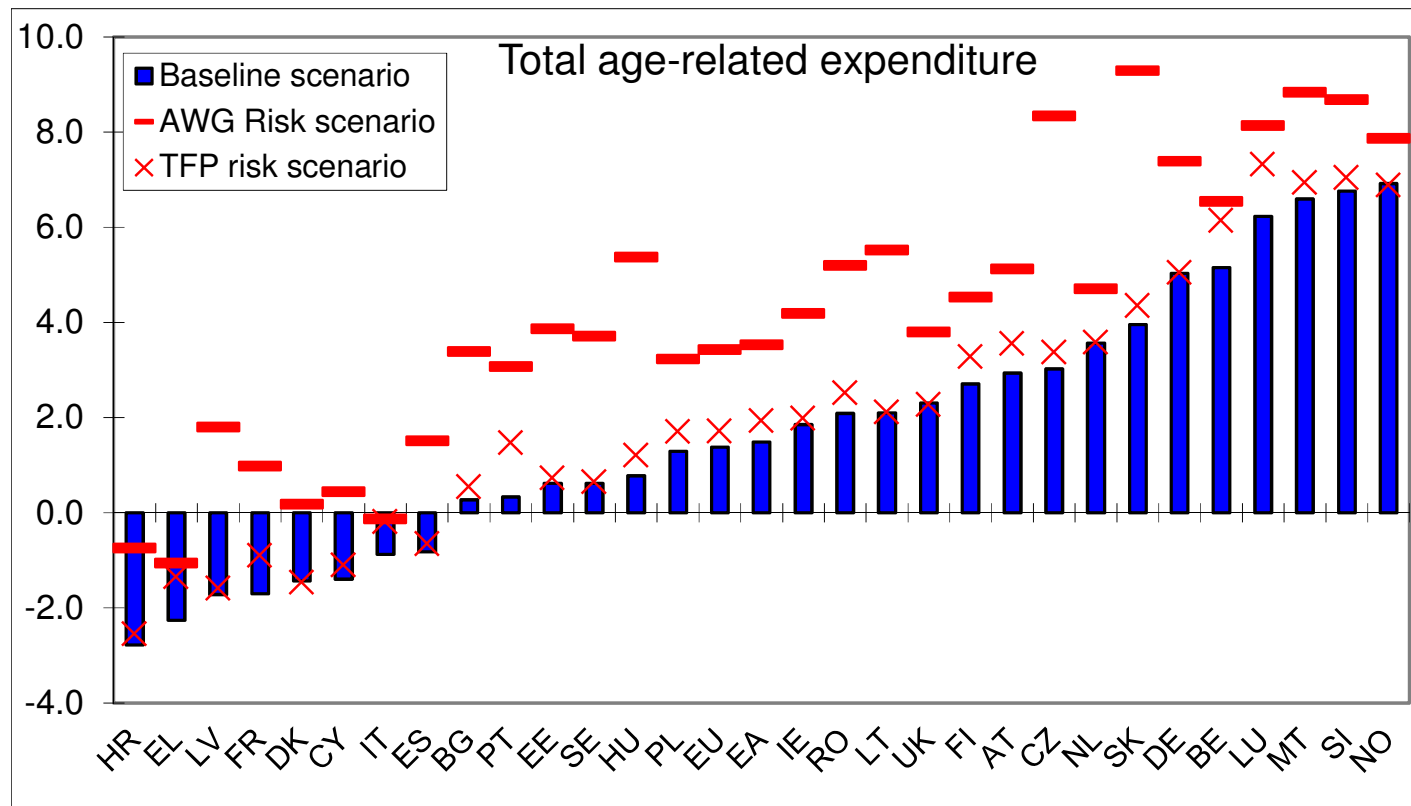
**FISK-Workshop - FISCAL POLICY AND AGEING**  
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# Outline of the presentation

- Future demographic and other structural developments
- Fiscal sustainability from a conceptual point of view
- The Commission approach: a fiscal sustainability indicator

# Future expected pressures on public finances (as a share of GDP)

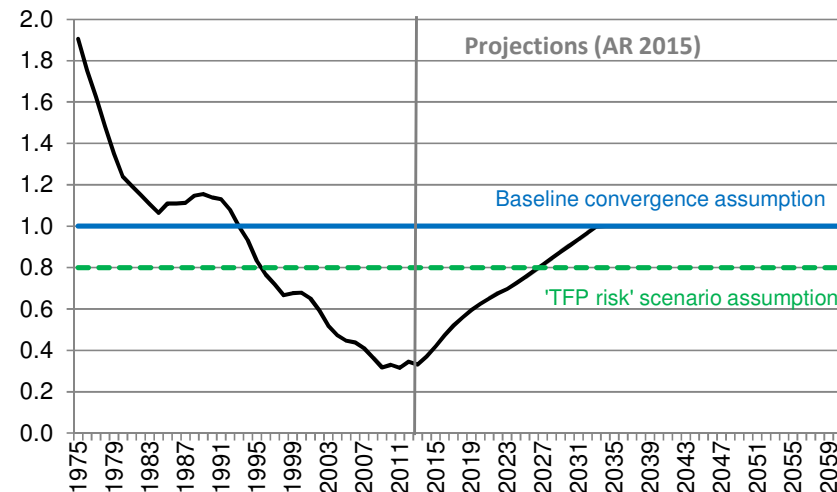


Source: Ageing Report 2015

# Sizeable uncertainties about developments in the far future

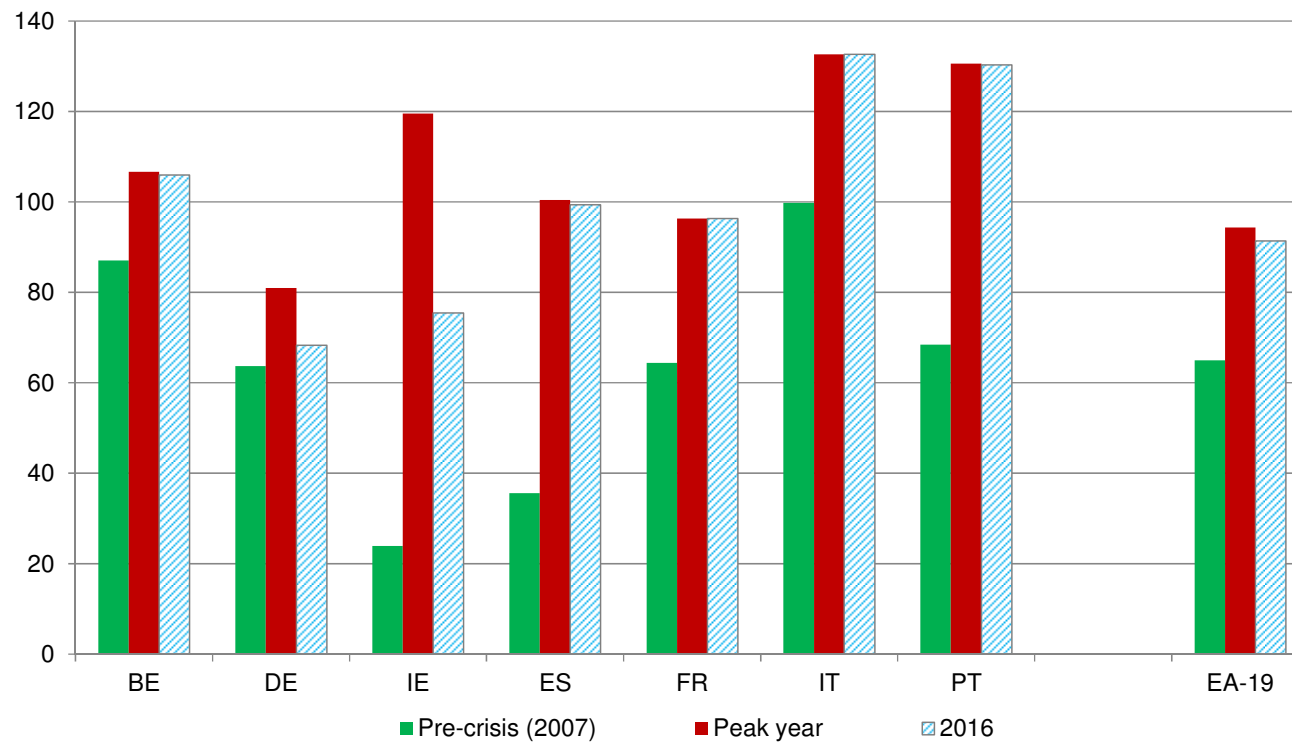
- Longevity risk, migration flows
- Macroeconomic assumptions (e.g. participation rate, unemployment rate, productivity)
- Policy implementation risks

Trend TFP Growth Rates in the euro area (1975-2060)



Source: Ameco, Ageing Report 2015

# Remaining important public debt vulnerabilities (public debt, % of GDP)



Source: Ameco



## Fiscal sustainability from a conceptual point of view

- Meeting the **intertemporal budget constraint**: over an infinite time-horizon, the net present value of all future primary balances must be sufficient to pay back the initial debt:

$$d_{t_0} = \sum_{t=t_0+1}^{\infty} \left( \frac{pb_t}{\alpha_{t_0,t}} \right)$$

where  $\alpha_{t_0,T} = (1 + r_{t_1}) \cdot (1 + r_{t_2}) \dots (1 + r_T)$

- This holds under a **no-Ponzi game condition** i.e. that the government does not roll over its debt systematically by issuing new debt



# Assessing long-term fiscal sustainability: the Commission approach

- The Commission approach: the S2 fiscal sustainability indicator
- Fiscal gap that measures the **immediate and permanent budgetary adjustment** required to fulfil the intertemporal budget constraint over the infinite horizon (Blanchard et al., 1990; Escolano, 2010)
- Including to cover future increases in cost of ageing
- S2 included in the Commission Sustainability Report since 2006

## The S2 indicator and its subcomponents

- The S2 indicator is directly derived from the IBC:

$$d_{t_0} = \sum_{t=t_0+1}^{\infty} \left( \frac{pb_{t_0} + S_2 - \Delta a_t}{\alpha_{t_0,t}} \right)$$

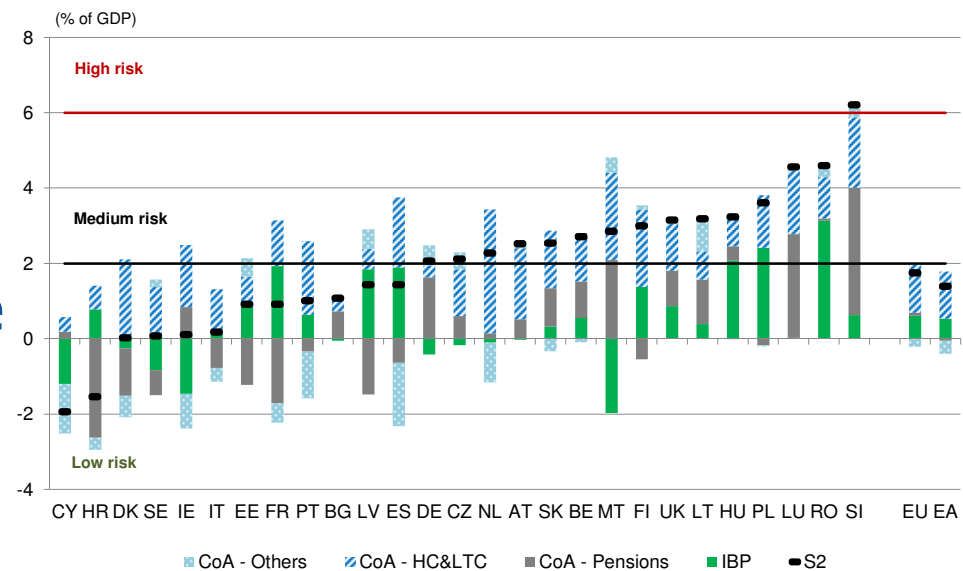
- Rearranging this equation and assuming – for simplicity - constant interest and growth rates:

$$S_2 = \underbrace{r \cdot d_{t_0} - pb_{t_0}}_A + r \cdot \underbrace{\sum_{t=t_0+1}^{\infty} \left( \frac{\Delta a_t}{\alpha_{t_0,t}} \right)}_B$$



# Mapping long-term fiscal risks in the EU (S2 and its sub-components)

- Strengths of the indicator: theoretically founded, 'full' scale of population ageing impact, benchmark value of fiscal imbalances, 'easy' reading and interpretation, comparability across countries
- Yet, some shortcomings...



Source: Commission services (Spring forecast 2017)

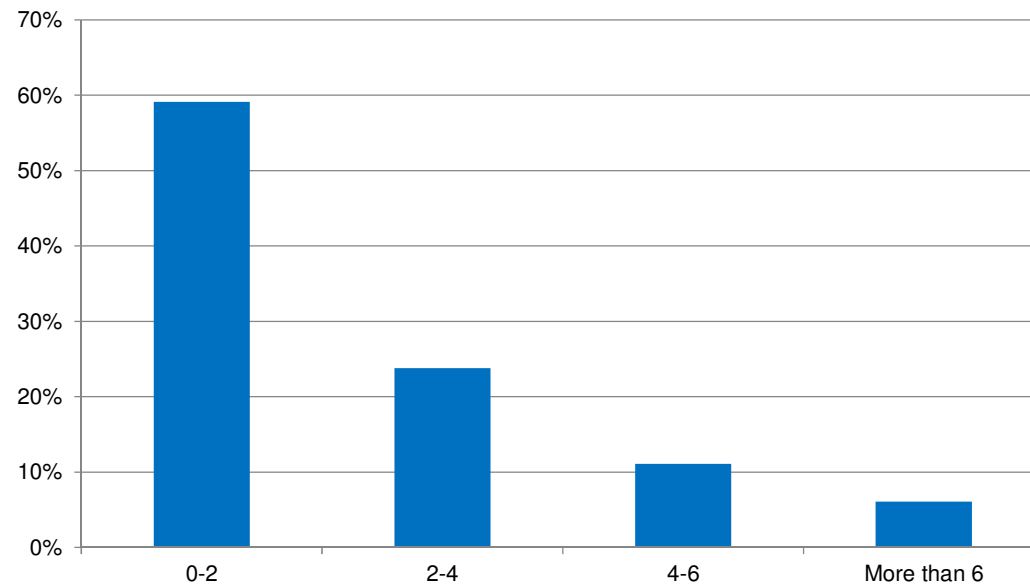
✓ To use S2 as a fiscal risk indicator, need to qualify values => **thresholds**

# Interpreting the S2 indicator: from a fiscal gap to a fiscal risk indicator

S2 indicator: summarised descriptive statistics (2006 and 2017)

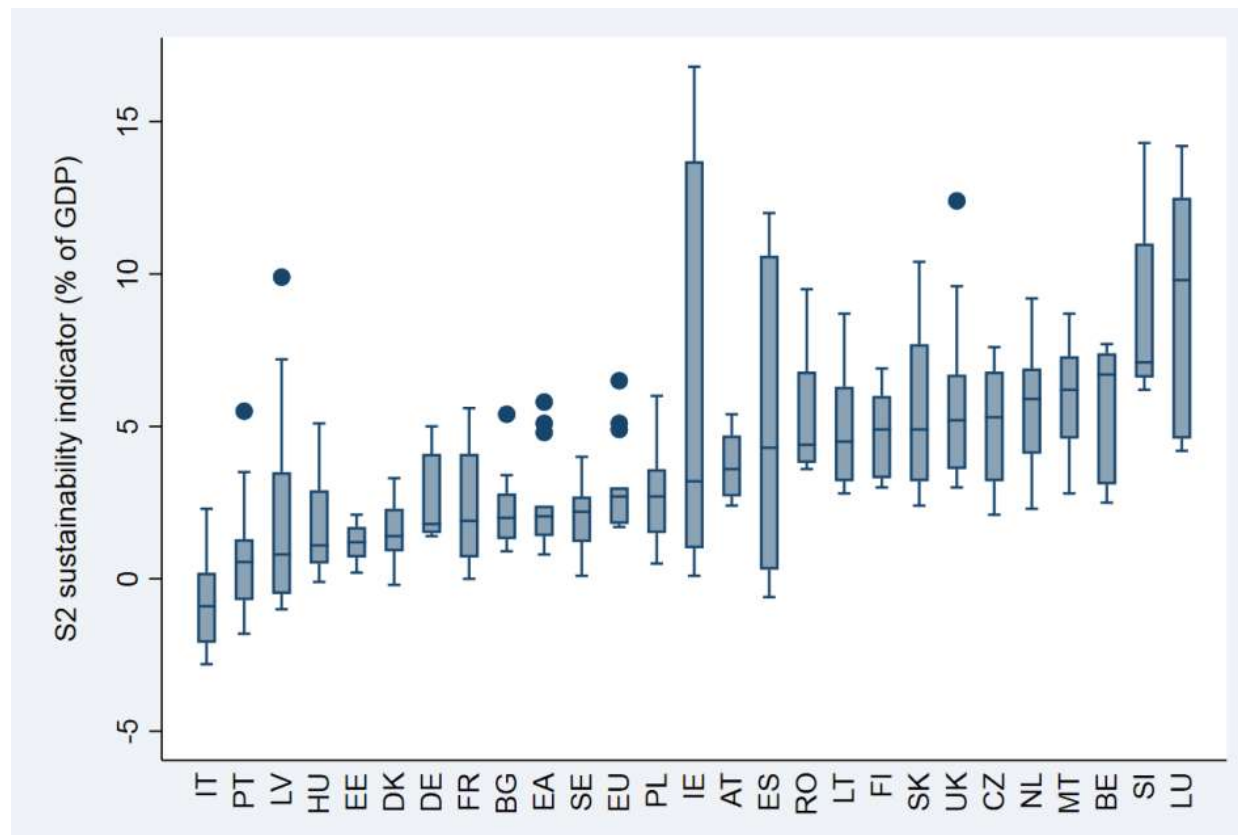
	2006	2017
mean	3.1	1.9
st dev	3.7	1.8
max 5	9.1	4.4
min 5	-1.6	-0.7

Relative frequency of fiscal consolidation episodes by size of fiscal consolidation, calculated over the period 1980 – 2016 and for all EU countries



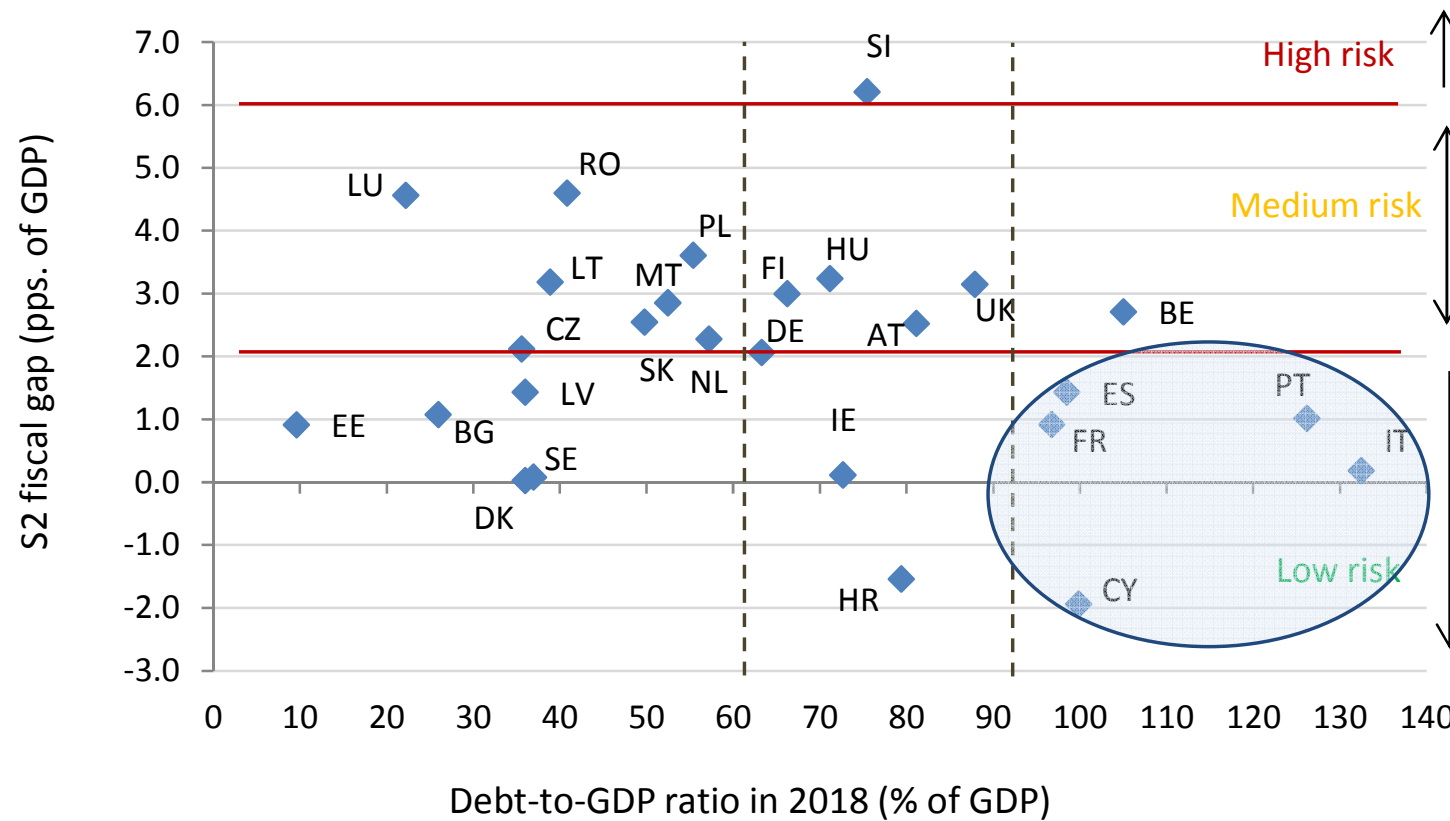
Source: Commission services, AMECO, Authors' calculations

# Volatility through time of the indicator can be high in some cases



Source: Authors' calculations

# The S2 indicator largely abstracts from risks linked to high debt levels



Source: Ameco, Commission services



## Commission approach to date

- Introduction of a comprehensive approach to assess fiscal sustainability (FSR 2015, DSM 2016) including based on:
  - **Different time-dimensions**
  - **Fully-fledged Debt Sustainability Analysis**
- Long-term fiscal risks further qualified by testing the sensitivity of S2 to alternative scenarios, by providing information on the magnitude of the implied fiscal stance, and by giving cautions when current debt burdens are high

# Sensitivity scenarios

- Importance of institutional features and structural factors (automatic stabilisation mechanisms, indexation rules, maturity of SS systems, volatility of fiscal position)

	S2 central scenario	S2 Alternative scenarios					Standard deviation
		Population	AWG risk	Historical SPB	TFP risk	Interest rate	
BE	2.7	4.2	4.0	1.6	3.3	3.1	0.8
BG	1.1	1.7	3.1	1.1	1.1	0.9	0.7
CZ	2.1	3.2	5.9	4.7	2.3	2.0	1.4
DK	0.0	1.2	1.1	-1.4	-0.1	0.1	0.9
DE	2.1	3.8	4.4	2.3	3.0	2.2	0.9
EE	0.9	1.6	3.0	0.8	1.0	0.9	0.8
IE	0.1	1.1	2.2	3.2	0.5	0.8	1.1
ES	1.4	2.4	3.2	1.2	1.8	2.2	0.7
FR	0.9	2.0	2.9	1.6	1.6	1.8	0.6
HR	-1.5	-0.8	-0.2	0.9	-1.1	-0.8	0.8
IT	0.2	1.0	0.7	-0.1	1.0	1.2	0.5
CY	-1.9	-1.9	-0.4	-0.1	-1.5	-1.3	0.7
LV	1.4	1.7	3.9	1.4	1.6	1.6	0.9
LT	3.2	3.9	5.6	4.6	3.3	3.5	0.8
LU	4.6	5.3	6.0	3.2	5.3	4.0	0.9
HU	3.2	4.0	6.1	3.3	3.5	3.3	1.0
MT	2.8	4.2	4.4	5.8	2.9	2.4	1.2
NL	2.3	3.6	3.0	3.1	2.1	2.1	0.6
AT	2.5	3.5	4.0	2.9	2.9	2.7	0.5
PL	3.6	4.1	4.8	4.1	3.8	3.7	0.4
PT	1.0	2.3	2.6	3.9	1.9	1.8	0.9
RO	4.6	5.0	6.5	4.3	4.9	4.7	0.7
SI	6.2	7.4	7.6	7.9	6.3	6.0	0.8
SK	2.5	2.9	5.7	5.3	2.7	2.3	1.4
FI	3.0	4.1	4.3	0.4	3.5	3.3	1.3
SE	0.1	1.0	2.3	-0.4	0.0	0.1	0.9
UK	3.1	4.2	4.2	5.6	3.2	3.4	0.8
<b>EU28</b>	<b>1.7</b>	<b>2.9</b>	<b>3.3</b>	<b>2.4</b>	<b>2.2</b>	<b>2.2</b>	<b>0.5</b>
EA	1.4	2.6	3.1	1.8	2.1	1.9	0.5
<b>Median</b>	<b>2.1</b>	<b>3.2</b>	<b>4.0</b>	<b>2.9</b>	<b>2.3</b>	<b>2.2</b>	<b>0.7</b>



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# Thanks for your attention





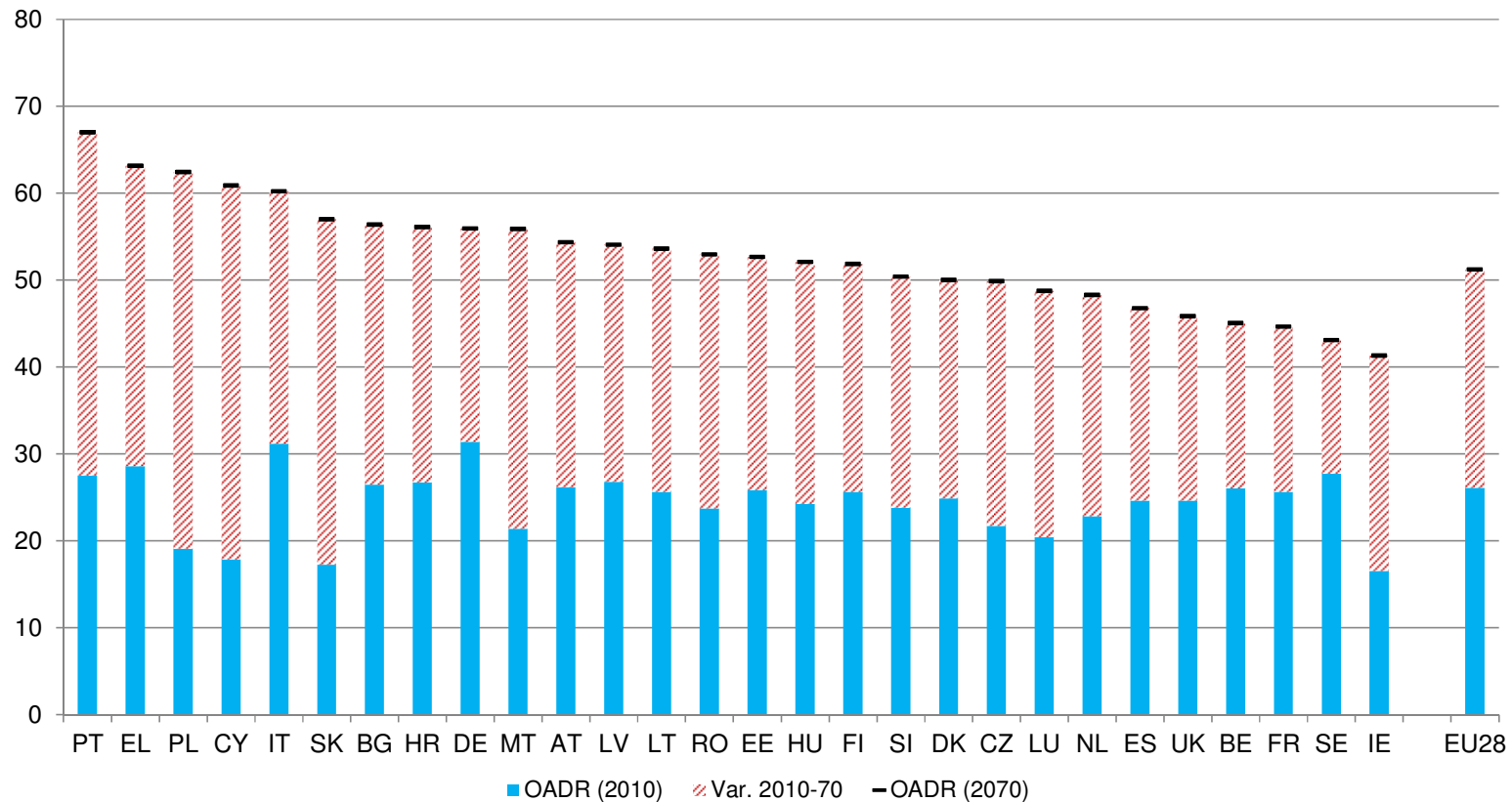
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# Extra slides





# Large projected increase in the old-age dependency ratio (population aged 65 and over / population aged 15-64)



Source: Eurostat

# Alternative scenarios

Alternative scenarios	Changing assumption compared with the central scenario
<b>Population</b>	<i>Higher demographic driven costs:</i> a two-year additional increase in life expectancy at birth by 2060
<b>AWG risk</b>	<i>Higher non-demographic costs:</i> healthcare and long-term care costs in excess of costs expected from purely demographic factors (linked to technological changes and catching-up effects)
<b>Historical SPB</b>	<i>SPB gradual convergence beyond forecasts:</i> gradual convergence over 4 years to the last 15 year historical average of the structural primary balance
<b>TFP risk</b>	<i>Lower TFP growth:</i> TFP growth assumed to converge to 0.8% in the long-term instead of 1%
<b>Interest rate</b>	<i>Higher interest rate:</i> Higher real long term interest rate by 1 percentage point, from 3% to 4% in the long-term