

The Consequences of Demographic Change on Labor Demand, Wages and Social Security Systems in Europe

Hilmar Schneider, CEPS / IZA

Mathias Dolls, ZEW

Karina Doorley, IZA

Eric Sommer, IZA

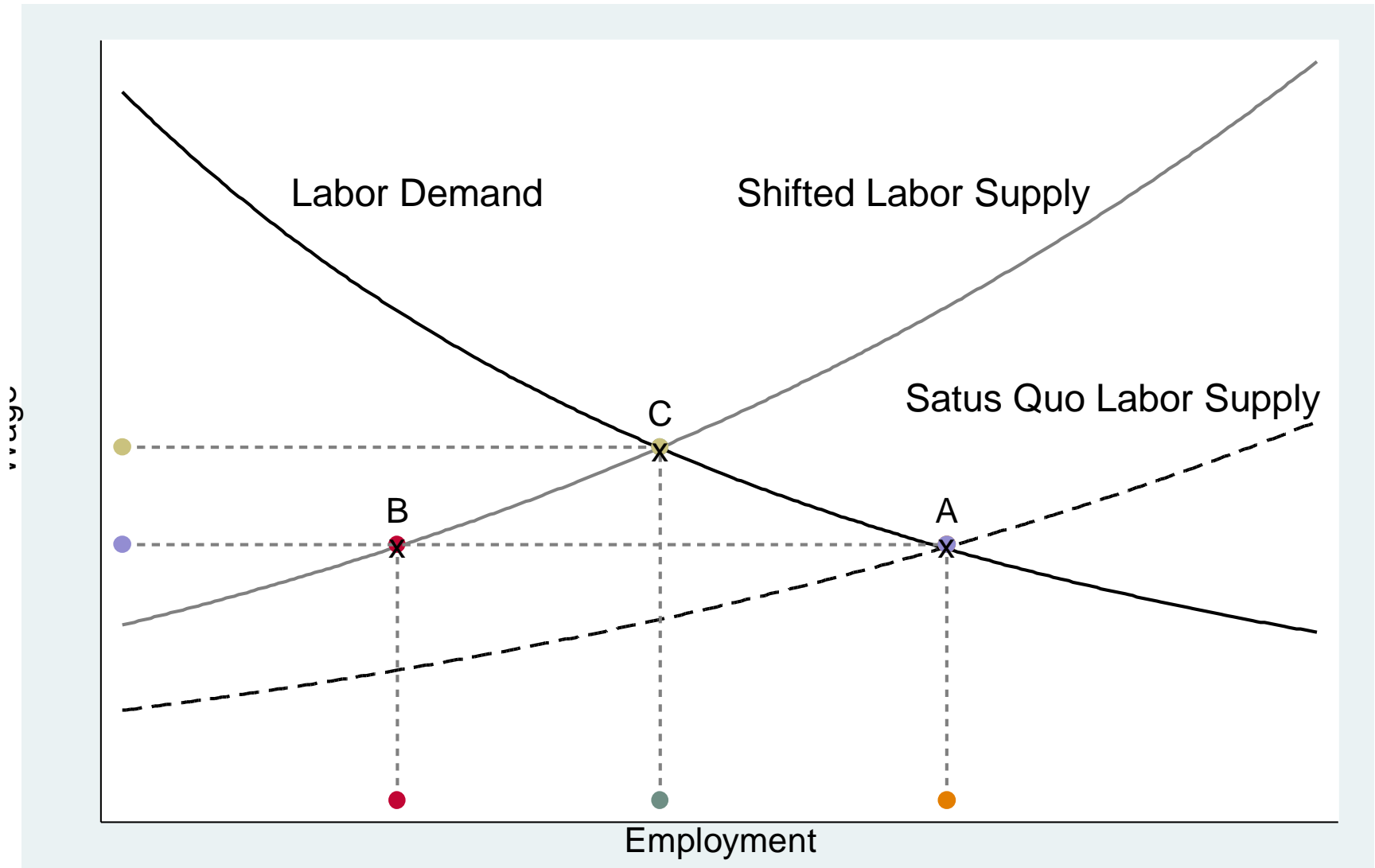
Ageing Society in Europe and UK: Employment and Policy Challenges

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Outline

- To what extent is the foreseeable population decline aggravated by structural and behavioural effects (age-specific labour supply, part-time incentives)?
- To what extent will the foreseeable shortage of labour supply affect wages?
- What are the effects of increasing wages on labour demand?
- What are the consequences on the sustainability of the welfare system?

Wage adjustment due to demographic change



Modelling Technique

- Estimation of labour supply is based on discrete choice models on the level of individuals within a household
- The shift of labour supply is projected for specific groups (skill groups, marital status, gender)
- Estimation of wage changes is based on disaggregated labor demand elasticities
- Changes of individual labour supply are simulated based on the assumption of utility maximization with regard to leisure and consumption

Database for Labour Supply Models

- EU SILC 2008 linked with EuroMod modules for the computation of taxes and transfers
- Adjustment to 2010 population and 2030 projections by reweighting
- Projections for 2030 are based on a „tough“ and a „friendly“ scenario

Simulation results - 1

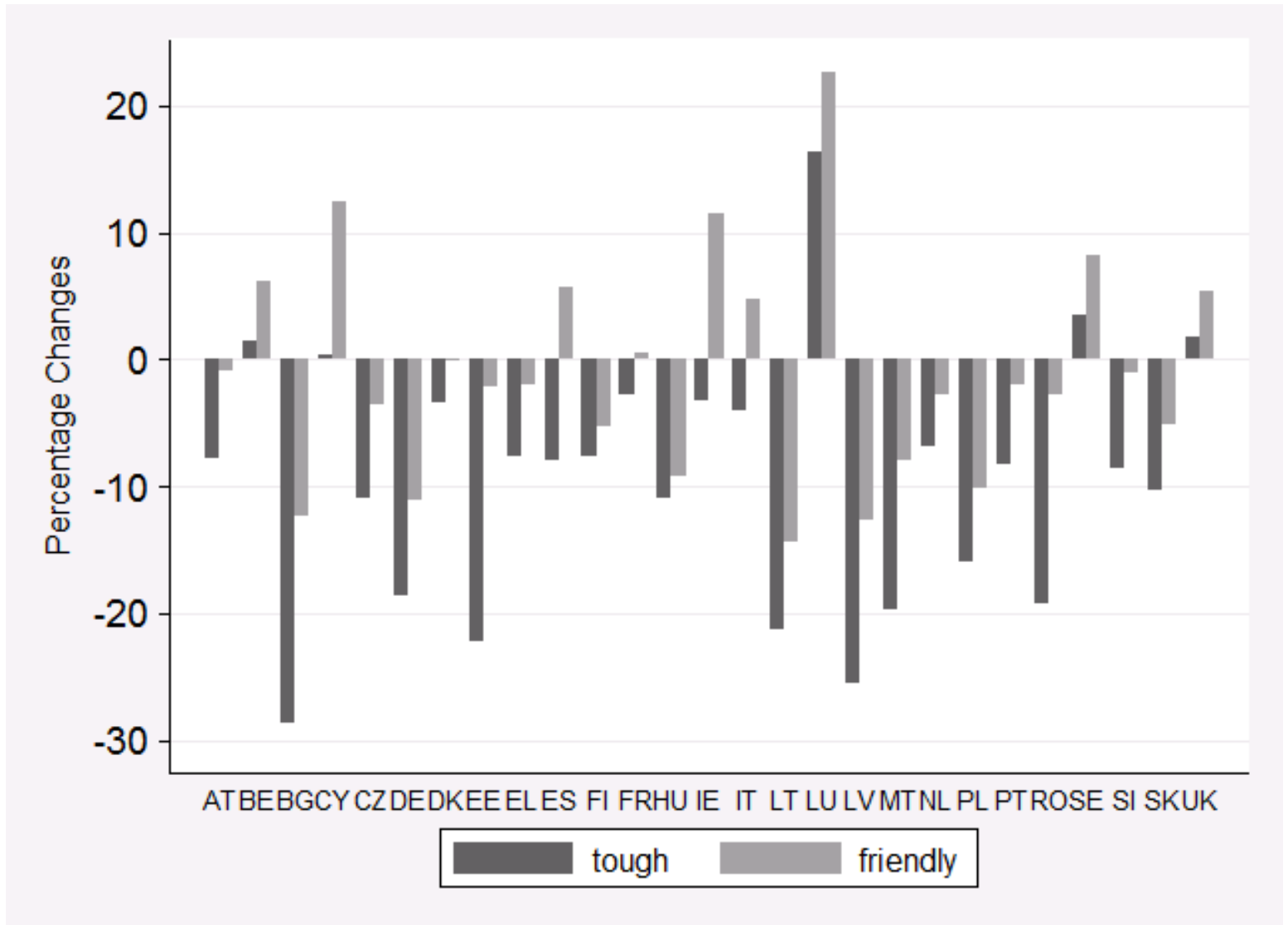
- Substantial decline of labour supply in head counts for most European member states between 2010 and 2030

- Pure age-specific effect of decline of labour supply is of minor importance

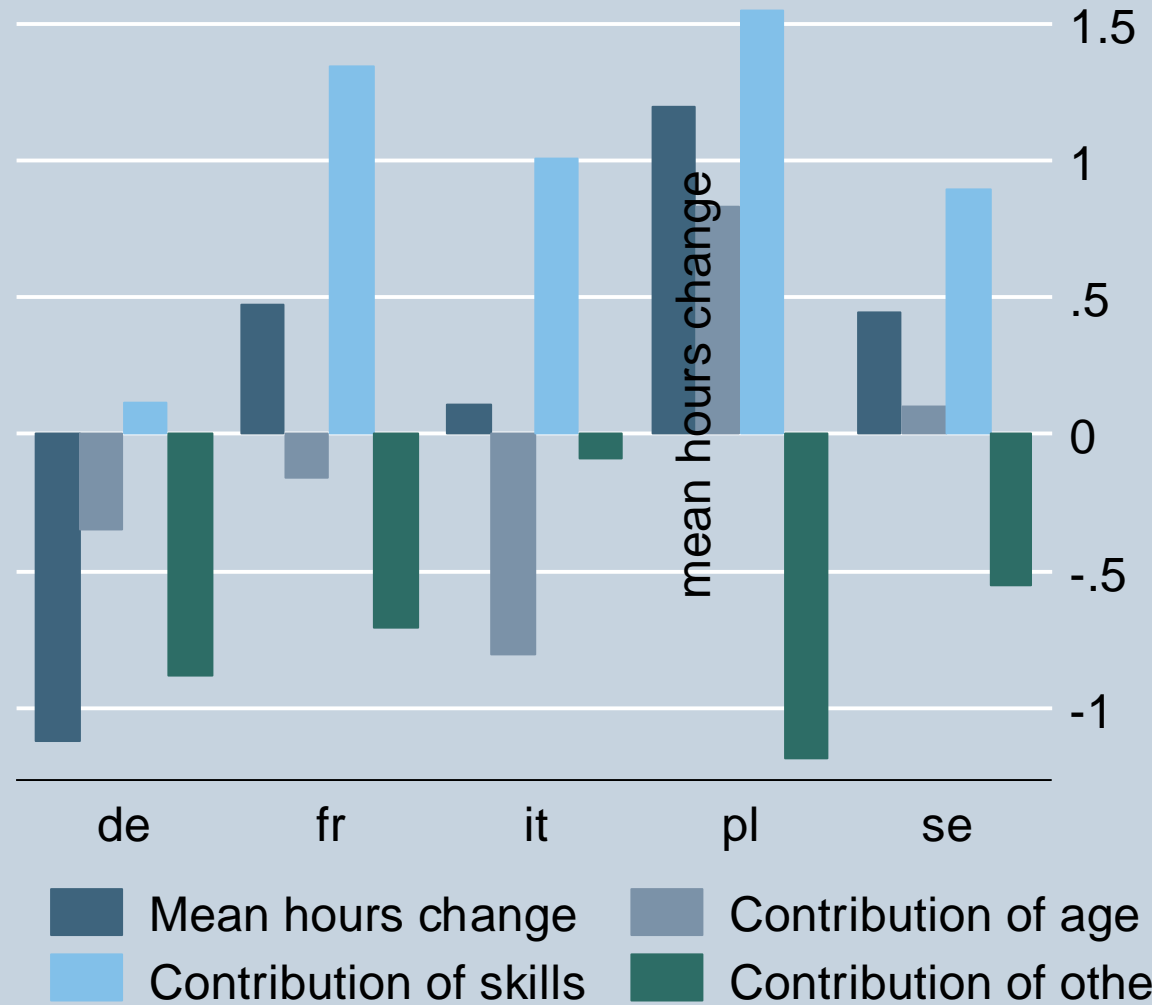
- Even for Germany, the decline of labour supply increases only from 18.5 to 21.4 % due to age effects

- Age-specific effects are largely compensated by skill effects

Changes of labour force in head counts



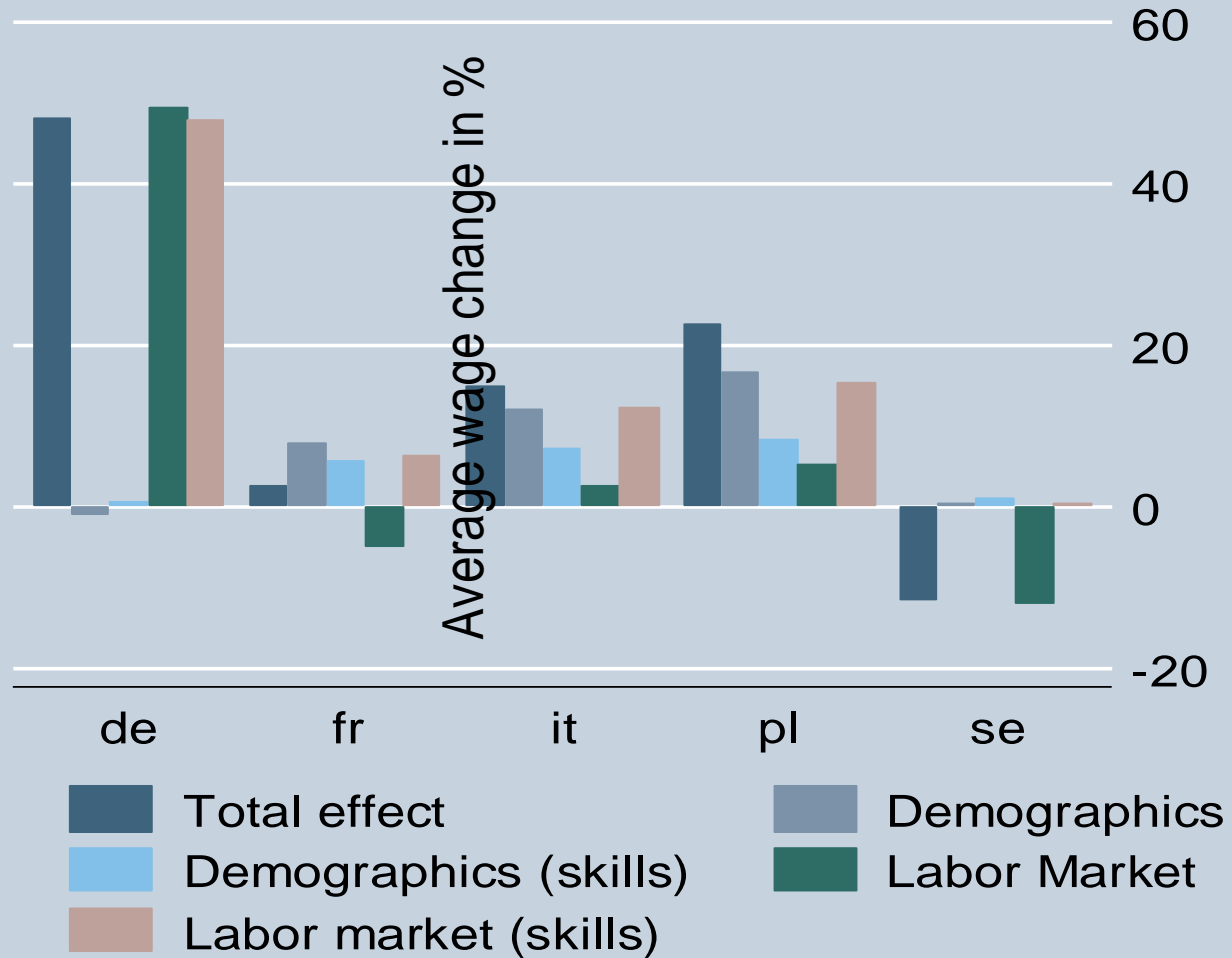
Average change in hours per week



Simulation results - 2

- The relative decline of labour supply induces a strong upward pressure on wages
- Wage spread between low-skilled and high-skilled is likely to increase

Average wage change



Simulation results - 3

- Wage increase may largely compensate for decline of labour supply with regard to tax revenues and social security contributions

Percentage changes of public revenue between 2010 and 2030 with and without projected wage changes

| Germany | Taxes | | Social Contributions | | Total | |
|---------|-------------|----------------|----------------------|----------------|-------------|----------------|
| | Fixed wages | Adjusted wages | Fixed wages | Adjusted wages | Fixed wages | Adjusted wages |
| Germany | -19.6 | 68.6 | -20.8 | 7.3 | -20.2 | 40.1 |
| France | 15.2 | 44.8 | 2.7 | 12.9 | 6.7 | 23.1 |
| Italy | 8.6 | 39.6 | -0.6 | 11.5 | 6.4 | 32.8 |
| Poland | 1.4 | 12.9 | -7.1 | 4.6 | -3.7 | 8.0 |
| Sweden | 8.1 | 13.3 | 7.7 | 8.2 | 8.0 | 12.1 |

Conclusions

- The impact of population decline is likely to be much less harmful for the welfare system than expected
- However, the results only hold, if wage increases can be realized in a highly competitive world
- Results should not be mis-interpreted as forecasts; they have rather to be regarded as “price tags” for the consequences of demographic change