

Ageing and Economic Growth: Measures, Effects and Policies

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Ageing and productivity: The evidence

- | Age structure and labour supply:
 - | Participation rates and labour productivity differ by age, gender and educational attainment level
 - | The degree of substitutability between workers of different ages shapes the labour supply effects
 - | The effects obtained using matched employer-employee datasets are inconclusive
 - | Population ageing affects the relative returns to human capital accumulation
- | Age structure and physical capital accumulation
 - | Standard life-cycle consumption theory would predict a decrease in savings as populations age
 - | The possibility of a second demographic dividend, which would affect economic growth through an increase in savings as life expectancy increases has been suggested also in the literature
 - | Unambiguous negative effects on public savings and the sustainability of public finance

Ageing and productivity: The evidence

- | Age structure and technological progress
 - | The age structure of educated individuals matters for economic growth: technology adoption and innovation effects
 - | To the extent that public spending in R&D is a determinant of technological progress, the negative effects of ageing on public savings will exert negative effects on innovation
- | The theoretical channels are partly ambiguous and call for a rigorous empirical analysis of the aggregate effects on economic growth
- | Standard approach implies using variation in the old-age dependency ratio (

Reassessing Ageing in Advanced Societies

- | But ... isn't 40 the new 30?

Reassessing Ageing in Advanced Societies

- | From chronological to prospective age measures
 - | From the standard OADR,

$$\text{OADR} = \frac{\text{Number of people aged 65+}}{\text{Number of people aged 20-64}}$$

- | ... to the prospective OADR,

$$\text{POADR} = \frac{\text{People with remaining LE} \leq 15}{\text{People aged 20 - threshold age at which LE} \leq 15}$$

Ageing in Europe

1980

1990

2000

2010

Figure: EU-28 countries: Old age dependency ratio (OADR) against prospective old age dependency ratio (POADR); 1980, 1990, 2000 and 2010

Economic Growth and Ageing in Europe

- | Do ageing measures help explain income growth differences in Europe?
- | Simple income growth specification, based on an aggregate production function

$$\log y_{it+\tau} = \alpha_i + \beta_{t+\tau} + \beta_1 \log \text{POP}_{it+\tau} + \beta_2 \log K_{it+\tau} + \beta_3 \log y_{0;it} + \beta_4 \text{AGE}_{it+\tau} + \beta_5 \text{AGE}_{it+\tau} \log y_{0;it} + \epsilon_{it+\tau};$$

- | Panel dataset spanning the period 1970-2010, alternatively at 5, 10 and 20-year intervals

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Economic Growth and Ageing in Europe

- | Comparable results for chronological and prospective ageing measures at relatively short horizons, the effects are only significant for prospective ageing measures once we move to longer horizons
- | The results indicate that the negative effects of ageing on economic growth appear to be more important in economies with a relatively lower income per capita level
- | The model estimates give thus evidence that ageing is a particularly serious challenge to sustainable income growth in Eastern European economies, whose income per capita level is below EU average and

Conclusions

- | We evaluate empirically for the first time whether prospective ageing measures are better able to explain the effect of such demographic changes on economic growth than chronological age indicators
- | The results of our panel regressions provide clear empirical evidence concerning the superiority of measures based on prospective ageing as predictors of future economic growth at long horizons
- | Our results indicate that the effect of ageing on income dynamics is heterogeneous across countries and that the negative consequences of ageing societies are stronger in relatively poorer economies
- | Monitoring prospective ageing measures should be a priority in the framework of designing policies aimed at combating the negative economic consequences of ageing