

# Workforce age and innovation

## – where do we go from here?

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Dr. Katharina Frosch  
✉ [katharina.frosch@fh-brandenburg.de](mailto:katharina.frosch@fh-brandenburg.de)



### Empirical insights

## What drives workforce aging in Europe?



### Research results

## Does innovative performance depend on workforce age?



### Outlook

## What can we learn from this with respect to age and the adoption of new technologies (such as ICT)?



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**Center left:** Image courtesy of Serge Bertasius Photography at FreeDigitalPhotos.net

**Lower:** Image courtesy of Toa55 at FreeDigitalPhotos.net

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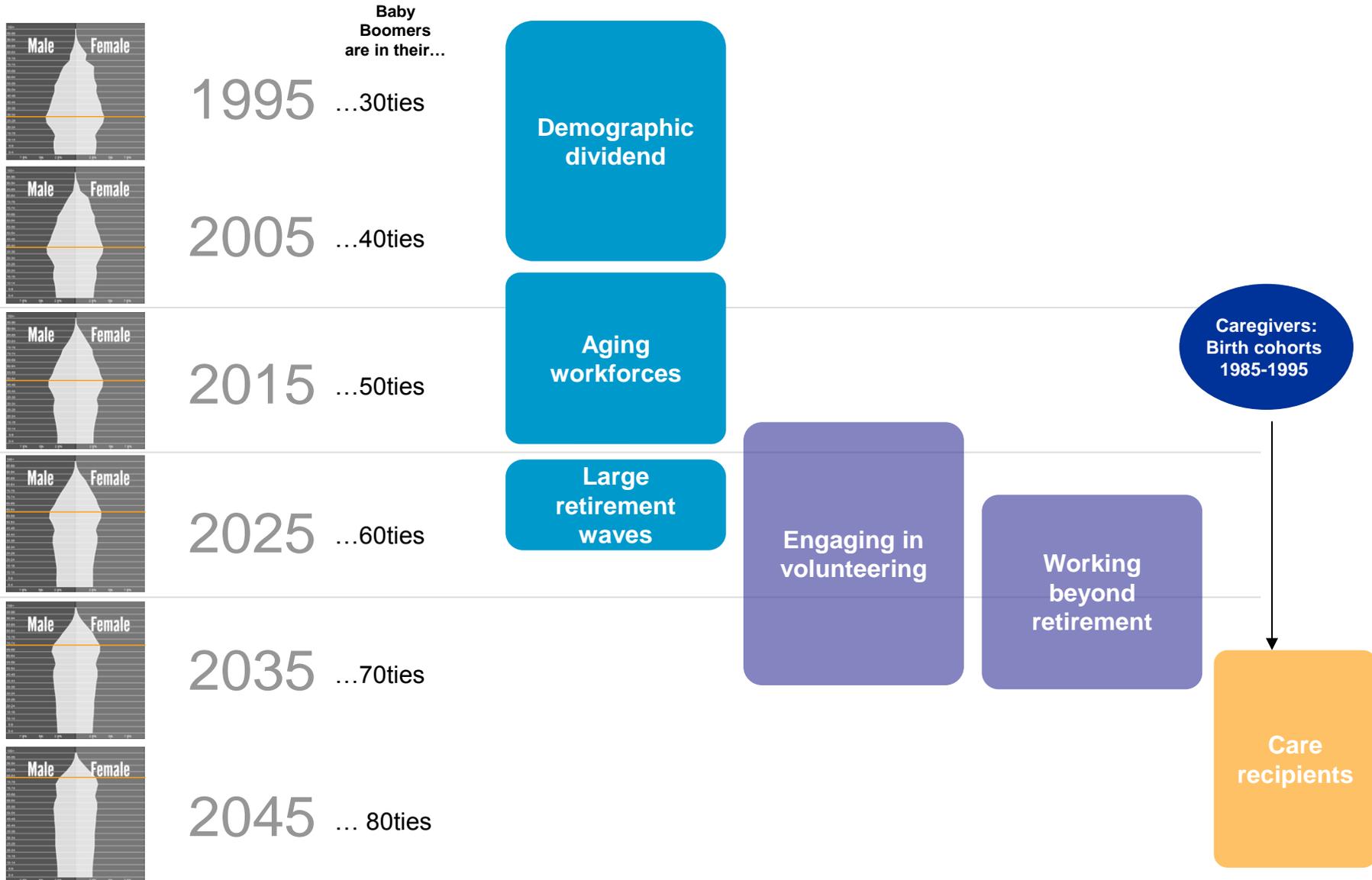


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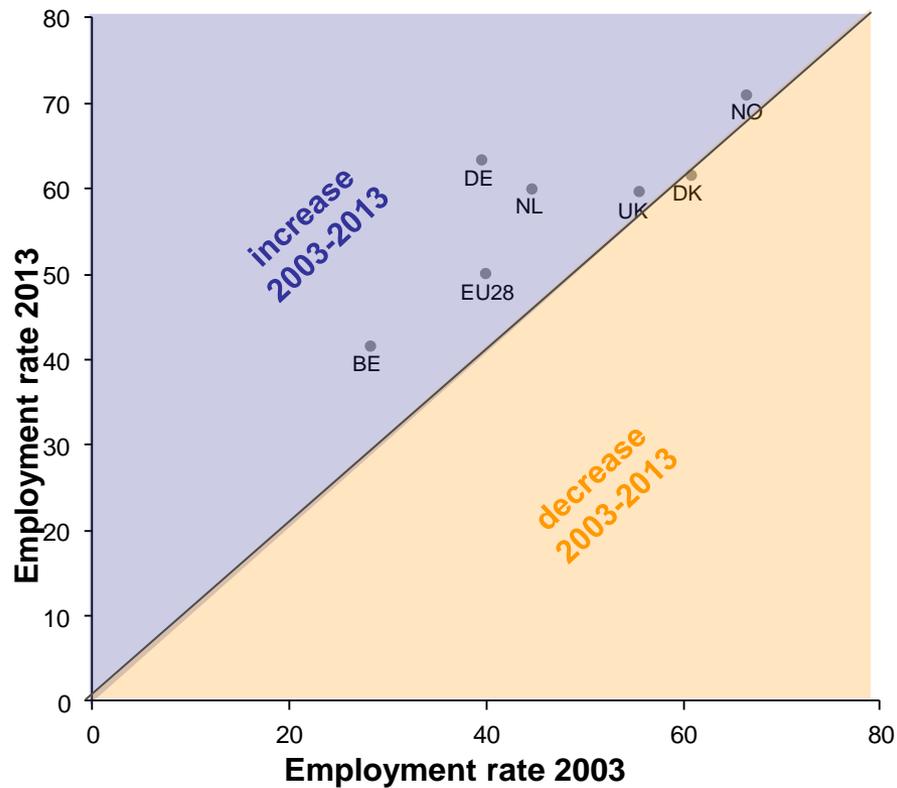


# Demographic Change: The role of the baby boomers

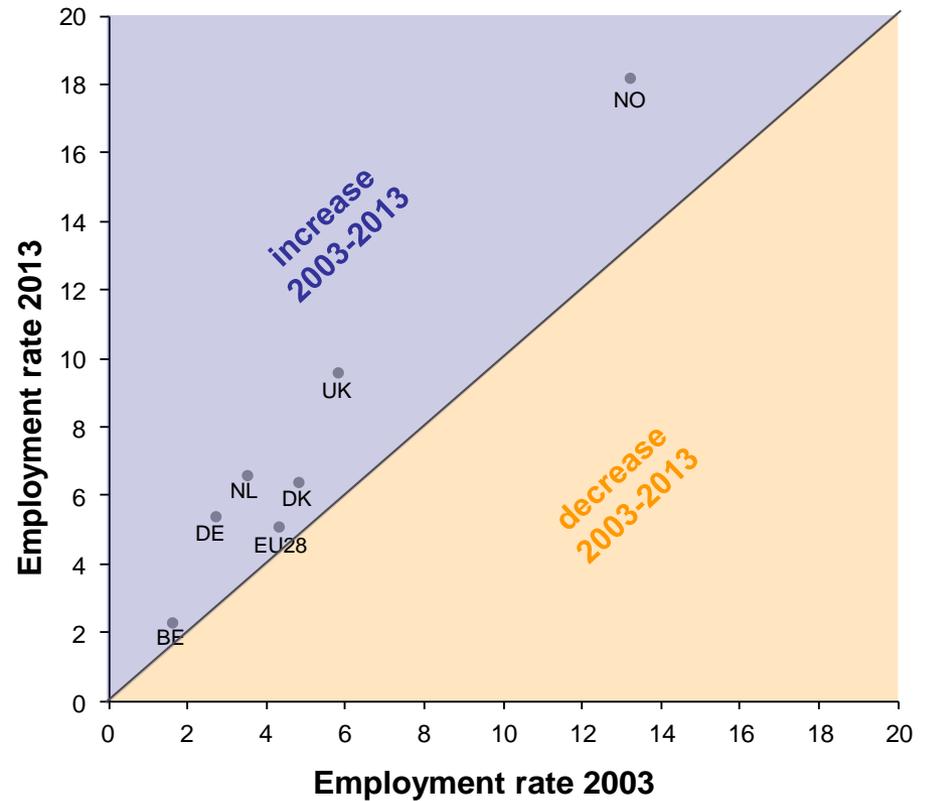


# Change in age-specific employment rates (2003-2013)

## 55-64 year-old



## 65+ year-old



# Summing up: Workforce aging

- » **First wave: “Growing into an age” (2015-2025)**
  - Main driver: relative size of the baby boom cohorts
  - Most firms will experience an increase in the share of older employees
  
- » **Second wave: “Slowing down” [?] (2025-2035)**
  - Retirement of baby boomers
  - Loss of valuable knowledge and experience
  
- » **Third wave: “Extending work lives” [?] (2035-2045)**
  - Lower pension claims
  - Different attitude towards work at older age as compared to earlier cohorts

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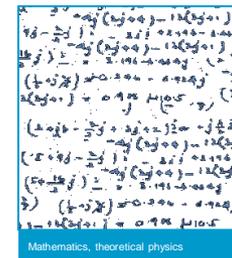
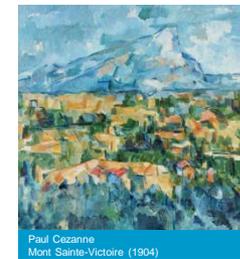
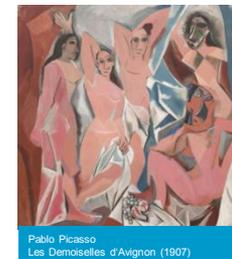
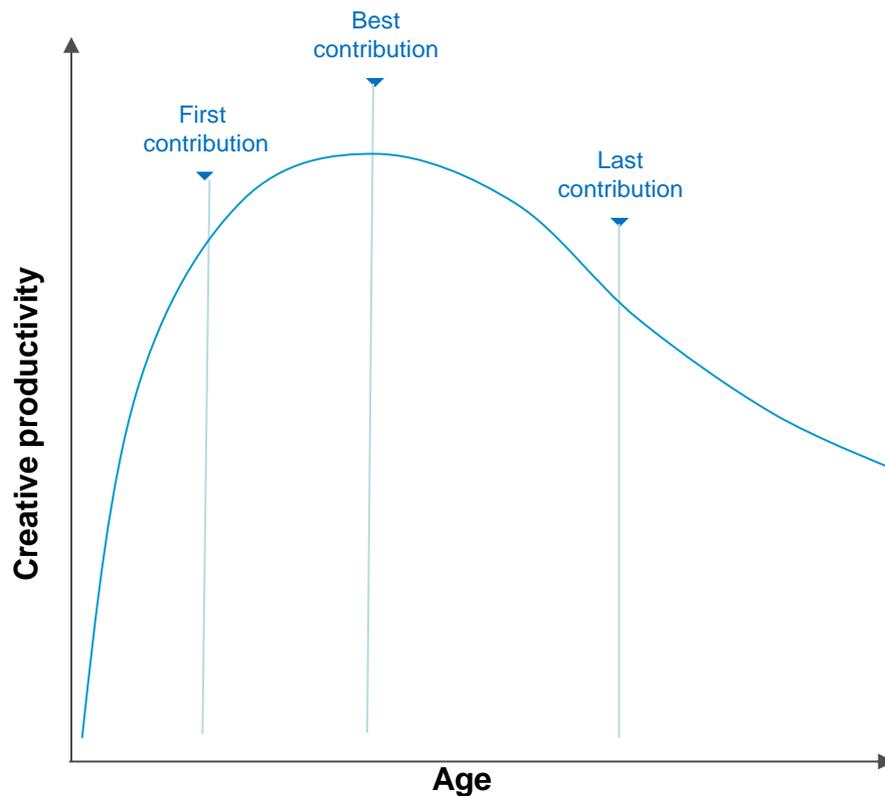
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# Creative achievements over the life course

**Inversely-u shaped age-performance profile** at the individual level (age of maximum performance differs across domains)



**conceptual  
creators**  
(„finders“)  
early peak

**experimental  
creators**  
(„seekers“)  
late peak

Image „Les Femmes d'Alger“ (Pablo Picasso)  
Image „Mont St. Victoire“ (Paul Cézanne)  
Image center left: courtesy of Janaka Dharmasena at FreeDigitalPhotos.net  
Image center right: courtesy of ponsulak (center right) at FreeDigitalPhotos.net

# Potential age effects on creative performance

Skill obsolescence  
Cohort differences (in particular in emergent technology fields)  
↓



Depend on (examples):

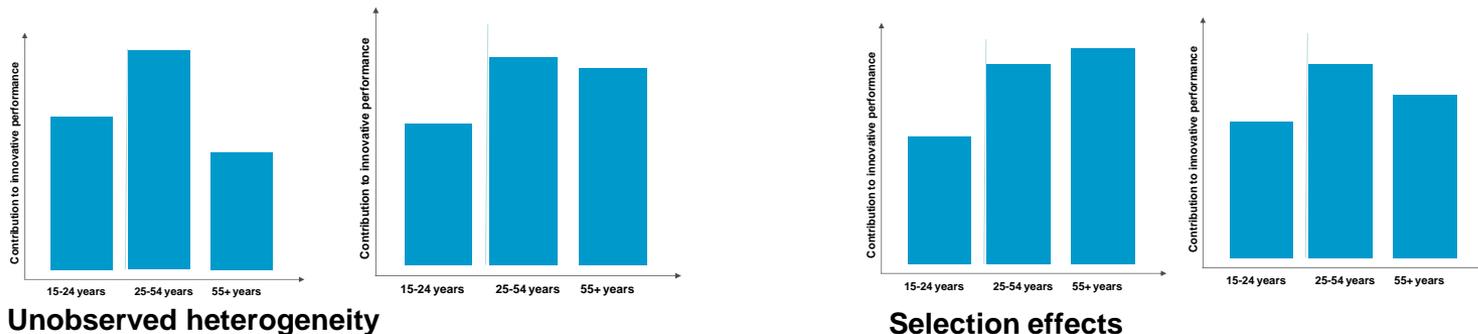
- openness for experience (⇒)
- risk attitude (↓)
- divergent thinking skills (⇒)
- fluid (↓) vs. crystallized intelligence (↑)

⇒

No age-related decline of intrinsic motivation  
⇒/ ↑

# Workforce age and the *development* of new technologies

- » **Aggregate-level studies** on workforce age and innovation (firms, regions, countries) – methodological pitfalls [Malmberg et al. 2008, Frosch 2011a, 2011b]



- » Higher shares of old employees **do not necessarily lead to a decrease** in innovative performance [Frosch 2011b, Frosch, Zwick & Göbel 2011]
- » However: Older workforces may be less innovative in emergent high tech fields due to **cohort-specific knowledge and skills** [Frosch 2011]
- » **Specific personnel measures** can further enhance the performance of older workers [Göbel & Zwick 2013, Meyer 2011]

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# Workforce age and the *adoption* of new technologies

- » **Age-neutral:** Intrinsic motivation should not play a major role
- » **Age-specific:** Learning capacity and physical abilities may decrease
- » **Cohort specific:** On average, older workers embody less computer skills



# Summary and Outlook

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# References

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