Digitalization, demographics, inequality and the environment:
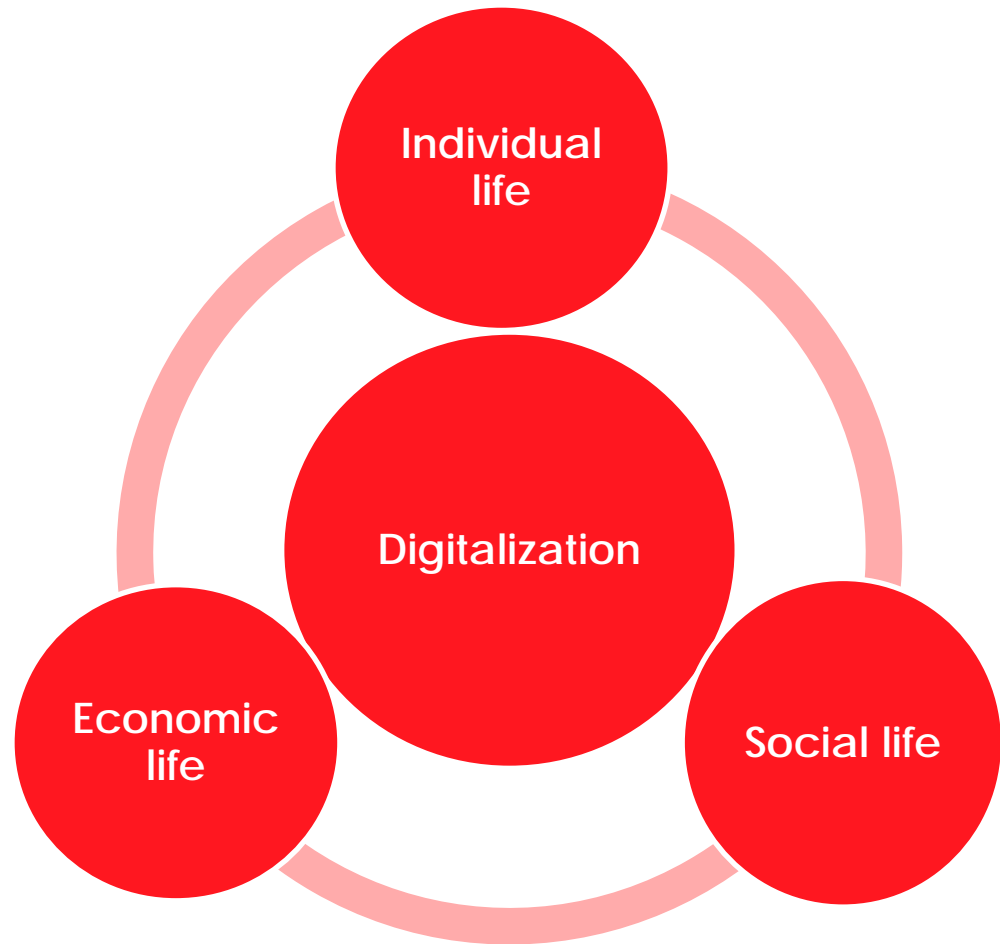# future trends in the Austrian labour market

Julia Bock-Schappelwein

Austria's place in the Europe of tomorrow
Session 1: Shaping Austria's future – demographics, digitalization, inequality and the environment
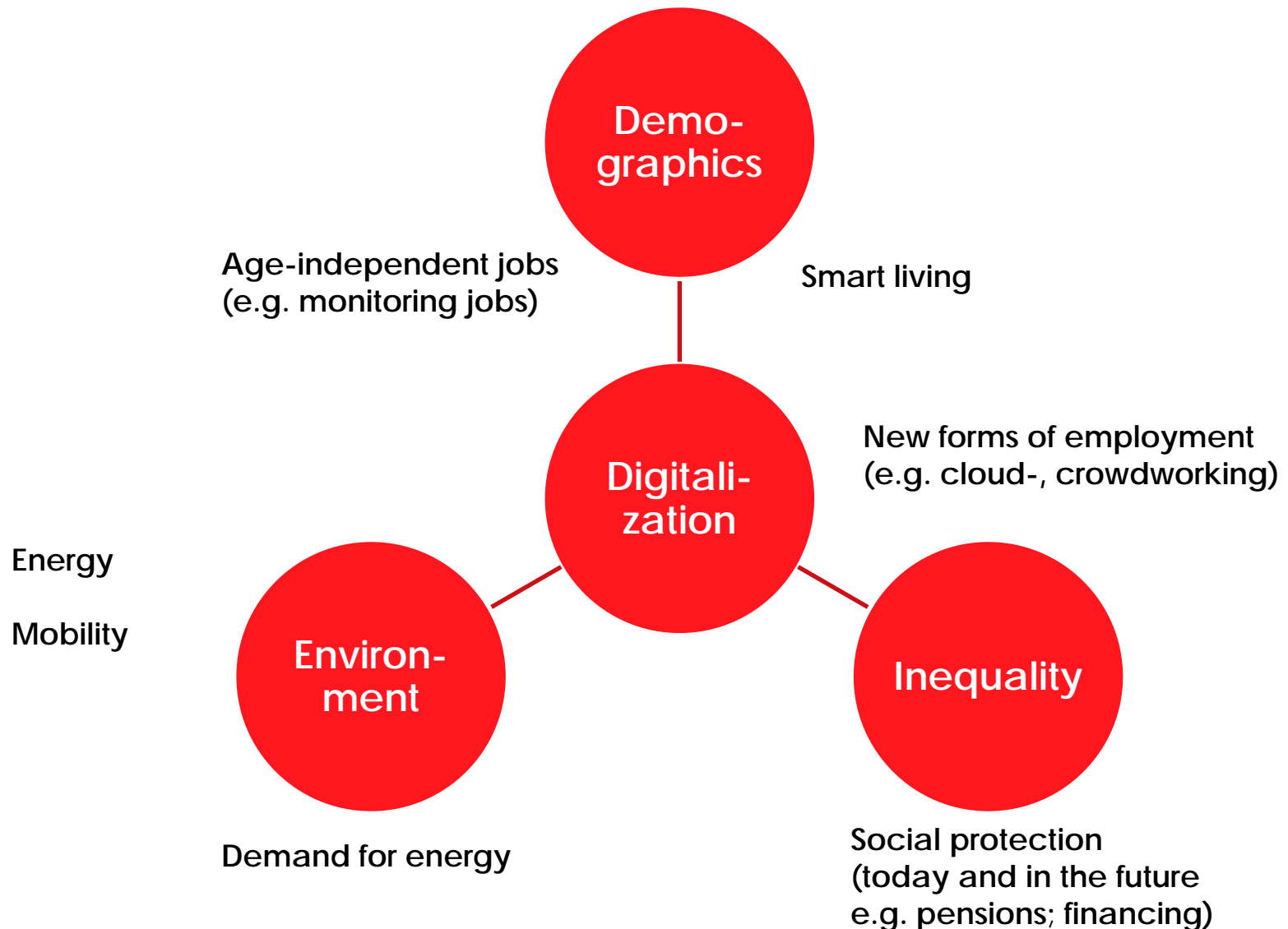27 April 2018, Oesterreichische Nationalbank, Vienna

- **Interaction between digitalization and demographics, inequality and the environment**

- **Digitalization and employment: future trends in the Austrian labour market**

- **Concluding remarks**

WIFO ▪

- ▪ **Endless possibilities to change the way we live, work and communicate with new technology**

- ▪ **At a speed we have never seen before**

Individual life

Digitalization

Economic life

Social life

WIFO

Demo-graphics

Digitali-zation

Environ-ment

Inequality

Age-independent jobs
(e.g. monitoring jobs)

Smart living

New forms of employment
(e.g. cloud-, crowdworking)

Energy

Mobility

Demand for energy

Social protection
(today and in the future
e.g. pensions; financing)

Questions:

- Who will work how, where and for whom and under what conditions?

- What role does locality play?

- Which job profiles will be developed?

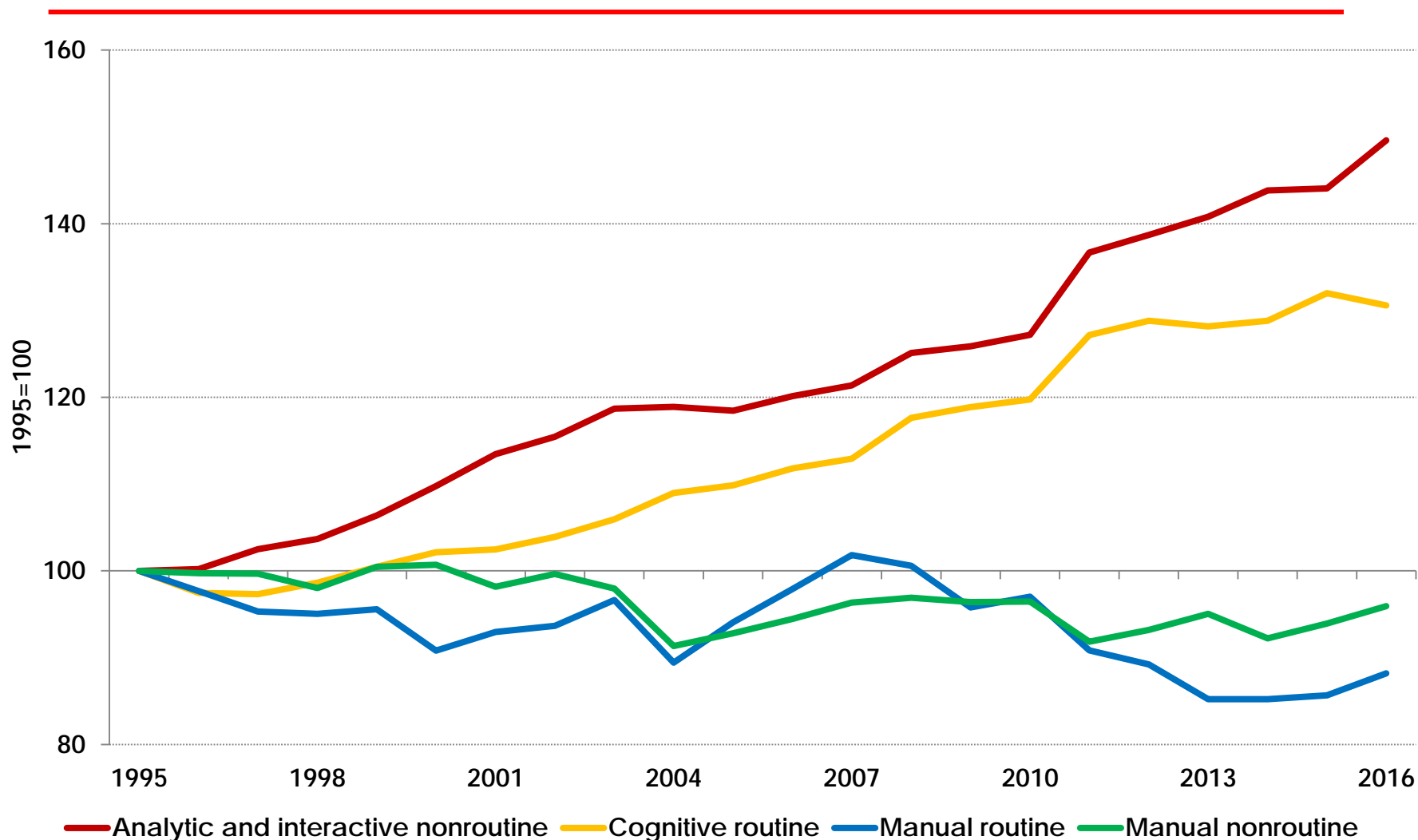- What qualifications, competences, skills will be needed?

Approaches of assessing the impact of automatization / digitalization on employment:

- Learning from past developments

- Assessing the risks of occupations / tasks to be automated

- Assessing the impact of using robots on employment

Digitalization and employment: What do we know from recent development?

WIFO ■

- **Less physically demanding, monotonous and simple activities, but more monitoring activities**

- **New task profiles also for less qualified workers (e.g. communication skills, relevant in monitoring activities)**

- **More high skilled jobs (less routine, less manual routine, more analytical and interactive non-routine)**

- **Combined vocational qualifications & IT-skills are on demand**

- **Less work accidents (e.g. as a consequence of automated production processes)**

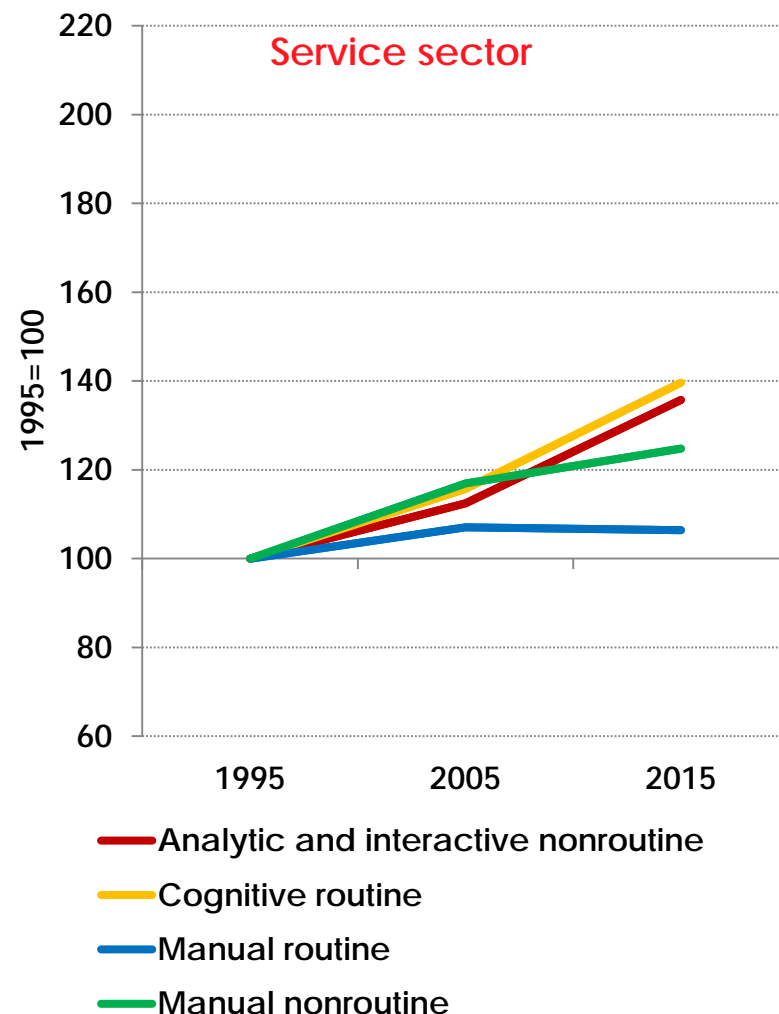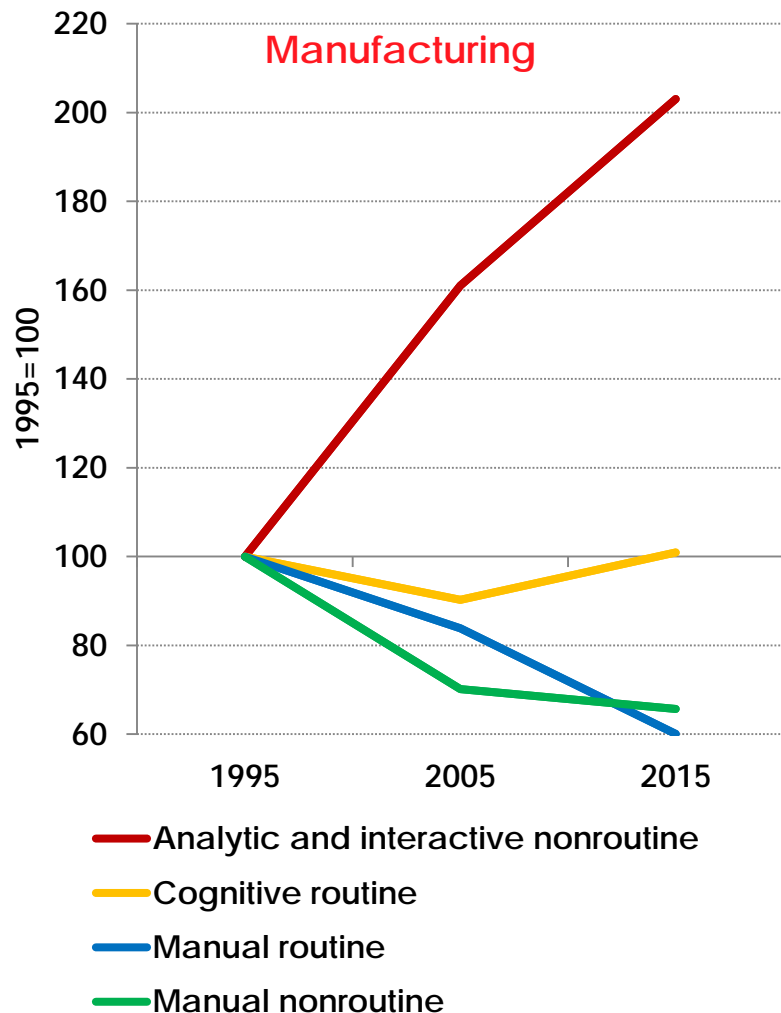# Which qualifications and competencies will be needed in the labor market?

- Being able to adapt to new labour market situations

- Mix of formal qualifications, competencies and skills that make the human workforce different from robots or programmed algorithms
  - Understanding and communicating information
  - Problem solving (unstructured/non-standardized problems)
  - Doing manual non-routine tasks

- Frey (2010): literacy skills as basic skills

- Hausegger (2016): literacy skills are required to use digital technologies
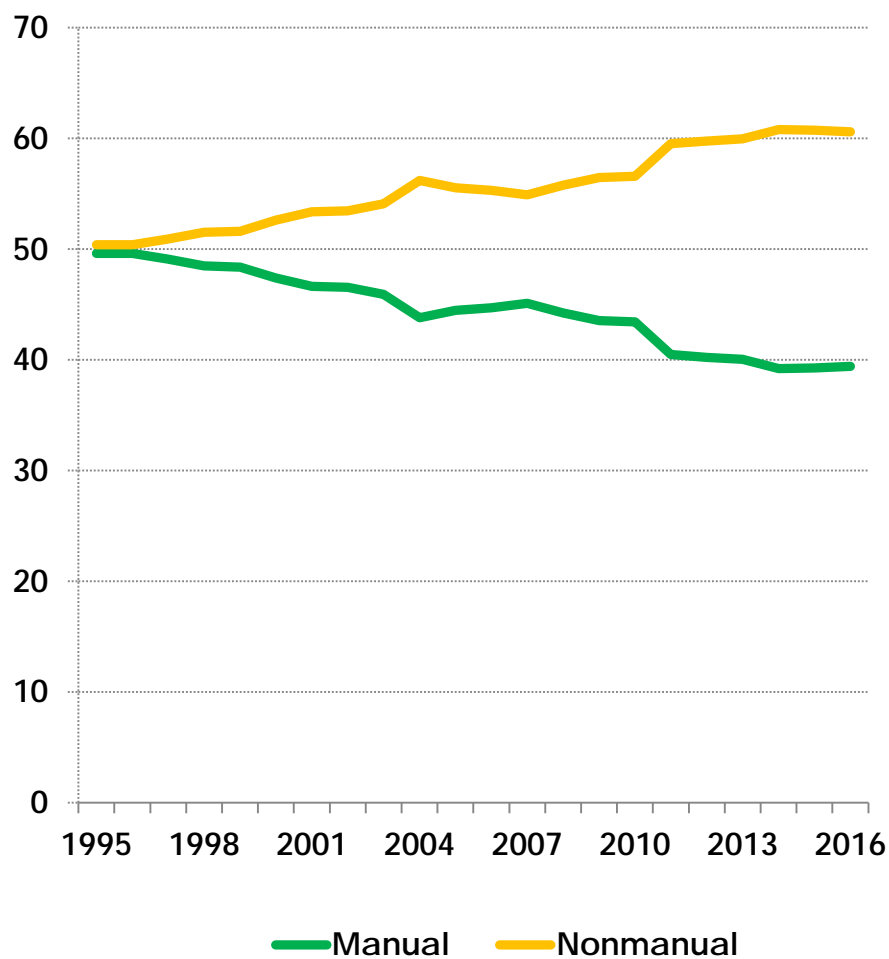
Employment growth by tasks in Austria
(1995-2016)

WIFO ◼

1995=100

Year	
160	
140	
120	
100	
80	

1995 · 1998 · 2001 · 2004 · 2007 · 2010 · 2013 · 2016

— **Analytic and interactive nonroutine** — **Cognitive routine** — **Manual routine** — **Manual nonroutine**

S: Statistics Austria: LFS, WIFO-calculations. 2010/2011 break in data base. ISCO-88 1995-2010, ISCO-08 2011-2015. Break in data base 2003/04: change LFS calculations. See for more details *Bock-Schappelwein* (2016).

Employment growth by tasks and sector in Austria
(1995-2015)

Manufacturing

Service sector

Analytic and interactive nonroutine

Cognitive routine

Manual routine

Manual nonroutine

S: Statistics Austria: LFS, WIFO-calculations. 2010/2011 break in data base. ISCO-88 1995-2010, ISCO-08 2011-2015. Break in data base 2003/04: change LFS calculations. See for more details *Bock-Schappelwein et al.* (2017).
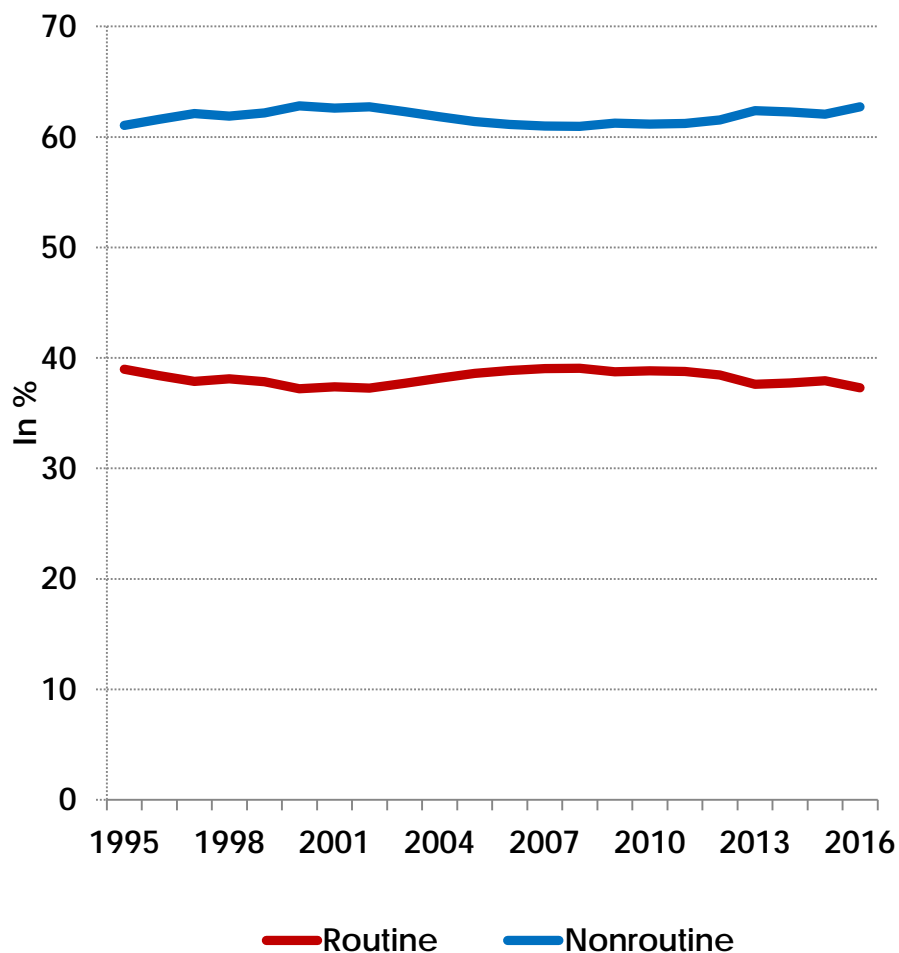
Employment structure by tasks in Austria
(1995-2016)

S: Statistics Austria: LFS, WIFO-calculations. 2010/2011 break in data base. ISCO-88 1995-2010, ISCO-08 2011-2015. Break in data base 2003/04: change LFS calculations. See for more details *Bock-Schappelwein* (2016).

- **High skilled tasks are expected to be demanded in a digitalized labour market**

- **Labour force has to meet changing requirements (e.g. low skilled workers are often required to have communication skills)**

- **Literacy skills are essential in a digitalized labour market**

Thank you very much for your attention!

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