Digital technologies, new work and policy

Maarten Goos (m.goos@uu.nl)
Utrecht University & Instituut Gak

25 May 2021, Bruegel

https://www.bruegel.org/events/the-work-of-the-future-how-are-new-jobs-created-and-what-are-the-implications-for-labour-markets/

Race between automation and augmentation

- *What do we need?*

  A better understanding of today's **race between automation and new job creation** → David, Anna and Bryan's work is key contribution.

- *What do we know*?

  History suggests **broadly shared benefits** are possible but also depend on **institutional changes** that were hard political battles.

- *What can we do?*

  1. Inclusive innovation; 2. Competition policy; 3. Skills and occupational mobility; 4. Geographic mobility; 5. Labour relations.
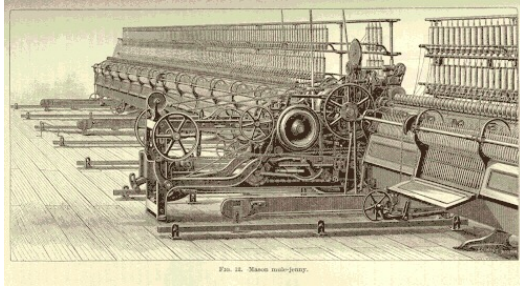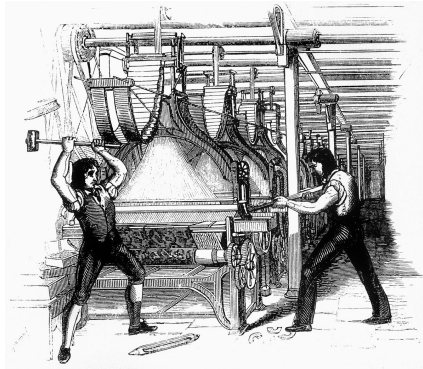
Historical evidence

1890

2021

Place Royale (Koningsplein), Brussels

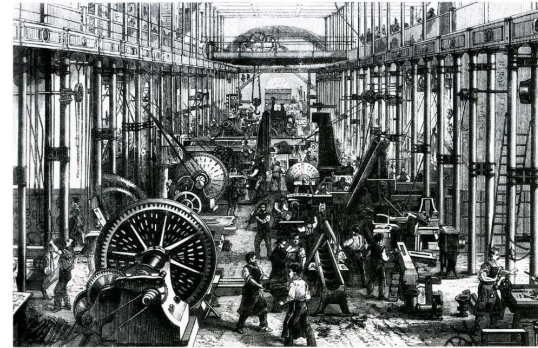# First Industrial Revolution (steam engine)

Mule Jenny

Le Belge

« Le Belge », première locomotive à voyageurs construite en Belgique (1835).
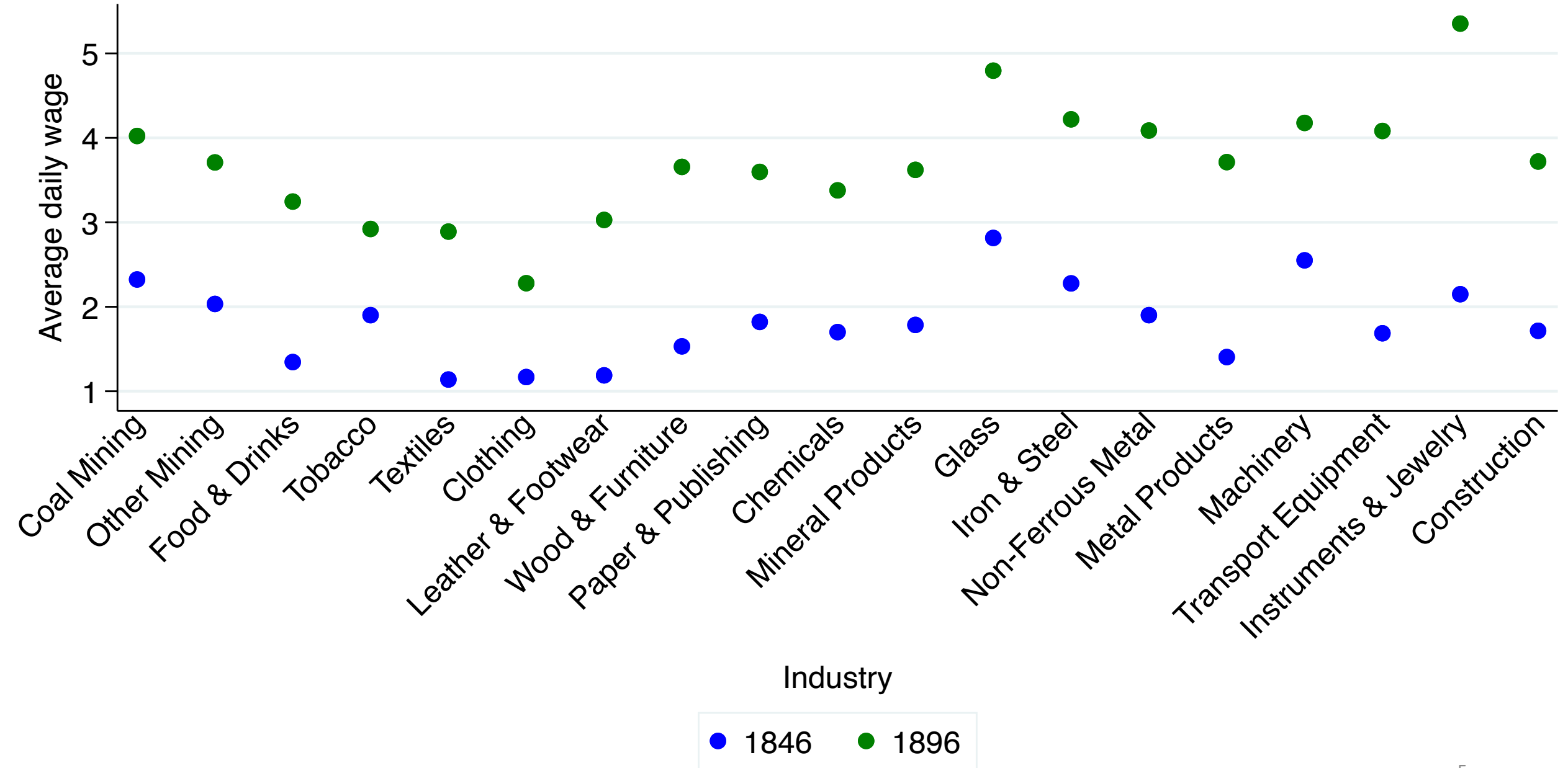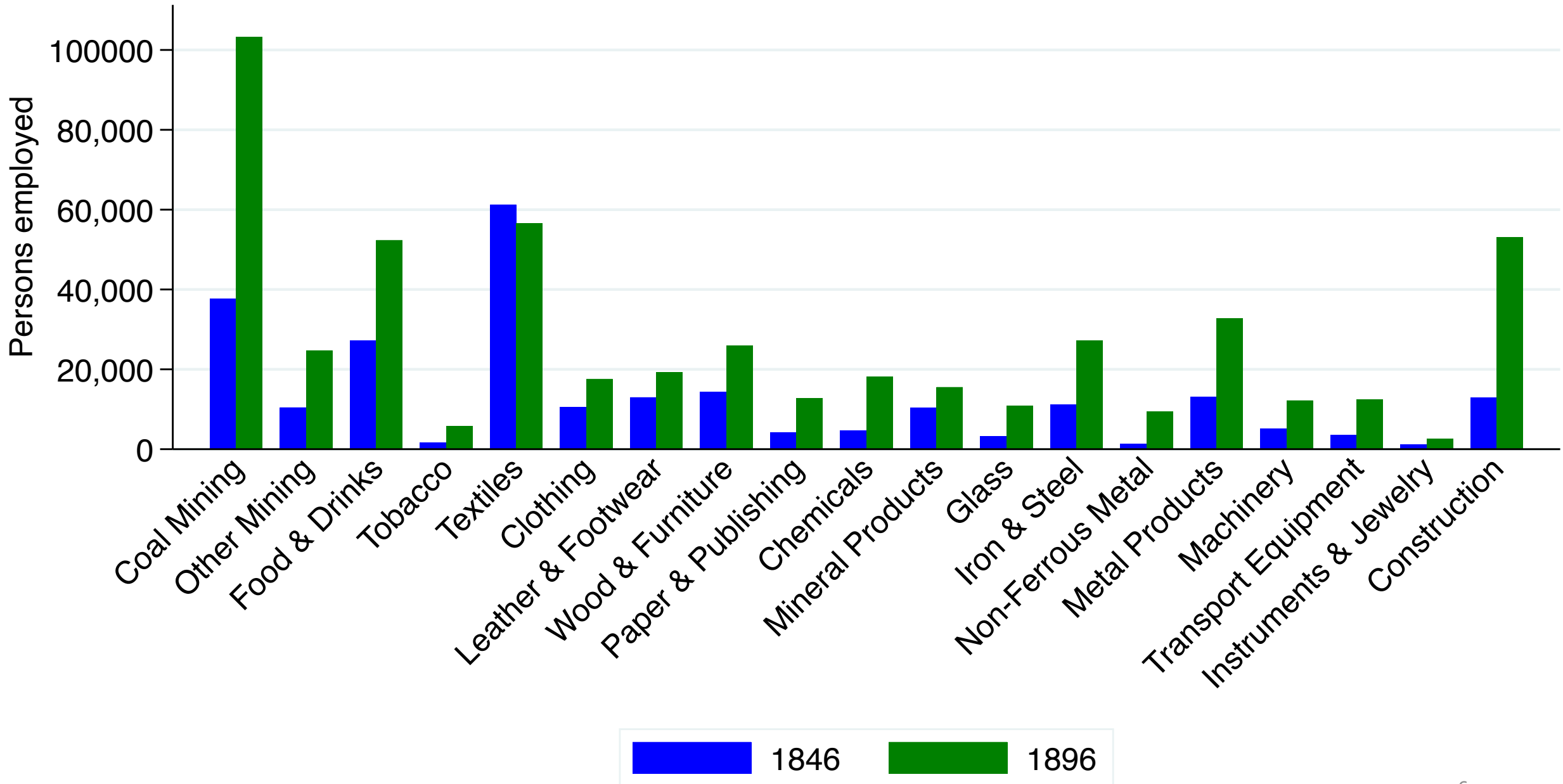
1796
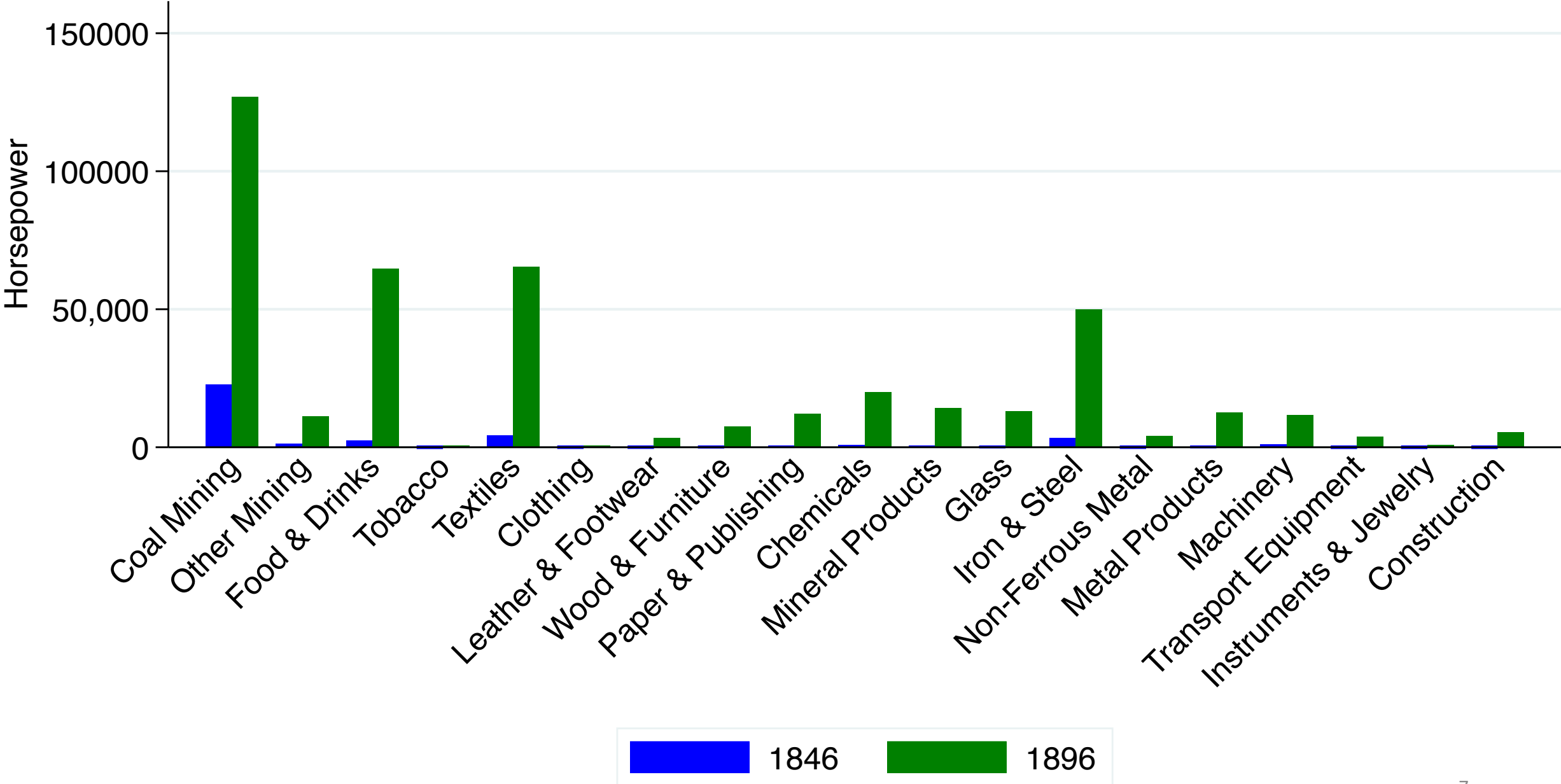
1846

Augmenting for all workers

1896

Adult daily wages in Belgium (in 1910 Belgian franc)

Delabastita & Goos (21)

5

Adult employment in Belgium

Delabastita & Goos (21)

6

Steam engine horsepower in Belgium

Delabastita & Goos (21)

7

Key institutional changes

Mule Jenny

Le Belge

Institutional changes after 1846

1. Broad implementation of steam engines at falling capital prices
2. Competitive product and labour markets
3. Schooling and occupational mobility
4. Geographic mobility (to city or by train)
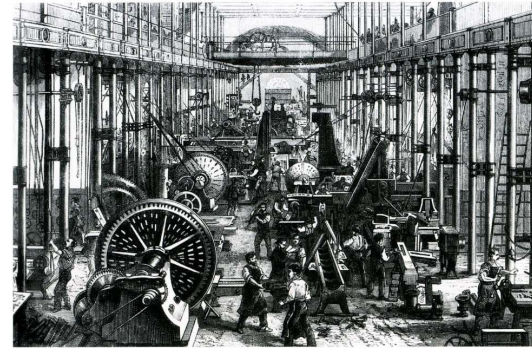5. Rise of labour relations

Many of these changes were hard political battles
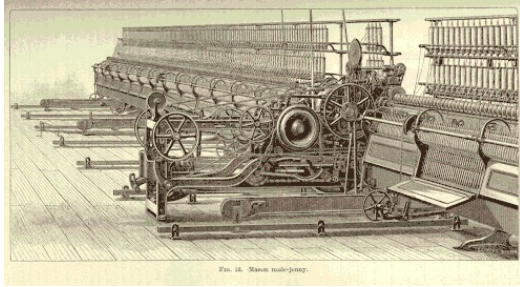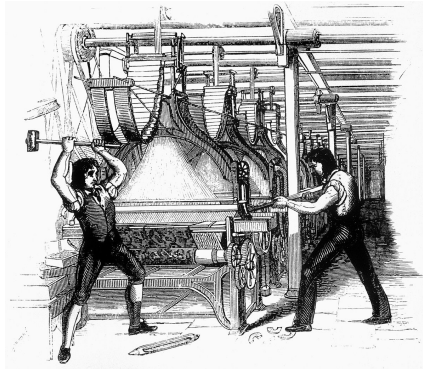
1796

1846

1896

Augmenting for all workers

Caselli & Manning (19)

Autor, Levy & Murnane (03)

Acemoglu & Autor (11)

Acemoglu & Restrepo (18)

8

Contemporary evidence

1890

2021

Place Royale (Koningsplein), Brussels

Digital Revolution

Cumulative Change in Real Log Weekly Earnings 1963 - 2017
Working Age Adults, Ages 18 - 64

1980

2020

2070

Not augmenting for all workers

Falling real wages in the US

Cumulative Change in Real Log Weekly Earnings 1963 - 2017
Working Age Adults, Ages 18 - 64

Autor (19)

Job polarization in the US

Figure 6. Employment Growth Has Polarized Between High- and Low-Paid Occupations
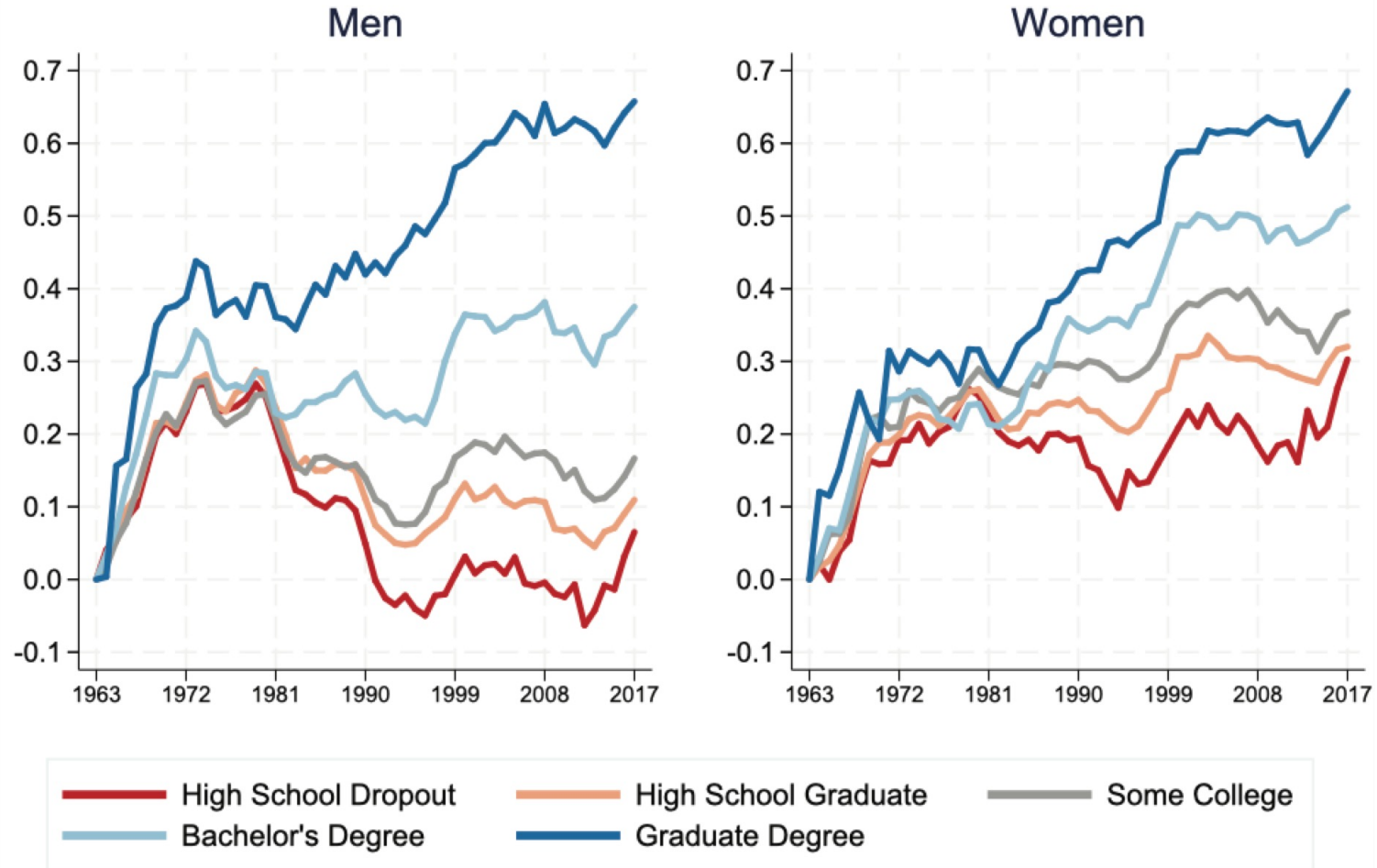
CHANGES IN OCCUPATIONAL EMPLOYMENT SHARES AMONG WORKING-AGE ADULTS, 1980−2015

Autor, Mindell & Reynolds (20)
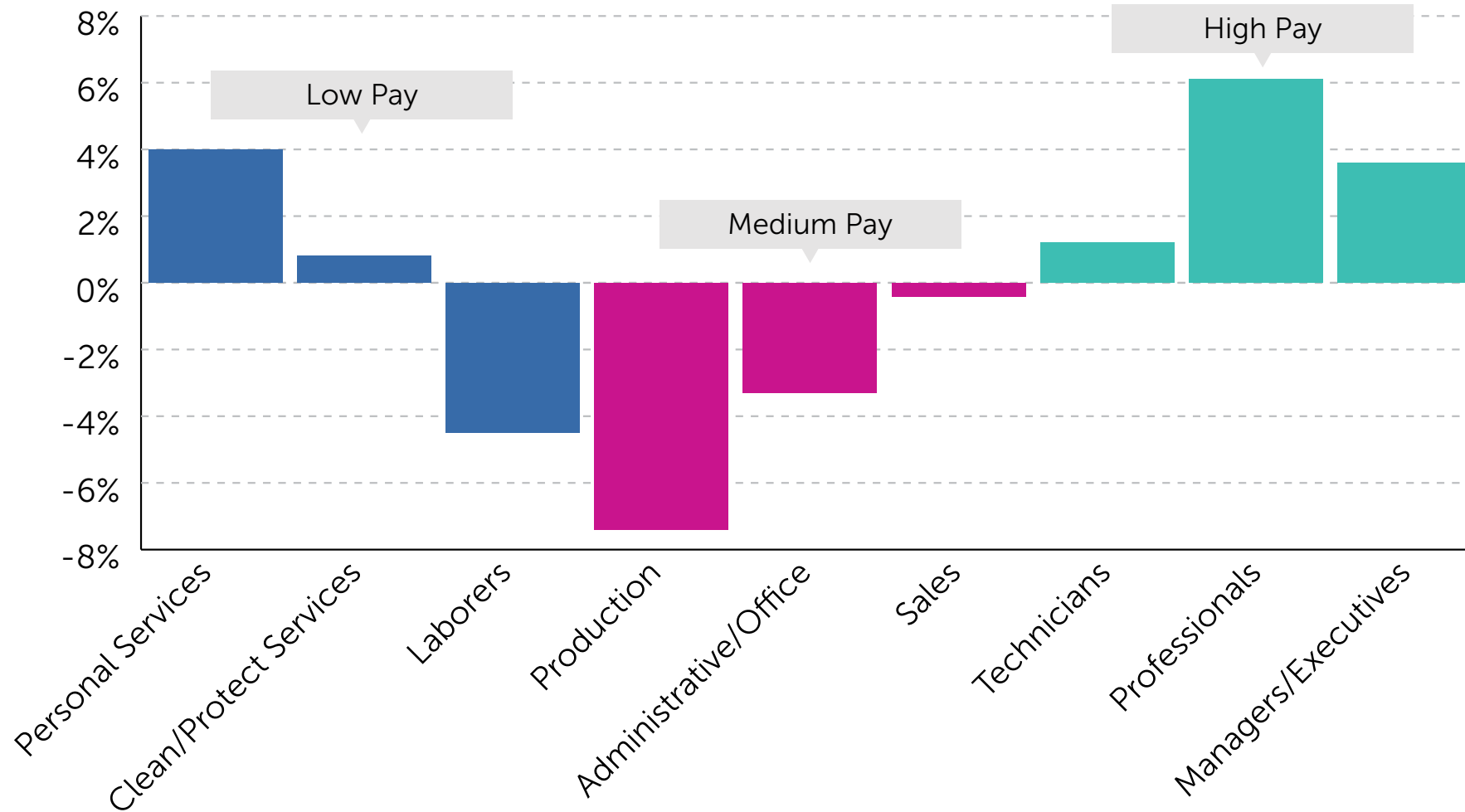
Job polarization in the EU

Change in employment shares by occupation 1993-2006 in 16 European countries
Occupations grouped by wage tercile: Low, Middle, High
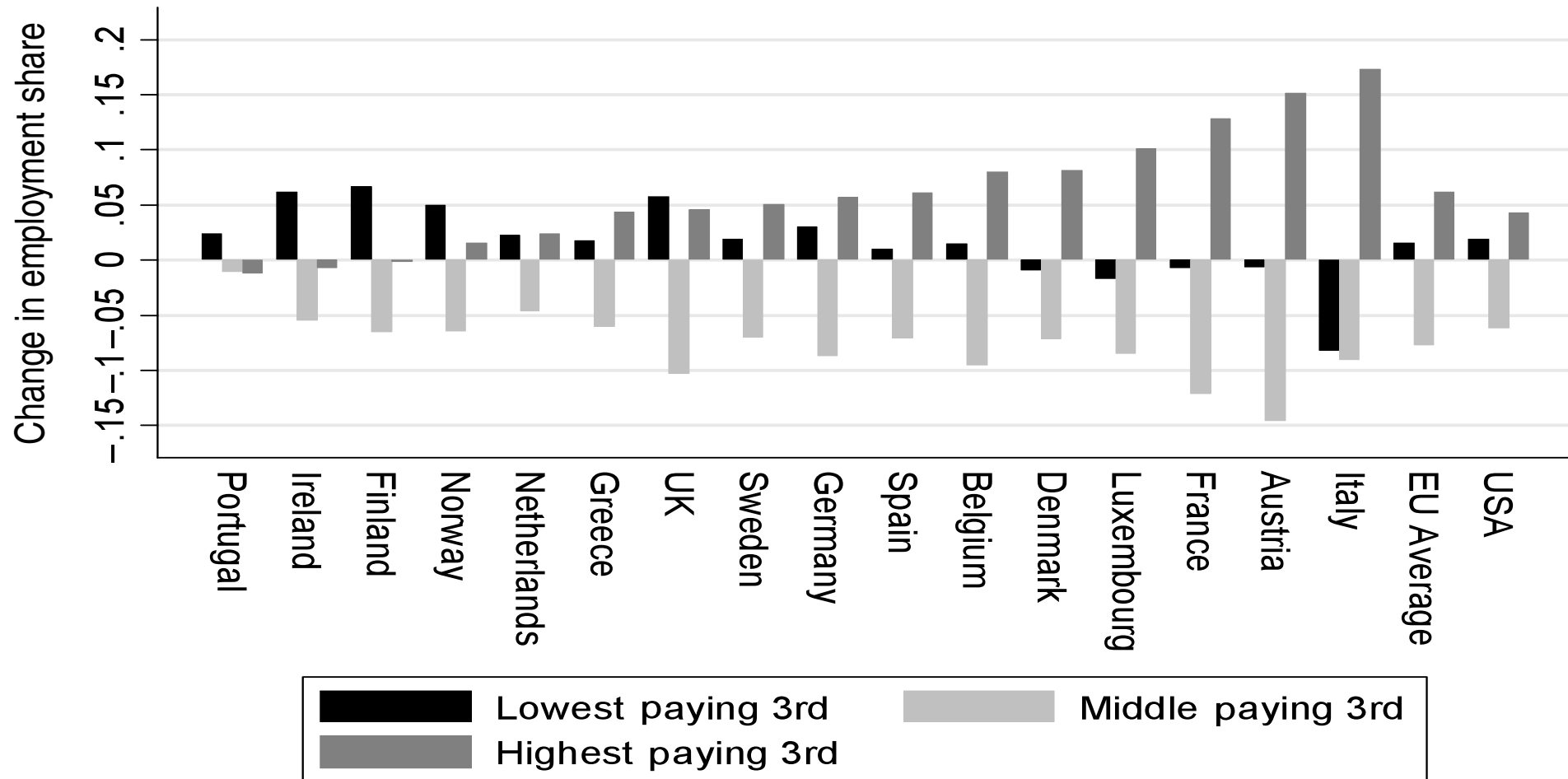
Goos, Manning & Salomons (14)

Digital technologies, new work and policy

Cumulative Change in Real Log Weekly Earnings 1963 - 2017
Working Age Adults, Ages 18 - 64

Men | Women

High School Dropout | High School Graduate | Some College
Bachelor's Degree | Graduate Degree

Change in employment sh... | ...ean countries

Portugal, Ireland, Finland, Norway, Netherlands, Greece, UK, Sweden, Germany, Spain, Belgium, Denmark, Luxembourg, France, Austria, Italy, EU Average, USA

Lowest paying 3rd | Middle paying 3rd
Highest paying 3rd

What do we need?

A better understanding of how digital technologies displace workers and create new jobs, i.e. good careers.

→ David, Anna and Bryan's work is key.

A change of priorities and a new approach that uses digital technologies to augment jobs.

cf. European Green Deal using digital technologies for resource-saving.

What can we do?

1. Support but direct digital technologies to be inclusive
2. Competitive product and labour markets
3. Skills and occupational mobility
4. Geographic mobility (and transfers)
5. Re-defining labour relations

Many of these changes will be hard political battles
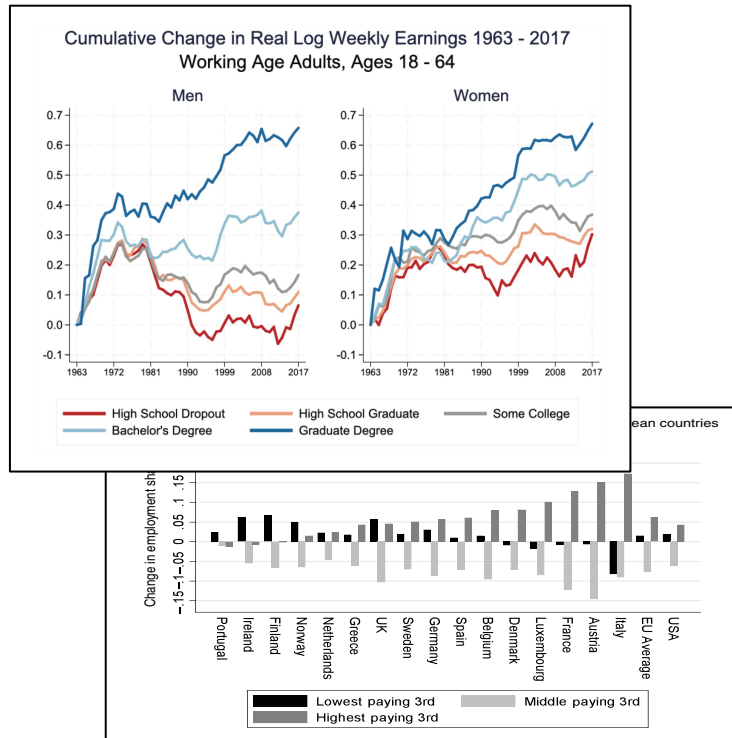
1980

Not augmenting for all workers

2020

2070

14