



An Roinn Airgeadais
Department of Finance



AI & income inequality in Ireland

Karina Doorley, Sorchá O'Connor, Richard O'Shea & Dora Tuda

October 13th 2026



Overview

1. Motivation
2. Methodology
3. Results
- 4. Alternative scenarios**
5. Exchequer cost & inequality
6. Conclusion & policy implications

Motivation



The impact of Artificial Intelligence (AI) on the labour market is likely to be mixed

- Reduced demand for workers whose jobs can be (partially) done by AI
(Susskind, 2020)
- Increased or new demand for workers whose jobs are complementary to AI
(Acemoglu & Restrepo, 2019)
- Increased human creativity, productivity and economic growth as workers are freed from time-consuming and repetitive tasks (Fan & Liu, 202; Gonzales, 2023)
- There may also be an increased return to capital (Cazzaniga et al., 2024)

Motivation



The impact of Artificial Intelligence (AI) on the labour market is likely to be mixed:

- OECD (2023): no evidence of large-scale job destruction from AI, but occupational transformation likely
- Cazzaniga et al. (2024): 40% of global employment **exposed** to AI, 60% of jobs in advanced economies; higher skilled more exposed but also higher productivity gains
- Acemoglu & Restrepo (2018; 2019): displacement effect (jobs replaced by AI; Susskind, 2020) and reinstatement effect (new tasks/occupations and productivity gains; Fan & Liu, 2021; Gonzales, 2023)

Motivation



- Negative employment growth for 15-29 year olds in sectors with the highest levels of AI "risk" (Department of Finance, 2026)
- AI may be displacing graduate recruitment in certain sectors
- Competing theory that the rise of remote work - which can slow on-the-job learning and diminish the value of young hires- is responsible (Lambert & Schindler, 2026)



Motivation

Some evidence on productivity gains from RCTs for specific occupations:

- Brynjolfsson, Li & Raymond (2023): US call centre data, 14% increase in productivity with AI, largest improvement among less experienced workers
- Dell'Acqua et al. (2023): consultants randomly assigned to use GPT-4: increases in task completion and quality

EU-level estimates

- TFP expected to grow by 1% over 5 years in 31 European countries, and less if AI becomes highly regulated (Misch et al, 2026)

Far from conclusive and cannot extrapolate to all occupations



Motivation

Some professions are more exposed than others to AI

- AI exposure is positively correlated with education and income
(Felten et al., 2023; Eloundou et al., 2023; Williamson et al., 2024)

Workers, professions & capital income are unevenly distributed across income distribution

- AI adaptation likely to affect wage and income inequality
- Increased wage inequality doesn't necessarily mean increased income inequality
- Household formation, progressive tax and welfare policies

How is AI adoption likely to affect the income distribution in Ireland?



Overview

1. Motivation
2. Methodology
3. Results
- 4. Alternative scenarios**
5. Exchequer cost & inequality
6. Conclusion & policy implications

AI exposure



- Measured using the **Complementarity adjusted AI occupational exposure** index (C-AIOE)* developed by (Cazzaniga et al., 2024)
 - exposure: positively correlated with displacement probability
 - complementarity: positively correlated with potential for productivity gains
- Williamson et al. (2024) uses C-AIOE to identify occupational exposure in Ireland
- Robustness check – (Tolan et al., 2021) index, not complementarity adjusted

Figure 2: AI Exposure (AIOE) and Potential Complementarity (θ) in an Irish Context¹⁶



Williamson et al. (2024)

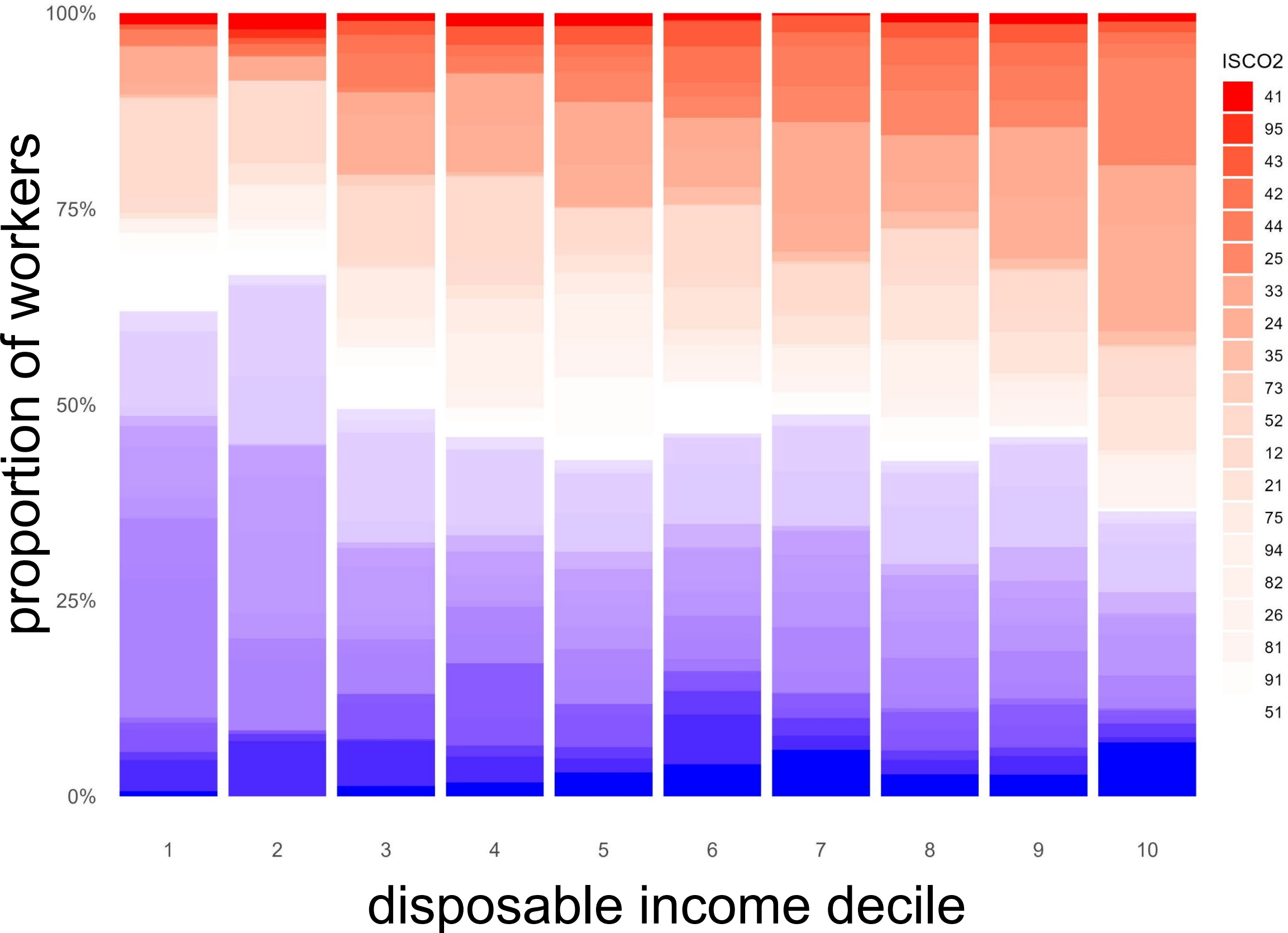
Mapping exposure to occupation



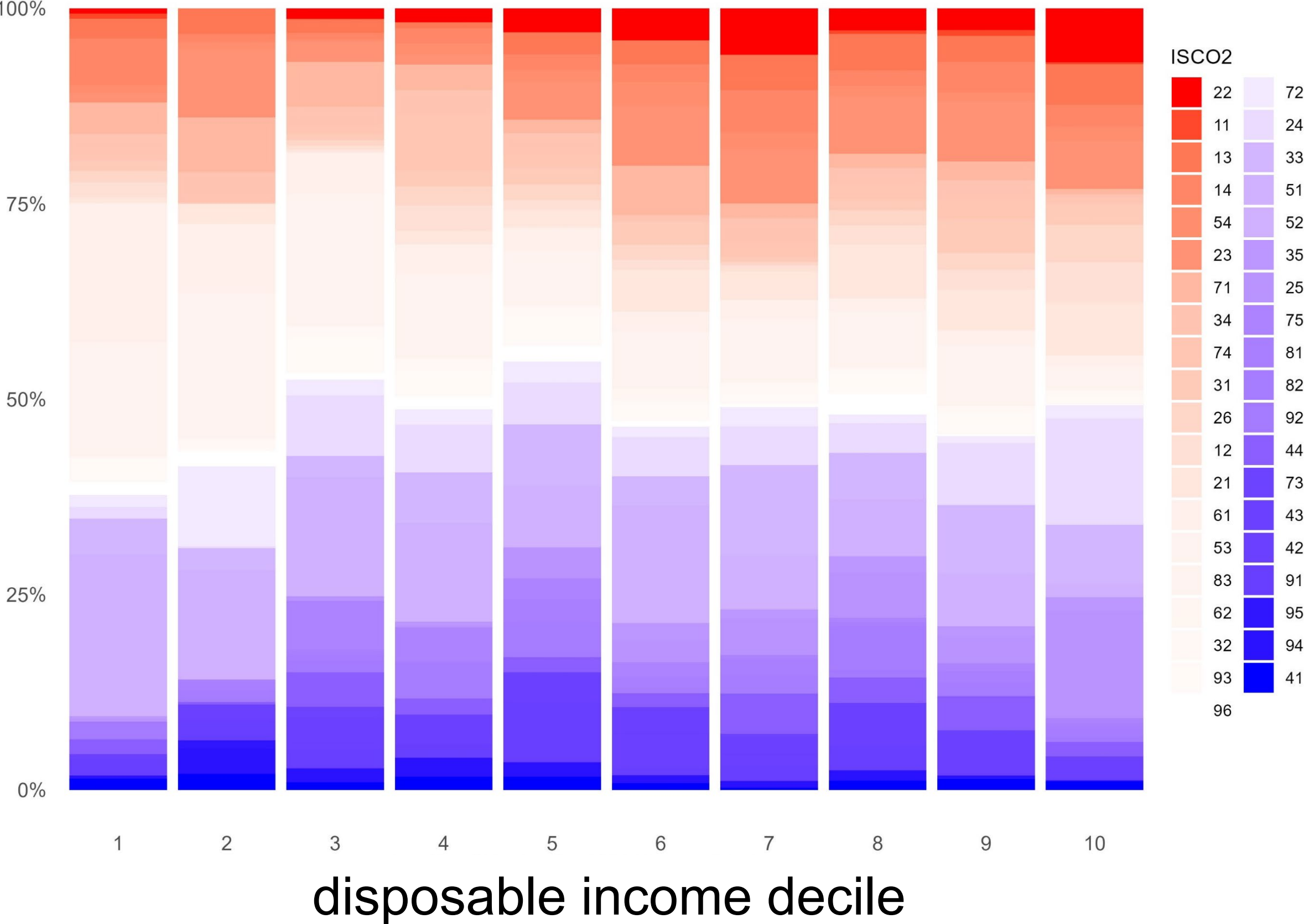
- Map C-AIOE scores → ISCO occupation codes (4 digit level)
- Calculate **weighted average C-AIOE score** for each sector (2 digit level)
 - Weight each occupation by size (# of employees)
 - Normalise (minimum C-AIOE = 0)



Worker exposure to AI (C-AIOE)



Worker complementarity with AI



Quantifying the (AI-induced) shock



The projected impacts of AI adoption on employment and wages are mixed

- Some research has derived a change in the share of occupation groups using historic data but is silent on the change in the total size of the labour force
- Others have derived changes in productivity, but these conflate wage changes and employment transitions



Quantifying the shock

The projected impacts of AI adoption on employment and wages are mixed

- Some research has derived a change in the share of occupation groups using historic data but is silent on the change in the total size of the labour force
- Others have derived changes in productivity, but these conflate wage changes and employment transitions

Main scenario



Short term shock, pre-job market transition

(Briggs & Kodnani, 2023) – “upper bound”

- 7 per cent employment loss
- 2.6 pp wage increase for those remaining

(Cazzaniga et al., 2024)

- 0.4 pp increase in return to capital



Microsimulation

- SWITCH model linked to 2022 SILC data, uprated to 2025
- Distribute employment shock by weighted C-AIOE index
 - within occupations, random workers selected to transition to unemployment
 - number of transitions set to hit scenario targets
- Distribute wage increase in a similar manner for remaining employees by “C”
- Apply capital income increase uniformly to those with investment income
- Recalculate household disposable income, accounting for tax/benefit system



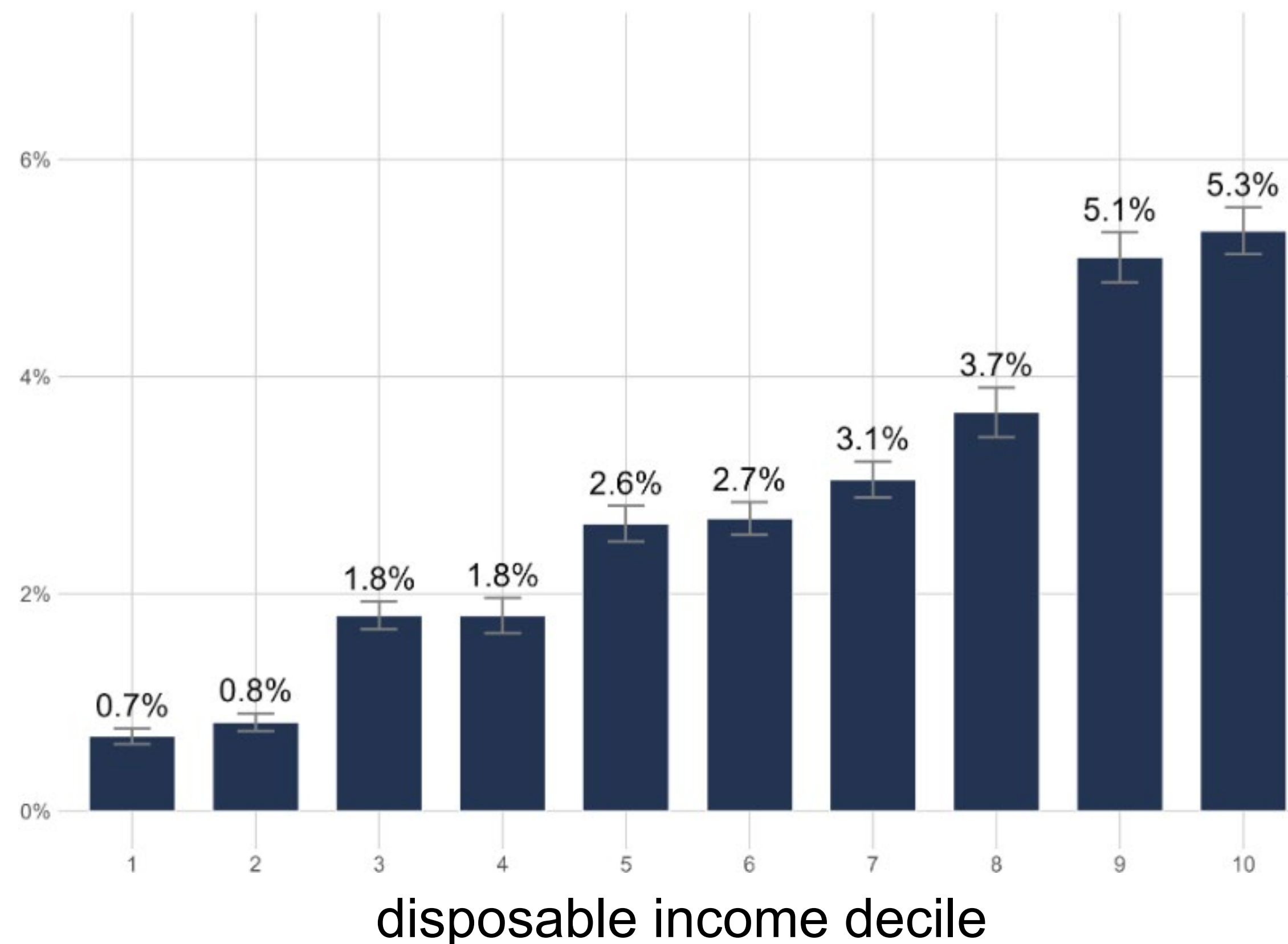
Overview

1. Motivation
2. Methodology
3. Results
- 4. Alternative scenarios**
5. Exchequer cost & inequality
6. Conclusion & policy implications



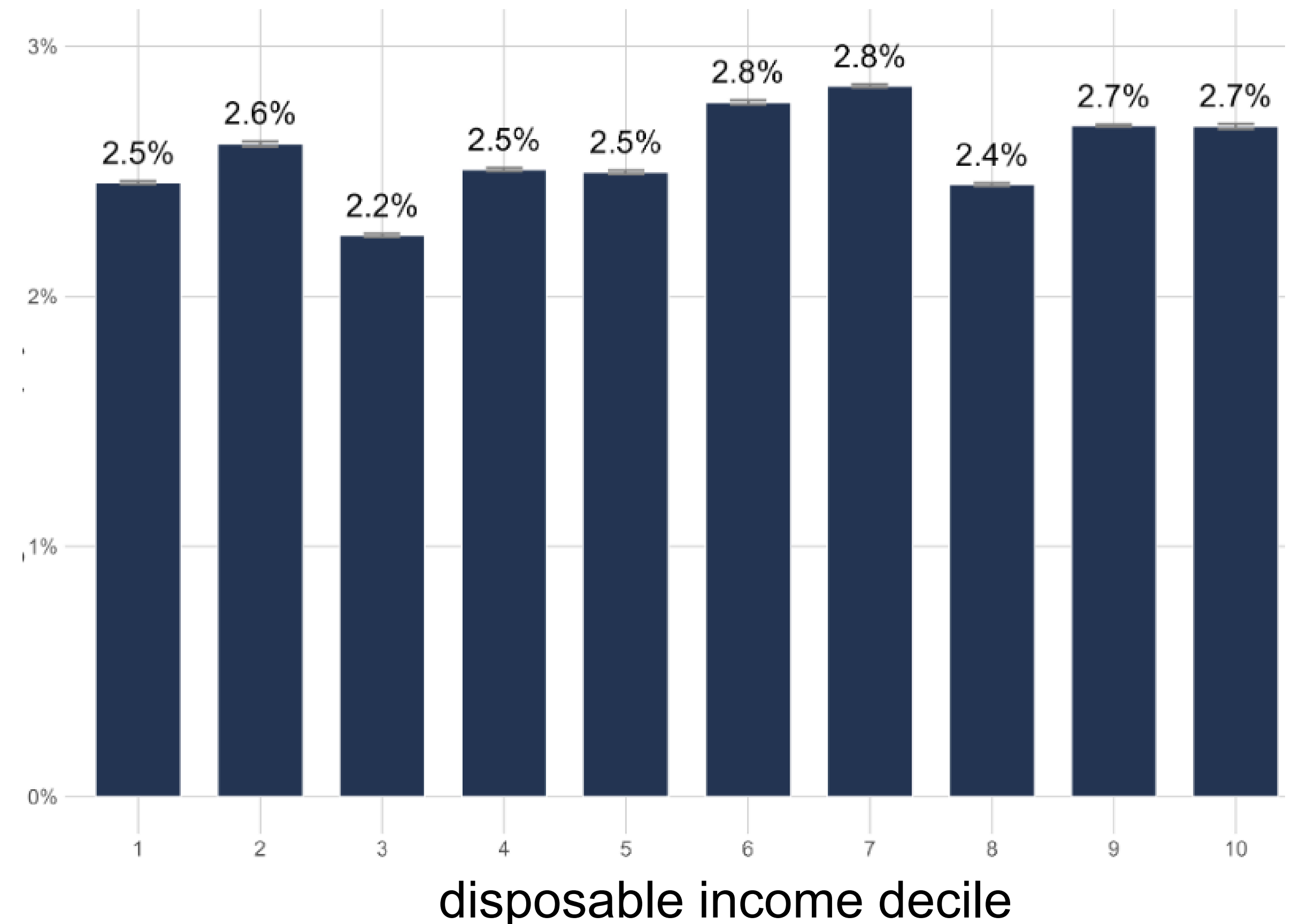
Employment effect

(per cent transitioning to unemployment)

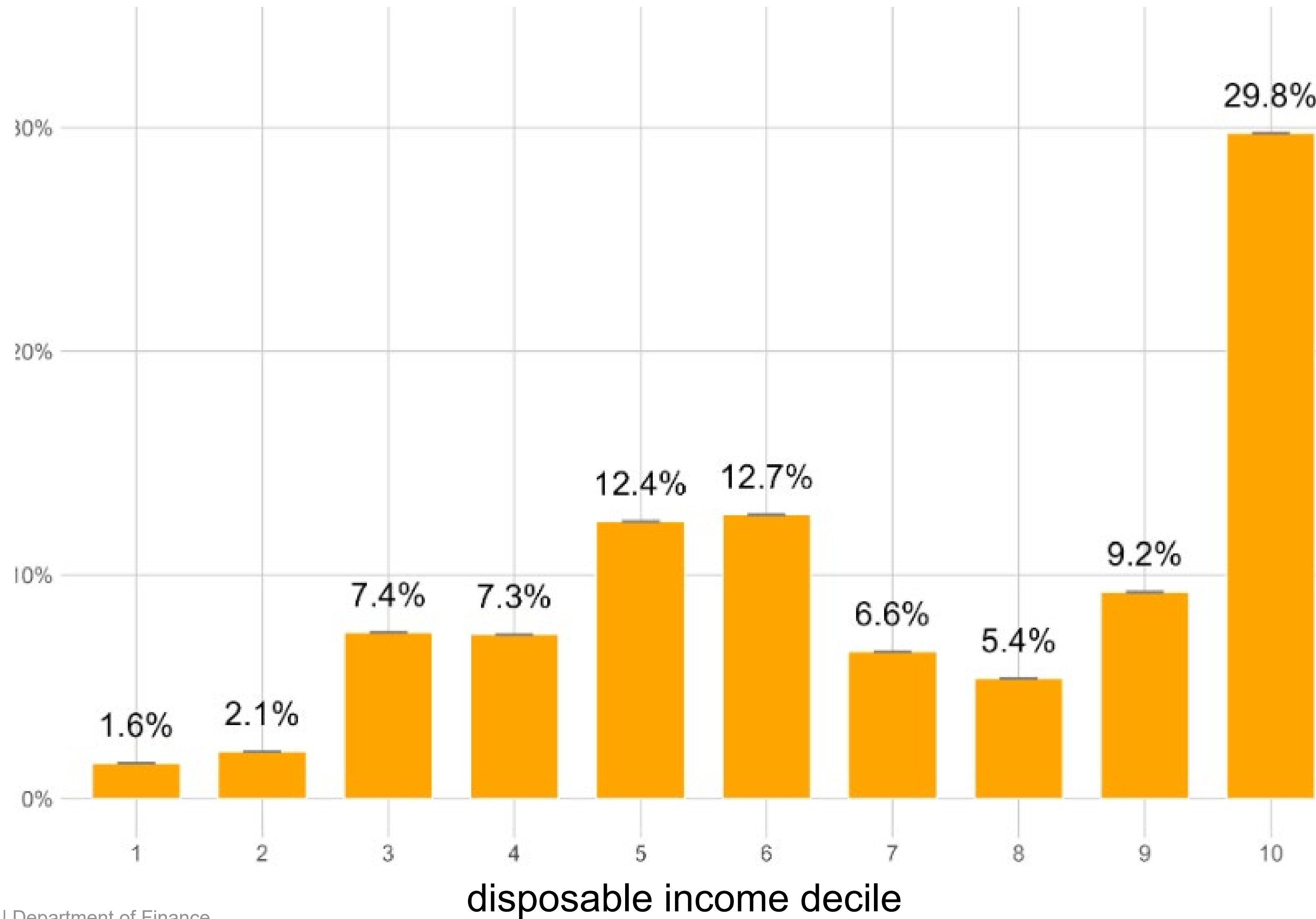


Wage effect

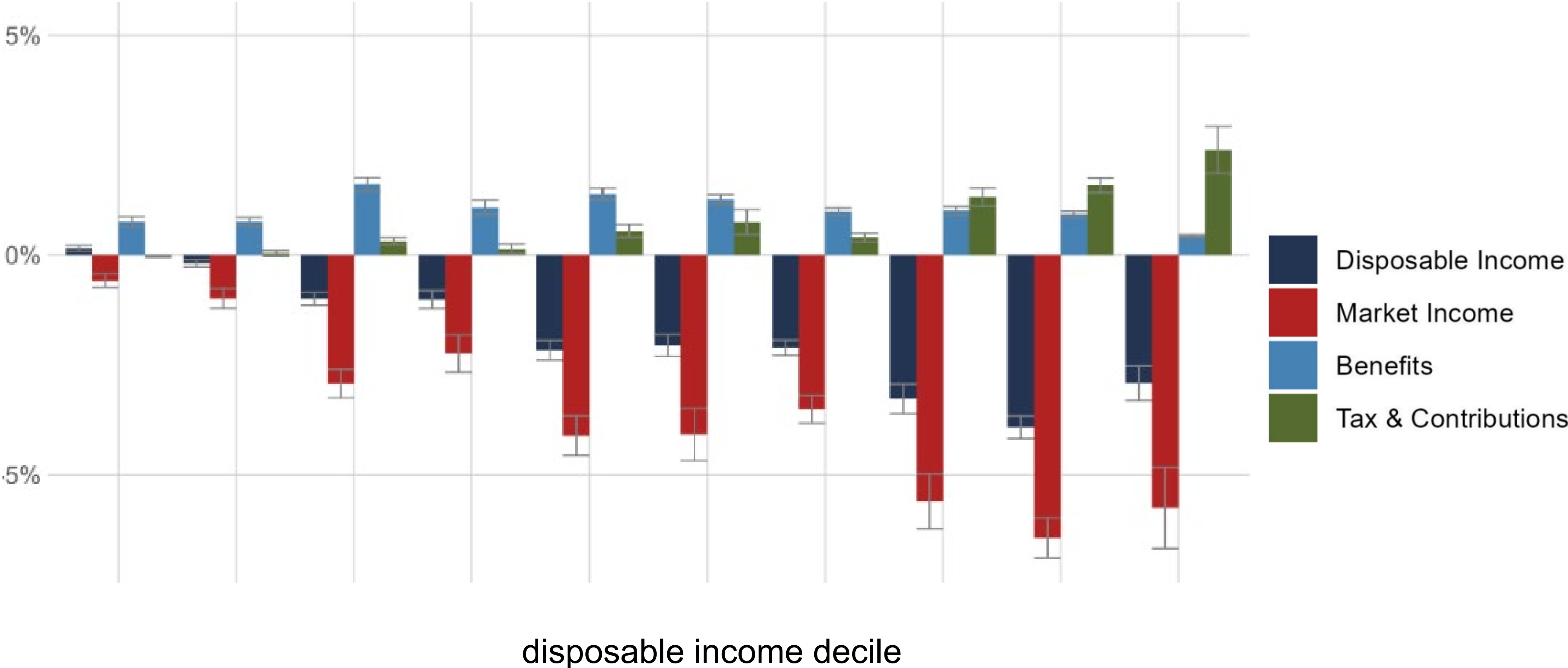
(per cent change; employment income)



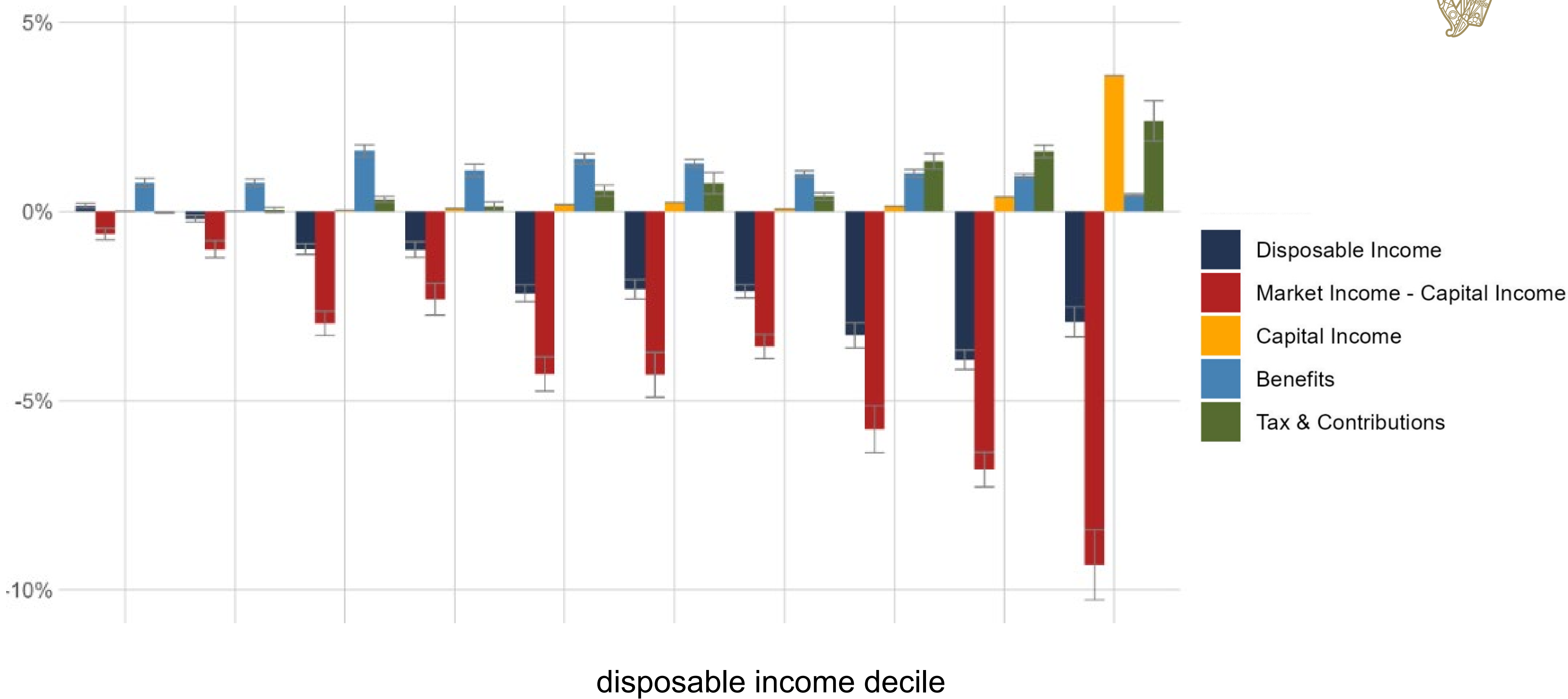
Capital income effect (per cent change; capital income)



Household income effect (per cent change)



Household income effect (per cent change)





Overview

1. Motivation
2. Methodology
3. Results
- 4. Alternative scenarios**
5. Exchequer cost & inequality
6. Conclusion & policy implications



Alternative scenarios

(per cent change; average disposable income)





Overview

1. Motivation
2. Methodology
3. Results
4. Alternative scenarios
- 5. Exchequer cost & inequality**
6. Conclusion & policy implications

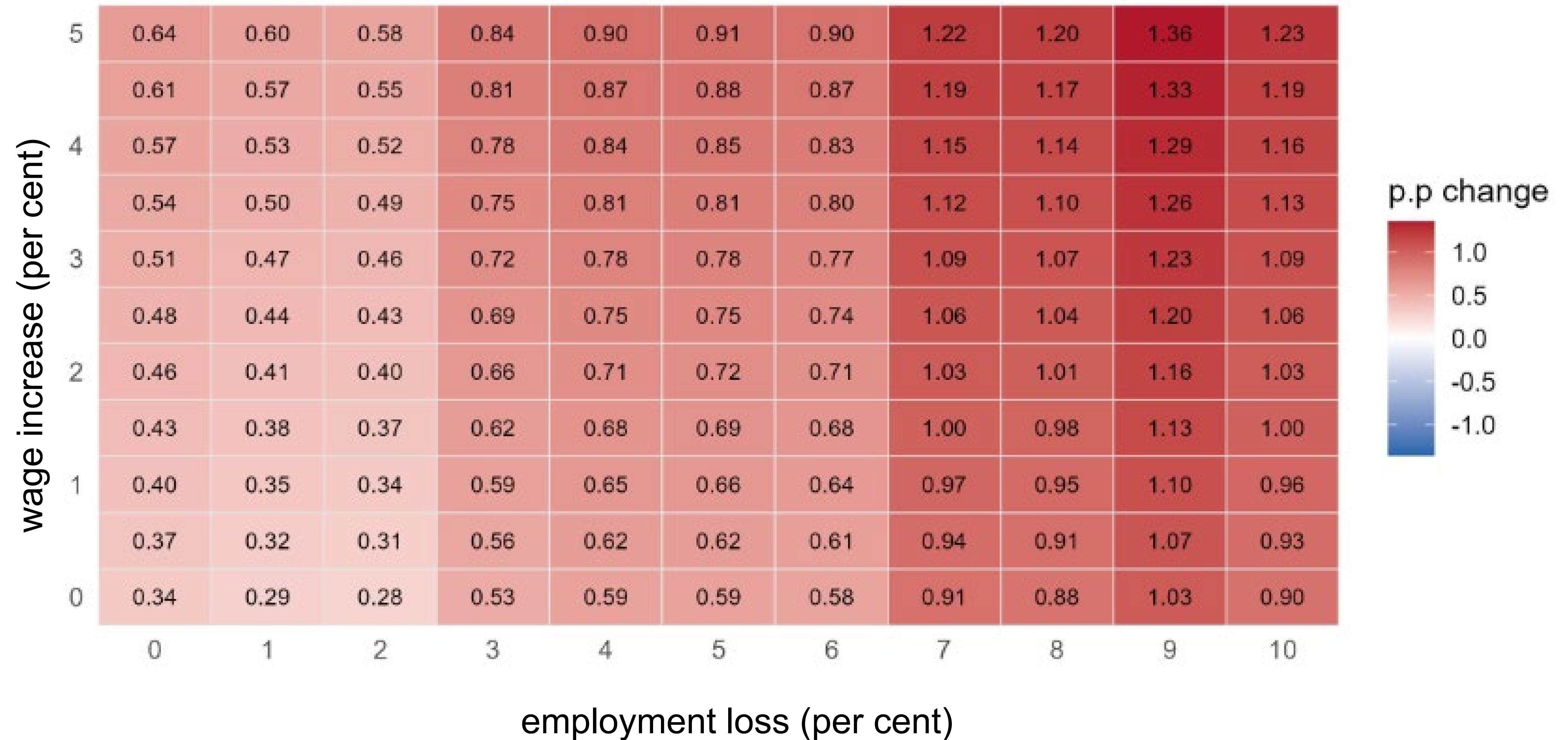


Exchequer effect (per cent change; revenue)





Income inequality (pp change; Gini Index)





Overview

1. Motivation
2. Methodology
3. Results
- 4. Alternative scenarios**
5. Exchequer cost & inequality
6. Conclusion & policy implications



Conclusion

Short to medium-term...

- Job losses likely but level of creative destruction unknown
- Productivity-driven wage gains – moderate
- Increased returns to capital investment
- Market income losses partly offset by tax/welfare system
 - lower income households cushioned by benefits, worker composition
 - losses for higher income households reduced by half
- Moderate increase in income inequality if speed of AI adoption is fast  or speed of worker transitions is slow – NB for social cohesion

AN INSTITIÚID
EACNAMÁIÓCHTA
AGUS SÓISIALTA
ESRI ECONOMIC & SOCIAL
RESEARCH INSTITUTE

Policy implications



- Adaptation likely in the longer-term (previous technological revolutions)
- Implications for public finances & taxation
 - decline in labour share, increase in capital share
 - impact on income tax revenue (+ if government successfully supports upskilling and job transitions)
 - knock-on impacts for welfare system
- Four day work week?
- **Education, up-skilling, and re-skilling programs are essential**

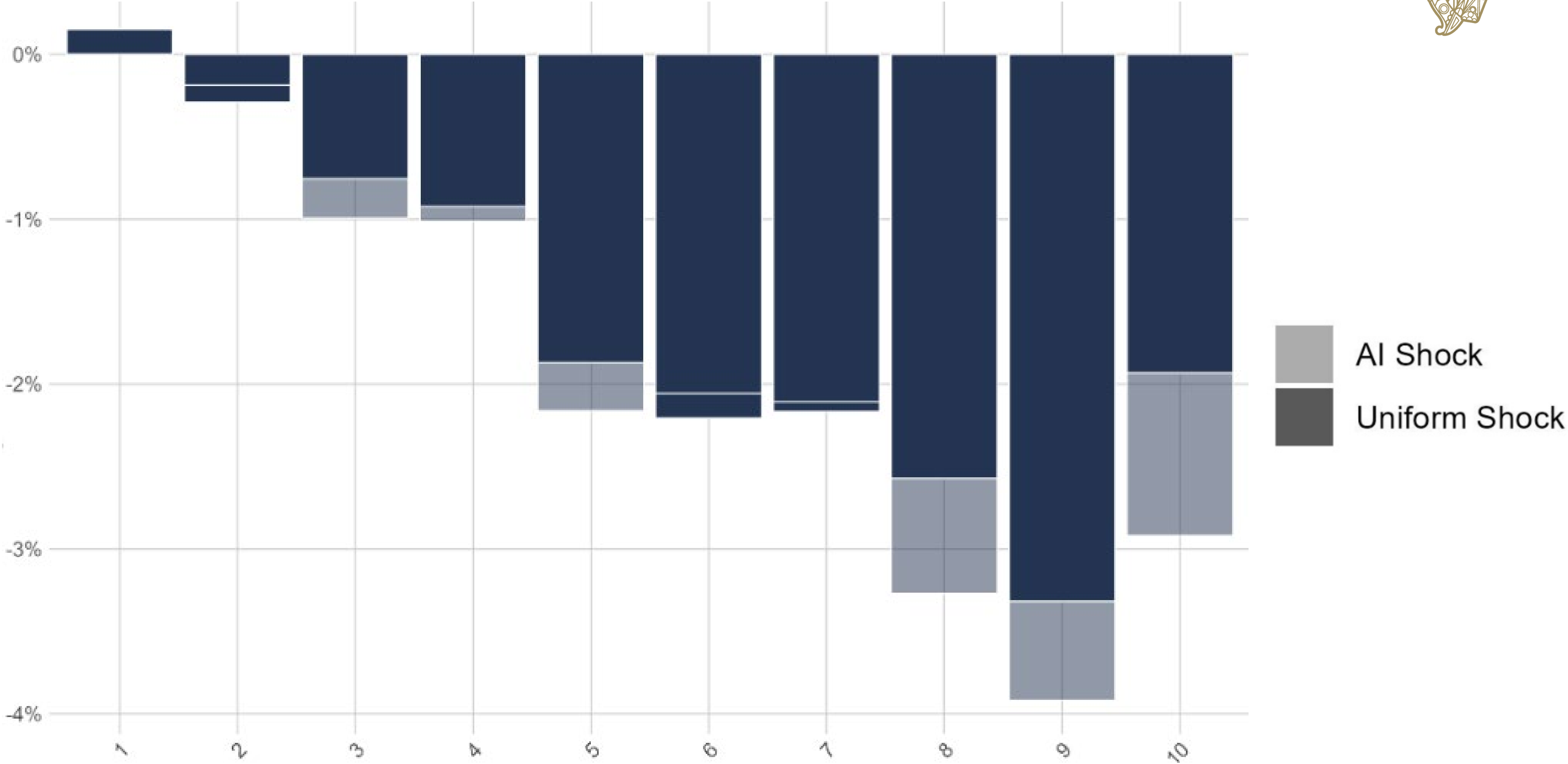


Thank you!

Karina.doorley@esri.ie

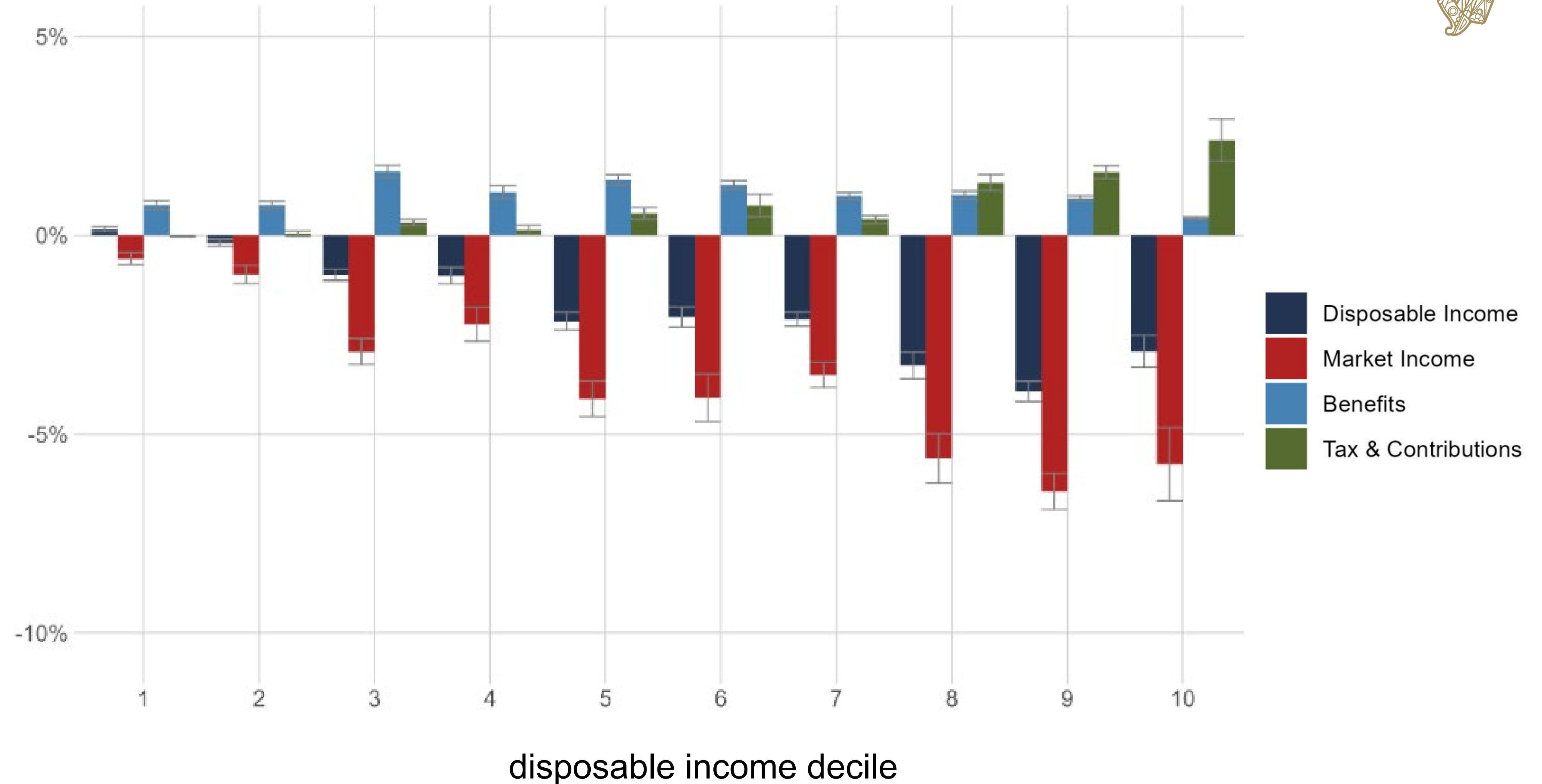
AI shock vs. uniform employment shock

(per cent change; disposable income)



Alternative Index – Tolan et al (2021)

(per cent change)





Alternative scenarios – by income tercile

(per cent change; average disposable income)

