



AI and the labour market

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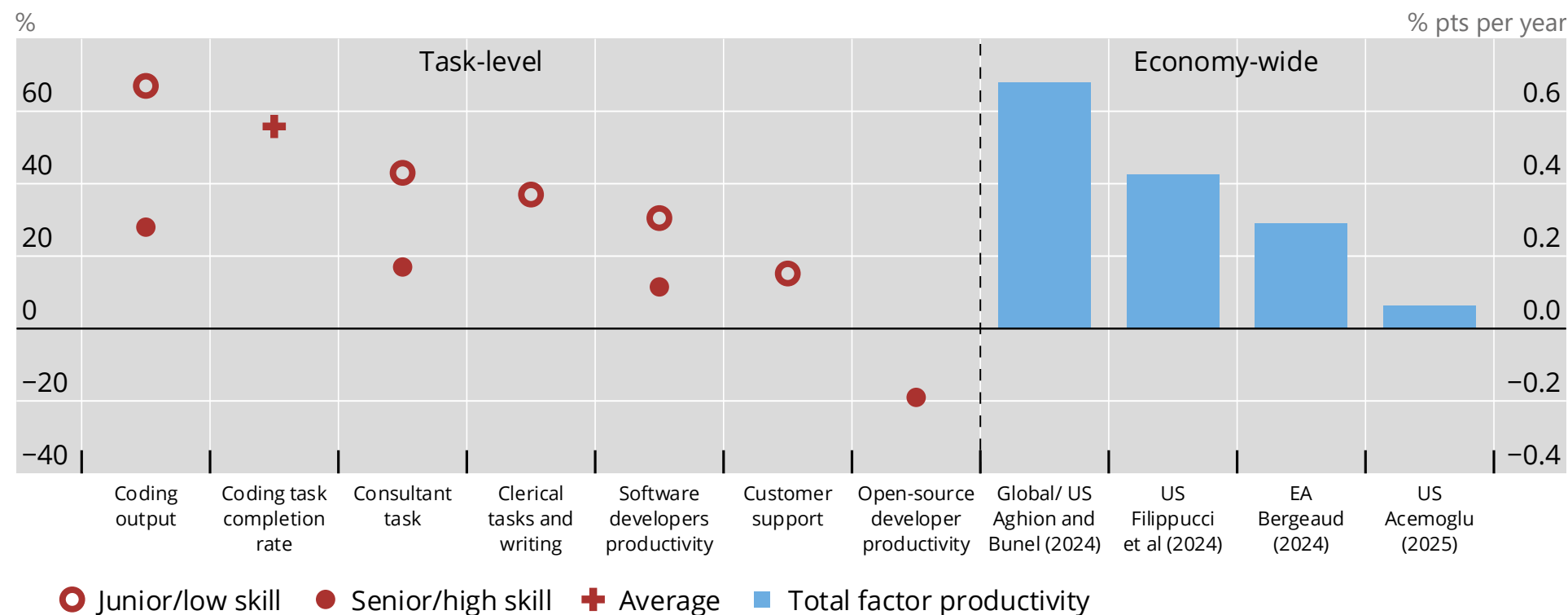
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* The views expressed here are those of the presenter and not necessarily the Bank for International Settlements

Overview

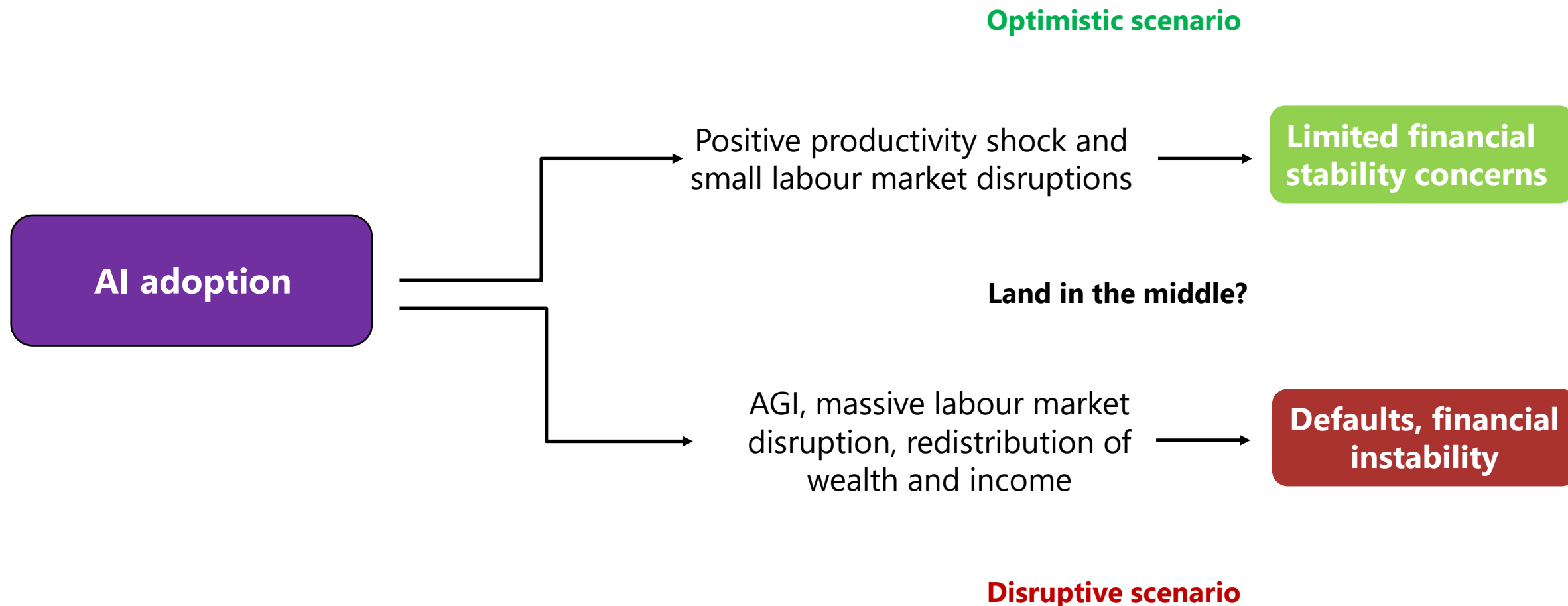
- ❖ Effects of AI on productivity
 - ❖ On tasks and occupations
 - ❖ On the macroeconomy
- ❖ Impact of AI on the labour market
 - ❖ Two alternative scenarios: Copilot vs AGI
 - ❖ Heterogeneity in AI effects across countries
 - ❖ Steady-state effects
- ❖ Conclusions

Productivity gains from AI



Sources for task-level productivity gains: Coding output from Gambacorta et al (2024); Coding task completion rate from Peng et al (2023); Consultant task from Dell’Acqua et al (2023); Clerical tasks and writing from Noy and Zhang (2023); Software developers productivity from Cui et al (2025); Customer support from Brynjolfsson et al (2025); Open-source develop productivity from Becker et al (2025).

Effects of AI adoption on the labour market: two scenarios



Source: Aldasoro, I, S Doerr, L Gambacorta, G Gelos and D Rees (2024): "[Artificial intelligence, labour markets and inflation](#)", SUERF, Policy Brief, no. 923.

Heterogeneity in the effects of AI across countries

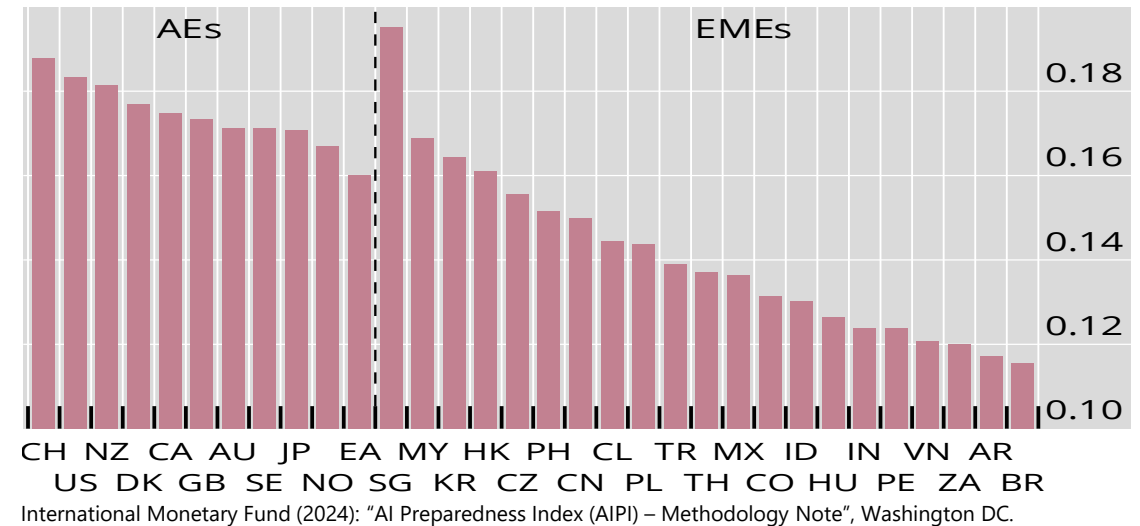
❑ AI preparedness and adoption

- Varying AI adoption rates due to digital literacy, age, demographics, internet diffusion, labour market conditions, and fiscal space to support large-scale reskilling

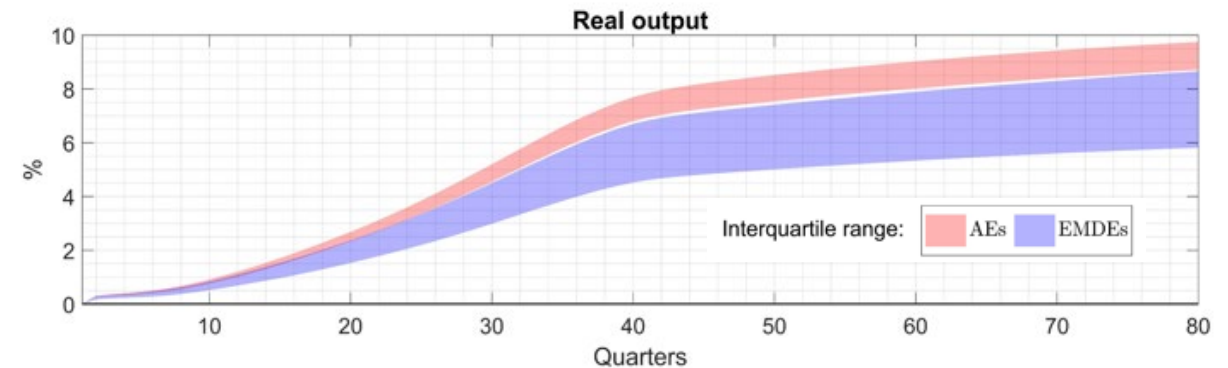
❑ Sectoral differences

- AEs excel in AI-adopting sectors (eg, finance, healthcare, advanced manufacturing, IT). EMDEs greater reliance on agriculture, resource-based activities, or traditional manufacturing sectors

AI preparedness: AI capital and labour market policies

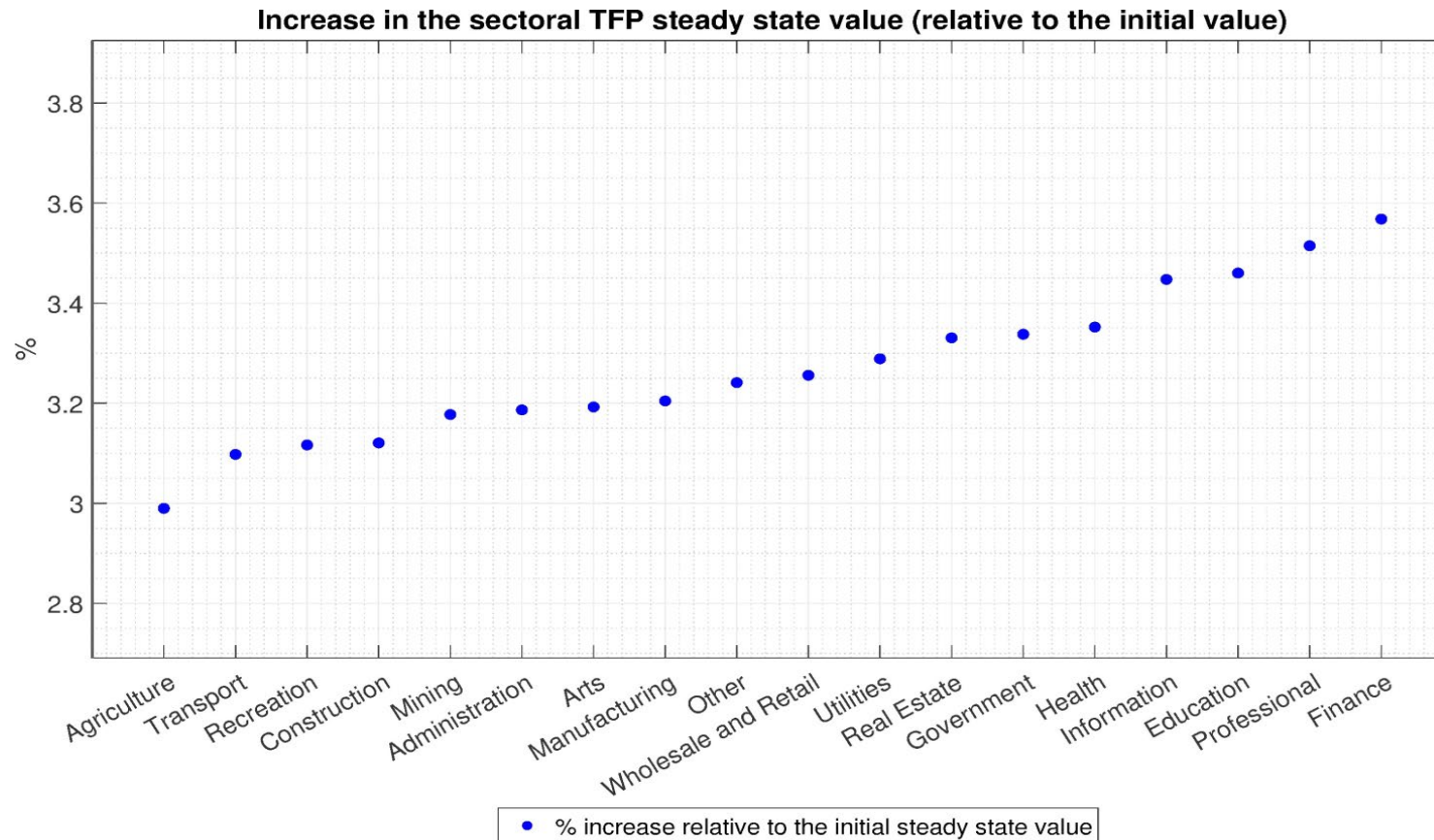


Effects of increase in productivity due to AI



Cornelli G, L Gambacorta, D Rees, and F Smets (2025): "Gen AI and productivity: differences in the effects across countries", mimeo. The graph shows the effects of a perfectly anticipated positive supply shock to TFP arising from gen AI. The simulation covers 70 countries – 23 AEs and 47 EMDEs – and uses the AI industry exposure measure developed by Felten et al (2021) to assess the order of the impact of AI adoption across industries. The calibration is set so that the aggregate impact on TFP growth amounts to 0.5% per year for the US, as a benchmark, over a decade.

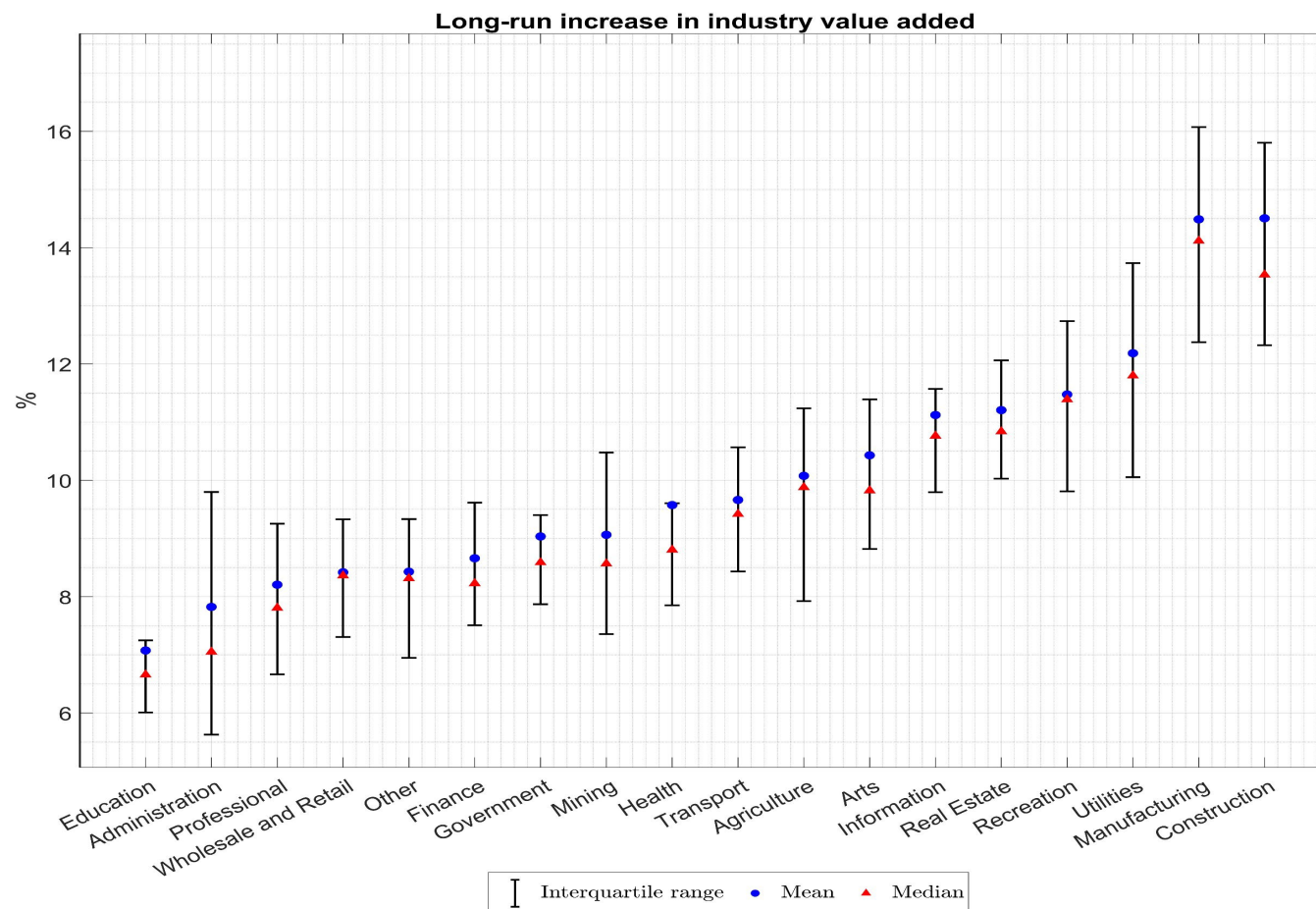
Increase in sectoral TFP in steady state (average across countries)



1. Positive effects on TFP across all sectors
2. This leads to limited variation across industries
3. Aggregate demand effects prevail

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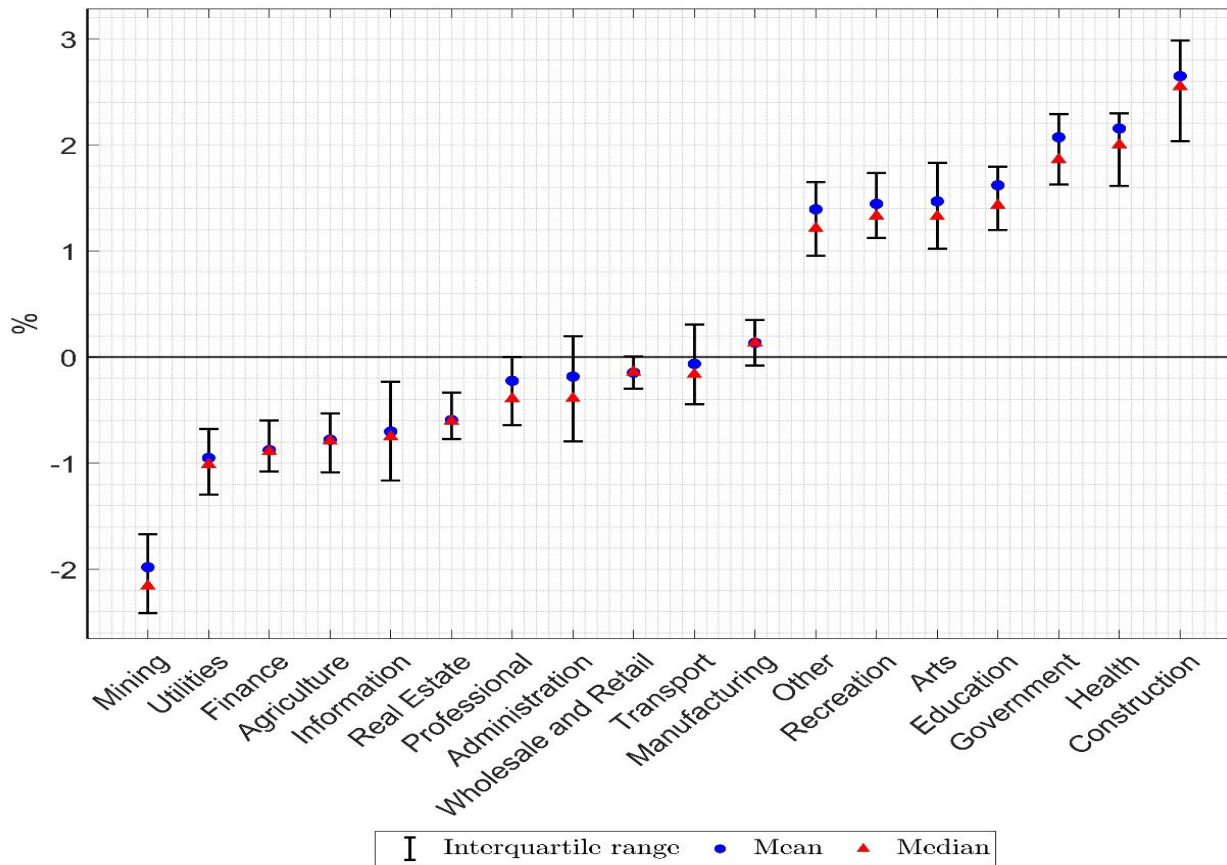
AI impact on value added across industries (steady state)



1. Output rises in all sectors: AI as a general-purpose technology
2. Large variation across industries and countries
3. Some industry groups benefit disproportionately

Cornelli G, L Gambacorta, D Rees, and F Smets (2025): "Gen AI and productivity: differences in the effects across countries", mimeo. The graph shows the effects of a perfectly anticipated positive supply shock to TFP arising from gen AI in the steady state. The simulation covers 70 countries – 23 AEs and 47 EMDEs – and uses the AI industry exposure measure developed by Felten et al (2021) to assess the order of the impact of AI adoption across industries. The calibration is set so that the aggregate impact on TFP growth amounts to 0.5% per year for the US, as a benchmark, over a decade.

AI impact on employment across industries (steady state)



1. Long-run effects on labour demand are highly heterogeneous – both across countries (see interquartile range) and across sectors
2. Employment in sectors such as construction and health care benefits from stronger demand effects and more limited scope for labour substitution
3. By contrast, sectors such as mining and agriculture could face larger disruptions, particularly where AI is applied to robotics and automation technologies that directly replace labour

Cornelli G, L Gambacorta, D Rees, and F Smets (2025): "Gen AI and productivity: differences in the effects across countries", mimeo. The graph shows the effects of a perfectly anticipated positive supply shock to TFP arising from gen AI in the steady state. The simulation covers 70 countries – 23 AEs and 47 EMDEs – and uses the AI industry exposure measure developed by Felten et al (2021) to assess the order of the impact of AI adoption across industries. The calibration is set so that the aggregate impact on TFP growth amounts to 0.5% per year for the US, as a benchmark, over a decade.

Main takeaways

- ❖ AI adoption boosts productivity
 - ❖ Effects vary by task and occupation — larger for junior / low-experience workers
 - ❖ Macroeconomic effects are harder to quantify
- ❖ AI can enhance labour (Copilot scenario) but also substitute it (AGI scenario)
 - ❖ Up to 60% of existing occupations could see major task reallocation by 2030
 - ❖ Net employment effect depend critically on reskilling, upskilling and labour market policies
- ❖ Sectoral differences and AI preparedness drive cross-country heterogeneity
 - ❖ Aggregate demand effects likely to dominate initial TFP shock
 - ❖ Larger gains for advanced economies than emerging markets

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