Institute of Strategic and International Studies
Economics, Trade
and Regional Integration

New AI technologies, inequality, and inclusive growth

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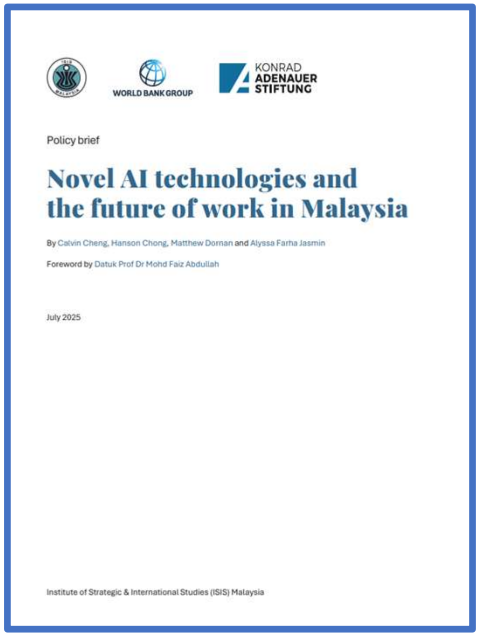
Report:

Novel AI technologies and the future of work in Malaysia

Cheng, Chong, Dornan and Jasmin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Policy brief

Novel AI technologies and the future of work in Malaysia

By Calvin Cheng, Hanson Chong, Matthew Dornan and Alyssa Farha Jasmin

Foreword by Datuk Prof Dr Mohd Faiz Abdullah

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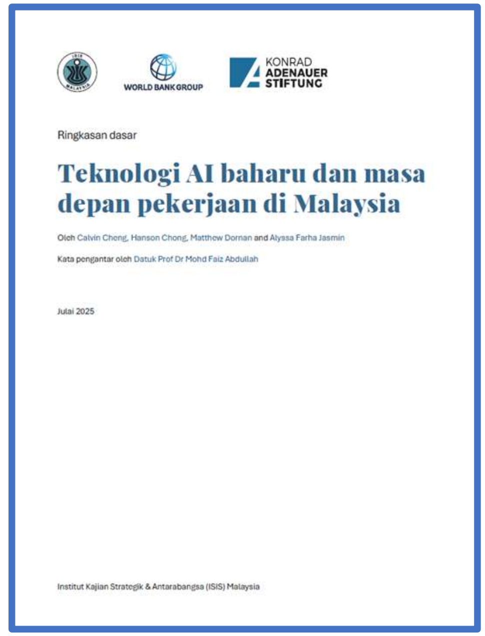
English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Ringkasan dasar

Teknologi AI baharu dan masa depan pekerjaan di Malaysia

Oleh Calvin Cheng, Hanson Chong, Matthew Dornan and Alyssa Farha Jasmin

Kata pengantar oleh Datuk Prof Dr Mohd Faiz Abdullah

Julai 2025

Institut Kajian Strategik & Antarabangsa (ISIS) Malaysia

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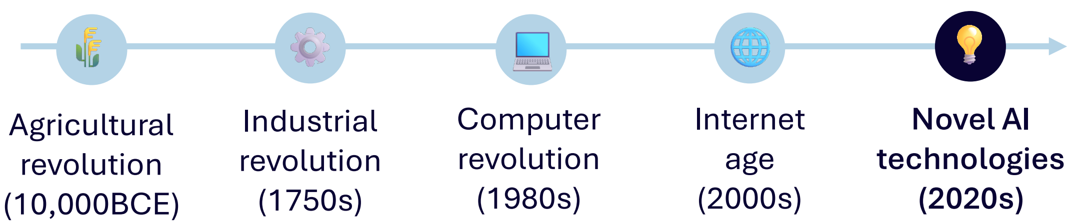
Contents

▶ New AI technologies can be a new risk for inclusive growth and inequality.

▶ **Technology has continually shaped inequality and inclusion across human history – and novel AI technologies are the latest in this trajectory.** Each wave of innovation has transformed who benefits, and who does not.



▶ **Technological change since the 1980s onwards have increased inequality.** Research suggests that computerisation and industrial robots have contributed to a global decline in labour share of income, fuelled inequality, and gave rise to political polarisation.

Source: Authors' illustrations.
Chu et al. (2020), Frey (2024), Graetz and Micheals (2018), Katz and Goldin (2007), Autor (2020). Acemoglu (2022), Bastani (2019)

▶ Generative AI impacts are wide-ranging globally.

▶ Up to 40% of jobs globally already highly exposed to current Generative AI technologies

Job exposure to AI (% of jobs) by region, empirical estimates

Developed economies

4 in 10 workers highly exposed to AI

Emerging economies

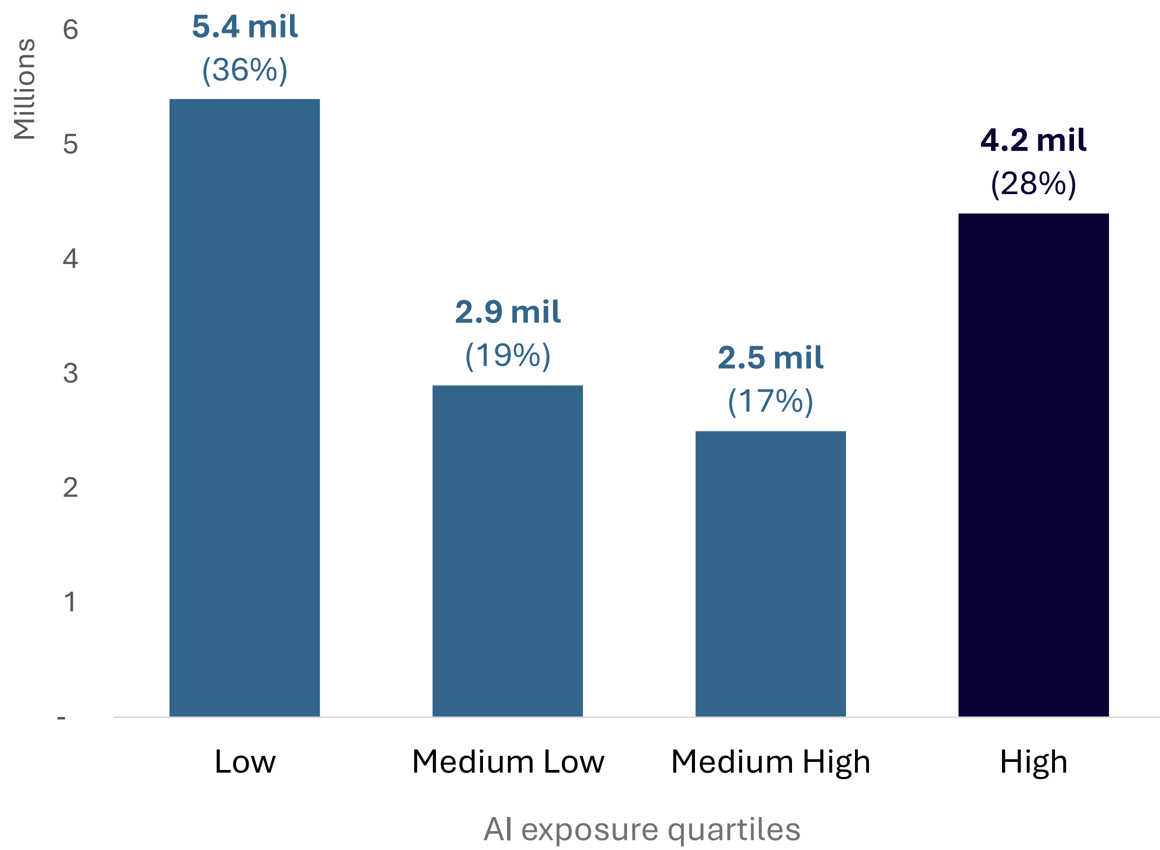
2 in 10 workers highly exposed to AI

Source: Pizzinelli (2023); Talentcorp (2024).

Note: Developed economies = United States and United Kingdom. Emerging economies = Brazil, South Africa, and Colombia. Highly exposed = in top 20^{th} percentile of AI exposure.
*Only for 10 sectors, includes exposure to green economy and digital technologies.

▶ 28% of the Malaysian workforce are highly exposed to generative AI.

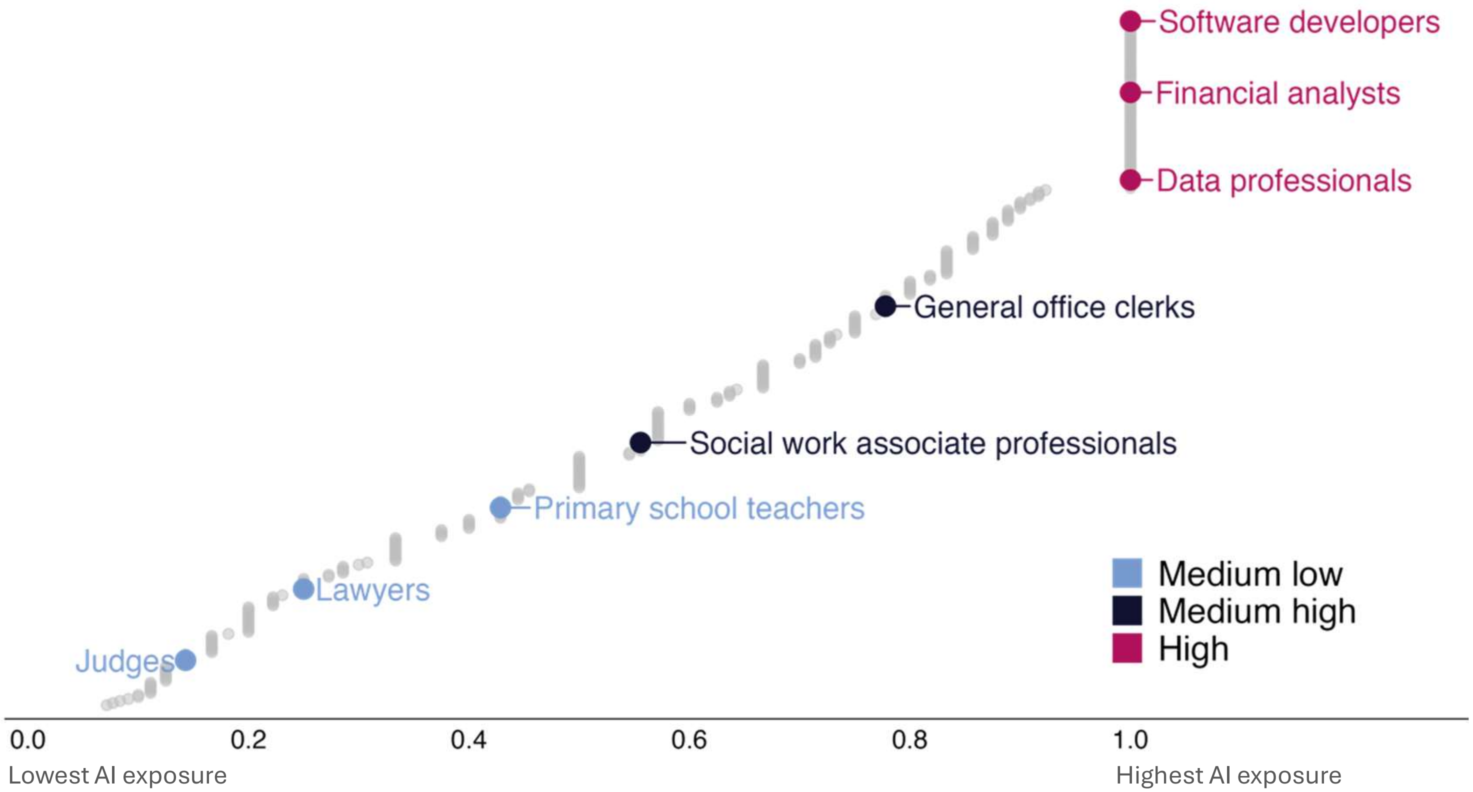
Employed persons by quartiles of AI exposure (2021), millions



Source: Cheng et al. (2025). Authors' calculations based on DOSM data.
Note: Percentages = share of workers in the category of AI exposure as a percentage of all workers.

▶ Some jobs are most exposed to AI than others.

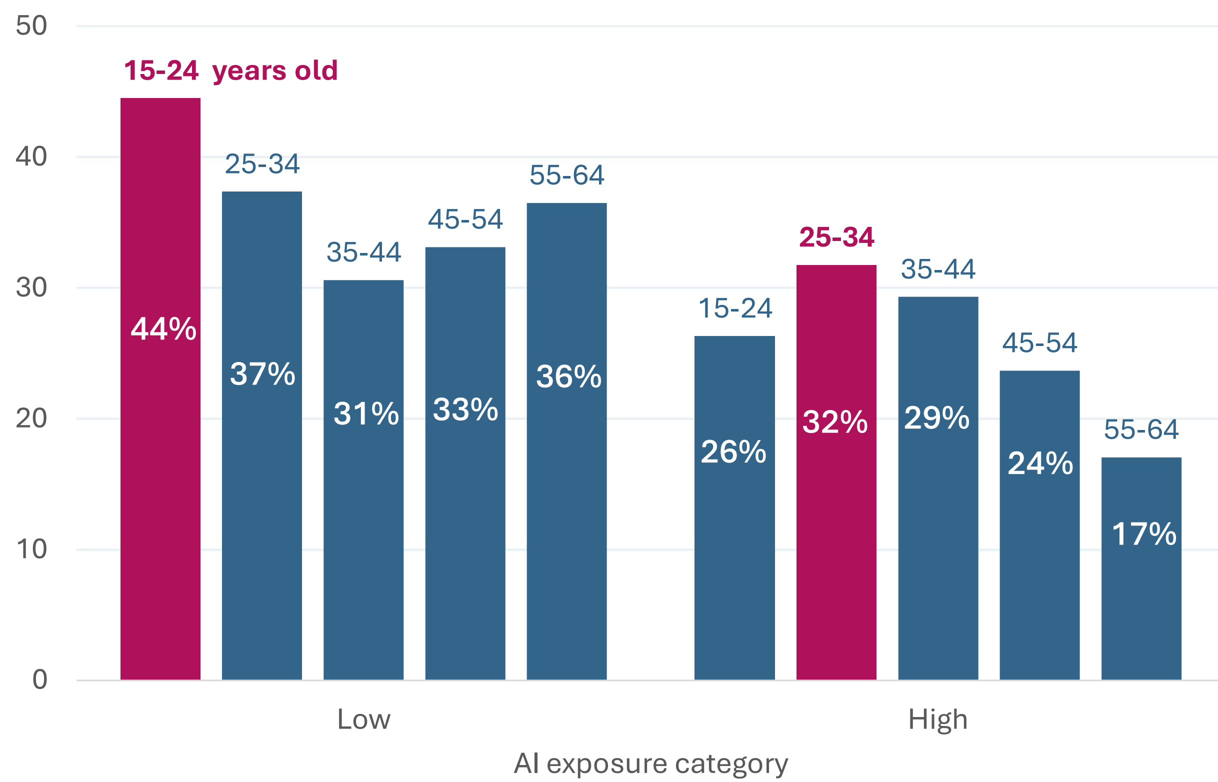
Occupations ranked by AI exposure (0 = least exposed, 1= most exposed)



Source: Cheng et al. (2025). Authors' calculations based on e-MASCO data. Note: Analysis of 484 jobs at the 4-digit level.

▶ Younger prime-age and early career workers are more exposed to generative AI.

Share of employment (%) in the highest and lowest quartiles of AI exposure, by age group



Source: Cheng et al. (2025). Authors' estimates based on Labour Force Survey data.

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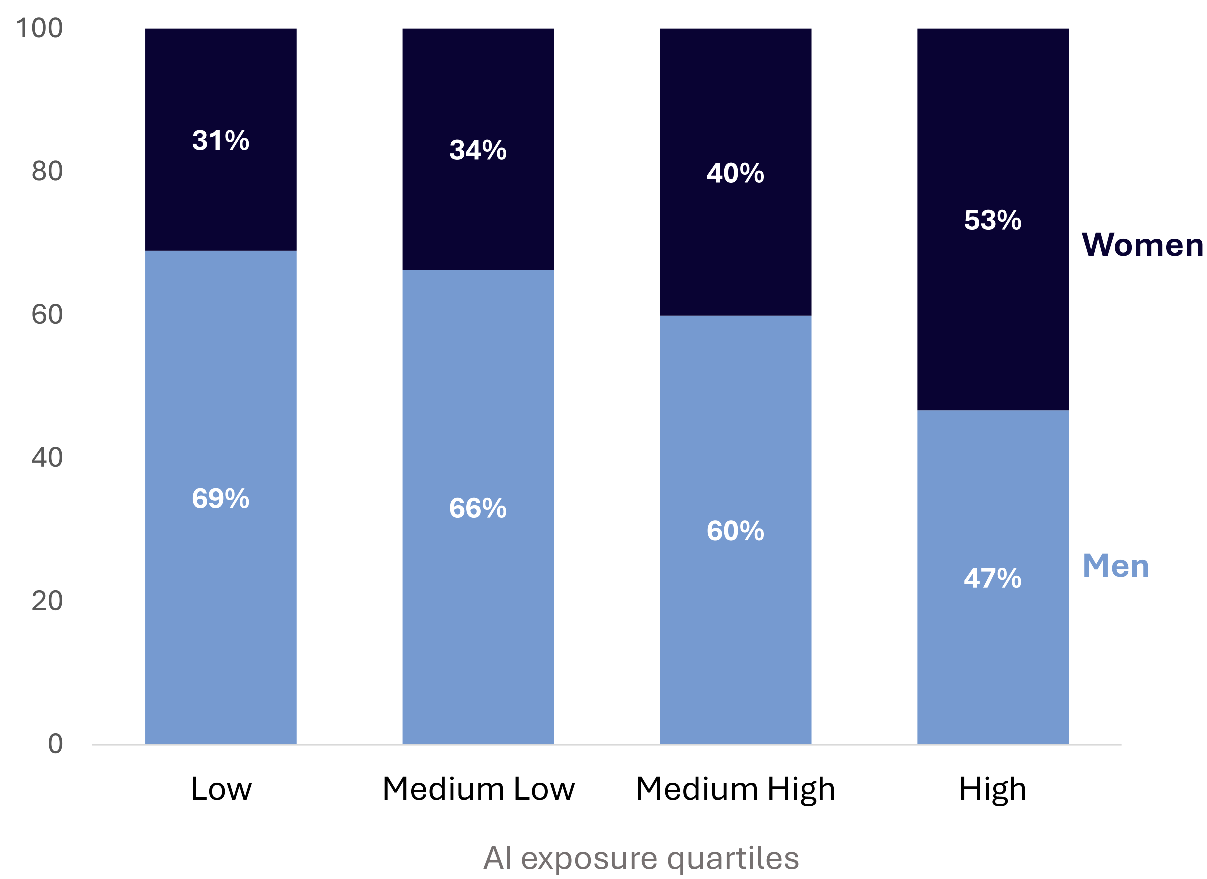
▶ Women nearly 2x more likely to be 'highly exposed' to generative AI than men.

Share of employment (%) by quartiles of AI exposure, by gender

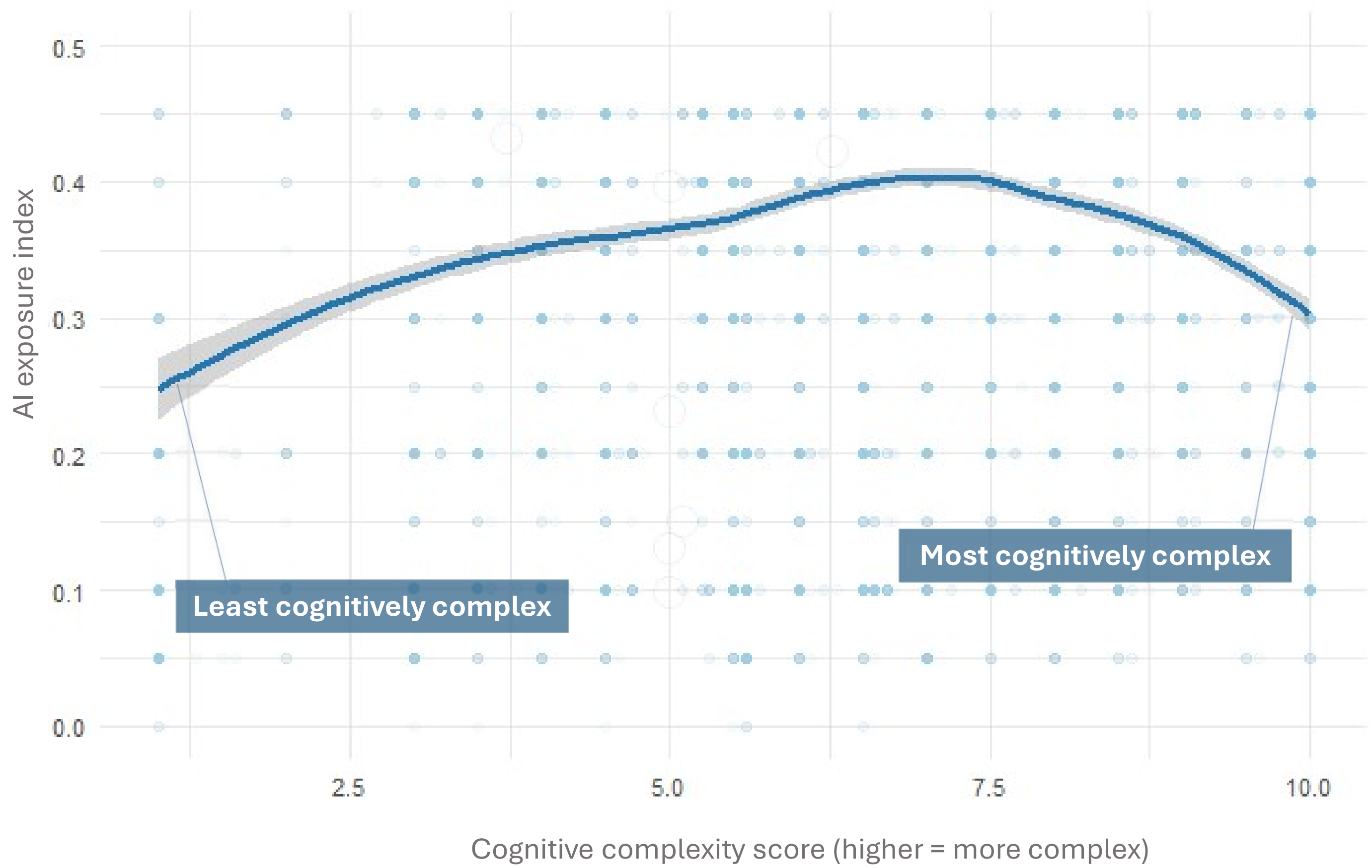


Source: Cheng et al. (2025). Authors' estimates based on Labour Force Survey data.

▶ Hollowing out the middle (1):

AI automation exposure **peaks in the middle** – and plateaus at highest-cognitive tasks.

Skill-wages and average AI exposure index, scatter plot and fitted line



Source: Cheng and Chong (2025).

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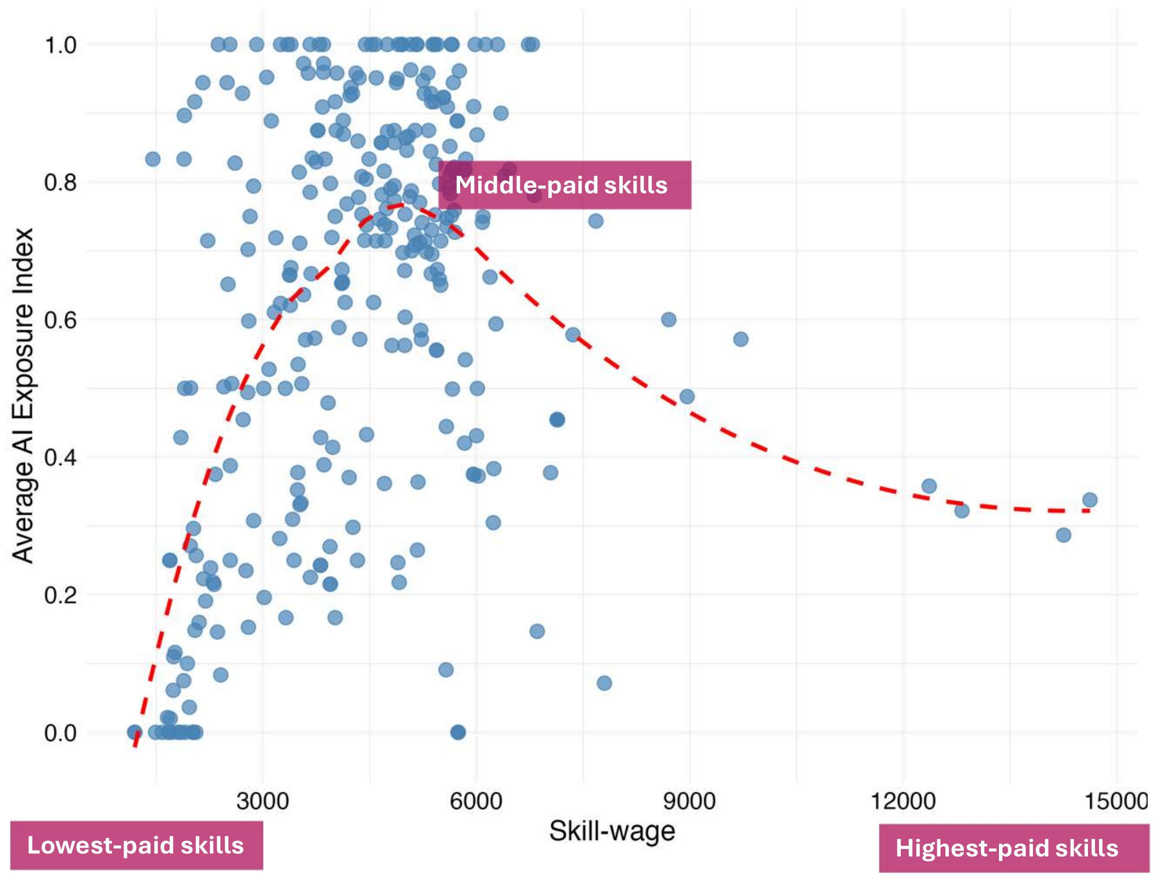
▶ Hollowing out the middle (2):

Skills in the "middle" are most automatable by generative AI.

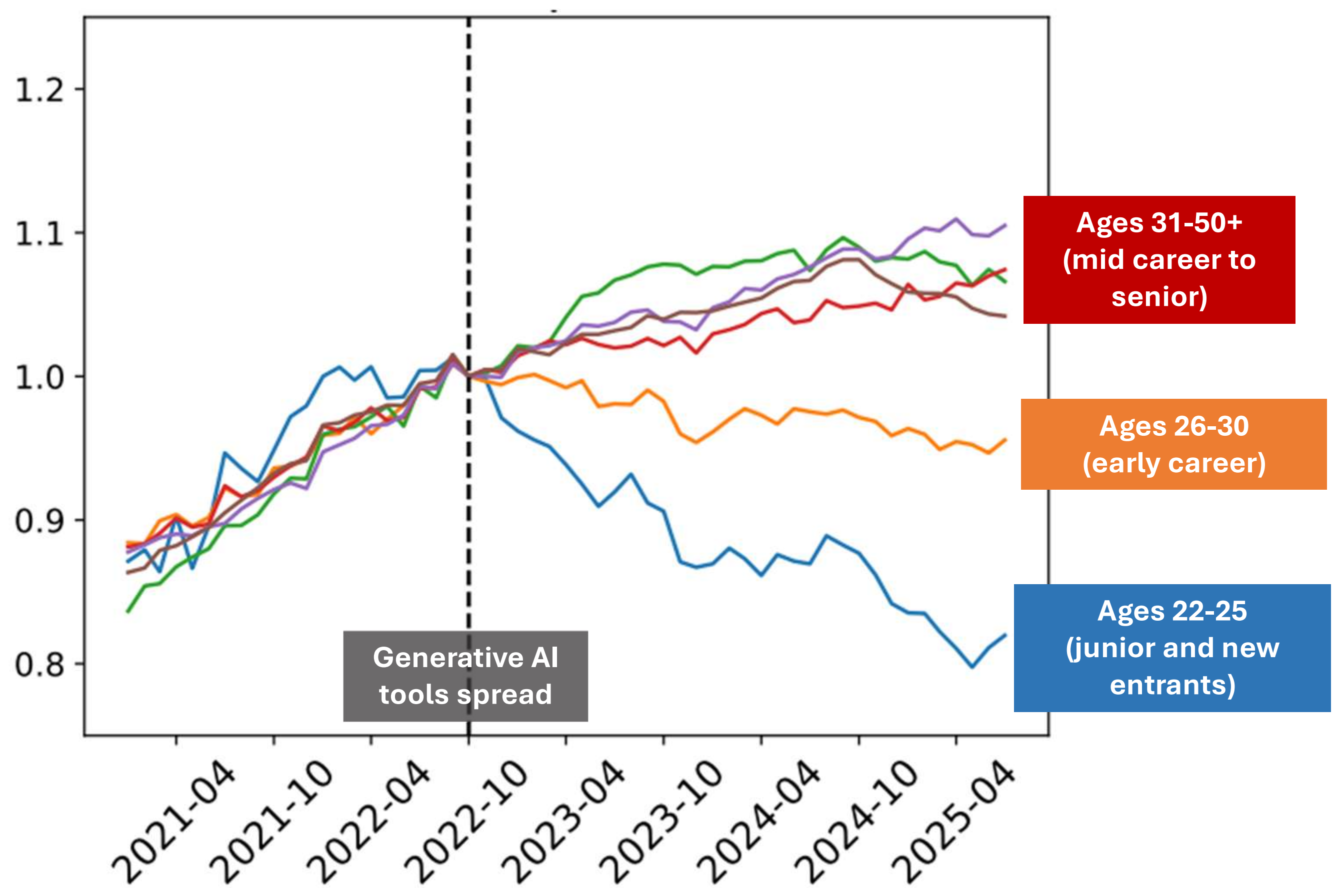
Skill-wages and average AI exposure index, scatter plot and fitted line



Source: Cheng et al. (2025).
Note: Red line estimated via LOESS (local) regression.

▶ **New data from the US:** early career workers in AI-exposed occupations saw 13% decline in employment.

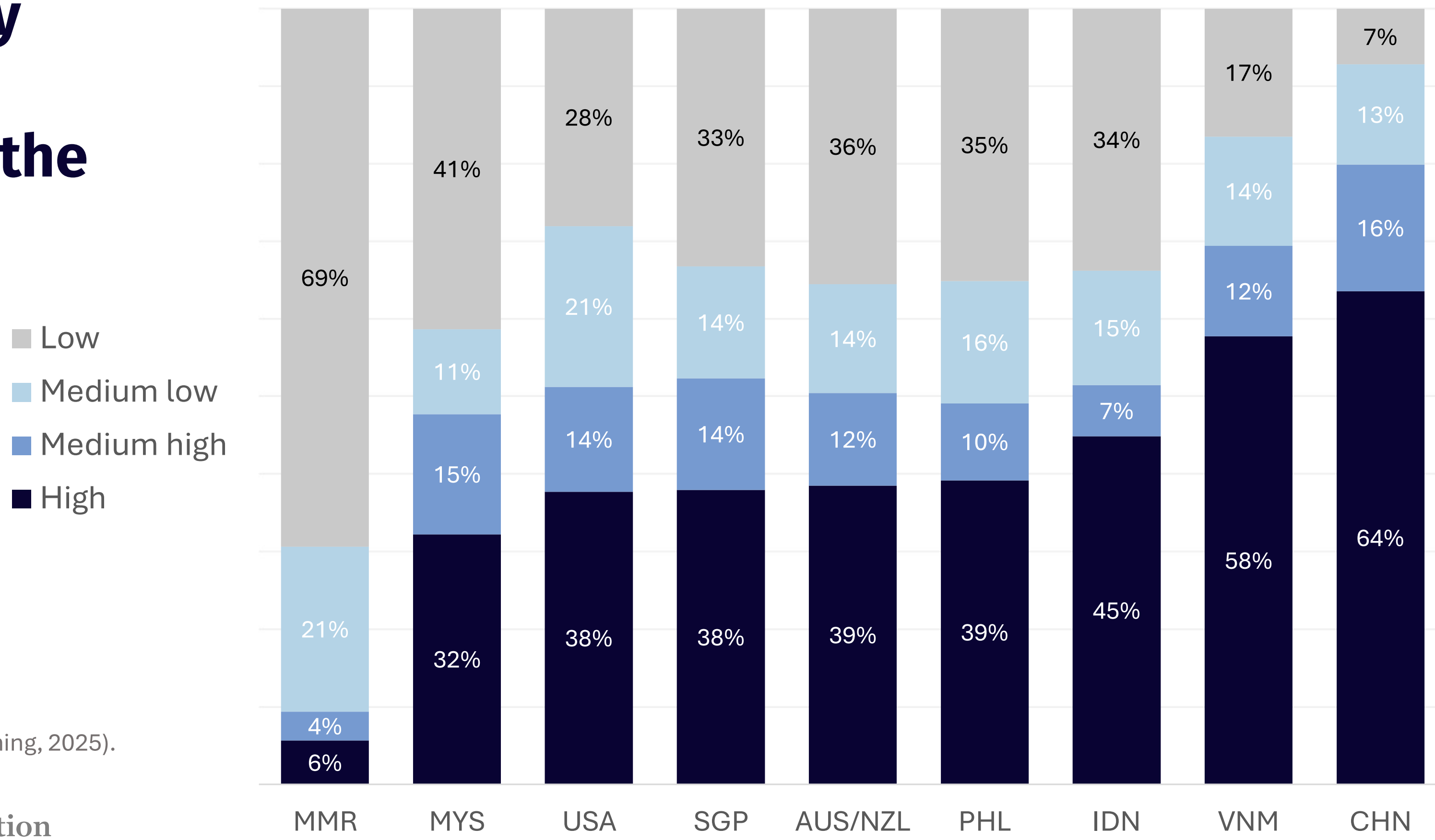
Employed by age group (2021 to 2025), software developers in the US



Source: Brynjolfsson, Chandar, and Chen (2025). Based on US data.

▶ AI exposure varies widely across countries in the region.

AI exposure quartiles, exposure as % of total employed

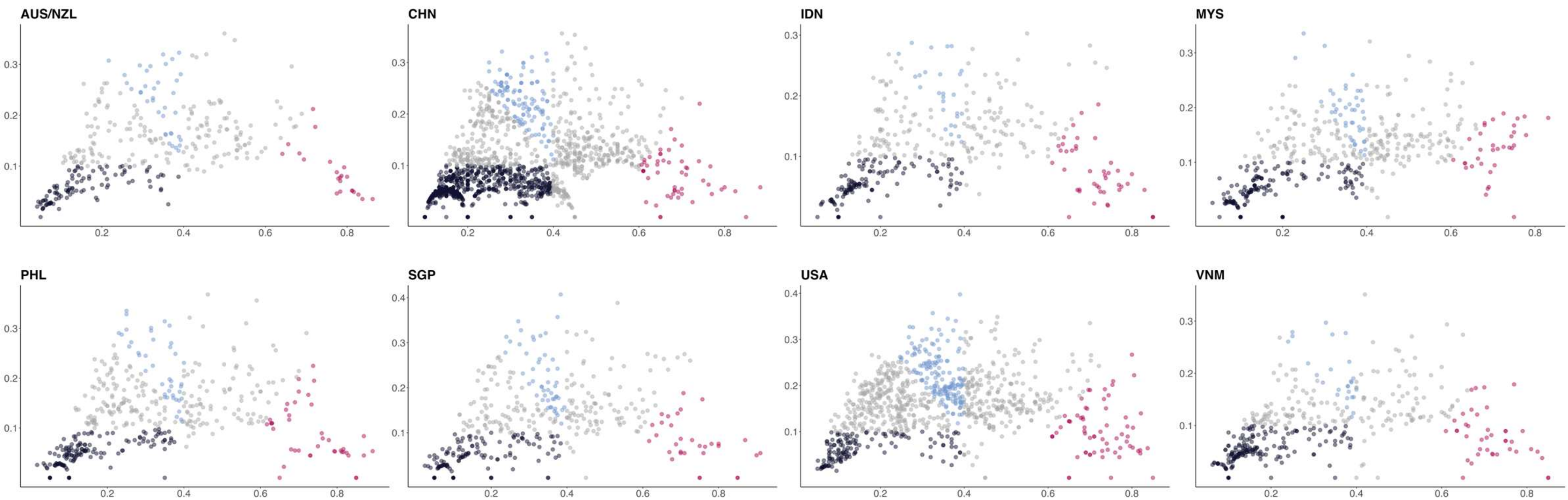


Source: Cheng and Chong (forthcoming, 2025).

Classifying AI exposure.
Augmented or automated?

Insulated
Augmentation potential
Automation potential

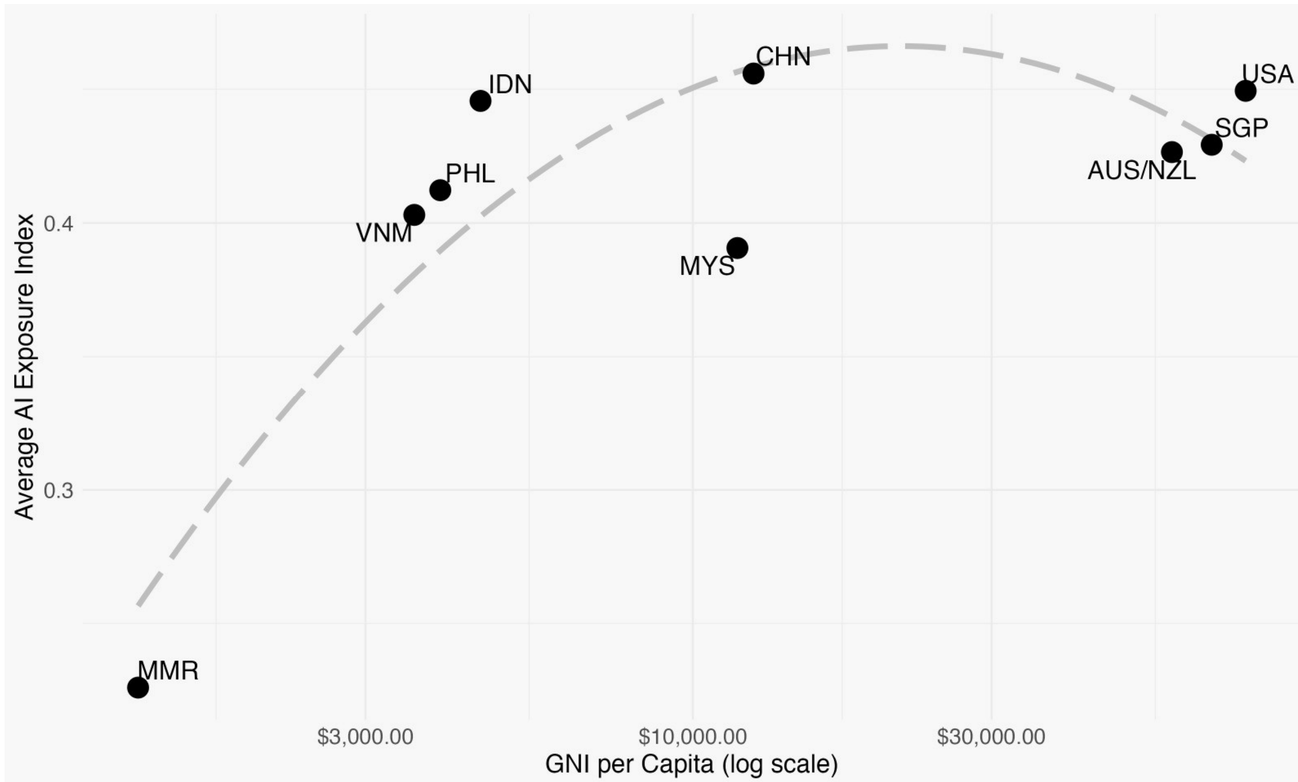
Source: Cheng and Chong (2025).



Note: Figures for Myanmar are unavailable because Myanmar's figures are obtained at the occupational level. Dark blue indicates occupations that are classified as "insulated", dark pink indicates occupations that have "automation" potential, light blue indicates occupations that have "augmentation" potential, and grey indicates occupations classified as "mixed".

- **Middle-income economies have highest "automation" exposure to generative AI…**

Middle-income countries may face the largest automation risk.
Automation % of jobs, by country



Source: Cheng and Chong (forthcoming, 2025).

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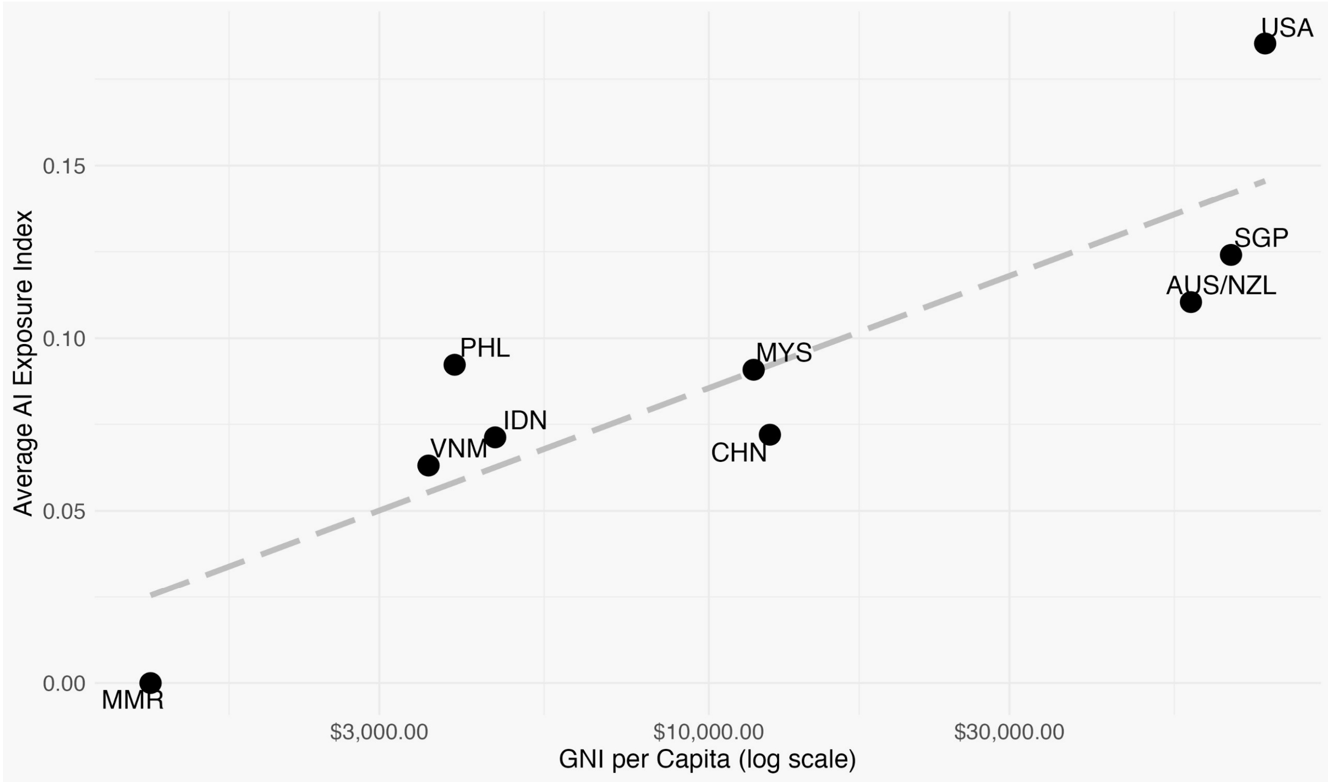
▶ …while advanced economies have the highest augmentation potential.

Richer countries enjoy greater augmentation potential from AI.
Augmentation % of jobs, by country



Source: Cheng and Chong (forthcoming, 2025).

Takeaway:
New AI technologies may increase within-country inequality.

- **New AI technologies are now widespread, and create new challenges for inequality and inclusive growth.**
- **Our estimates show AI exposure is unequal across gender and age.** Women and younger workers are amongst the most exposed to AI technologies.
- **Generative AI could deepen job polarisation by hollowing out the middle.** Extends inequality impacts from past waves of technology.
- **Occupations that emphasise "human edge" skills may become more valuable as generative AI automation progresses.**

Read more here

Source: Cheng et al. (2025).

Takeaway:
New AI technologies may also increase between-country inequality and threaten developmental pathways.

- **Relatively high AI exposure overall, but wide disparities between countries**
- **Middle income squeeze.** Automation risk peaks in middle-income economies, while augmentation benefits accrue disproportionately to advanced, high-income economies.
- **Developmental pathways at risk:** traditional services-led convergence could stall as developing economies face higher automation of jobs (automation of tradeable services), while advanced economies capture unequal “AI dividends” through augmentation.

Source: Cheng et al. (2025).

What can individual countries do?

- **Social protection.** Extend social protection coverage to all workers across the life-cycle. Universal access to lifelong learning.
- **Education and training.** Mainstream AI education while cultivating "human edge" skills like social intelligence, and implementing flexible credential pathways.
- **Labour market institutions.** Make it cheaper for firms to invest in workers' skills and raise job quality through stronger worker bargaining power. Universal labour guarantee.

Source: Cheng and Chong (2025).

What can countries in the region do together?

- **Rebuilding regional agency.** Restoring collective agency through strengthening and modernising domestic labour market institutions. ASEAN-level: common labour and digital standards, pooling of funds to develop homegrown AI technologies.

- **Remaking market incentives.** Realigning the underlying incentive structures that underpin technological development and adoption towards progress over profit. Fiscal tools, open-source mandates, collective ownership.

Source: Cheng and Chong (2025).

What can donor institutions and development partners do?

- **Helping recipient countries strengthen labour standards and governance.** Embed labour and digital standards, skills recognition, and social protection portability into trade arrangements along with capacity-building/support.

- **Share experience in building adaptive skills training and lifelong learning systems.** Co-finance lifelong learning, labour market governance, and universal social protection, while building domestic revenue and subnational (federal) capacity so reforms are fiscally sustainable.

- **Strengthen regional agency for shared standards, rules and co-innovation.** Finance norm-setting, mutual recognition frameworks, and pooled funds for home-grown AI and digital public goods. Convene governments, firms, and workers to co-design rules.

Source: Cheng and Chong (2025).

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