Macroeconomic Consequences of AI: A Sectoral and Regional Perspective

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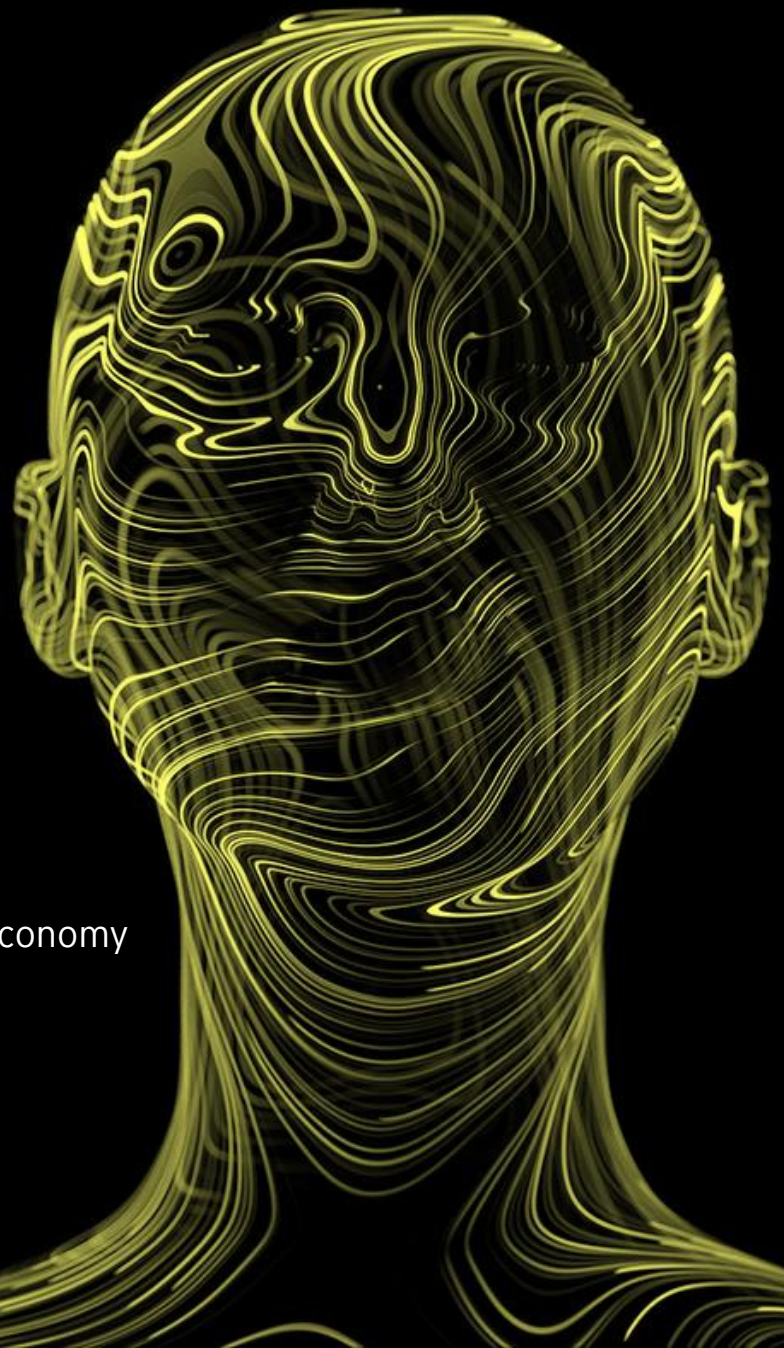

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Our study: Investigates macroeconomic consequences as well as regional and sectoral disparities of AI.

Context: Rapid advancement of AI fuels high expectations, with most research US-focused.
Our contribution: Extensive set of covered topics and wide geographical coverage.

Extensive set of covered topics
Covers AI's potential impact over the next decade on labor market, investment, productivity, GDP, inflation, interest rates, and international competitiveness.

Wide geographical coverage
Main focus on the EMEA region: Western Europe, Southern Europe, CEE, MENA, and SSA.

Global analysis includes: US & Canada, Latin America, ASEAN, South Asia, and the rest of Europe and Central Asia.

Labour market: AI-driven transformation. AI may automate 5% of tasks in high-income regions by 2033.

Our approach: Task automation and augmentation depend on technical feasibility and economic benefits.

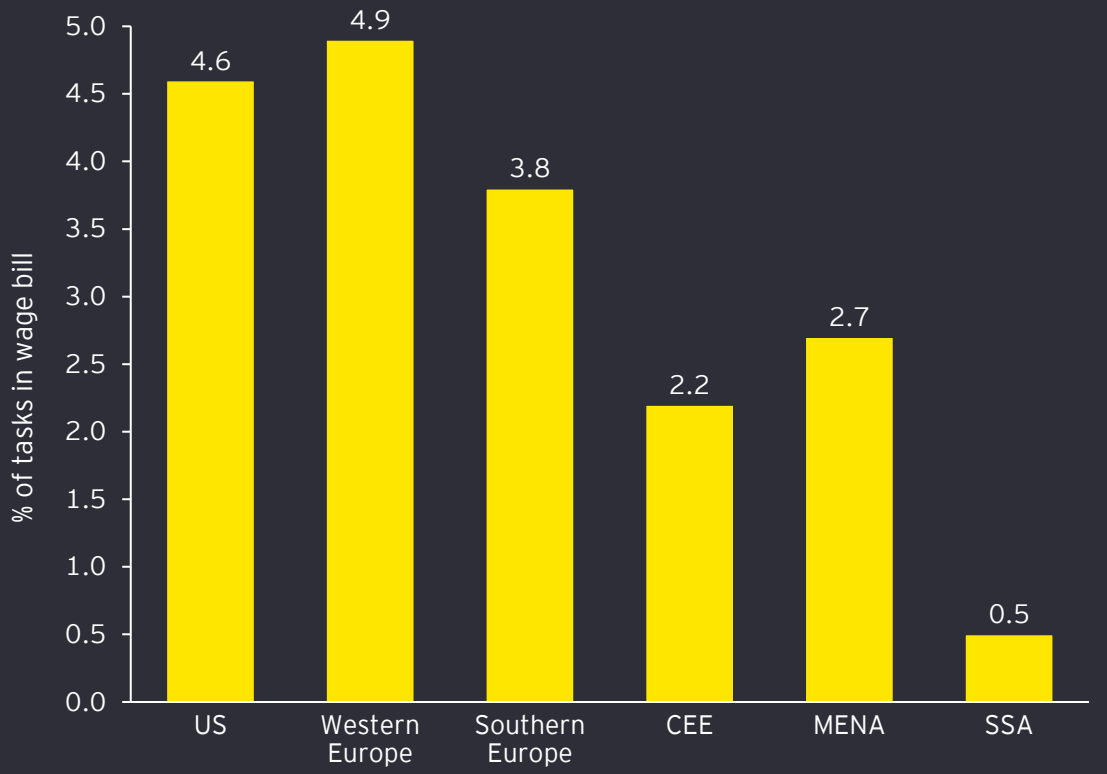
Results: Western Europe may automate 5% of tasks in the next decade. Other EMEA regions will see slower AI adoption due to wage differences.

Following Acemoglu's (2024) framework, we estimate the proportion of tasks likely to be automated by AI over the next decade, differentiated by region.

Factors considered:

- occupational exposure to AI
- regional labor market structure, and
- economic benefits of automation (proxied by relative wage levels in PPP)

AI implementation potential in 2033, % of tasks in wage bill



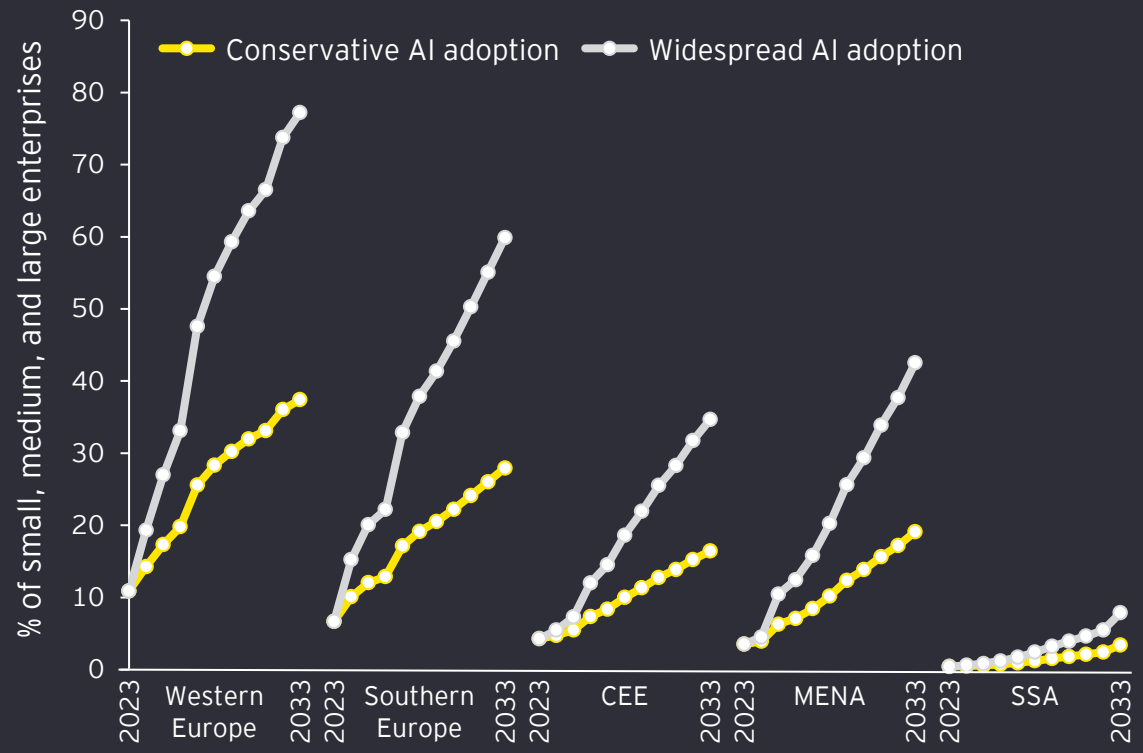
Source: Acemoglu (2024), EY EAT

Investment: AI adoption by firms is predicted to rise significantly. AI adoption could spur investment, similar to the ICT boom.

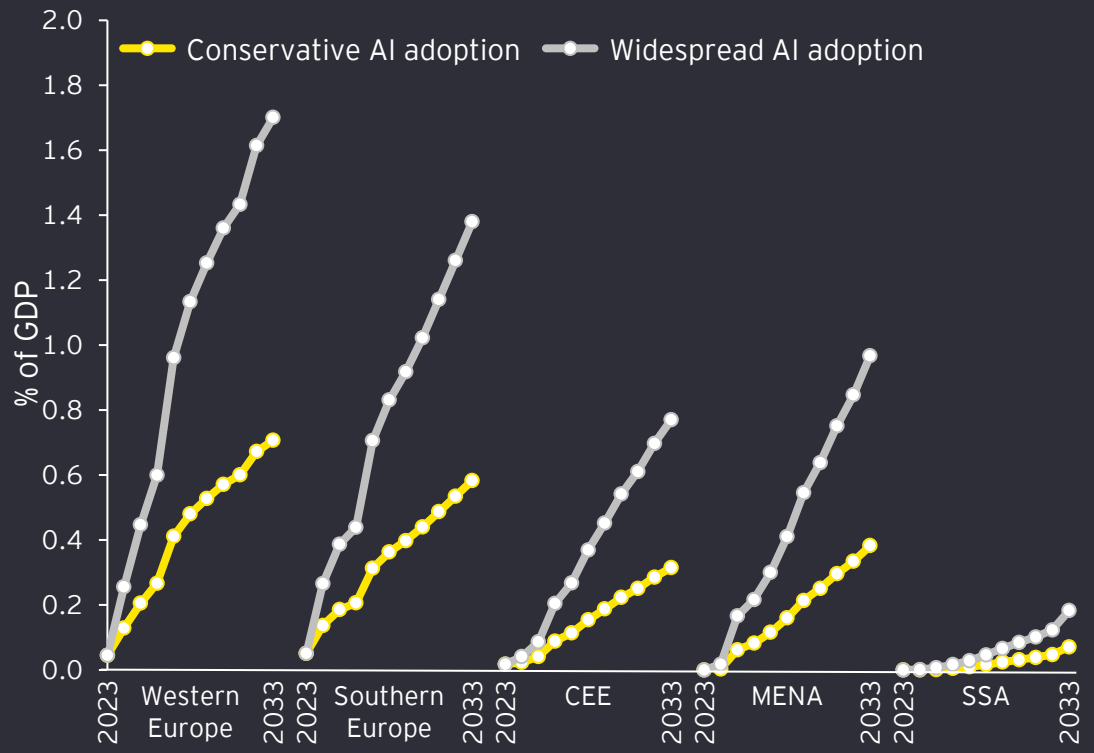
Our approach: Learn from ICT adoption to estimate AI's impact on investment.

Results: By 2033, AI-driven ICT investment rise by 1.7% of GDP in Western Europe and up to 0.2% of GDP in Sub-Saharan Africa.

AI adoption rate, % of small, medium, and large enterprises using AI



Projected increase in ICT Investment driven by AI as a percentage of GDP relative to 2022 levels (2023-2033)

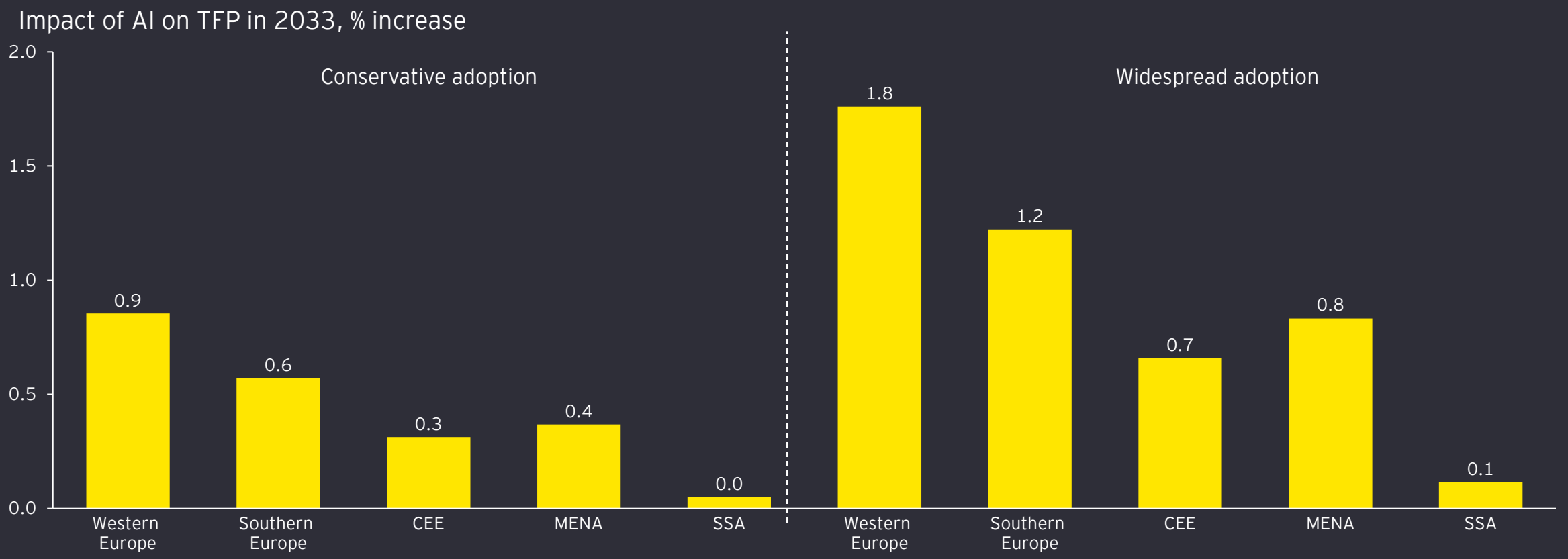


Source: EY EAT

Productivity: AI is on track to enhance productivity. The degree of impact will be region-specific.

Our approach: Mid-term TFP gains will depend on the AI-driven task automation, the associated average labor cost savings, and the labor income share.

Results: Western Europe could experience a TFP increase of 0.9%–1.8%, while other EMEA regions will see lower AI-driven productivity gains.



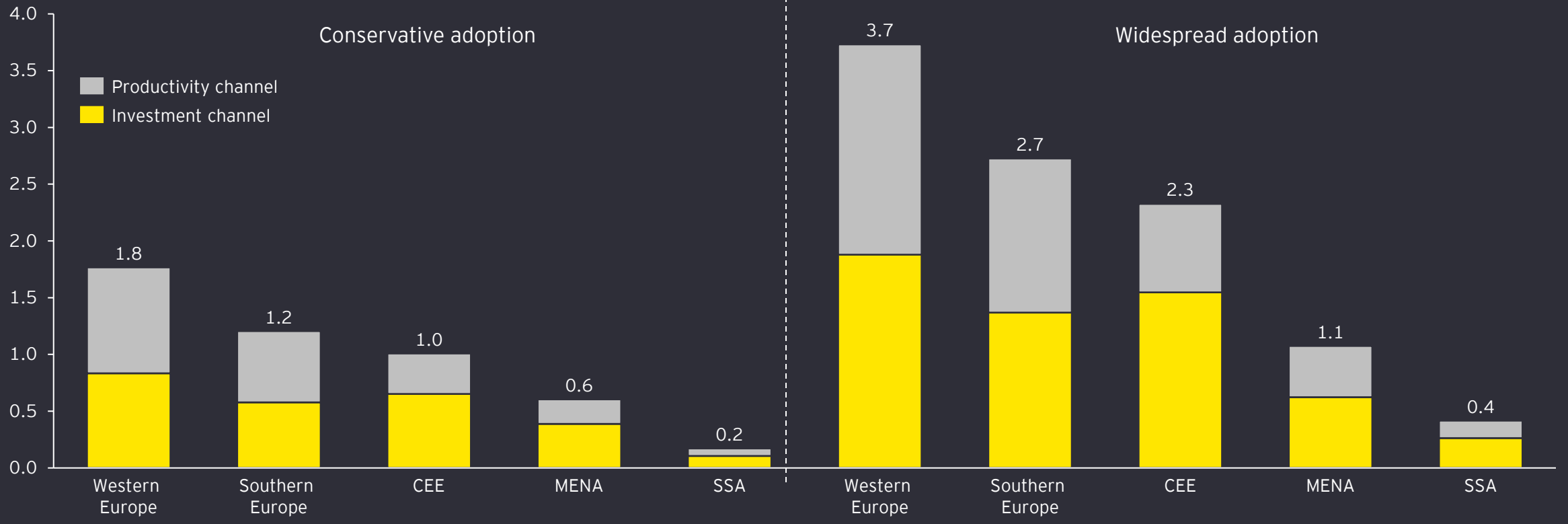
Source: EY EAT

GDP: AI's economic impact varies by region, with productivity gains driving similar GDP increases as investment channel.

Our approach: Merge investment and TFP gains into a global macroeconometric model, assuming no crowding out of other investments or productivity gains.

Results: In most regions, GDP gains are proportional to the increase in investment and TFP. CEE is an exception, with a strong boost from external demand.

Impact of AI on GDP in 2033, % increase



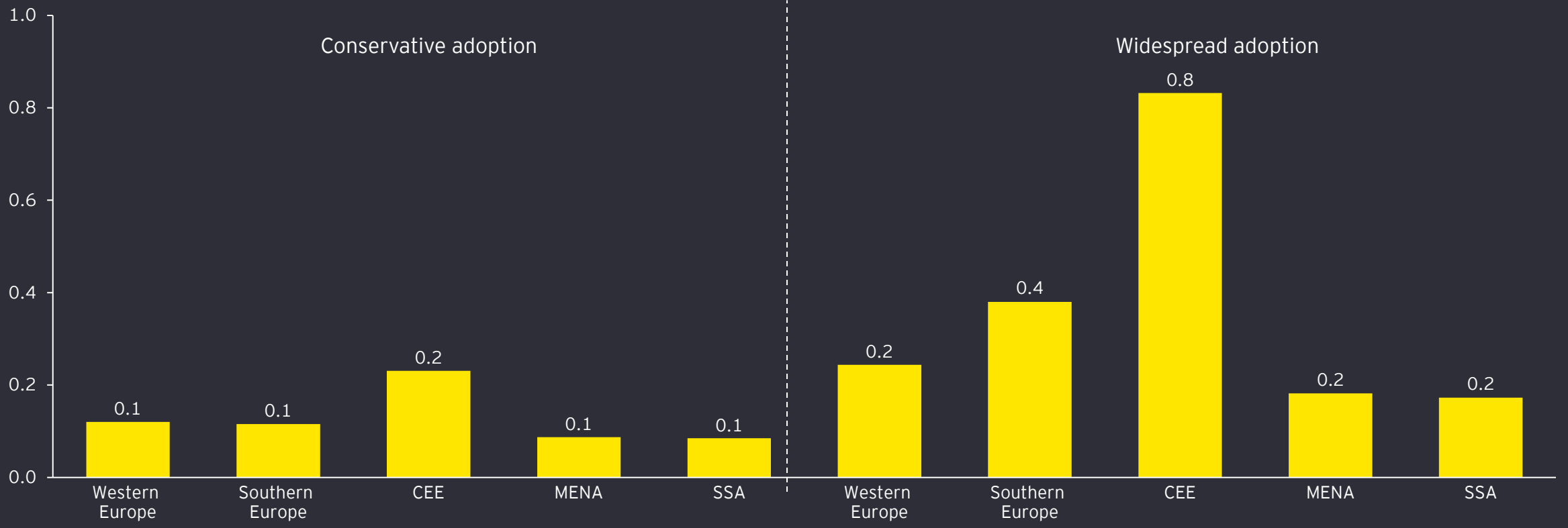
Source: EY EAT

Inflation: Over the next decade, we anticipate that AI's demand-side effects will slightly outweigh its supply-side benefits, leading to a minor increase in prices.

Our approach: Utilizing simulations from the global macroeconometric model, we estimate AI's cyclical effects on inflation.

Results: Inflationary effects are estimated to be between 0.1 and 0.25 percentage points for most regions, reaching up to 0.8 points in CEE.

Peak impact of AI on annual inflation over 2024-33 (percentage points)



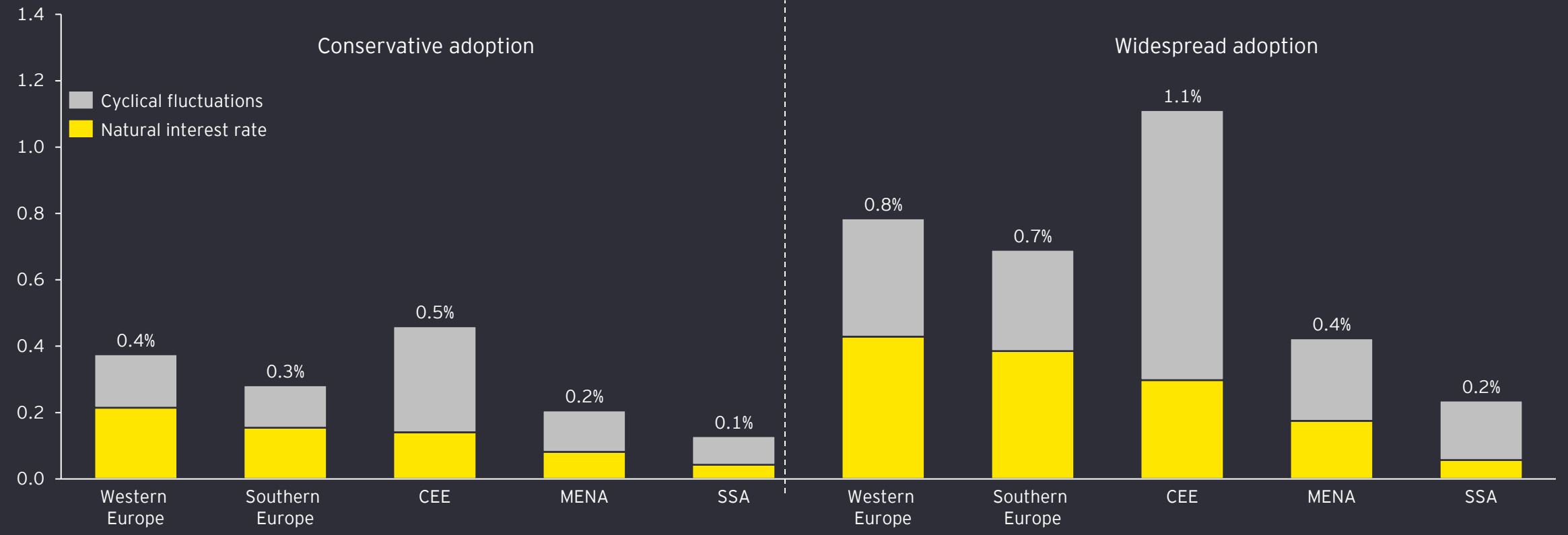
Source: EY EAT

Interest rate: Interest rates are expected to rise more significantly than inflation.

Our approach: Assess cyclical impact on monetary policy (global macroeconometric model) and structural effects on natural interest rates (panel error correction model).

Results: Interest rates are to increase moderately, with the effects ranging from 0.1-0.2 pp in SSA through 0.3-0.8 pp in Western Europe to 0.5-1.1 pp in CEE.

Peak impact of AI on interest rates over 2024-33 (percentage points)



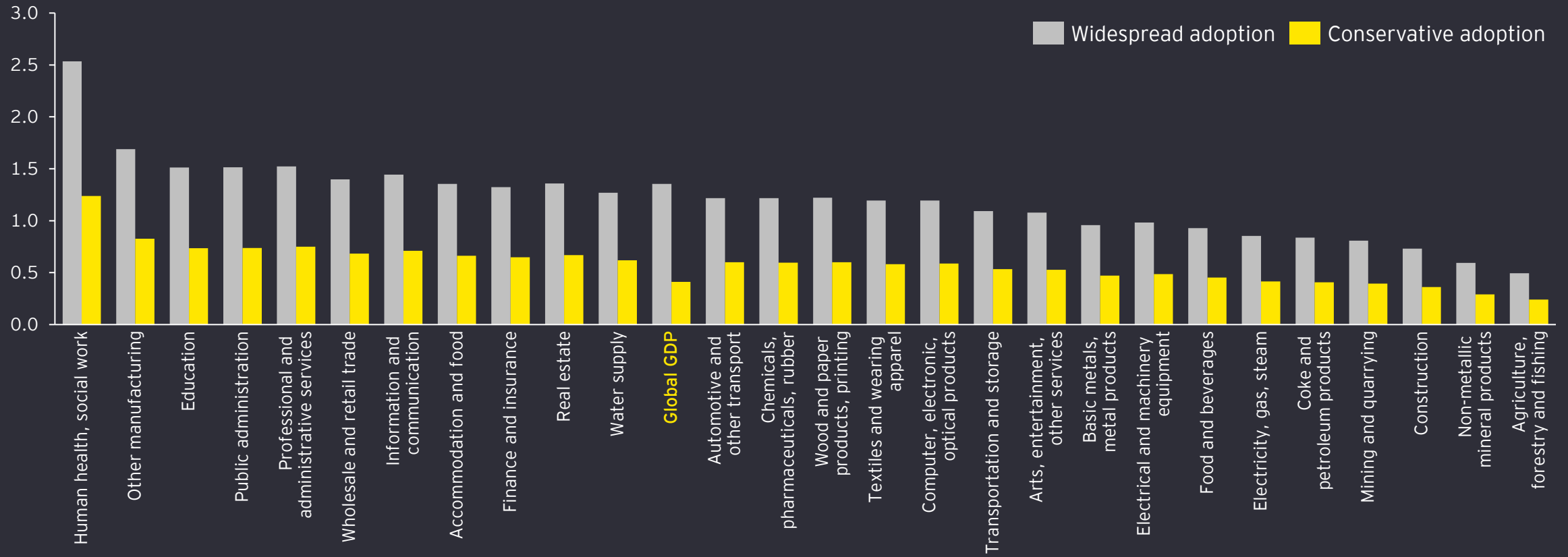
Source: EY EAT

Sectoral performance: AI is set to deliver significant TFP and output enhancements across sectors. Healthcare and advanced manufacturing are expected to lead the way.

Our approach: Utilize the **EY UPGRADE CGE model** to capture sectoral implications, considering ICT investment and sector-specific TFP gains by region

Results: AI-driven TFP gains do not map directly to output growth, as shifts in comparative advantage and capital flows also influence growth.

Impact of AI on global real value added by sector, percentage change from the baseline level in 2033



Note: Presented figures correspond to a high international capital mobility scenario. In our paper, we also study a low international capital mobility scenario where investors are not responsive to changes in rates of return across regions (e.g., due to home bias, significant domestic public support, etc.).
Source: EY EAT, EY UPGRADE CGE model

Conclusions: : AI's economic impact over the next decade will be profound and uneven.

1. GDP growth: Enhanced productivity and investment boost GDP.
2. Inflation and interest rates: Moderate increases expected.
3. Regional gains: Highest in Western Europe, US & Canada, Developed Asia & Oceania due to TFP and investment boost.
4. Sector-specific gains: Uneven, concentrated in healthcare, advanced manufacturing, and education.
5. Investment opportunities: Significant in fast-adopting countries, potential capital outflows from lagging countries.

Thank you!

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