

Global Economics Comment: EM Technology Adoption Cycles and Implications for Artificial Intelligence

- Our standing forecasts assume that artificial intelligence would boost annual EM productivity by 4% over the next decade on a gross basis, a sizable uplift that is nonetheless less than half our forecast for DM economies. In this *Global Economics Comment*, we revisit our adoption timeline and framework assumptions to assess whether such sizable DM-EM productivity gaps are warranted.
- The rise in low-cost and open-source AI models accessible to EMs suggest that we may see a shorter DM-EM AI adoption lag than previously assumed. This is consistent with recent technology cycle trends where DM-EM adoption lags have been compressed, particularly for ICT-related technologies.
- The digital and cloud-based nature of AI products also makes technological leapfrogging more likely this cycle. Microdata from the World Bank shows that firms in developing countries are more likely to skip to the technology frontier in business functions that are novel and digital, suggesting potential for faster step ups in EM productivity from AI. Indeed, early evidence of AI deployment in EM healthcare highlights the potential for discrete jumps in effectiveness and productivity. If current healthcare improvements scale, an AI-driven reduction in EM-DM healthcare gaps could eventually deliver a 5% uplift to EM labor supply.
- These patterns highlight potential AI-related upside to our EM GDP growth forecasts over the next decade, both because adoption timelines may be compressed and because EM economies may realize benefits that extend beyond work automation.

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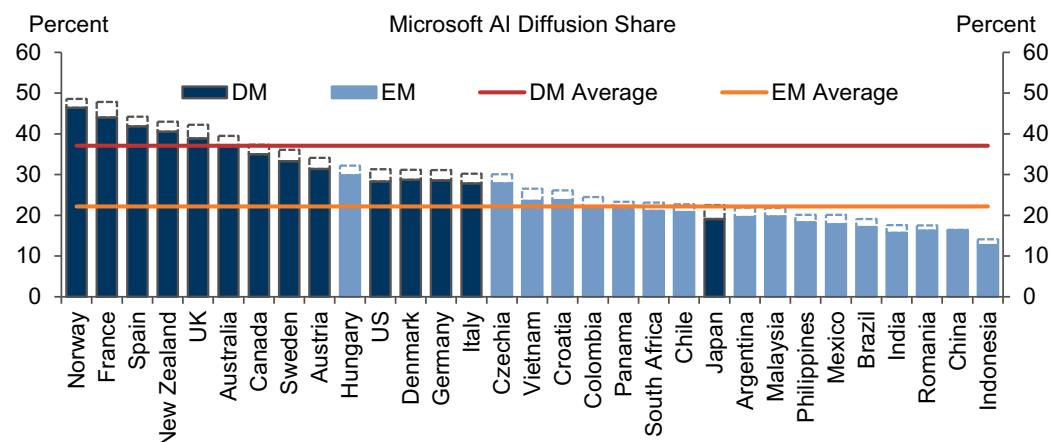
EM Technology Adoption Cycles and Implications for Artificial Intelligence

Our standing forecasts assume that artificial intelligence would boost annual EM productivity by 4% over the next decade on a gross basis, a sizable uplift that is nonetheless less than half our forecast for DM economies. The more limited EM impact reflects both that 1) technology adoption in EMs has historically lagged DMs, and 2) EM workforces are more skewed toward production jobs that are less AI exposed and therefore will benefit less from task automation. In this *Global Economics Comment*, we revisit our assumptions on timing and benefits to assess the implications for the EM AI outlook.

On the timing of adoption, the rise in low-cost and open-source AI models—particularly from China—are leading to a fairly rapid pace of EM adoption. While measured adoption rates depend on the data source (and measurement definition),

Exhibit 1 shows that data from Microsoft suggests that EM adoption rates (22% on average) are only moderately trailing DM adoption rates (37%). Given that the same data suggests that global adoption is rising at a roughly 5pp/year pace, current trends point to a 3-year adoption lag that is notably shorter than the 5-year lag built into our baseline forecasts.

Exhibit 1: AI Adoption in Major EMs Is Only Slightly Lagging DMs



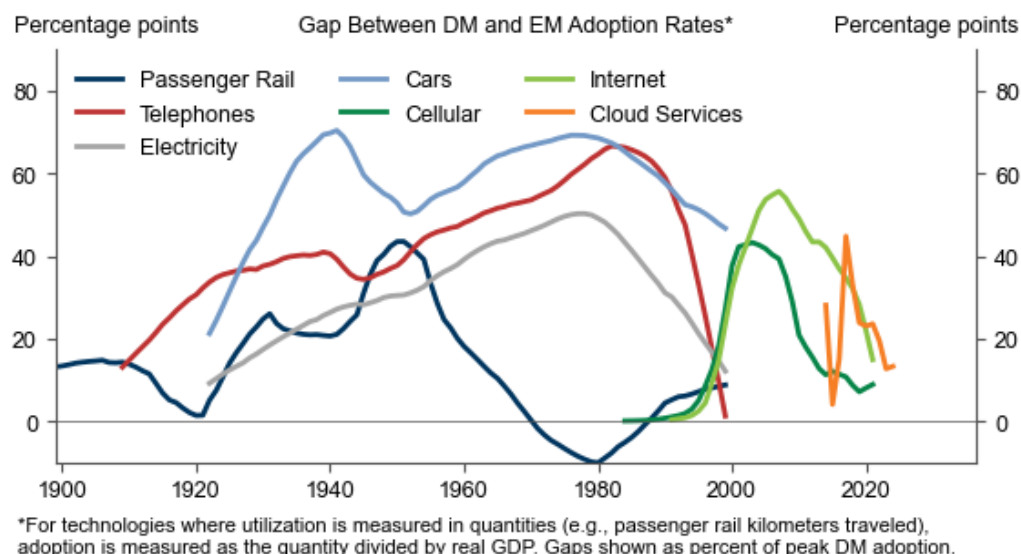
Note: AI diffusion is defined as the share of individuals aged 15-64 who have used a generative AI product during the reported period. Solid bars represent AI adoption as of 2025H2. Dashed bar

Source: Microsoft, Goldman Sachs Global Investment Research

Given the measurement difficulties, it is also likely that current adoption surveys are underestimating adoption progress in major EMs. In particular, we have already accounted for a shorter adoption lag in China, where the emergence of DeepSeek and other Chinese competitors has suggested faster AI development and adoption. Our China economics team expects adoption rates to exceed 30% by 2030—effectively matching the pace of non-US DMs (who lag US adoption by a year)—and become fully adopted within the next 15 years. More broadly, however, patterns in AI adoption therefore appear to be following a trend where DM-EM technology adoption lags have been compressed, particularly for ICT-related technologies with low infrastructure costs and cross-border transaction barriers (Exhibit 2).

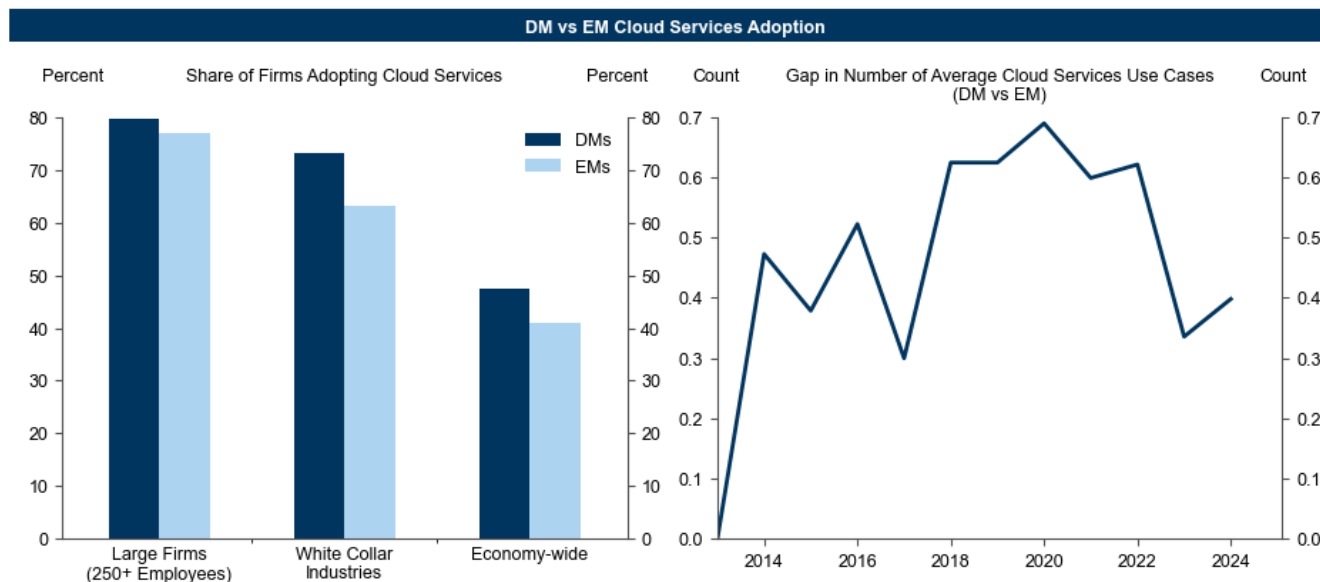
Very recent data on technology adoption suggests these trends could continue. The left chart of Exhibit 3 uses data from the OECD to highlight that the share of EM businesses purchasing cloud services (41%) is only slightly lagging the share in DMs, with similarly small gaps among white collar and large firms. The right chart of Exhibit 3 shows the average number of cloud services use cases among DM and EM adopters, with the recent decline indicating that EM businesses are deepening their usage by integrating cloud services into more business functions.

Exhibit 2: The Absolute and Relative Gap Between DM and EM Adoption Rates Has Been Shrinking, Including for Cloud Services



Source: Data compiled by Goldman Sachs Global Investment Research

Exhibit 3: The Gap in Adoption of Cloud Services Is Small, Both in Terms of Adoption Rates and Number of Uses



Source: OECD, Goldman Sachs Global Investment Research

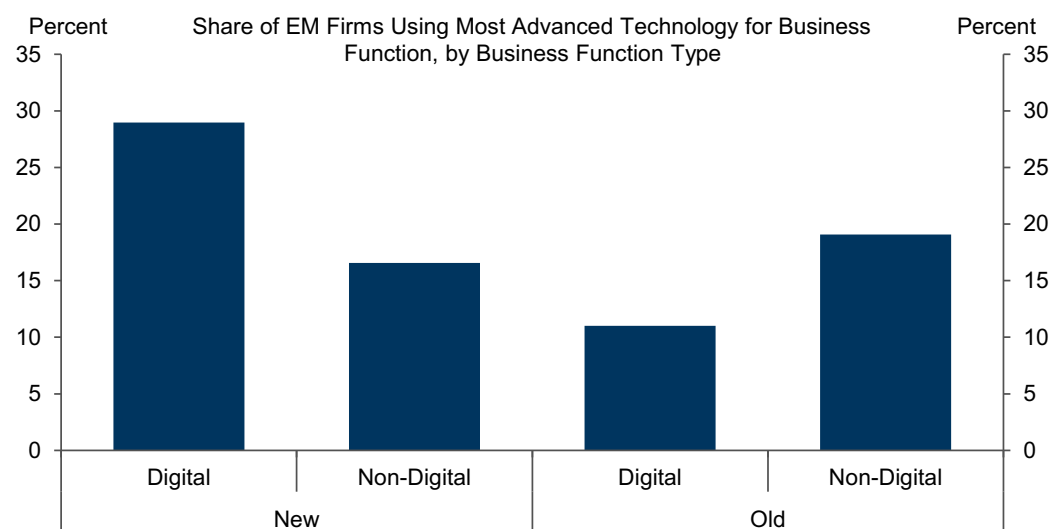
The upshot from this analysis is that both current AI adoption rates and recent digital technology trends point to a relatively short adoption lag. If EM adoption rates continue to only lag DM adoption rates by three years, we would estimate a 6% boost to EM GDP over the next decade (vs. 4% currently).

Second, while some EM economies have high idiosyncratic labor force exposure—for example, roughly 1% of workers in India are employed in IT, while call centers account for 4% of jobs in the Philippines—the lower share of white collar workers (and corresponding higher share of production workers) continues to suggest a more limited EM boost from task automation relative to DMs. That said, the digital and cloud-based nature of AI products also makes leapfrogging more likely this cycle, suggesting that EM

productivity could benefit from a discrete step forward in some areas.

To demonstrate, in [Exhibit 4](#) we utilize a detailed firm-level technology usage [dataset](#) from the World Bank to analyze patterns in technology adoption across different types of business functions and work tasks. Indeed, we find that EM businesses are much more likely to use the frontier (most advanced) technology to perform a business function when it is both digital-friendly and not a substitute for prior modes of production.

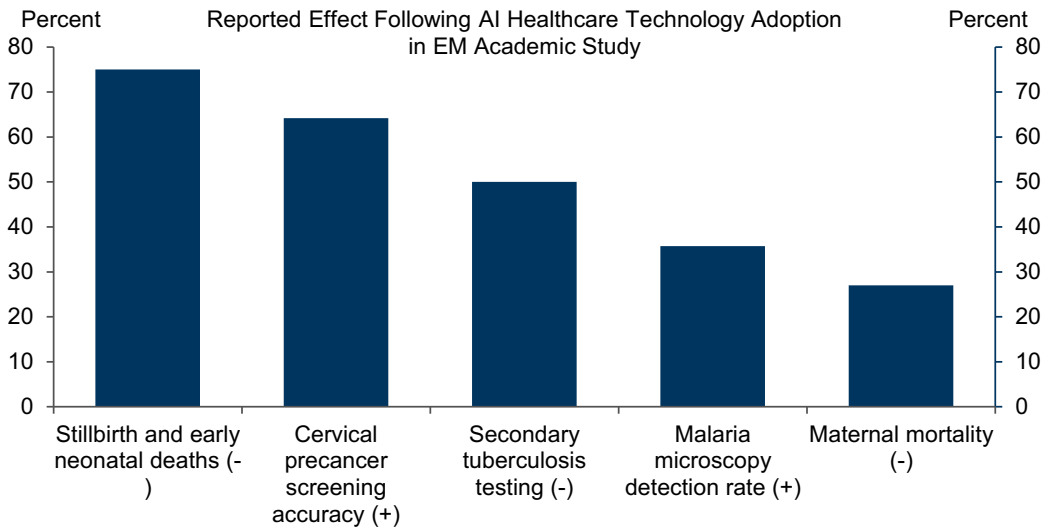
Exhibit 4: EM Countries Are Much More Likely Leap to the Technology Frontier with Digital Technologies



Source: World Bank, Goldman Sachs Global Investment Research

As an example, early applications of AI in EM healthcare have raised the efficiency and accuracy of certain procedures and yielded better health outcomes at a relatively low infrastructural cost ([Exhibit 5](#)). Poor health [weighs heavily on economic activity](#) in developing countries via losses in hours worked and labor force participation from sickness, premature death, and informal caregiving. If the effects in [Exhibit 5](#) hold as AI tools enable EMs to jump closer to the healthcare frontier, a proportional reduction in the current EM-DM healthcare gaps would imply a 5% cumulative uplift to EM labor supply due to a larger and healthier workforce. While only illustrative, this estimate highlights that the potential benefits of AI in EMs could extend beyond our standard work-task-automation framework.

Exhibit 5: Early AI Use Cases in Healthcare Have Already Yielded Notable Improvements in EMs



Source: Data compiled by Goldman Sachs Global Investment Research

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