发展经济学研究所

学术论文

题目：The potential impact of artificial intelligence on CO2 emissions A comparison between China and the US

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论文摘要：
To better address artificial intelligence challenges, a rational assessment of its impacts is essential. However, when estimating the influence of artificial intelligence, most studies have overlooked sectoral heterogeneity and regional competition, which are prevalent in reality. This paper constructs an analytical framework based on the GTAP-E model and input-output analysis to more effectively forecast artificial intelligence's intricate effects. The results show that both China and the US are estimated to achieve better GDP growth during 2025–2035, but the US growth rate is higher. Rising AI adoption in developed countries lowers production costs and prices, impacting exports from China. Environmentally, despite producing more, China's CO2 emissions growth rate is significantly lower than expected, demonstrates that artificial intelligence has great potential in helping China reduce emissions. China's imports of embodied CO2 resulting from the export of energy-intensive products will be reduced. In contrast, the US, which may popularize artificial intelligence earlier, is reducing its CO2 emission intensity more slowly than China by 2035. Besides, with the growth of demand resulting from artificial intelligence, the US will export more embodied CO2 emissions overseas.

连结：https://doi.org/10.1016/j.techsoc.2026.103233