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ARTIFICIAL INTELLIGENCE AND THE FUTURE OF US COMPETITIVENESS: SECTORAL IMPACTS, WORKFORCE TRANSITIONS, AND POLICY CHALLENGES

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ABSTRACT

This paper provides a comprehensive analysis of Artificial Intelligence's impact on U.S. economic competitiveness through six key dimensions. First, we examine AI's macroeconomic effects, synthesizing projections that estimate potential contributions of $4.8-$19.9 trillion to global GDP by 2030, with annual productivity growth ranging from 0.5-1.3%. Second, we analyze labor market transformations, where 20-40% of jobs may be affected, creating both displacement risks and opportunities for workforce augmentation. Third, we investigate the intensifying geopolitical competition in AI, particularly between the U.S. and China, where military AI markets are projected to reach $38.5 billion and $32 billion, respectively, by 2030. Fourth, we evaluate sector-specific impacts, highlighting manufacturing efficiency gains of 15-30% and small business productivity improvements up to 25%. Fifth, we compare different AI paradigms - narrow AI, agentic AI, and AGI - with their distinct economic implications, from incremental task automation to potential exponential growth scenarios. Finally, we assess policy frameworks needed to balance innovation with risk mitigation, emphasizing digital infrastructure investment, workforce reskilling, and international governance cooperation. Our analysis synthesizes findings from over 100 recent sources to present a holistic view of AI's transformative potential and challenges. The paper concludes with strategic recommendations for maintaining U.S. competitiveness while addressing inequality risks and ensuring sustainable AI integration across economic sectors. Key findings suggest that while AI offers substantial economic opportunities, its benefits are not automatic and require proactive policy interventions to achieve equitable distribution and long-term growth. We examine the policy interventions needed to harness AI's transformative benefits while mitigating its associated risks. The analysis highlights that while AI offers opportunities for efficiency gains and innovation across sectors, its equitable and sustainable integration necessitates proactive governance, investment in digital infrastructure, workforce reskilling, and international collaboration. We examine the strategic policy interventions required to harness AI's transformative benefits while mitigating its associated risks. The analysis highlights that while AI offers opportunities for