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THE ROLE OF ARTIFICIAL INTELLIGENCE IN TACKLING THE SHADOW ECONOMY

The shadow economy, characterized by its operation outside the bounds of official regulation and taxation, poses a significant challenge to global economic stability and governance. However, the advent of artificial intelligence (AI) offers promising tools to combat this elusive sector. This article delves into the multifaceted role of AI in this fight, exploring its potential, challenges, and ethical considerations.

The shadow economy encompasses a wide range of activities, from unreported employment to the trade of illicit goods, all unified by their evasion of governmental oversight. While it can offer short-term benefits to participants, such as income in regions with limited formal employment opportunities, its long-term effects are detrimental. It undermines legitimate businesses, deprives governments of tax revenue, and can even threaten national security. However, the advent of Artificial Intelligence (AI) offers promising tools to combat this elusive sector.

Artificial Intelligence (AI) systems are adept at analyzing extensive datasets to uncover patterns that suggest shadow economic activities. By synthesizing data from diverse sources, AI can pinpoint irregularities that might escape human scrutiny. This includes unusual financial transactions or discrepancies in tax records. The work of Russell in the Oxford Review of Economic Policy discusses the evolution of AI and its increasing success in complex tasks, which could be applied to detecting shadow economy activities [1].

The predictive power of AI extends to forecasting the growth of the shadow economy. Machine learning models can identify sectors or regions at risk, enabling authorities to take preemptive action. Furman and Seamans, in their working paper for the National Bureau of Economic Research, explore how AI and robotics could potentially enhance productivity growth and affect labor markets. [2].

AI's capability to automate the monitoring of economic activities ensures adherence to tax laws and regulations. This automation reduces the need for manual enforcement and allows for instantaneous detection of non-compliance. The implications of such innovations on economic growth are discussed in a panel data study published in the Journal of Economic Structures [3].

AI enables the seamless exchange of information across international borders, which is vital for addressing the shadow economy that often operates beyond national jurisdictions. Advanced AI algorithms can assist in harmonizing data from different countries, thus bolstering international cooperation.

While AI has shown promise in combating the shadow economy, there are also challenges and limitations to consider. AI technologies rely on data, and in the case of the shadow economy, much of the data is unstructured, unreported, or intentionally obfuscated. This poses challenges for AI systems in accurately detecting and assessing

illegal activities. Moreover, AI algorithms are not foolproof and can sometimes produce false positives or miss emerging trends in the shadow economy.

In conclusion, the role of AI in tackling the shadow economy is evolving and holds great potential for improving the effectiveness of law enforcement efforts in combating illicit economic activities. By harnessing the power of AI technologies, governments and regulatory bodies can enhance their ability to detect, monitor, and prevent illegal economic activities, ultimately safeguarding their economies and fostering a more transparent and equitable business environment. However, it is essential to continuously innovate and adapt AI tools to the dynamic nature of the shadow economy and to address the inherent challenges and limitations in detecting and combating illegal activities effectively.

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