

## **Can Artificial Intelligence Design the Economy?: Cyber-Communism in the 21st Century and Its Impossibility**

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This paper examines the contemporary debate on “cyber-communism” – the argument that modern information technology enables socialist economic planning. Claims made by cyber-communists can be categorized into two distinct approaches: Market Socialism updated with modern technology and Democratic Socialism pursuing a decentralized model of economic planning. While modern Austrian economists have provided sharp criticisms of the former, relatively little attention has been paid to the latter.

Each model of communism in the modern world faces distinct fundamental problems originally raised by past authors: centralized Market Socialism cannot solve the Knowledge Problem advocated by Hayek, while decentralized Democratic Socialism cannot address Mises’s critique about the impossibility of valuing and allocating production goods under the absence of a unified unit of calculation – money.

This paper also clarifies misconceptions about Artificial Intelligence (AI) technology within the debate. The analysis in Chapter IV demonstrates that current AI systems, due to their non-deterministic nature and lack of explainability, are unsuitable as central planners. Modern AI based on deep learning technology is more heuristic than algorithmic, and more boundedly rational than computationally rational. Therefore, it fails to solve the Knowledge Problem and potentially exacerbates it by expanding the domain of tacit and embedded knowledge in society.

While this paper acknowledges possibilities for hybrid approaches combining market mechanisms with computation and planning, it concludes that information technology alone cannot enable socialist economic calculation.