Abstract

Artificial intelligence is increasingly embedded in administrative, nonprofit, and small organizational systems, yet prevailing economic measurement frameworks systematically undercount its effects on productivity, labor demand, skill valuation, and welfare. This paper examines how large language models and automated decision-support tools reallocate and substitute for cognitive tasks traditionally performed by credentialed professionals, generating intangible capital that remains largely invisible in standard labor, productivity, and firm-level datasets.

Drawing on real-world AI implementation experience in nonprofit and small organizational contexts, I document persistent measurement gaps arising when AI substitutes for or augments high-skill cognitive labor without corresponding changes in occupational classifications, wage data, or reported output. These gaps distort estimates of productivity growth, misstate labor market dynamics, and complicate policy evaluation.

I propose a task-based measurement framework that treats AI systems as organizational intangible capital rather than conventional IT inputs. The framework integrates task-level AI exposure, adoption indicators, and qualitative administrative evidence to improve the measurement of productivity, skill utilization, and welfare effects. The analysis highlights distributional implications and governance challenges, particularly for organizations and workers operating outside large, well-instrumented firms.

Motivation

Economic measurement infrastructure was designed for an economy in which capital was tangible, labor was credentialed, and productivity gains were gradual and observable. AI violates each of these assumptions.

In practice, AI systems now perform tasks associated with legal analysis, administrative decision-making, research synthesis, and strategic planning—functions historically tied to formal credentials and high wages. However, when these tasks are performed or mediated by AI, existing datasets continue to classify output as labor-driven and skills as unchanged. The result is a growing wedge between measured inputs and realized economic value.

This mismeasurement is most visible in nonprofit and small organizational environments, where AI adoption can dramatically expand output without parallel increases in headcount, wages, or capital expenditure. These environments provide an early signal of broader measurement failures likely to propagate across the economy.

Contribution

This paper makes three primary contributions:

1. Task-Level Reframing of AI Exposure

   It shifts analysis from occupation-based measures to task-based measurement, showing how AI substitutes for specific cognitive functions without triggering reclassification in labor statistics.

2. AI as Intangible Organizational Capital

   It conceptualizes AI systems as a distinct form of intangible capital—separate from traditional IT—that enhances productivity through task substitution, coordination, and decision support.

3. Measurement and Policy Implications

   It identifies how current statistical frameworks understate productivity growth, misprice skills, and obscure distributional effects, with direct implications for labor policy, education policy, and regulatory oversight.

Data and Methodological Approach

The analysis combines:

- Task-based mapping of AI capabilities to occupational functions
- Qualitative administrative evidence from AI deployment in nonprofit and small organizational systems
- Comparative assessment of labor market, productivity, and firm-level measurement frameworks

While the paper does not rely on proprietary datasets, it is designed to complement empirical work using administrative records, surveys, and firm-level data, and to inform future data collection strategies.

Relevance to Conference Themes

This paper directly engages multiple themes of the conference:

- Labor Markets and Skills: Measuring AI exposure by task, skill compression, and job quality misclassification
- Productivity and Intangible Capital: Accounting for AI-generated organizational capital
- Policy and Governance for Measurement: Transparency, auditability, and interpretability of AI-mediated outputs
- Welfare and Economic Contribution of AI: Distributional impacts and the gap between measured and experienced economic value

Policy Implications

Without updated measurement frameworks, policymakers risk:

- Underestimating productivity growth while overstating labor market slack
- Misaligning education and workforce policy with actual skill demands
- Designing regulation based on incomplete or distorted economic indicators

Accurate measurement of AI's economic contribution is not ancillary—it is foundational to credible policy in an AI-mediated economy.

Disclosure

The author reports no financial relationships with AI vendors or platforms related to this research. The analysis draws on professional experience in AI consulting and nonprofit leadership.