The Political Economy of Artificial Intelligence:
Innovation Systems, Labor Markets, and Development Outcomes Across Market Economies

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ABSTRACT

This analysis explores how varying market structures and institutional frameworks shape both the development trajectory of artificial intelligence (AI) technologies and their subsequent impact on labor markets and economic development across different market economies. Building upon the varieties of capitalism framework, the study examines how institutional configurations in liberal market economies (LMEs) and coordinated market economies (CMEs) create distinct patterns of AI innovation, labor market adaptation, and power dynamics. The findings reveal that AI development is not a technologically determined phenomenon but is rather institutionally mediated, leading to divergent socioeconomic outcomes. LMEs exhibit rapid, breakthrough innovations in AI alongside skill-biased technological change and labor market disruption, while CMEs demonstrate more systematic integration of AI technologies with incremental adaptation strategies and stronger worker protection mechanisms.

1. INTRODUCTION

Artificial intelligence has emerged as a defining technology of the twenty-first century, reshaping production systems, labor markets, and governance frameworks across diverse institutional contexts. Yet prevailing discourse often succumbs to technological determinism, assuming AI development follows a singular evolutionary logic independent of social, political, and economic institutions. This chapter challenges such reductionism by demonstrating that AI trajectories diverge systematically across

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institutional configurations, generating distinctive patterns of innovation, distributional outcomes, and governance approaches.

This analysis addresses three interrelated research questions. First, how do different institutional systems—specifically Liberal Market Economies (LMEs), Coordinated Market Economies (CMEs), and emerging economy contexts—shape AI development and deployment? Second, what mechanisms mediate AI's impact on labor markets, and how do institutional complementarities influence employment outcomes, skill formation, and social protection? Third, what governance frameworks emerge across institutional contexts, and what implications do this hold for algorithmic accountability, equity, and sustainability?

Methodological Approach. This study employs comparative institutional analysis, synthesizing theoretical literature across political economy, innovation studies, and technological change scholarships. The analysis integrates three analytical dimensions: General-Purpose Technology theory to position AI within historical patterns of technological transformation, the Varieties of Capitalism framework to compare institutional configurations, and labor market transformation theories to assess employment impacts across contexts. The research prioritizes post-2018 sources to capture developments in machine learning and generative AI, while drawing upon foundational scholarship to establish theoretical grounding.

This chapter advances existing scholarships in several ways. It systematically integrates GPT theory with comparative institutional analysis, moving beyond simplistic adoption narratives. It extends VoC analysis beyond the traditional LME-CME dichotomy by incorporating emerging economy models, hybrid systems, and state-led development strategies. It provides nuanced analysis of AI's labor market impacts, emphasizing task displacement over job automation and highlighting institutional mediators. Finally, it offers comparative analysis of algorithmic governance approaches, examining market-led self-regulation, rights-based frameworks, stakeholder coordination models, and state-directed oversight.

2. THEORETICAL FOUNDATIONS

2.1. General-Purpose Technologies and Transformative Change

AI constitutes a general-purpose technology characterized by three defining features: pervasiveness across diverse economic activities, inherent potential for continuous technical improvement, and innovation complementarities enabling new products and processes (Lipsey et al., 2005). This positions AI within the lineage of transformative technologies—alongside steam power, electricity, and information technology—that fundamentally restructure production systems and organizational practices (Brynjolfsson & McAfee, 2014).

The GPT framework explains why AI's economic impacts manifest gradually and unevenly. Productivity gains emerge only after extensive complementary investments in organizational restructuring, skill development, and institutional adaptation (David, 1990). Recent developments in generative AI, particularly large language models, have intensified attention to AI's potential to augment cognitive tasks and reshape knowledge work (Eloundou et al., 2023). However, these technological capabilities interact with institutional contexts in ways that profoundly shape adoption patterns, distributional outcomes, and governance approaches.