

Beyond the Phillips Curve Orthodoxy: Reassessing the Wage–Inflation Trade-Off Under Nonlinear Labor Market Segmentation in Post-Pandemic Economies

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Abstract. The canonical Phillips Curve framework has long anchored monetary policy design across advanced and emerging economies; however, its empirical reliability has deteriorated substantially in the post-pandemic macroeconomic environment. This study critically re-examines the wage–inflation nexus by incorporating nonlinear labor market segmentation dynamics, exploiting a panel dataset of 38 OECD economies spanning 2010–2024. Employing threshold vector autoregression (TVAR) models augmented with time-varying parameter estimation, we demonstrate that the conventional inverse relationship between unemployment and wage inflation becomes structurally unstable when labor markets exhibit dual-sector segmentation exceeding critical heterogeneity thresholds. Our findings indicate that sectoral polarization, gig-economy proliferation, and skill-biased technological displacement jointly attenuate the trade-off's predictive validity. These results carry significant implications for central bank forward guidance and fiscal-monetary policy coordination frameworks.

Keywords: Phillips Curve nonlinearity, wage-inflation trade-off, labor market segmentation, threshold vector autoregression, post-pandemic macroeconomics, monetary policy transmission, skill-biased technological displacement, gig economy labor dynamics, time-varying parameter models

Introduction

The relationship between labor market slack and nominal wage growth has constituted one of the most foundational empirical regularities in macroeconomic theory since A.W. Phillips's seminal 1958 contribution. For decades, policymakers at central banks and supranational fiscal authorities—including the European Central Bank, the Federal Reserve System, and the Bank for International Settlements—have anchored their inflation-targeting frameworks to the structural assumption that tightening labor markets predictably translate into upward wage pressure, which subsequently transmits into consumer price inflation through unit labor cost channels. Yet the post-pandemic macroeconomic landscape of 2022–2025 has exposed a striking dissonance: several OECD economies simultaneously recorded historically compressed unemployment rates alongside decelerating real wage growth and inflation trajectories that proved structurally resistant to orthodox monetary tightening cycles. This divergence constitutes not a mere cyclical anomaly, but rather a systemic challenge to the theoretical architecture underpinning inflation forecasting, central bank communication strategy, and evidence-based labor market policy design.

The contemporary relevance of this challenge is acute. As of 2024–2025, central banks across the Euro Area, North America, and select East Asian economies are navigating an unprecedented confluence of structural disruptions: the accelerating displacement of routine and semi-routine occupational categories via artificial intelligence and robotics diffusion; the rapid institutionalization of non-standard employment arrangements within platform-mediated gig labor ecosystems; persistent geographic and sectoral mismatches between labor demand and supply profiles; and the demographic compression of prime-age labor force participation in aging economies. Each of these forces operates as a structural wedge between aggregate unemployment statistics—the principal Phillips Curve input variable—and the underlying distributional mechanics of wage-setting behavior. When labor markets are functionally segmented into insulated high-productivity and low-productivity tiers, as current empirical evidence increasingly corroborates, aggregate unemployment rates systematically misrepresent the degree of effective demand pressure operating within each segment. Consequently, the macroeconomic signal upon which the Phillips Curve's predictive mechanism depends is structurally distorted at the point of measurement.

Extant literature has made incremental progress in accommodating these complexities. Introduced regime-switching specifications, hybrid New Keynesian Phillips Curve formulations incorporating inflation expectations anchoring, and cross-sectional heterogeneity corrections have each partially addressed individual dimensions of the framework's empirical fragility. However, no unified analytical treatment has simultaneously modeled the interaction between dual-sector segmentation thresholds, time-varying structural parameters, and gig-economy labor supply elasticity within a panel econometric design of sufficient cross-national scope to yield policy-generalizable conclusions.

This paper advances the literature along four structured dimensions. Section 2 situates the present study within the theoretical genealogy of Phillips Curve

scholarship, identifying the specific mechanisms through which labor market segmentation disrupts the wage–unemployment relationship. Section 3 details the panel dataset construction, variable operationalization, and the threshold vector autoregression (TVAR) methodology with time-varying parameter extensions. Section 4 presents the core empirical findings, including segmentation threshold estimates, regime-conditional impulse response functions, and cross-economy heterogeneity decompositions. Section 5 derives policy implications for central bank forward guidance architectures and coordinates fiscal-monetary stabilization responses. Section 6 concludes with limitations and a forward research agenda addressing data granularity constraints in gig-economy labor measurement.

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