

Decomposing Structural Unemployment Persistence in Post-Transition Economies: A Beveridge Curve Misalignment Approach Under Asymmetric Labor Demand Shocks

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Abstract. Structural unemployment persistence in post-transition economies remains a critical policy challenge, exacerbated by asymmetric sectoral demand shocks and deepening skill-vacancy mismatches. This study employs a dynamic Beveridge curve decomposition framework augmented with time-varying parameter vector autoregression (TVP-VAR) to isolate cyclical from structural unemployment components across fourteen Central and Eastern European economies over the period 2004–2023. Utilizing harmonized Eurostat labor force survey microdata and vacancy statistics from the European Job Mobility Portal, the analysis identifies statistically significant northward shifts in Beveridge curves post-2015, indicative of deteriorating matching efficiency. Quantile regression results further reveal heterogeneous firm-size effects on vacancy-filling durations. Policy simulations suggest that targeted active labor market programs, conditional on occupational retraining subsidies, reduce structural unemployment rates by 1.8–2.4 percentage points within a four-year horizon.

Keywords: structural unemployment, Beveridge curve decomposition, labor market matching efficiency, TVP-VAR, post-transition economies, skill-vacancy mismatch, active labor market programs, asymmetric demand shocks, occupational retraining subsidies

Introduction

The persistence of structural unemployment in post-transition economies constitutes one of the most analytically complex and policy-relevant challenges confronting applied labor economists in the contemporary macroeconomic landscape. Unlike cyclical unemployment, which responds predictably to aggregate demand stimuli and conventional monetary accommodation, structural unemployment is rooted in the misalignment between the

evolving composition of labor demand and the prevailing distribution of worker skills, geographic mobility, and sectoral adaptability. As of 2024–2026, this phenomenon has been dramatically intensified by the twin forces of accelerated digitalization—particularly the deployment of large-scale automation and artificial intelligence in manufacturing and services—and the geopolitical realignment of global value chains, which has imposed asymmetric reallocation pressures on labor markets across Central and Eastern Europe (CEE). The theoretical architecture underpinning this inquiry draws upon the canonical Diamond-Mortensen-Pissarides (DMP) search-and-matching framework, within which the Beveridge curve serves as an empirical diagnostic tool for matching efficiency. A northward or outward shift in the unemployment-vacancy space signals a structural deterioration in the economy's capacity to reallocate workers into available positions—a deterioration that purely expansionary fiscal or monetary policy cannot rectify without complementary supply-side interventions. Despite the theoretical clarity of this framework, its empirical application to post-transition economies has been hindered by data heterogeneity, institutional discontinuities, and the compounding effects of EU accession-induced labor mobility flows, which fundamentally alter the domestic labor supply curve. Existing empirical literature, including the foundational contributions of Šimunek and Eichhorst (2019), Lehmann and Muravyev (2021), and the OECD's structural employment outlook series, has tended to conflate cyclical and structural components or to apply static decomposition methods that are ill-suited to capturing the regime-switching dynamics characteristic of transition-era institutional reforms. Furthermore, the heterogeneous impact of firm-size stratification on vacancy-filling durations—a critical determinant of matching efficiency—remains underexplored in the CEE context. This paper addresses these gaps by introducing a dynamic Beveridge curve decomposition methodology augmented with time-varying parameter vector autoregression (TVP-VAR), enabling the identification of structural breaks and evolving shock transmission mechanisms without imposing arbitrary regime boundaries. The empirical strategy is further enriched by quantile regression analysis, which illuminates distributional asymmetries in labor market outcomes across firm-size cohorts and occupational classifications. The remainder of the paper is organized as follows. Section 2 provides a review of the theoretical and empirical literature on structural unemployment measurement and Beveridge curve dynamics in transition contexts. Section 3 details the data sources, variable construction, and econometric methodology, including the TVP-VAR specification and the quantile regression framework. Section 4 presents the core empirical results, encompassing Beveridge curve shift decompositions, impulse response functions, and firm-size-stratified vacancy duration estimates. Section 5 develops and discusses counterfactual policy simulations centered on active labor market program interventions and occupational retraining subsidy schedules. Section 6 concludes with policy recommendations and directions for future research.

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