

# Trend Inflation and Evolving Inflation Dynamics: A Bayesian GMM Analysis of the Generalized New Keynesian Phillips Curve\*

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## Abstract

Inflation dynamics in the U.S. and Japan are structurally investigated by estimating a generalized New Keynesian Phillips curve (GNKPC) with Bayesian GMM. This curve is derived from a staggered price model with trend inflation and backward-looking price setters, and possesses two main different features from a canonical New Keynesian Phillips curve (NKPC). First, the GNKPC's slope and inflation-gap inertia depend on the level of trend inflation. Second, its real marginal cost consists not only of unit labor cost but also of relative price distortion. Mainly due to these features of the GNKPC, the evolutions of its estimated slope and inertia over the U.S. three eras of the Great Inflation, the Great Moderation, and the Great Recession were very distinct from those of the NKPC. As for Japan's three eras of the Crude Oil Shock, the Low-to-Moderate Inflation, and the Deflation, the estimated slope and inertia of the GNKPC evolved over the eras oppositely to those of the NKPC, which was largely inherited from differing changes in estimated underlying parameters. Moreover, the Bayesian GMM model selection criteria suggest that the GNKPC outperforms the NKPC in all the eras of the U.S. and Japan.

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