

# Global Bond Market Interaction: An Arbitrage-free Dynamic Nelson Siegel Modeling Approach

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## Abstract

We have extended Diebold, Li, and Yue (2008) to an arbitrage-free setting, proposing a hierarchical model in which country yield-level and slope factors may depend on global-level and slope factors as well as country-specific factors. Using a monthly dataset of government bond yields for Germany, Japan, the US, and the UK from 1995:1 to 2018:11, we extracted global and country-specific factors for both the full sample. The results indicate strongly that global yield-level, slope, and curvature factors do indeed exist and are economically important, accounting for a significant fraction of variation in country bond yields. Moreover, the global yield factors appear linked to global macroeconomic fundamentals. We show, in particular, that curvature factors are key to explaining term premium dynamics, and appear more important in the second sub-sample.

**JELCodes:** C13,C32,E43

**Keywords:** Term Structure Model, Global Bond Market, Global Factor