



## Why common factors in international bond returns are not so common

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### Abstract

This paper analyzes the common factor structure of US, German, and Japanese Government bond returns. Unlike previous studies, we formally take into account the presence of country-specific factors when estimating common factors. We show that the classical approach of running a principal component analysis on a multi-country dataset of bond returns captures both local and common influences and therefore tends to pick too many factors. We conclude that US bond returns share only one common factor with German and Japanese bond returns. This single common factor is associated most notably with changes in the level of domestic term structures. We show that accounting for country-specific factors improves the performance of domestic and international hedging strategies.

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### 1. Introduction

Traditional principal component analysis (hereafter PCA) provides much of the intuition for the dynamics of bond yields. Empirical analysis generally determines that three principal components are needed to almost fully explain the dynamics of the term structure of interest rates

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