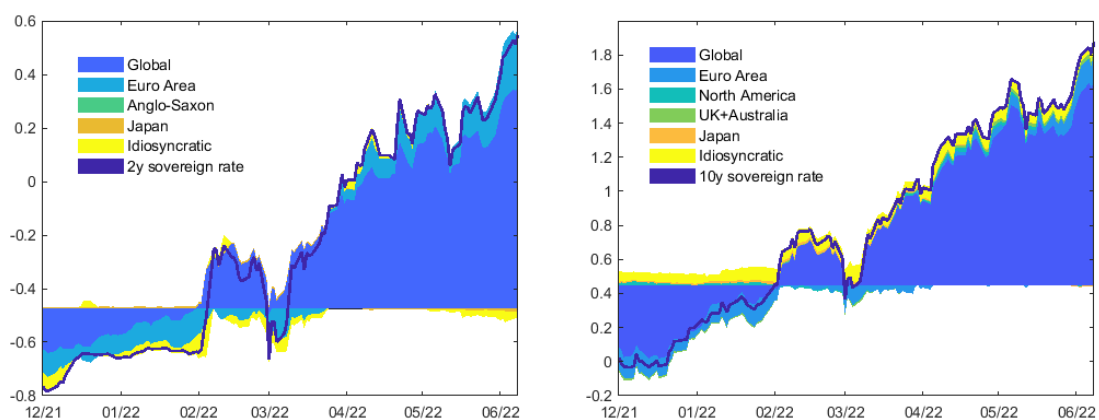


## A global shock to bond yields?

By [Mattia Girotti](#), [Guillaume Horny](#), [Adrian Penalver](#) and [Anna Petronevich](#)

*The co-movement of sovereign bond yields has been unusually strong in the most recent period. A global factor usually explains much of the variation in 10-year yields. What has been particularly striking over the recent months is the importance of a global factor in explaining 2-year yields. This suggests a common shock is driving expectations of monetary policy in the major advanced economies.*

**Chart 1 Global-local decomposition of French 2-year and 10-year sovereign yields**



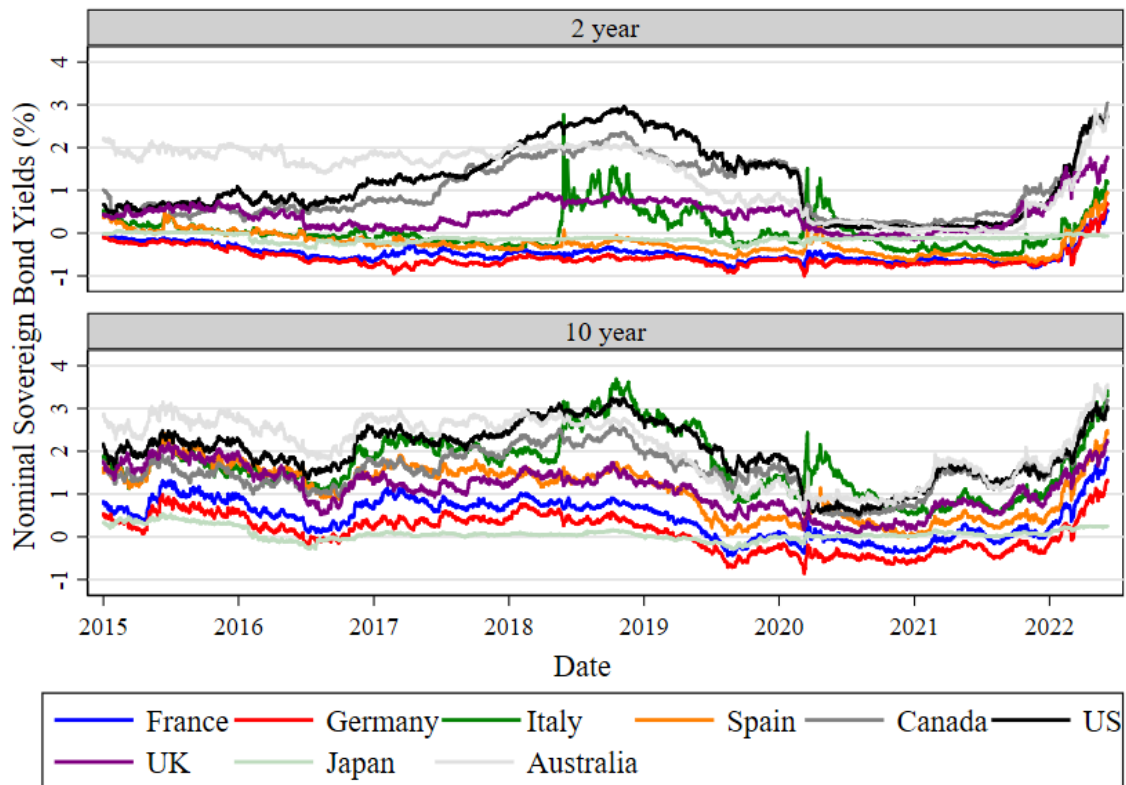
*Source: Bloomberg, authors' calculations.*

*Note: Solid lines represent the yields. Areas show the contribution of each factor relative to the 2015-2022 average rate. Latest observation: 06/07/2022.*

### Hunting for explanatory factors of sovereign yields

Chart 2 illustrates the nominal bond yields for nine major advanced economies from 2015 onwards. Visually, it is clear that there are some periods when they all tend to move together and other periods when the movements are disassociated. Sometimes the co-movement is only evident between groups of countries. How can we turn this visual impression into a measure that we can track and compare over time? This blog explains one approach and what we can learn from this about the current monetary policy debate.

*Chart 2: Nominal Sovereign Bond Yields – Medium and Long*



*Source: Bloomberg.*

*Note: Latest observation: 06/07/2022.*

Our first step is to identify a global factor common to all yields for each maturity. Technically, this is the first principal component and is illustrated in blue in Chart 1 for the case of French sovereign yields. By construction, it is common to the time series of yields of all nine countries. We then construct a series for each country of the part of their yields that *cannot* be explained by the global factor. Countries with similar patterns of yield dynamics are then grouped together (France, Germany and Spain) and (Australia, Canada, United Kingdom, United States) in order to identify a “euro area” factor and an “Anglo-Saxon” factor, respectively. Italy is not part of the group used to identify the euro area factor because of its low correlation with the rest of the group. Japan is a factor in itself. For 10-year yields we find that we need to split the “Anglo-Saxon” countries into North America and Australia/UK.

To estimate the euro area factor, we again search for a common factor which explains the co-movement of the residual components of those countries' yields after accounting for the contribution of the global factor. We do the same for the Anglo-Saxon factor. Finally, we regress the yields of each country on all these factors to establish the importance of each factor for each yield. The residual that we cannot explain is termed the idiosyncratic factor. We obtain a decomposition of each yield as illustrated in Chart 1 for the French case.

## A global, not a US factor

It is sometimes argued that US markets drive the global financial cycle ([Miranda-Agrippino and Rey, 2021](#)). In this case, we would expect to find the highest correlation between US yields and the global factor. We do not find this. The results in Table 1 show that the US correlation is even below the median for both maturities.

*Table 1: Share of variance of nominal sovereign bond yields explained by the global factor*

	10Y nominal yields	2Y nominal yields
Germany	<b>0.95</b>	<b>0.67</b>
France	<b>0.95</b>	<b>0.77</b>
Australia	<b>0.92</b>	<b>0.64</b>
UK	<b>0.87</b>	<b>0.69</b>
Spain	<b>0.86</b>	<b>0.66</b>
US	<b>0.78</b>	0.41
Canada	<b>0.66</b>	0.39
Italy	<b>0.59</b>	0.45
Japan	0.32	0.20

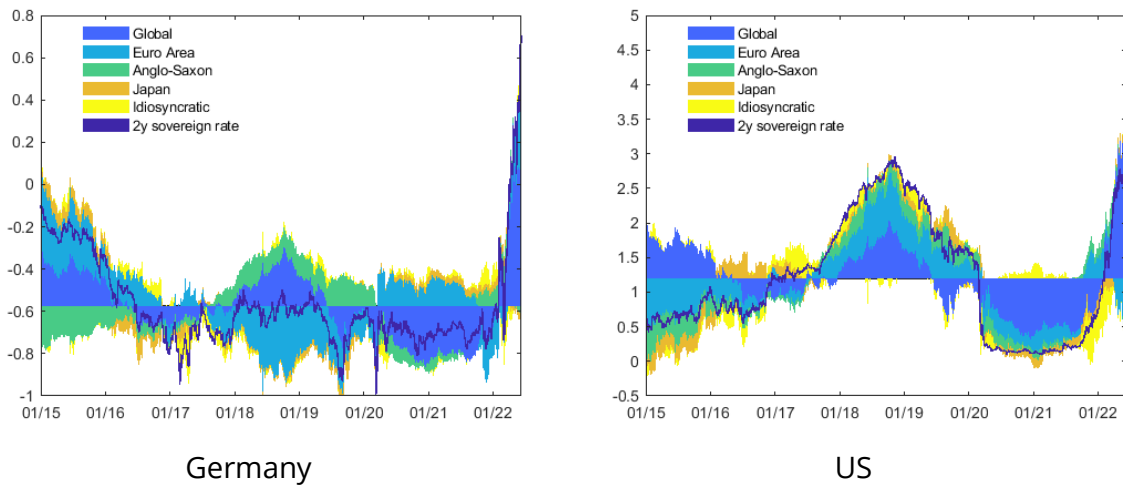
*Source: Bloomberg, authors' calculations.*

*Note: Numbers correspond to the R-squared of univariate OLS regressions of a given sovereign rate on the global factor on the period January 2015 - June 2022.*

## Trans-Atlantic comparison

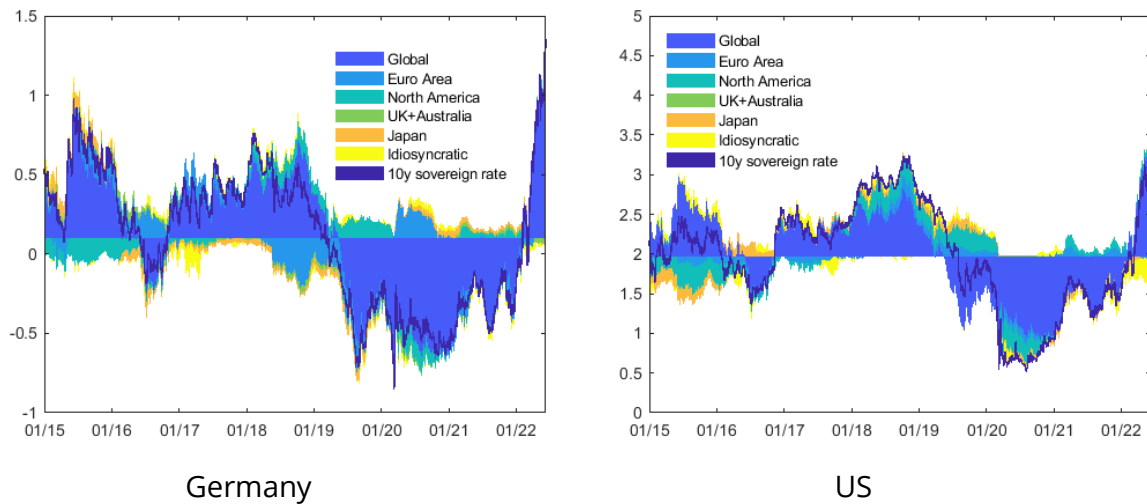
Charts 3 and 4 illustrate the decompositions for Germany and the United States for 2-year and 10-year maturities respectively. They provide a number of interesting insights. Firstly, our factors can explain almost all of the variations in these yields: the idiosyncratic contributions are fairly small. Secondly, the global factor is much more important in explaining longer-term maturities than shorter-term ones. This suggests that sovereign bond markets are globally highly integrated. Nevertheless, currency areas have significant monetary sovereignty in the short term, so that policy interest rates can diverge in response to local shocks. Third, all factors are present in all yields. So, for example, the Japan factor has an influence on euro area bond yields and the euro area factor influences US yields.

**Chart 3: Global-local factor decomposition of the German and US 2Y sovereign nominal yields**



*Source: Bloomberg, authors' calculations.*  
 Note: Solid lines represent the yields. Areas show the contribution of each factor relative to the 2015-2022 average rate. Latest observation: 06/07/2022.

**Chart 4: Global-local factor decomposition of the German and US 10Y sovereign nominal yields**

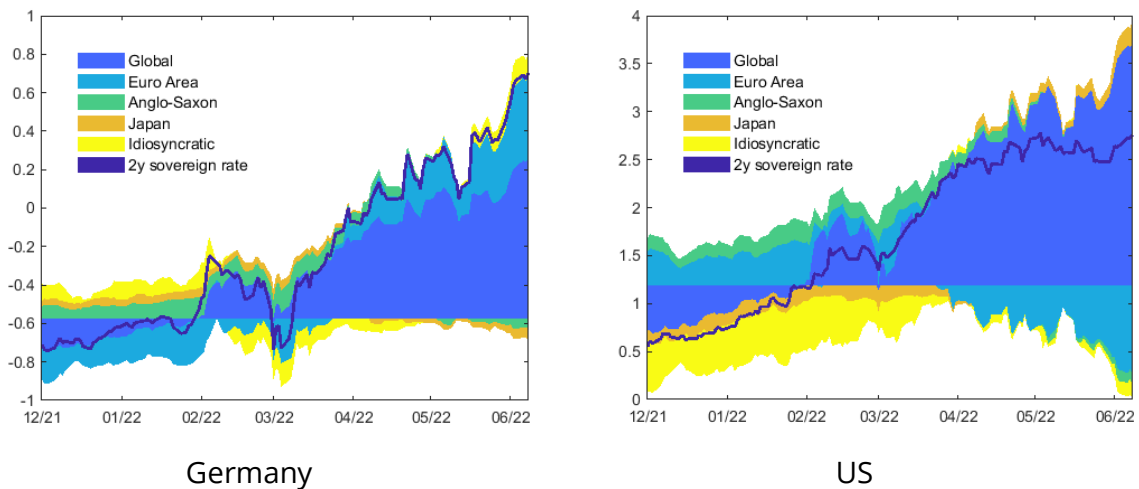


*Source: Bloomberg, authors' calculations.*  
 Note: Solid lines represent the yields. Areas show the contribution of each factor relative to the 2015-2022 average rate. Latest observation: 06/07/2022.

## A strong global trend recently

Chart 5 focuses on the most recent period – since December 2021. We can see that 2-year yields in Germany and the US have been strongly driven by the global factor since February 2022. This suggests that monetary policy expectations have been responding to a common global shock, which could be related to global inflation pressures. The pace of monetary policy normalisation is nevertheless different on both sides of the Atlantic, with the euro area factors contributing to slowing down the increase in US yields.

*Chart 5: Global-local factor decomposition of the German and US 2Y sovereign nominal yields – recent months*



*Source: Bloomberg, authors' calculations.*

*Note: Solid lines represent the yields. Areas show the contribution of each factor relative to the 2015-2022 average rate. Latest observation: 06/07/2022.*