

Financial Econometrics 871 Practical Exam 2022: Question 2

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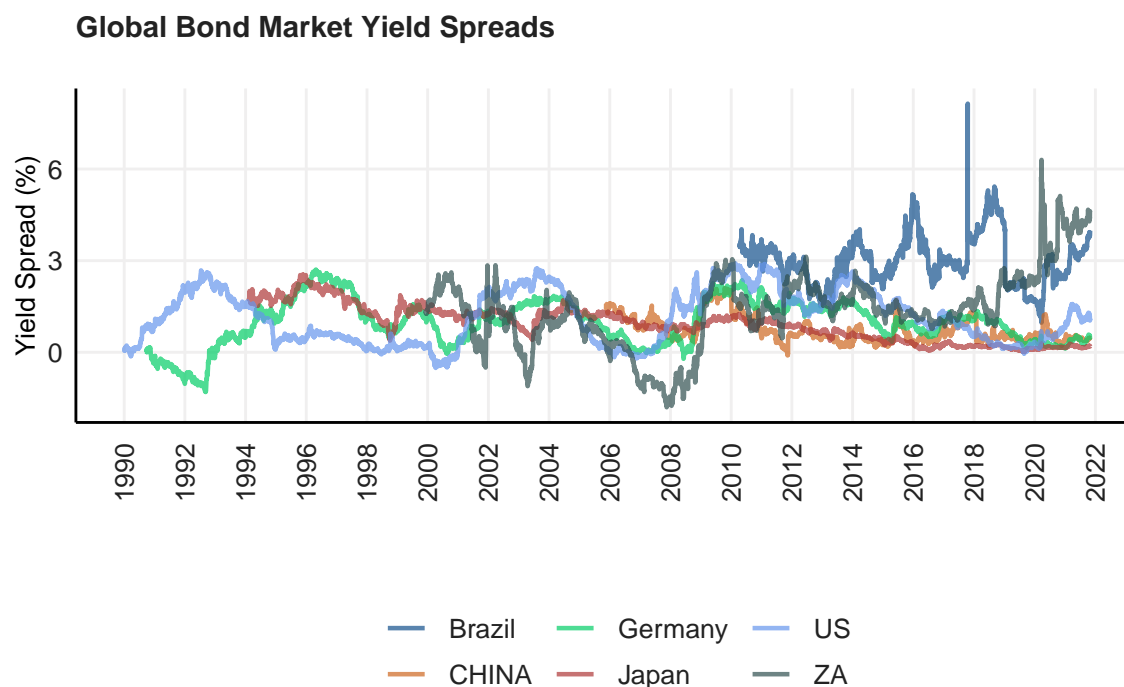
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Abstract

Economists recently pointed out that the current yield spreads in SA mid to longer-dated bond yields have since 2020 been the highest in decades. I analyse the current yield spreads in the local bond market for this question. In addition, I compare the local spread to comparable international spreads, observe the correlation between the local bond spreads and the USD-ZAR level, and consider the SA 10 Year Break-Even inflation estimate. The findings suggest that the current yield spreads in SA mid to longer-dated bond yields have been the highest in decades since 2020 and even 2018. Additionally, the strong co-movement between the SA bond yield spread and the ZAR/USD exchange rate has remained strong; however, it marginally diminished between 2010 and 2016. Lastly, the SA average inflation rate has not surpassed the BE inflation yield estimate since 2014, indicating that fixed investment has been firmly preferred over index-linked bond investment.

1. Comparing Global Bond Market Yield Spreads

Figure 1.1 shows the bond market yield spreads for SA, the US, Brazil, Germany, China, and Japan, respectively. Visually, 1.1 confirms the notion that the current yield spreads in local mid to longer-dated bond yields have since 2020 been the highest in decades. The SA Bond yield spread has been significantly more volatile than those of Germany, China, the US, and Japan while having less volatility in the last few years than Brazil.

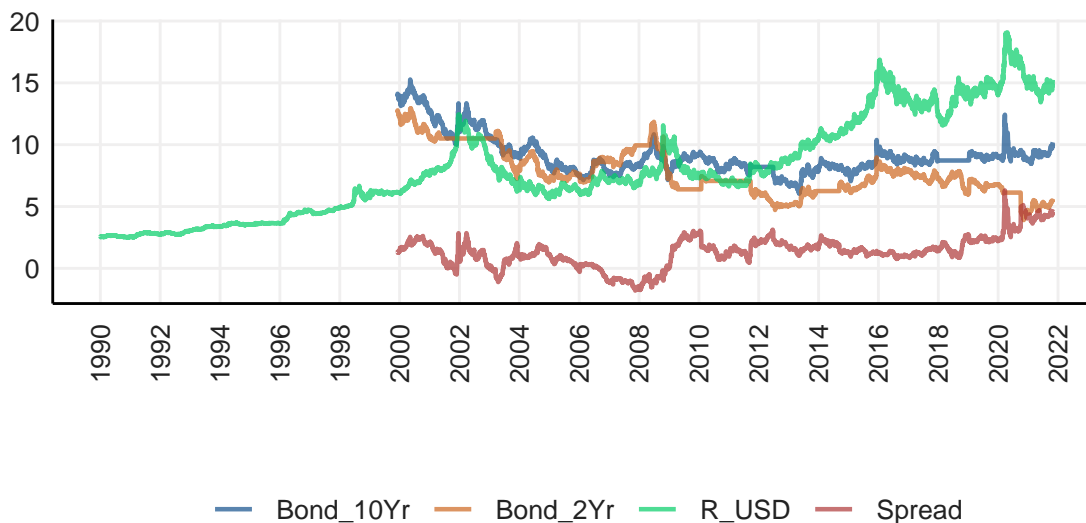


Note:
Calculation own

Figure 1.1: Global Bond Market Yield Spreads

In considering the SA and US bond yield spreads against the ZAR/USD exchange rate, graphed in [1.2](#) below, it is evident that the co-movements between the ZAR/USD and the SA bonds yield spread have over time been relatively strong, however, between the periods of 2010 and 2016 this positive correlation has diminished, likely due to the large open market asset purchases by the FED that distorts the international spillovers.

SA Bond Yields, Spread, and R/USD Exchange Rate



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Figure 1.2: SA Bond Yields, Spread, and ZAR/USD Exchange Rate

To provide an additional perspective, the statistics in Table 1.1 compared the SA and US bond yield spread before and after the Global Financial Crises (GFC). Overall, considering the SA and US separately and somewhat loosely, as done here, the volatility in the SA bond yield has remained relatively similar compared to its pre- and post-GFC.

Table 1.1: SA vs US Bond Yield Spread Statistics: Pre GFC vs Post GFC.

Description	Pre GFC		Post GFC	
	SA	US	SA	US
Minimum	-0.51	-1.80	-0.05	-0.58
Arithmetic Mean	1.04	0.50	1.43	1.97
Maximum	2.74	2.85	2.91	6.30
SE Mean	0.02	0.02	0.01	0.02
LCL Mean (0.95)	1.00	0.46	1.40	1.93
UCL Mean (0.95)	1.08	0.55	1.45	2.00
Stdev	0.96	1.10	0.80	0.99
Skewness	0.04	-0.14	0.03	1.15
Kurtosis	-1.52	-0.92	-1.10	1.39

2. SA Break-Even Inflation

Lastly, I analyse the SA Break-Even inflation yield estimate and compare it to the SA inflation rate (Figure 2.1). Break-even inflation is the difference between the nominal yield on a fixed-rate investment and the real yield (fixed spread) on an inflation-linked investment of similar maturity and credit quality. If inflation averages more than the break-even, the inflation-linked investment will outperform the fixed rate.

From Figure 2.1, the SA average inflation rate has not surpassed the BE inflation yield estimate since 2014, indicating that fixed investment has been firmly preferred over index-linked bond investment.

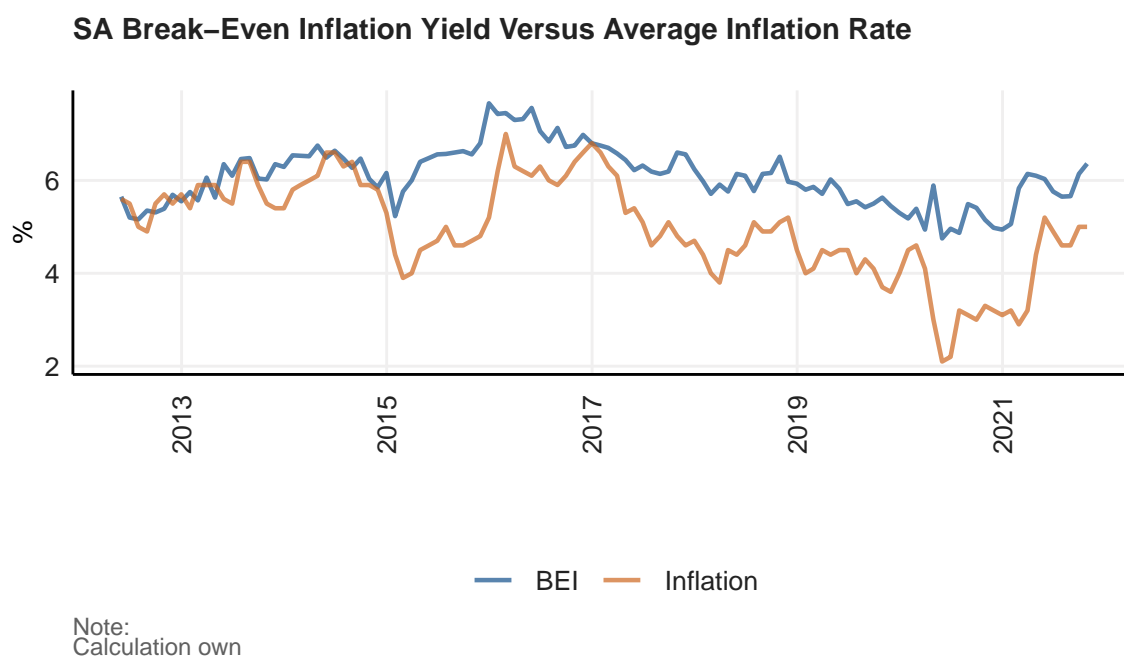


Figure 2.1: SA Break-Even Inflation Yield Versus Average Inflation Rate

References

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