## **PCA** in Finance

Long before Machine Learning became popular, PCA was used to "explain" the yield curve.

A Yield Curve is a vector of features

- ullet Whose length n corresponds to the number of bond maturities
- $\mathbf{x}_{i}^{(\mathbf{i})}$  is the yield, on day i of the  $j^{th}$  bond
  - lacktriangleq j increases with maturity

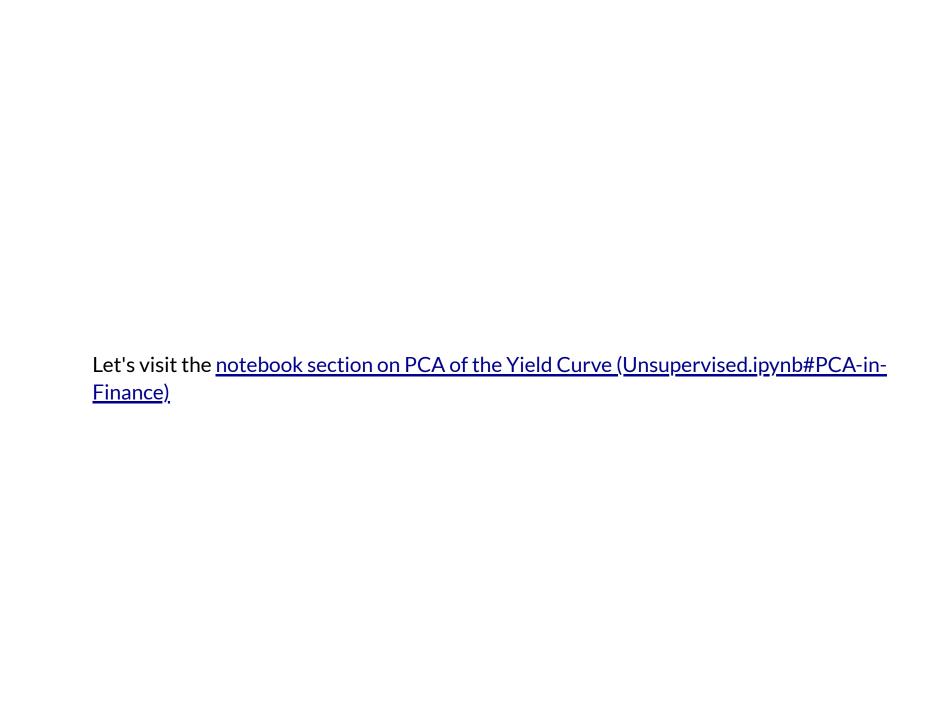
Does the yield of each maturity change (from day to day)

- Independently of other maturities?
- Or are there a small number of "common factors"/"concepts" that drive daily yield changes?

PCA can help us answer the question.

In the process, we are also able to *interpret* the common factors

• Which helps our intuition



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In [ ]: print("Done")
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