Tuesday, 1 November 2022

Price-Index-Interaction

Improving Existing Price Index

* Goal: I want to come up with an interaction price index which gives us information about the interaction between the indices of stocks from various sector.
* Data: I will be using the NIFTY Sectoral Indices for this work.
* Why is it important?
  + Current sectoral price indices are good(may not be..) to take into account the change in the prices of the companies’ stocks in that sector relative to the earlier years.
  + But it is often necessary to understand how NIFTY OIL & GAS price changes impacts the NIFTY METAL and other sector’s price index. This let’s us strengthen our prediction about the impact on a sector observing major trends in the other sectors.
  + Observing the magnitude of this interaction scores, we can have a relative ranking/attention that each sector has on the other sector. A study to observe the way these attention scores change throughout the year, can reveal interesting facts about the market behaviour.
  + Coming up with an Interaction Index for the sectors, will give us a single number which will tell us ‘how change in one of the sector’s index will have impact on all the other sector’s index’, which in turn can be helpful in predicting the overall index.
  + My interaction index would be a model based index, which will have the ability to adapt itself, rather than a fixed rule.
* Is it worth it?
  + I have to show that interaction index gives remarkable story about the market and ground level truth.
  + To show, how a well trained model for interaction index calculation can provide predictions about future crashes or rises in the usual indices.
  + To show, how changes in indexes in one sector propagates through other sectors, as if like a chain reaction.
  + We can study these sectors as a system and see the effect of various inputs and outputs to this system.
* Important Links
  + <https://en.wikipedia.org/wiki/NIFTY_50>
  + https://www.kaggle.com/sudalairajkumar/nifty-indices-dataset