Advantages and Disadvantages of using Monthly, Weekly and Daily Data

Posted on Mar 05, Posted by Tom Reilly Category Forecasting
We were asked to share our thoughts on advantages and disadvantages of forecasting at monthly vs weekly vs daily levels.
Monthly:
Advantages – Fast to compute, easier to model, easier to identify changes in trends, better for s trategic long term forecasting
Disadvantages – If you need to plan as the daily level for capacity, people and spoilage of product then higher levels of forecasting won't help understand the demand on a daily basis as a $1/30^{th}$ ratio estimate is clearly insufficient.
Causal variables that change on a frequent basis (ie daily/weekly – price, promotion) are not easily integrated into monthly analysis

Integrating Macroeconomic variables like Quarterly Unemployment requires an additional step of creating splines.
Weekly:
Advantages – When you can't handle the modeling process at a daily level you "settle" for this. When you have very systematic cyclical cycles like "artic ice extents" that follow a rigid curve and not need for day of the week variations.
Disadvantages – Floating Holidays like Thanksgiving, Easter, Ramadan, Chinese New Year change every year and disrupt the estimate for the coefficients for the week of the year impact which CAN be handled by creating a variable for each.
The number of weeks in a year is subject to change and creates a statistical issue due to the fact that every year doesn't have 52 weeks. We have seen the need to allocate the 53 rd week to a "non-player" week to make the data a standard 52 week period which is workable, but disruptive compared to daily data.
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