A rate base is comprised of allowances and net plant less accumulated depreciation and deferred federal income tax.

Allowances represent the net sum of all fixed allowances and deductions that figure into rate base. These allowances are often set by regulatory measures and are subject only to infrequent changes and expirations. The simplest way to forecast these is to simply carry forward the most recent data point.

Forecasting net plant requires the estimation of current plant at cost, accumulated depreciation, and future capital expenditure as well as any allowance for funds used during construction.

# Capex

Capex can be forecast any number of ways, including references to company guidance, review of permits filed, or statistical inference based on economic variables.

When speaking of capex it is necessary to make a distinction between capex (added plant) and AFUDC. In fact, capex guidance and added plant figures are normally reported inclusive of AFUDC. For our purposes, we will separate out the two for convenience in downstream computations. As a convention, we will always use capex to mean capex exclusive of AFUDC.

# Depreciation

For any asset, straight-line accumulated book depreciation can be computed based on the plant at cost, useful life, and years on books. If an asset has been on the books for longer than its useful life, then its accumulated depreciation is simply equal to plant at cost.

Tax depreciation can be calculated using the MACRS formula which is detailed in the appendix and is here represented as a function that takes the arguments plant at cost, useful life, years on books, and bonus.

Accumulated deferred income tax represents the tax shield provided by the differential rates of tax and book depreciation. It can be computed as the difference between tax and book accumulated depreciation multiplied by the corporate tax rate.

# Plant at Cost

A given book will have many assets, and in many cases we do not have complete information about them. Ideally we would like to group the assets into buckets based on useful life and years on books. For example, a portfolio of distribution assets having a useful life of thirty years might look like the following vector.