When it comes to determining price targets for publicly traded securities in Equity Research, it can typically be boiled down to two primary steps. The first is conceptually easy (although in practice quite difficult); forecast earnings before interest and depreciation as accurately as possible over the next 12-24 months as well as the most likely capital structure. The second step is to determine an appropriate multiple to apply to your forecasted earnings in order to calculate what your expected price per share should be at the end of your forecast horizon. While there are a number of metrics to use, each with their own merits, the most commonly used (at least in the Industrials space, which is what I cover) is Enterprise Value/EBITDA. Typically, the appropriate multiple will be selected based off of the securities’ historical range, a recent transaction (such as a merger, acquisition, LBO, etc.), or using multiples of comparable securities.

The issue with these commonly used methods of determining a “fair multiple” is that it is largely subjective, unscientific, and does not take into account the idiosyncratic fundamental drivers of performance for that particular security relative to the tradeable universe.

Being able to methodically determine this fair value multiple should allow an analyst to more accurately predict future prices of securities (i.e. a potential driver of “alpha” or outperformance) and also help in identifying mispriced securities by looking for large deviations between actual and predicted EV/EBITDA multiples.

This can be achieved by taking the EV/EBITDA multiples of publicly traded US securities in a point of time and using random forest to regress fundamental operating metrics (gross margin, EBITDA margin, revenue growth, return on assets, etc.) against a securities multiple to determine which of these features are statistically significant in determining an appropriate multiple. Using such a model would then allow us to then predict expected multiples now and in the future.

Data source:

a.      Using Kaggle’s historical financial indicators of US stocks (link below), regress financial metrics (independent variables) against price multiples (dependent variable, i.e. EV/EBITDA) to determine “fair value multiples”. This could in turn be used for projecting stock prices for individual stocks.

b.      Data source:<https://www.kaggle.com/datasets/cnic92/200-financial-indicators-of-us-stocks-20142018?resource=download>

c.      Could be merged with the attached for additional detail such as sector / industry:

d.      <https://www.kaggle.com/datasets/aakashshinde1507/s-and-p-500-companies>

Deliverables:

1. Create a problem statement worksheet
2. Collect / Analyze / Clean the Data
3. Perform EDA
4. Pre-process data
5. Modeling
6. Present work in a powerpoint