

# 10 Questions From The Audience

1. What was your reasoning to choose these models to forecast?
2. What do you mean by using a grid-search to tune?
3. What are large errors for MSE?
4. What about CocaCola's dividend history makes KO an attractive choice?
5. Is it really safe to accept cash from a credit card, even when predicting gains?
6. Who cares what Warren Buffett invests in?
7. Does the YTD drop affect your recommendations?
8. Why did you use a 30 year training period? If more training gives better accuracy, why don't you use 40 or 50 years of data?
9. How much confidence can we have in these predictions?
10. How do you account for inflation?

## Answers to 10 Questions

1. I selected these models because they are built for time-series forecasting. LSTMs model long-term dependencies, while Prophet does a particularly stellar job modeling trends, seasonality, and holidays. These models are the gold standard for modeling time-series data. This is particularly imperative for stock forecasting because of stocks' general volatility and unpredictableness.
2. Grid-search implies using the computer to experiment with all possible model parameters within a predefined range. It outputs the parameters which will most lower the loss function. This maximization technique substitutes manual hyperparameter tuning.
3. MSE is a loss function which quantifies the errors between the actual values and the predicted values. Squaring removes negative values and prevents errors of different signs from cancelling out each other. It penalizes large errors because of the squaring.
4. CocaCola has a consistent history of paying out dividends. It has not missed a payout since 1963. It has also consistently increased its dividend. This is what income-seeking investors are looking to buy. A robust dividend payout also shows how the company prioritizes shareholders.
5. Accepting cash from a credit card is a definite liability. One must pay back the loan in addition to having paid 5% upfront. KO gains is a prediction. There is risk that the stock will not conform to the forecast. There is no certainty of profit. One must weigh the risk/return balance for each prospective investor.
6. Warren Buffett has been called "The Oracle" for his investment choices. He has consistently picked undervalued stocks and made money. His endorsement of a company goes a long way toward endorsing the financial viability and value of a company. One must take into account Buffett's choice of investment with that individual's individual needs and goals.
7. The YTD performance performance affects recommendations, especially when considering a relatively short investment window of 6 to 18 months. It may, for instance, indicate that the market as a whole is undergoing a correction, and one cannot know when it will turn around. It also may be telling us that KO is overvalued, or almost as bad, that the market believes that KO is overvalued.

8. The 30-year training period covers much of the movement of KO price. This time period includes market changes as well as company changes over time. More than 30 years back did not show such volatility. Also, outdated data may hurt the model because that data is inapplicable for forecasting. It may add “noise” or just plain outdated data. We must be wary of overfitting.
9. Confidence in predictions is the crux of this project. The more accurate the model, the better the predictions. The better the predictions, the greater the chance that the forecast will be true. This must be balanced with the inherent volatility of the market, which raises the uncertainty of the prediction.
10. Inflation affects both historical and future pricing. This project models for close price. It assumes inflation is accounted and reflected in the share price. One can consider using Consumer Price Index to adjust for inflation. I assumed that the affects of inflation are manifest in both historical and future pricing because these affects are a major contributor to share price. This is a reason to explore adjusted close in addition to close.