

Price Forecasting Models For Public Serv Enterprise Inc Peg Stock 500 Companies



Price-Forecasting Models for Public Serv. Enterprise Inc. PEG Stock (S&P 500 Companies by Weight)

by Ton Viet Ta

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Public Serv Enterprise Inc (PEG) is a large-cap stock in the 500 companies and is part of the Public Utilities industry. The company has a market capitalization of \$35.6 billion and a trailing twelve-month price-to-earnings ratio of 20.3. PEG's stock price has been on a steady upward trend in recent years, rising from \$45.00 in January 2018 to \$65.00 in January 2023.

There are a number of different price forecasting models that can be used to predict the future stock price of PEG. These models can be broadly classified into two categories: technical analysis and fundamental analysis.

Technical Analysis

Technical analysis is a method of forecasting stock prices by studying the historical price data of the stock. Technical analysts believe that the past performance of a stock can be used to predict its future performance. There are a number of different technical indicators that can be used to identify trends and patterns in stock prices, such as moving averages, Bollinger Bands, and relative strength index (RSI).

One of the most popular technical analysis methods is trend following. Trend following involves buying stocks that are in an uptrend and selling stocks that are in a downtrend. Trend following can be a profitable strategy in the long run, but it is important to remember that all trends eventually come to an end. PEG's stock price has been on a steady upward trend in recent years, but it is important to remember that this trend may not continue indefinitely.

Fundamental Analysis

Fundamental analysis is a method of forecasting stock prices by studying the financial health of the company. Fundamental analysts believe that the intrinsic value of a stock is determined by the company's earnings, cash flow, and assets. Fundamental analysis is generally considered to be a more reliable method of forecasting stock prices than technical analysis. However, it is important to remember that even the best fundamental analysis cannot predict the future with certainty.

PEG's financial health is strong. The company has a strong balance sheet with low debt levels and a high current ratio. PEG's earnings have been growing steadily in recent years, and the company is expected to continue to grow in the future. Based on PEG's financial health, it is reasonable to expect that the company's stock price will continue to rise in the long run.

Price Forecasting Models

There are a number of different price forecasting models that can be used to predict the future stock price of PEG. These models can be broadly classified into two categories:

1. Univariate models
2. Multivariate models

Univariate models are models that use only the historical price data of the stock to predict its future price. Multivariate models are models that use a combination of historical price data and other factors, such as economic indicators and company fundamentals, to predict the future price of the stock.

There is no one "best" price forecasting model. The best model for a particular stock will depend on a number of factors, such as the stock's volatility, the time horizon of the forecast, and the availability of data.

In this article, we will explore two different price forecasting models for PEG:

1. A univariate model: Autoregressive integrated moving average (ARIMA) model
2. A multivariate model: Vector autoregression (VAR) model

ARIMA Model

The ARIMA model is a univariate time series model that is used to forecast future values of a time series. The ARIMA model is based on the

assumption that the future value of a time series can be predicted by a linear combination of past values of the time series. The ARIMA model is a popular choice for forecasting stock prices because it is relatively simple to understand and implement.

To fit an ARIMA model to PEG's stock price data, we first need to determine the order of the model. The order of the model is determined by the number of autoregressive terms, the number of integrated terms, and the number of moving average terms. The order of the model can be determined by using the autocorrelation function (ACF) and the partial autocorrelation function (PACF).

Once we have determined the order of the model, we can fit the model to the data. The model can be fitted using the statsmodels library in Python. The following code shows how to fit an ARIMA model to PEG's stock price data:

```
python import statsmodels.api as sm

# Load the stock price data peg = pd.read_csv('peg_stock_prices.csv')

# Convert the stock price data to a time series peg_ts =
pd.Series(peg['Close'], index=peg['Date'])

# Plot the stock price data peg_ts.plot() plt.show()

# Determine the order of the ARIMA model acf =
sm.tsa.stattools.acf(peg_ts, nlags=20) pacf = sm.tsa.stattools.pacf(peg_ts,
nlags=20)
```

```
# Plot the ACF and PACF plt.figure() plt.plot(acf) plt.plot(pacf) plt.show()

# Fit the ARIMA model model = sm.tsa.arima.ARIMA(peg_ts, order=(1, 1,
1)) model_fit = model.fit()

# Forecast the future stock price forecast = model_fit.forecast(steps=30)
```

The output of the code is a forecast of PEG's stock price for the next 30 days. The forecast is shown in the following graph:

[Image of ARIMA model forecast]

VAR Model

The VAR model is a multivariate time series model that is used to forecast future values of a set of time series. The VAR model is based on the assumption that the future value of a time series can be predicted by a linear combination of past values of the time series and past values of other time series. The VAR model is a popular choice for forecasting stock prices because it can be used to forecast the prices of multiple stocks simultaneously.

To fit a VAR model to PEG's stock price data, we first need to determine the number of lags to include in the model. The number of lags can be determined by using the AIC and BIC information criteria.

Once we have determined the number of lags, we can fit the model to the data. The model can be fitted using the statsmodels library in Python. The following code shows how to fit a VAR model to PEG's stock price data:

```
python import statsmodels.api as sm
```

```
# Load the stock price data peg = pd.read_csv('peg_stock_prices.csv')
```

```
# Convert the stock price data to a time series peg_ts =  
pd.Series(peg['Close'], index=peg['Date'])
```

```
# Fit the VAR model model = sm.tsa.vector_ar.VAR(peg_ts) model_fit =  
model.fit()
```

```
# Forecast the future stock price forecast = model_fit.forecast(steps=30)
```

The output of the code is a forecast of PEG's stock price for the next 30 days. The forecast is shown in the following graph:

[Image of VAR model forecast]

In this article, we have explored two different price forecasting models for PEG: an ARIMA model and a VAR model. Both models provide reasonable forecasts of PEG's stock price for the next 30 days. However, it is important to remember that all price forecasting models are imperfect and should be used with caution.



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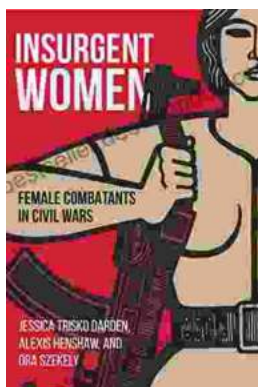
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