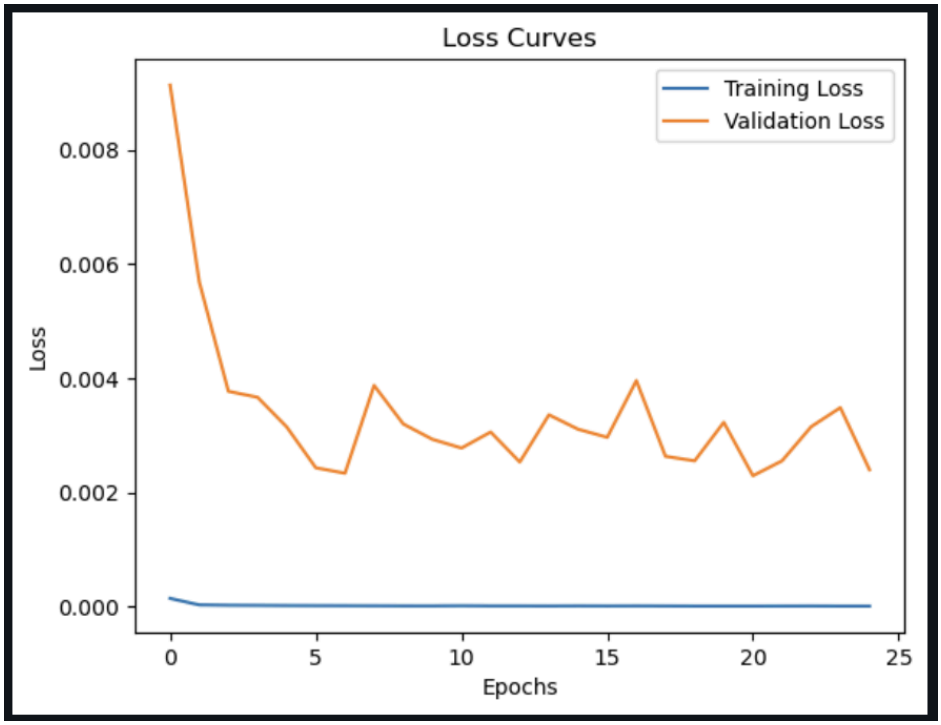
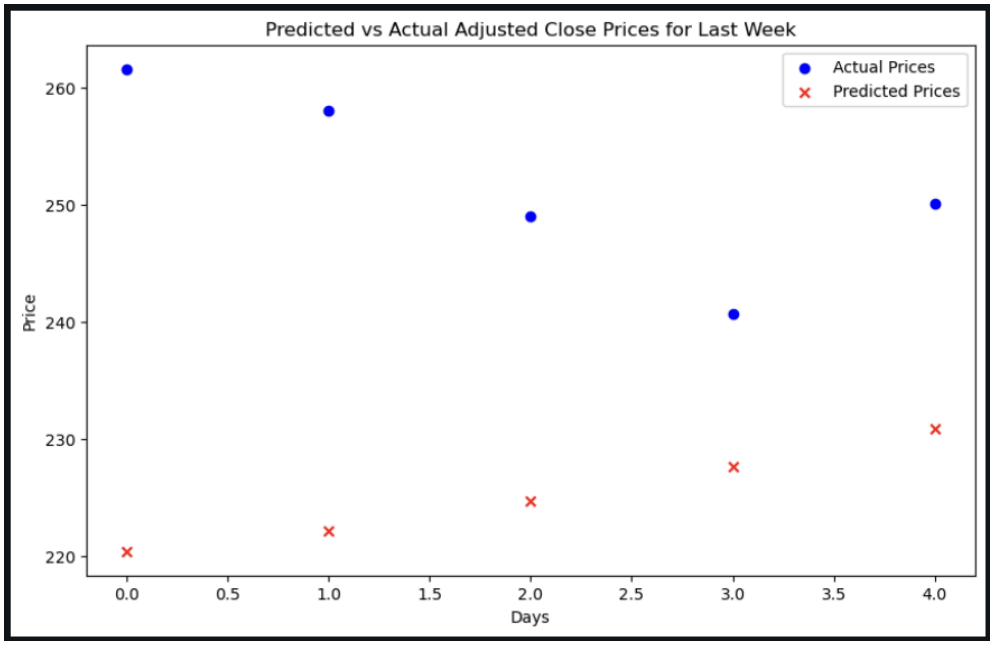
LSTM Rework Data

Change 1:

Change data trained to 2008-01-01 to 2021-12-31.

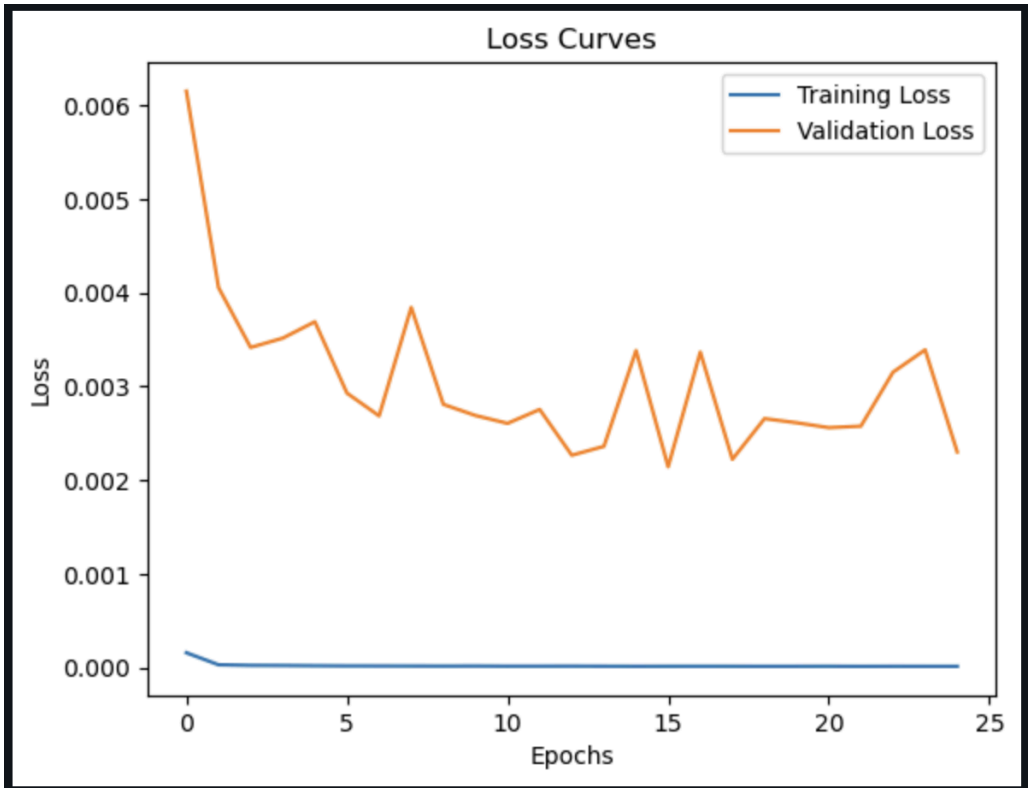


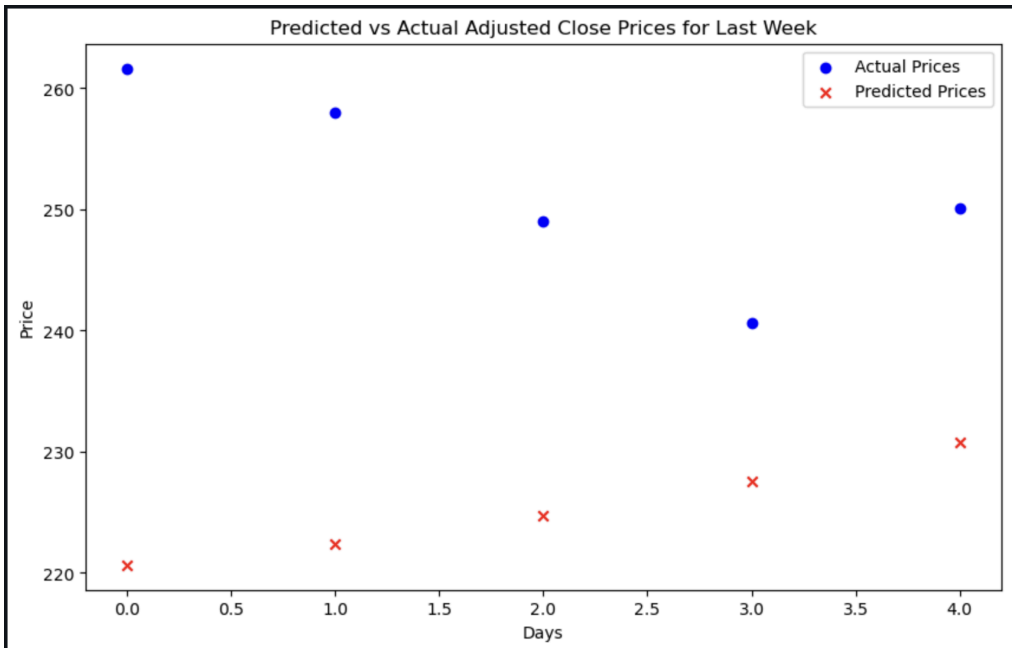


Not much improvement

Change 2:

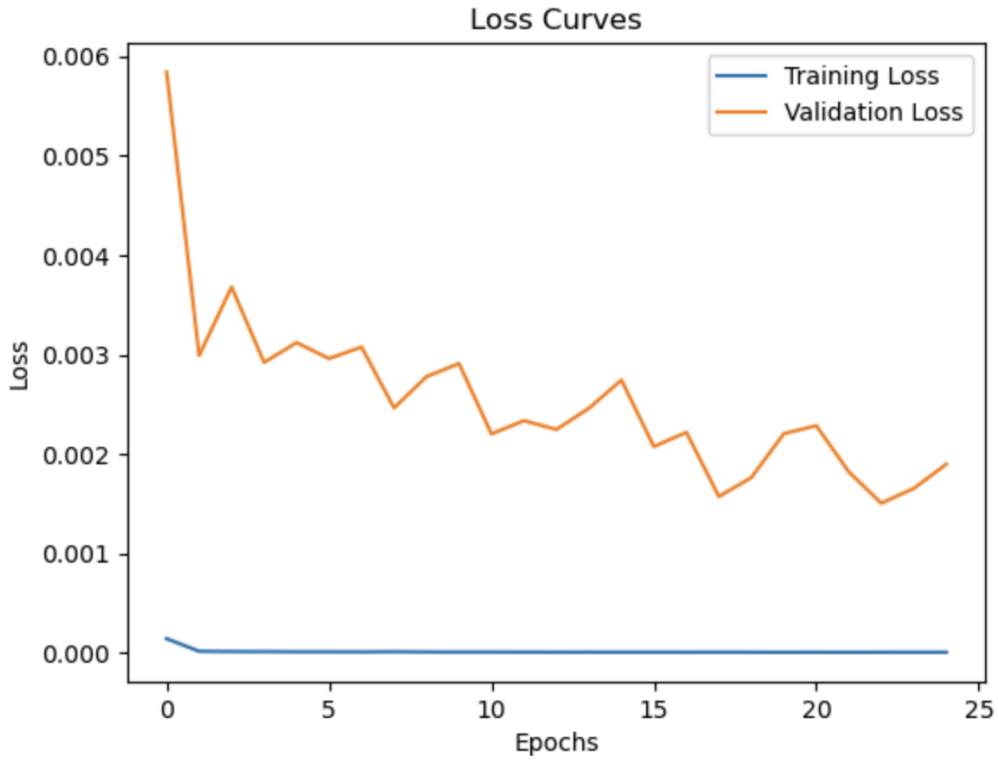
Change lookback time window to 20 days.

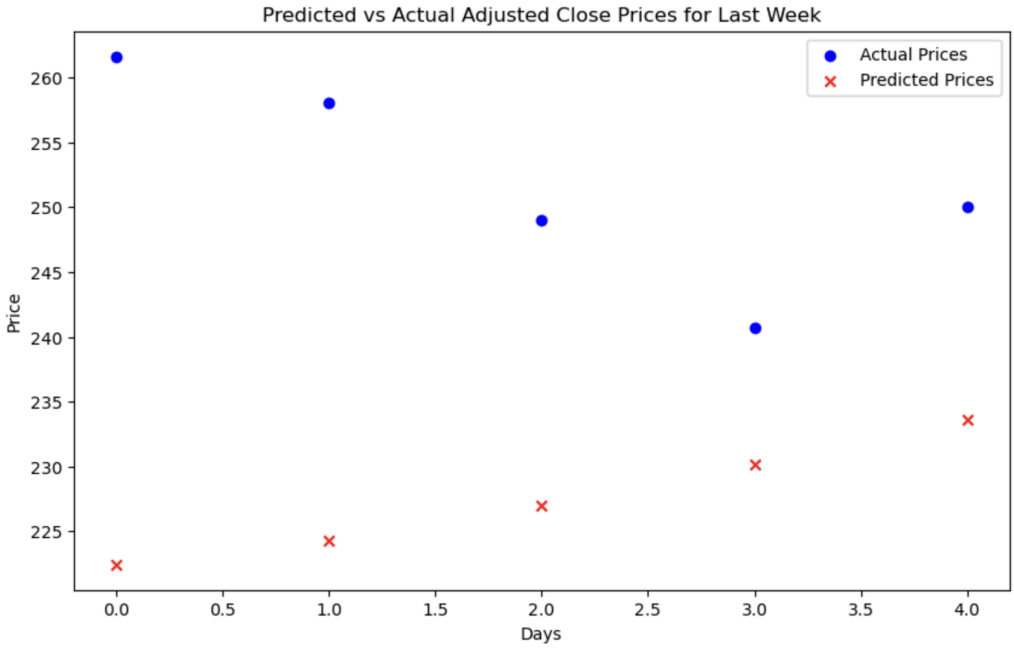




Loss is lower.

Change 3:
Change dropout probability to .2 instead of .4.

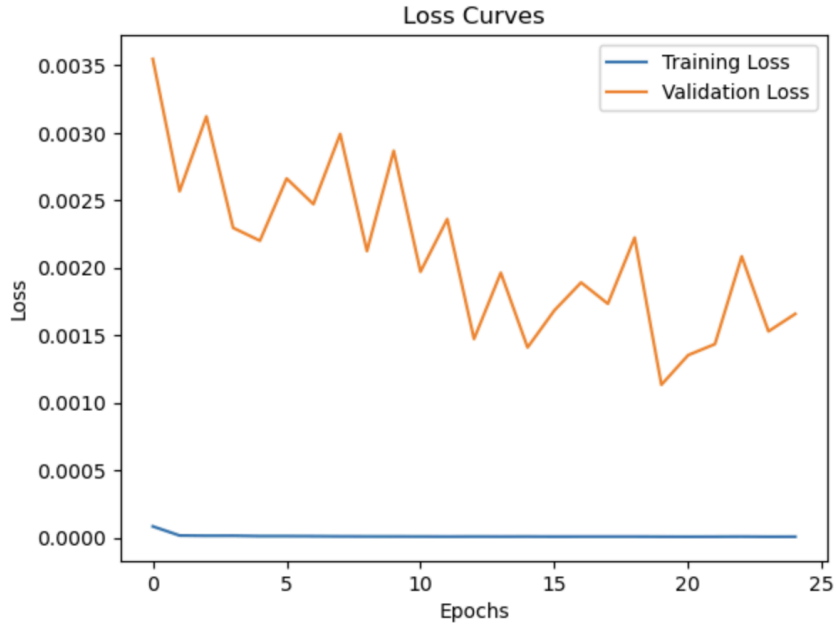


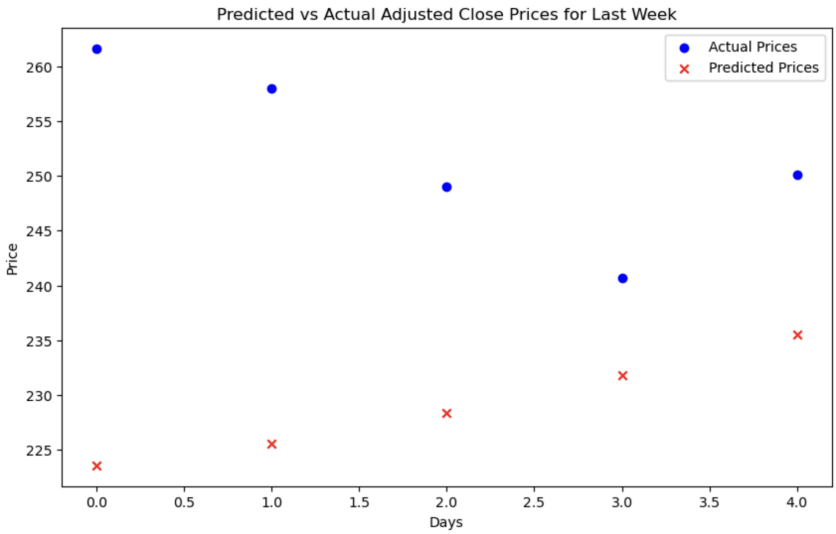


Maybe a little more consistent loss.

Change 4:

Change mini-batch size to 30 from 32

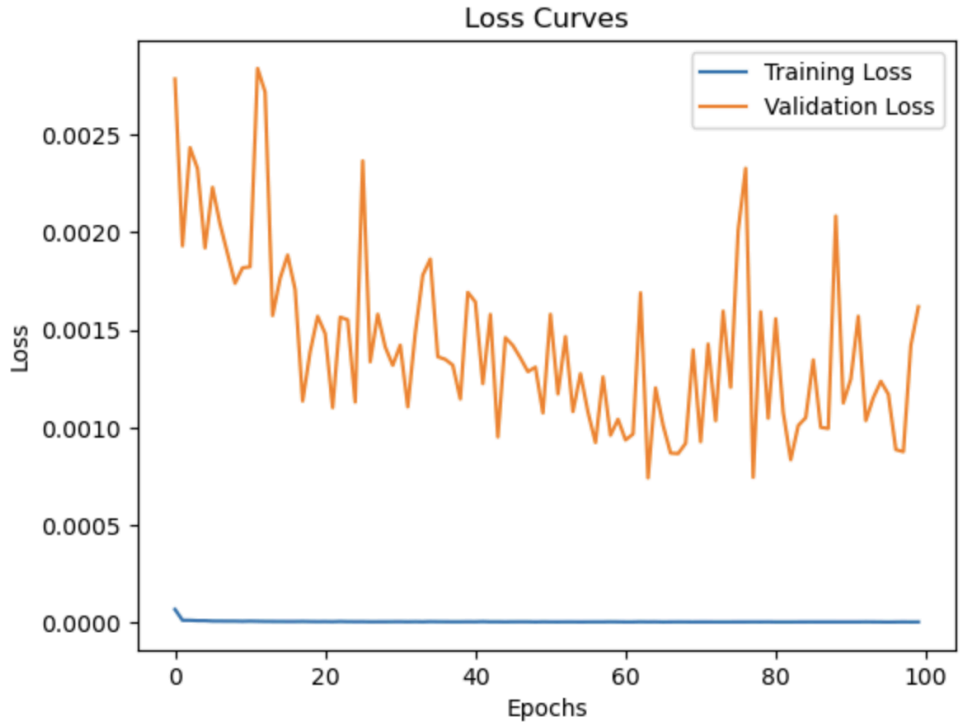


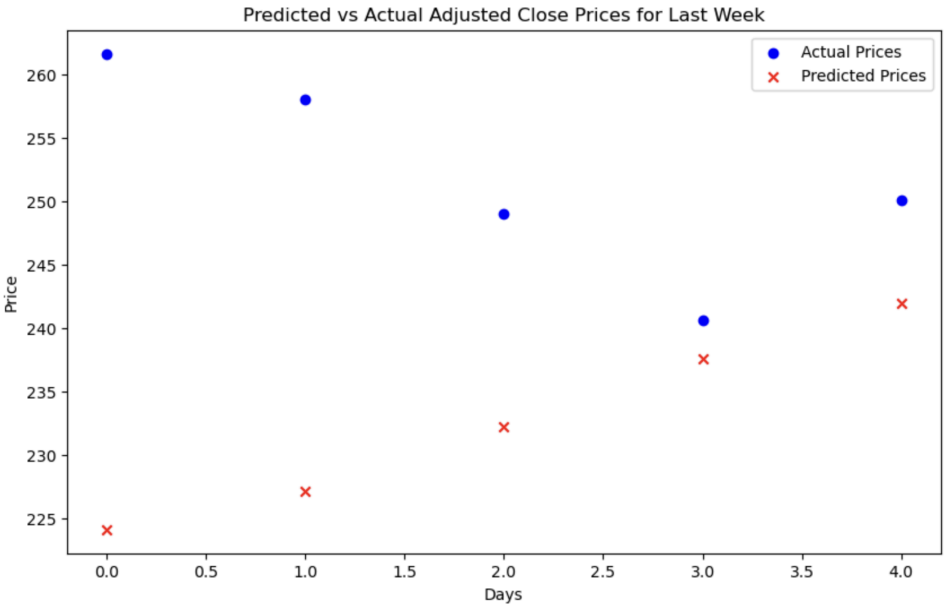


Not much change.

Change 5:

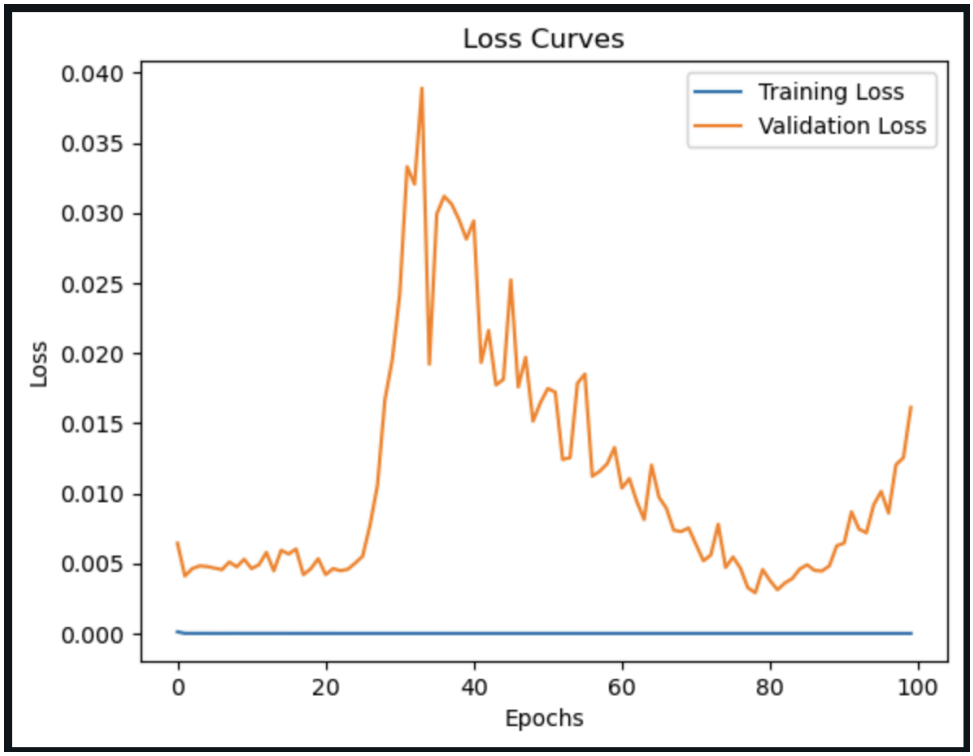
Change epoch amount to 100.

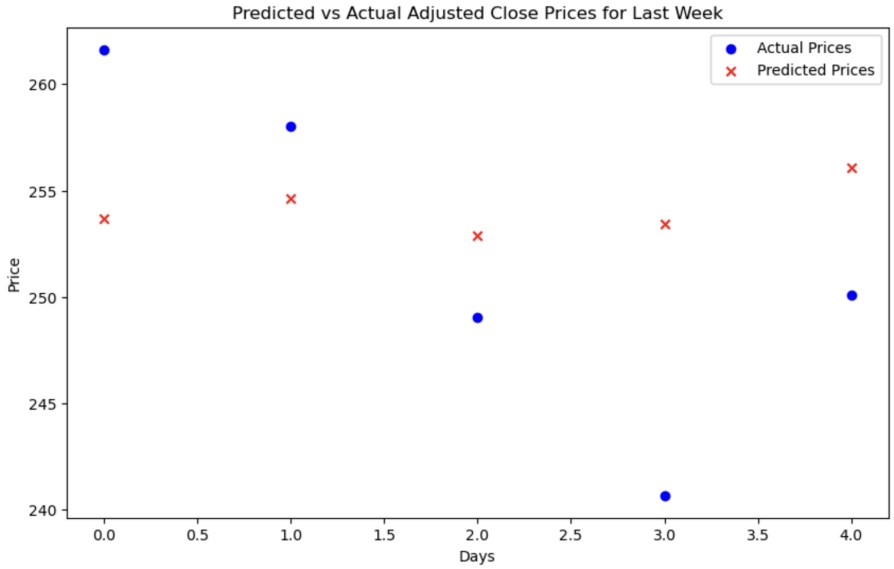




Outputs for Day 4 and 5 are better.

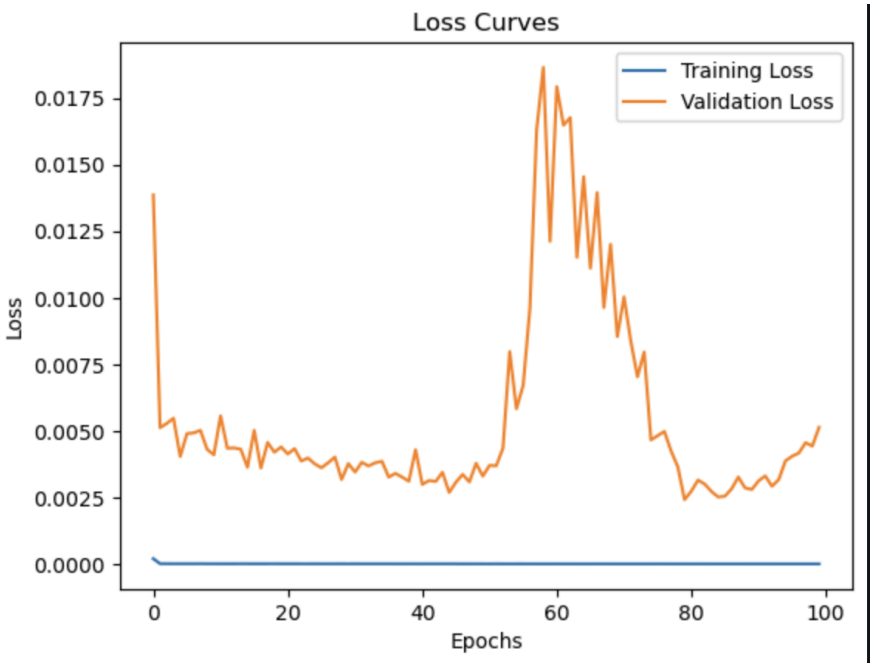
Change 6:
Change from Stacked LSTM to Attention LSTM

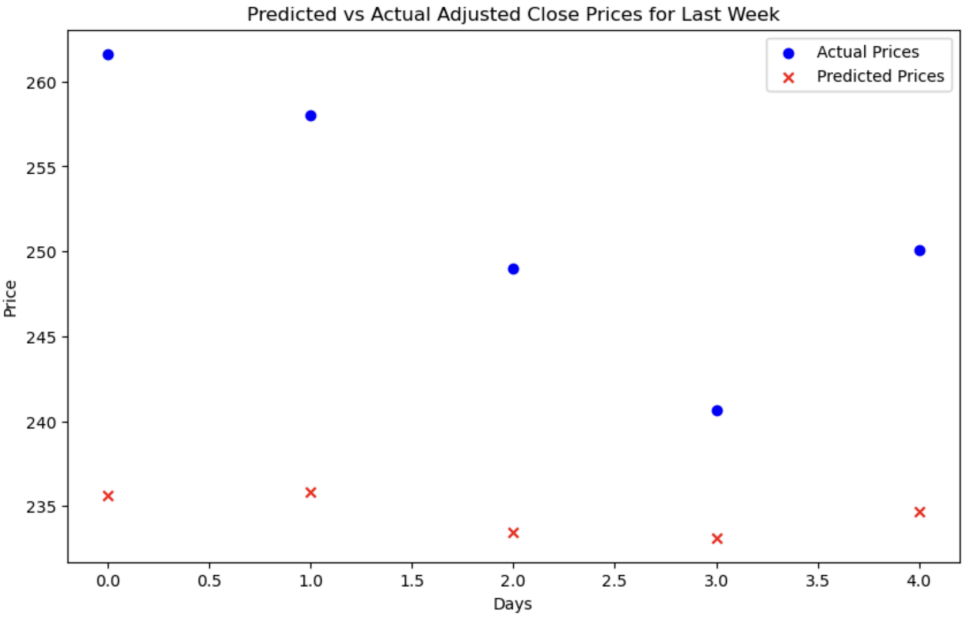




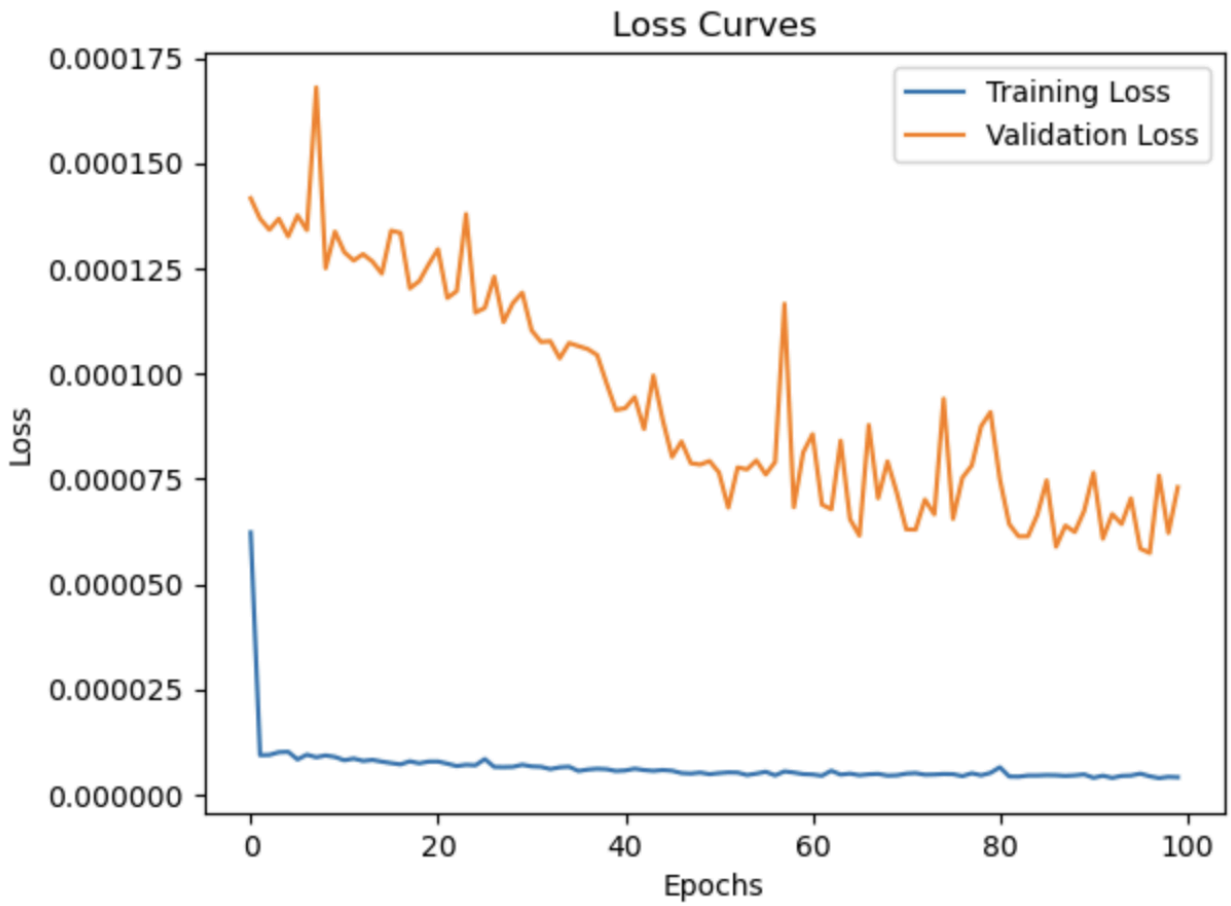
Much better output here. Not linear

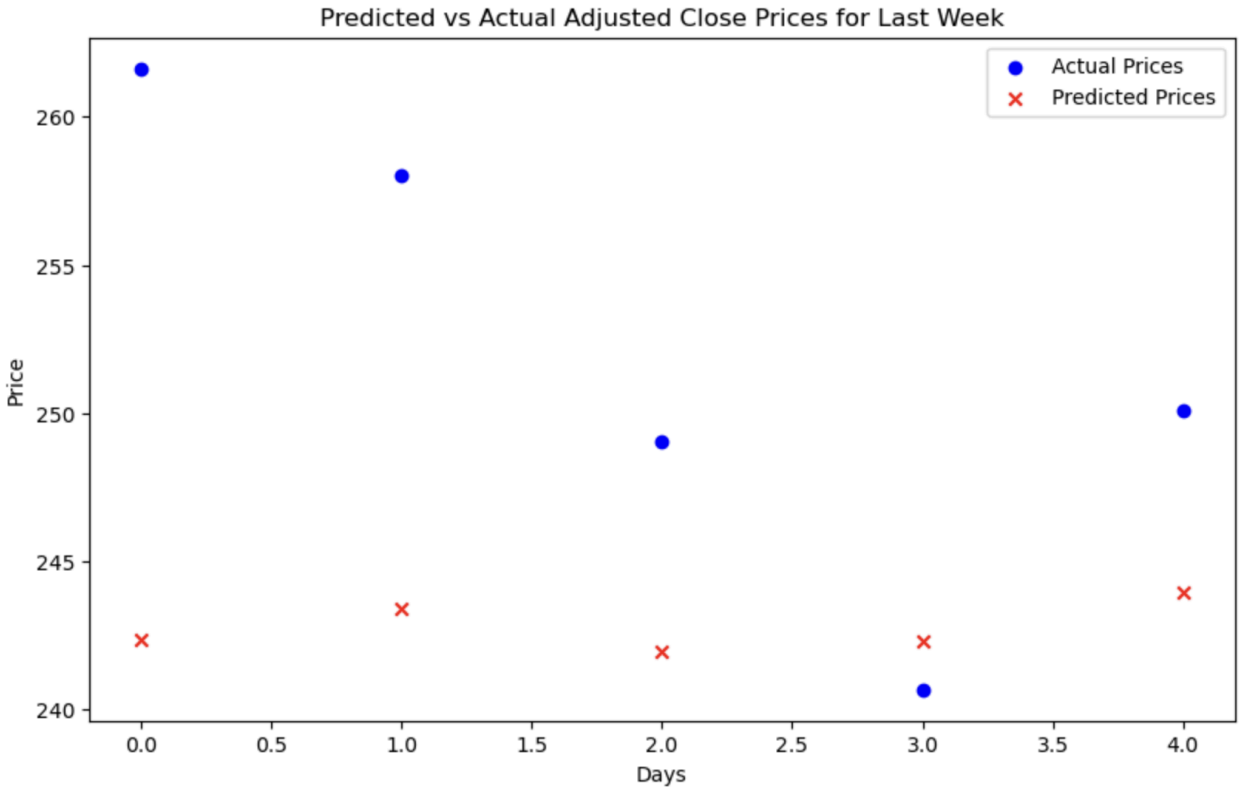
Change 7:
Add fundamental indicators



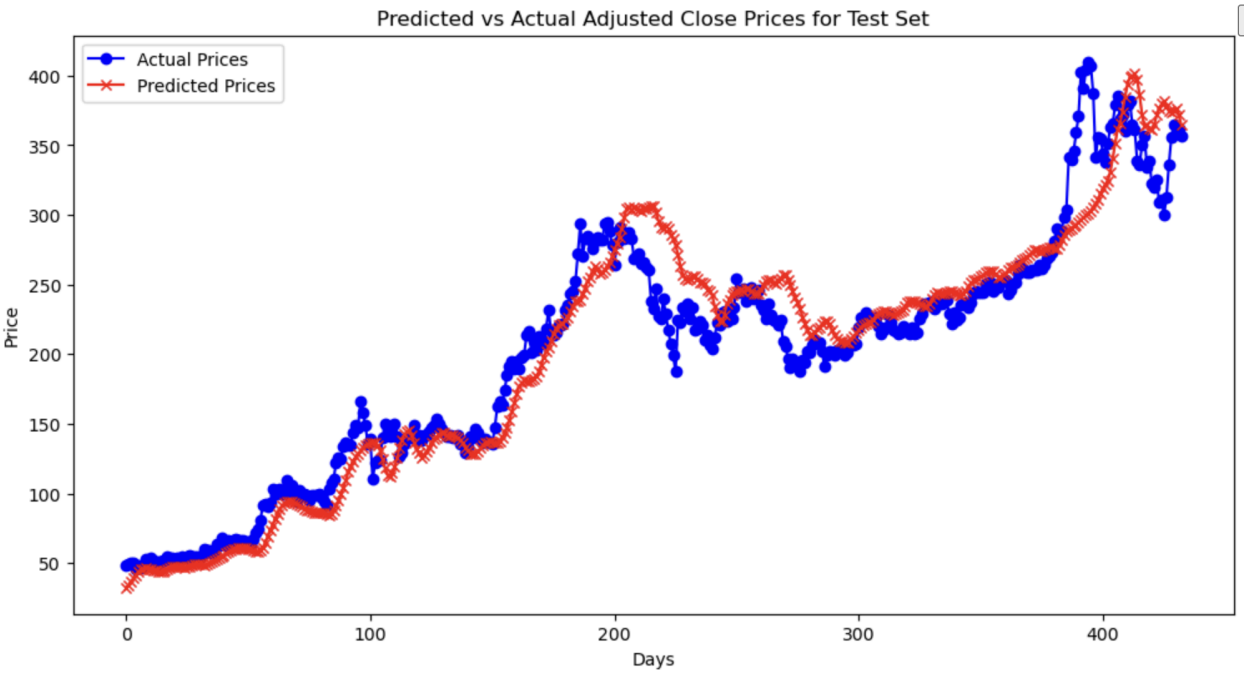


Change 8:
Change data split


Loss Curves
Training Loss
Validation Loss
Loss
Epochs
0.000175
0.000150
0.000125
0.000100
0.000075
0.000050
0.000025
0.000000
0
20
40
60
80
100

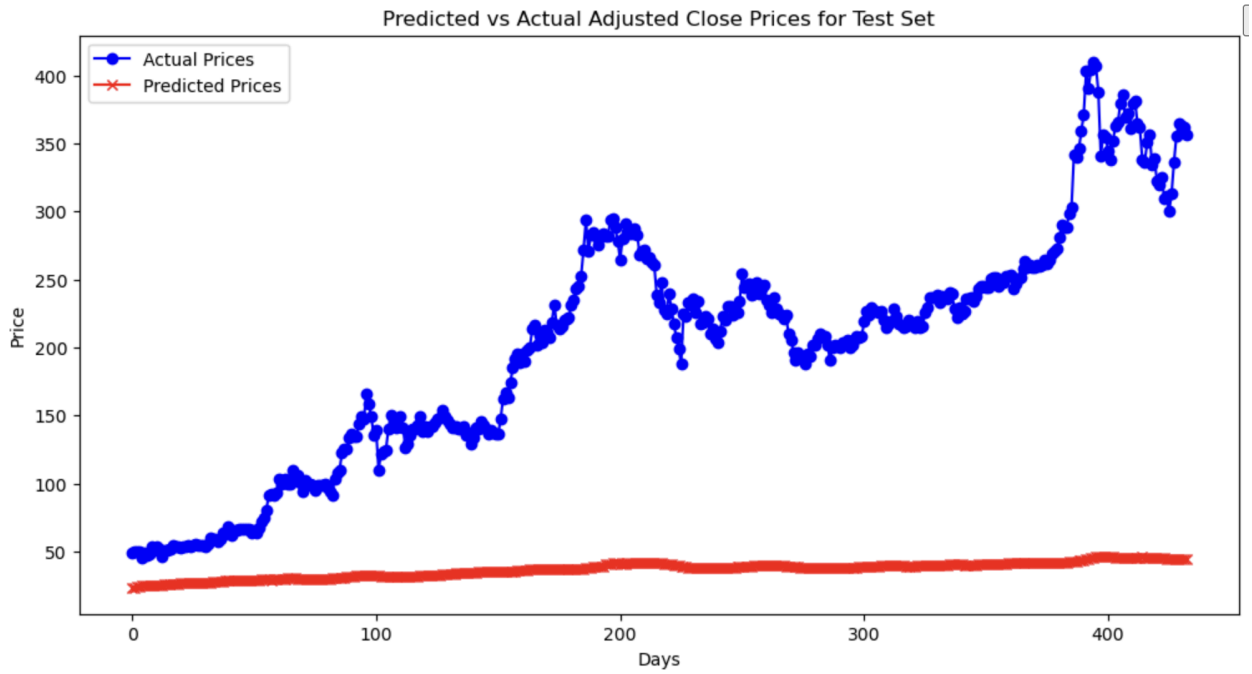


Change 9:
Train on data till the end of 2023.



MAPE: 10.08%

When changing to sigmoid activation function:

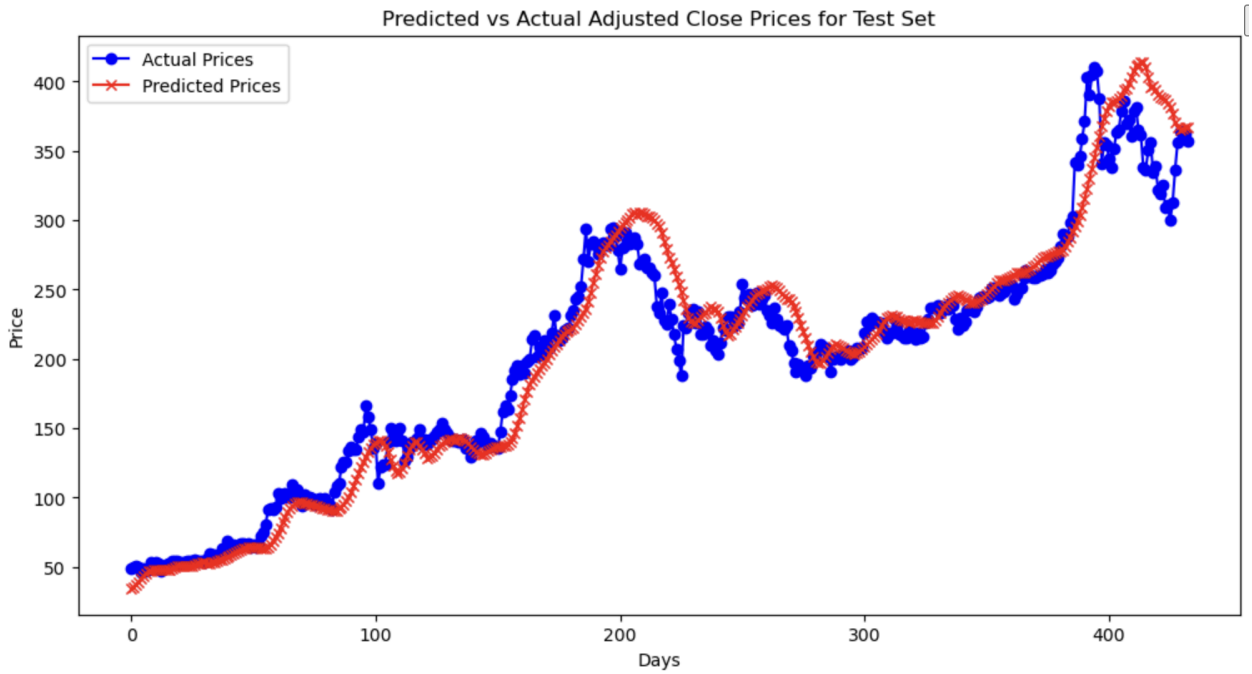


45 units: Mean Absolute Percentage Error (MAPE) for Test Set: 9.60%

40 units: Mean Absolute Percentage Error (MAPE) for Test Set: 23.01%

44 units + .25 Dropout: Mean Absolute Percentage Error (MAPE) for Test Set: 8.94%

Changing epoch count to 90:



Test Loss: 0.0032250434160232544, Test MSE: 0.0032250434160232544

Mean Absolute Percentage Error (MAPE) for Test Set: 8.23%
Root Mean Squared Error (RMSE) for Test Set: 23.22

Change Lookback period to 40: Mean Absolute Percentage Error (MAPE) for Test Set: 41.00%

Lookback period under 20 days: