Stock Price Analysis

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The Question

- Can a machine learning model accurately predict the effects of an economic downturn?
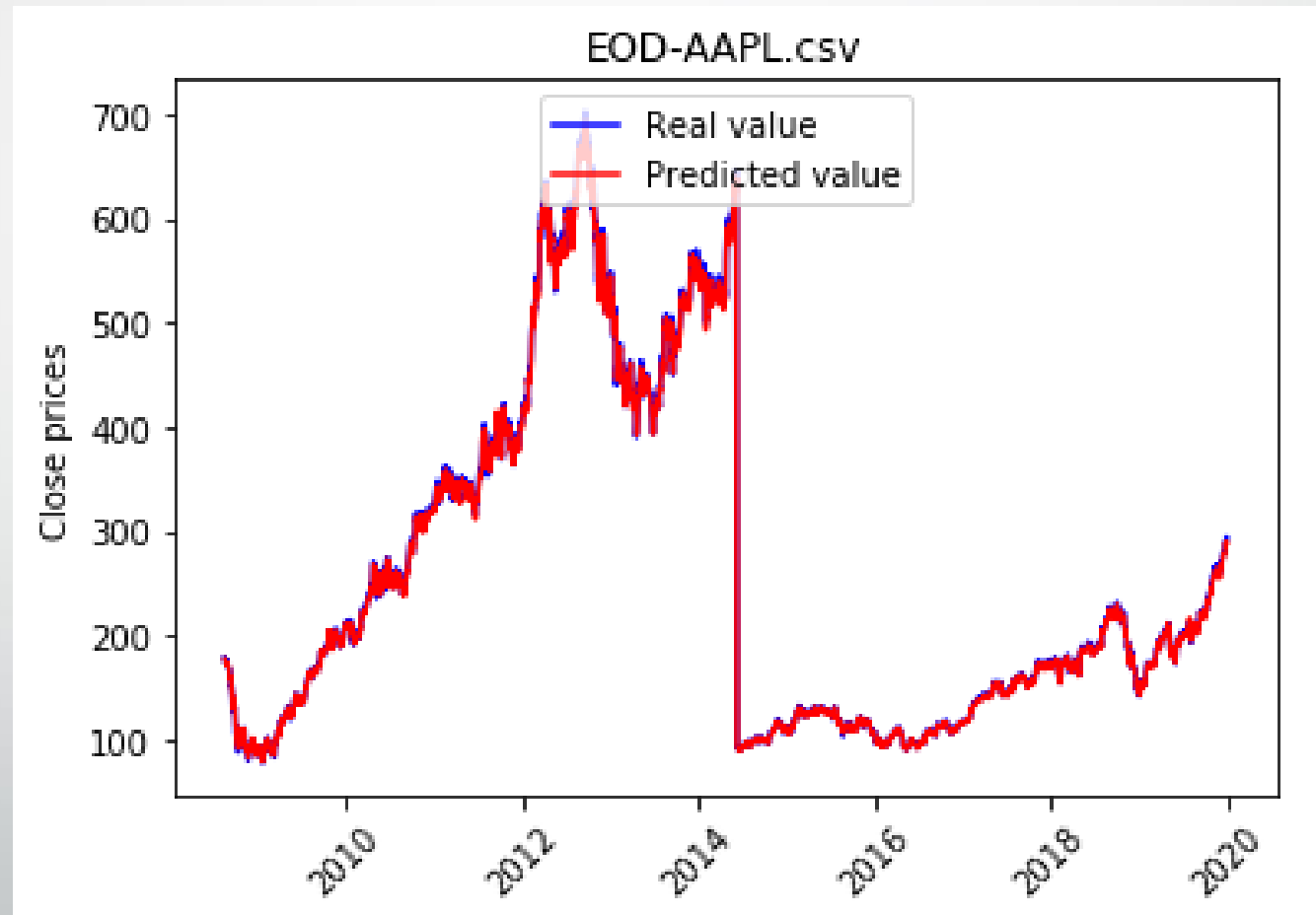
Data Set Used

- Top 50 of the Fortune 500 companies of 2019

- Data was acquired from Quandl

- Data includes open, high, low, and close prices as well as adjusted ones

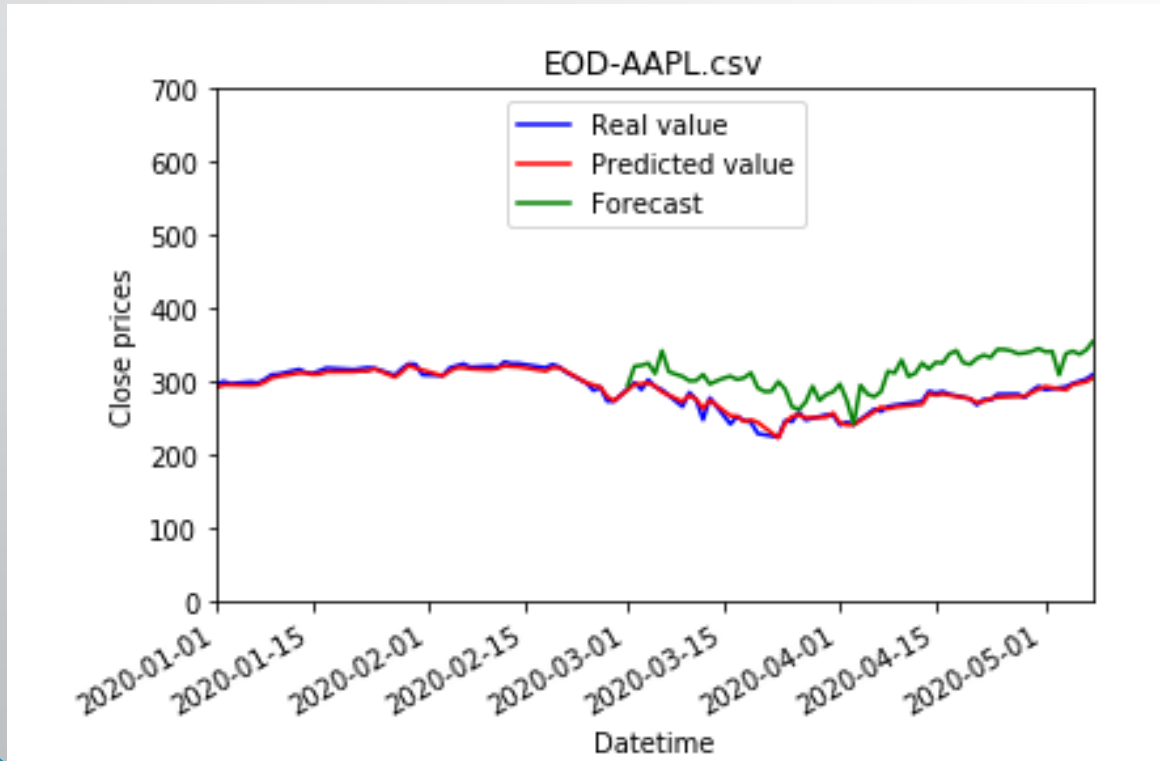| Date	Open	High	Low	Close	Volume	Dividend	Split	Adj_Open	Adj_High	Adj_Low	Adj_Close	Adj_Volume
5/8/2020	45.31	46.22	44.975	46.18	19971003	0	1	45.31	46.22	44.975	46.18	19971003
5/7/2020	44.96	45.27	43.97	44.24	22143029	0	1	44.96	45.27	43.97	44.24	22143029
5/6/2020	44.93	45.27	43.9	43.99	22645317	0	1	44.93	45.27	43.9	43.99	22645317
5/5/2020	46.26	47.15	44.66	44.83	29246658	0	1	46.26	47.15	44.66	44.83	29246658
5/4/2020	42.51	44.94	42.22	44.88	27452818	0	1	42.51	44.94	42.22	44.88	27452818
5/1/2020	45.63	46.39	43	43.14	35572556	0	1	45.63	46.39	43	43.14	35572556
4/30/2020	47.68	47.68	45.77	46.47	36993898	0	1	47.68	47.68	45.77	46.47	36993898
4/29/2020	46.26	47.6	46.16	47.46	29419141	0	1	46.26	47.6	46.16	47.46	29419141
4/28/2020	44.37	45.39	44.11	44.97	26511301	0	1	44.37	45.39	44.11	44.97	26511301
4/27/2020	43.59	44.32	42.23	43.94	28250609	0	1	43.59	44.32	42.23	43.94	28250609
4/24/2020	44.4	44.89	43.13	43.73	28653332	0	1	44.4	44.89	43.13	43.73	28653332
4/23/2020	43.19	44.66	42.81	43.45	35235708	0	1	43.19	44.66	42.81	43.45	35235708
4/22/2020	42.6	42.93	41.86	42.13	27071240	0	1	42.6	42.93	41.86	42.13	27071240
4/21/2020	40.4	42.13	39.63	40.96	44361709	0	1	40.4	42.13	39.63	40.96	44361709
4/20/2020	40.75	42.735	40.54	41.18	39225734	0	1	40.75	42.735	40.54	41.18	39225734
4/17/2020	39.88	43.32	39.87	43.22	40799138	0	1	39.88	43.32	39.87	43.22	40799138
4/16/2020	40.48	40.48	38.93	39.15	30758743	0	1	40.48	40.48	38.93	39.15	30758743
4/15/2020	41	41.06	39.38	40.48	33093070	0	1	41	41.06	39.38	40.48	33093070
4/14/2020	43	43.75	41.91	42.43	30749239	0	1	43	43.75	41.91	42.43	30749239
4/13/2020	44.45	44.69	41.97	42.76	29584923	0	1	44.45	44.69	41.97	42.76	29584923
4/9/2020	45.46	46.71	41.74	43.13	60091136	0	1	45.46	46.71	41.74	43.13	60091136
4/8/2020	41.95	44.04	41.47	43.85	33251768	0	1	41.95	44.04	41.47	43.85	33251768
4/7/2020	42.9	43.315	41.16	41.24	48891481	0	1	42.9	43.315	41.16	41.24	48891481
4/6/2020	39.88	40.83	39.23	40.47	41274807	0	1	39.88	40.83	39.23	40.47	41274807
4/3/2020	41.45	42.18	38.52	39.21	48384414	0	1	41.45	42.18	38.52	39.21	48384414
4/2/2020	38.74	41.96	37.9	40.4	61956487	0	1	38.74	41.96	37.9	40.4	61956487
4/1/2020	36.86	38.7	36.34	37.53	35999463	0	1	36.86	38.7	36.34	37.53	35999463
3/31/2020	38.34	39.45	37.37	37.97	41451368	0	1	38.34	39.45	37.37	37.97	41451368
3/30/2020	36.23	38.15	35.86	37.5	45819828	0	1	36.23	38.15	35.86	37.5	45819828
3/27/2020	37.13	37.68	36.2	36.95	51550947	0	1	37.13	37.68	36.2	36.95	51550947

Sample data of Exxon Mobil's historical stock prices

Results

- Initial models showed very high accuracy due to the labels used

EOD-AAPL.csv

Results (cont.)

- When it came to forecasting, the model showed values that were generally higher than the actual result
  - Forecasted early 2020 prices to present to judge the effects of COVID 19
- The mean error can be applied when the knowledge of the next crisis is known in order to get the worst case scenario prices