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Assignment 1

Assumptions:

We are buying/selling at the open and adj\_close price, and our algorithm depends on these two values, regardless of dividend devaluation.

Rounding takes place after each calculation.

* Shares bought/sold are first calculated for each day and rounded to 2 decimal places.
* End of day profit is calculated using the number of shares \* adj\_close rounded to 2 decimal places.
* Finally, total Profit/Loss (including the initial day investment) for the day is rounded to 2 decimal places.

While price per share was discussed, there is no requirement it needs to be included in the assignment answers, therefore calculations of per share per day were left out.

The Stock Ticker ‘WMT’ was used.

**Question 1:**

Average daily profit was calculated as the following:

If current day open > previous adj\_close:

Go Long:

If current day open < previous adj\_close:

Go Short:

Adding each day’s total profits divided by the total number of days:

Average total daily profit: **$-7.61**

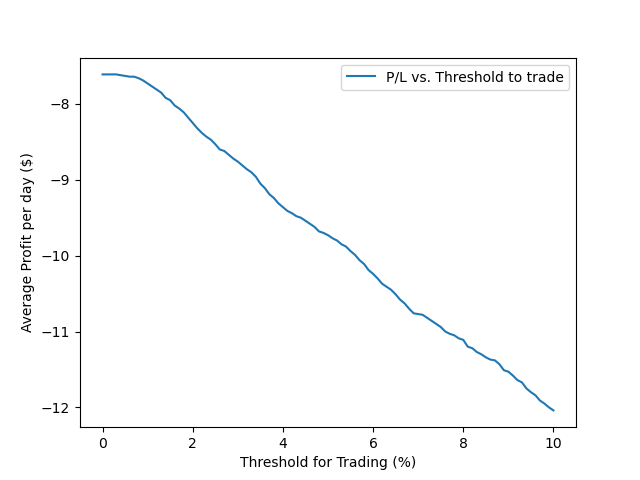
**Question 2:**

Long position profit: $-11,490.98

Short position profit: $13.98

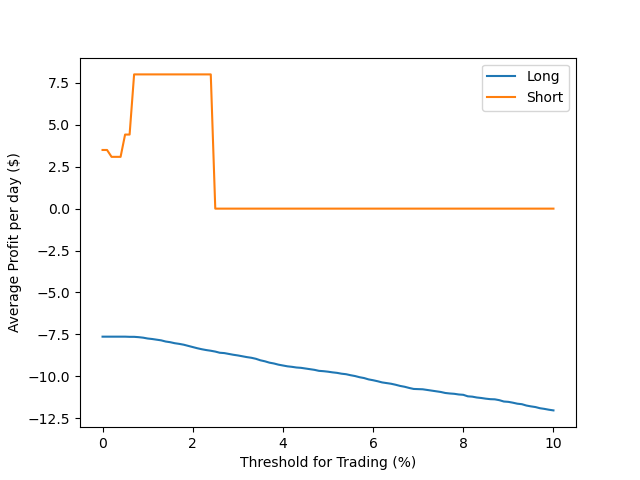
The short position profits are higher than the long position profits. It seems that due to dividend re-adjustment, there are calculations in here that aren’t reflected in our trading algorithm. Most of the time, adj\_close will always be lower than open, and we’ll almost always be losing money on a long trade, since adj\_close tends to be less than open by a significant amount.

**Question 3:**



There seems to be an inverse correlation with increasing the threshold when trading and an average profit per day. It seems like the greater the threshold the more money is lost on a long trade. This is most likely due to the differences in previous day adj\_close and open almost always being positive since (adj\_close < open on most days via dividend calculations). It turns out that trading on days with smaller “gap ups” allows for losing less money.

**Question 4:**

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It seems like profits decrease for longing the stock as the threshold increases, while profits for shorting the stock increase and stop due to the lack of threshold trading above a certain percentage. There are so few short trading days that they do not offset the average losses from long trading days in Q3.