CS 7646

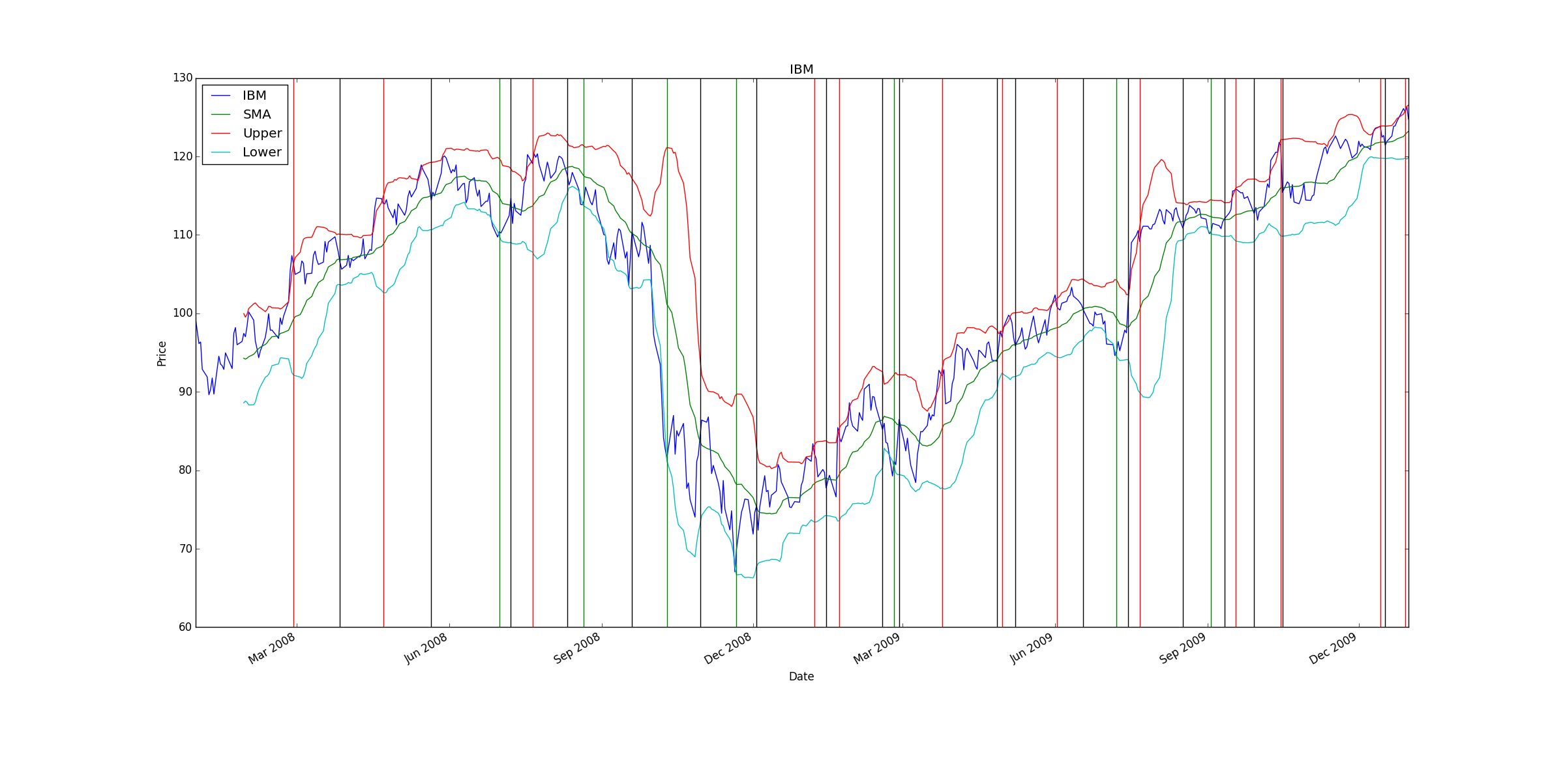
MC2 P2

David Mooney

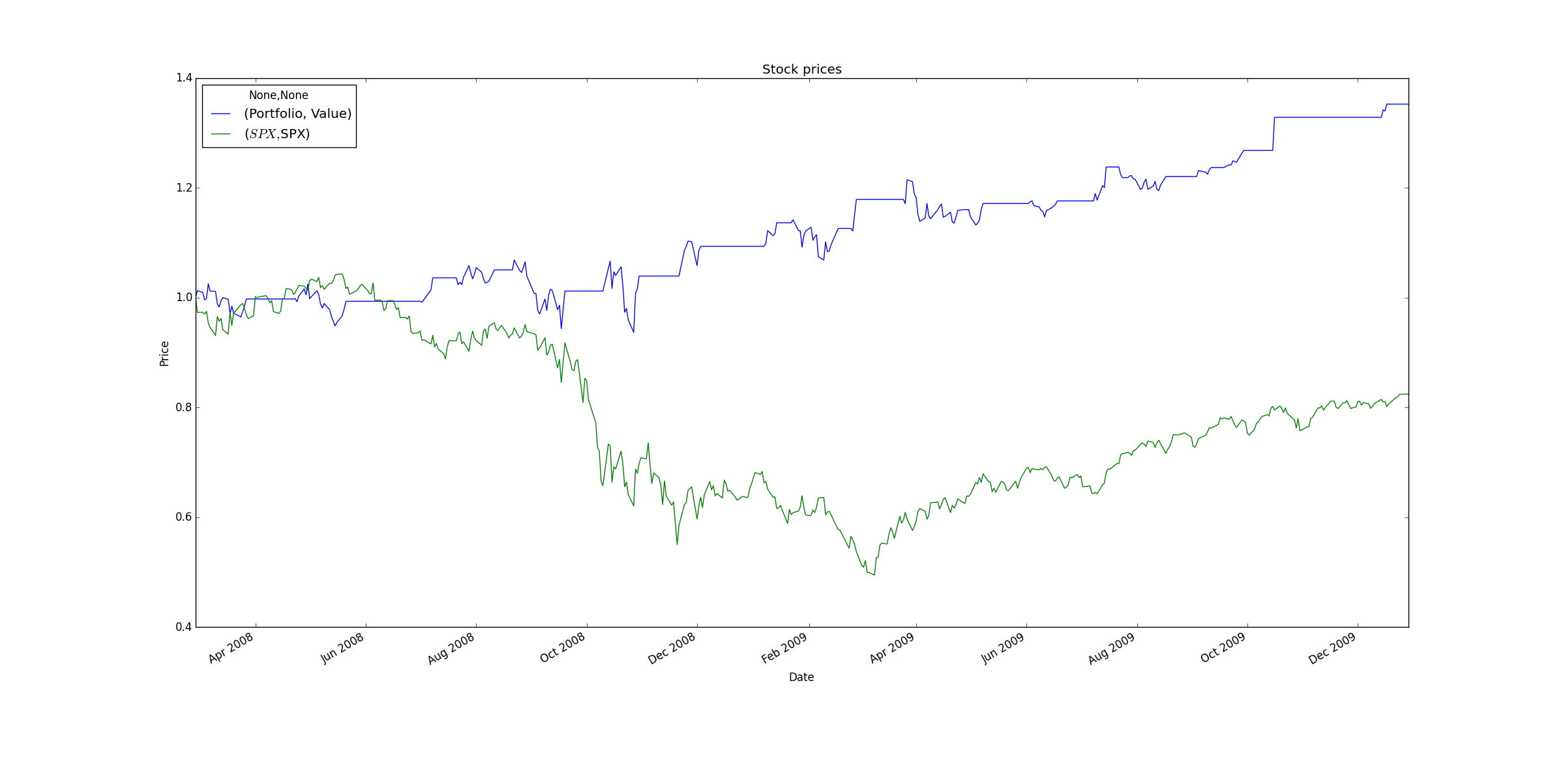
dmooney3

# Part 1 Bollinger Bands

## Entry and Exit Points



## Backtest Chart



## Backtest Performance Statistics

Date Range: 2008-02-28 to 2009-12-29

Sharpe Ratio of Fund: Value 1.001959

Cumulative Return of Fund: 0.3524

Standard Deviation of Fund: Value 0.011347

Average Daily Return of Fund: Value 0.000716

Final Portfolio Value: 13524.0

# Part 2 My Strategy

My strategy was to use the crossing points of short and medium-long term moving averages as signals. The short position would only be taken if the downward crossing signal held for a certain number of days. I experimented with a wide range of values for each variable and settled on a 15-day simple moving average, a 75-day moving average with an 11 day waiting period before taking a short position. This produced 2.34 times the cumulative return of the basic Bollinger strategy in-sample.

When the 15 day moving average dips below the 75-day moving average, this is a signal to potentially take a short position. We don’t actually take the short position unless the following are all true:

1. The 15-day moving average was above the 75-day moving average 11 days ago,
2. The 15-day moving average was below the 75-day moving average 10 days ago (i.e. it crossed below 10 days ago), and
3. The 15-day moving average was below the 75-day moving average today.

If these three hold true, we take a short position whether we are in cash or long. In other words, if we are long, we sell and also take a short position (sell twice).

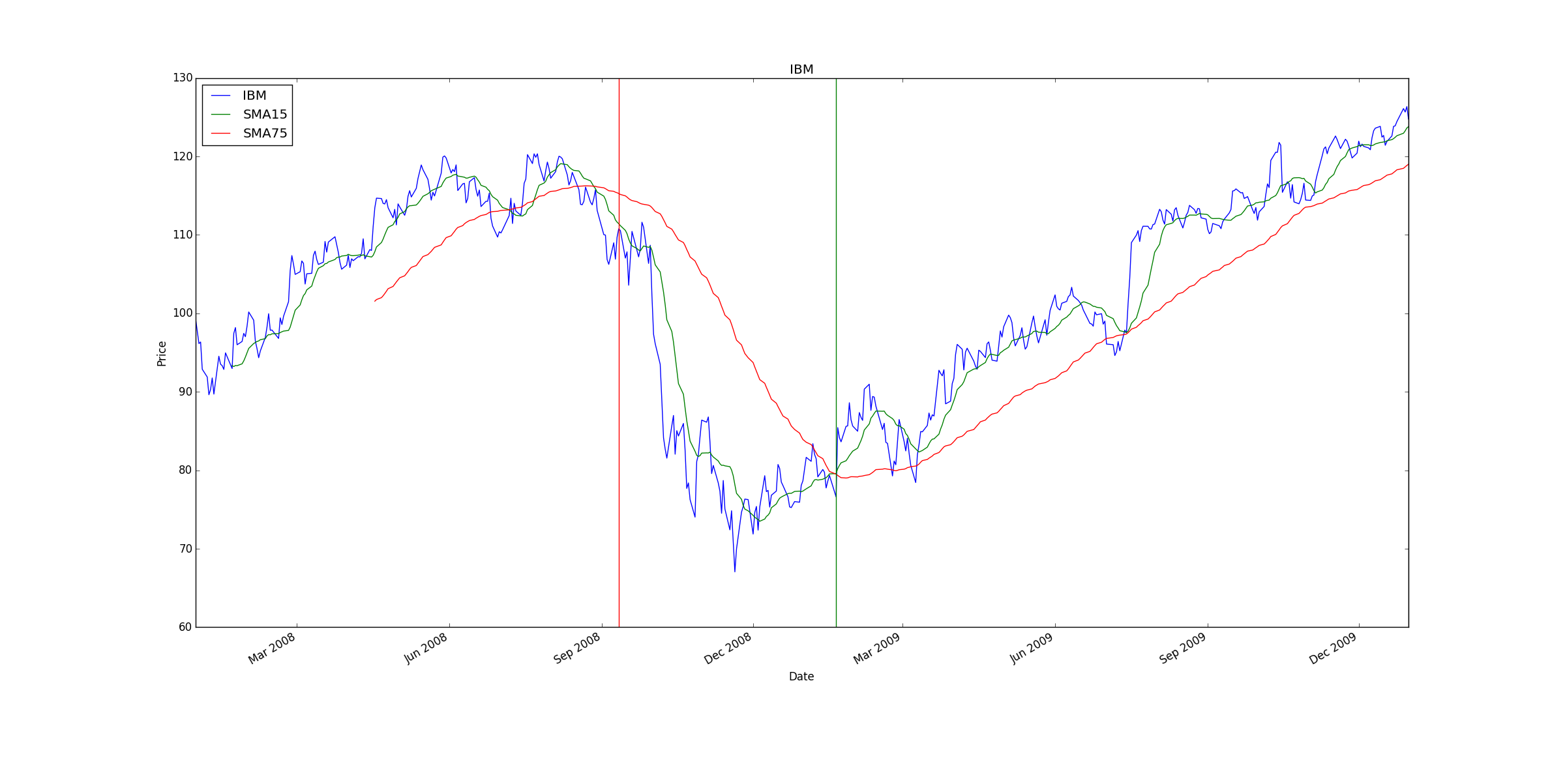
We take a long position as soon as the 15-day moving average crosses back above the 75-day moving average. There is no waiting period. We also never go from cash to a long position. We only go directly from short to long, i.e. buy twice.

If we are still holding any position at the end of the time period, we buy or sell to go to cash.

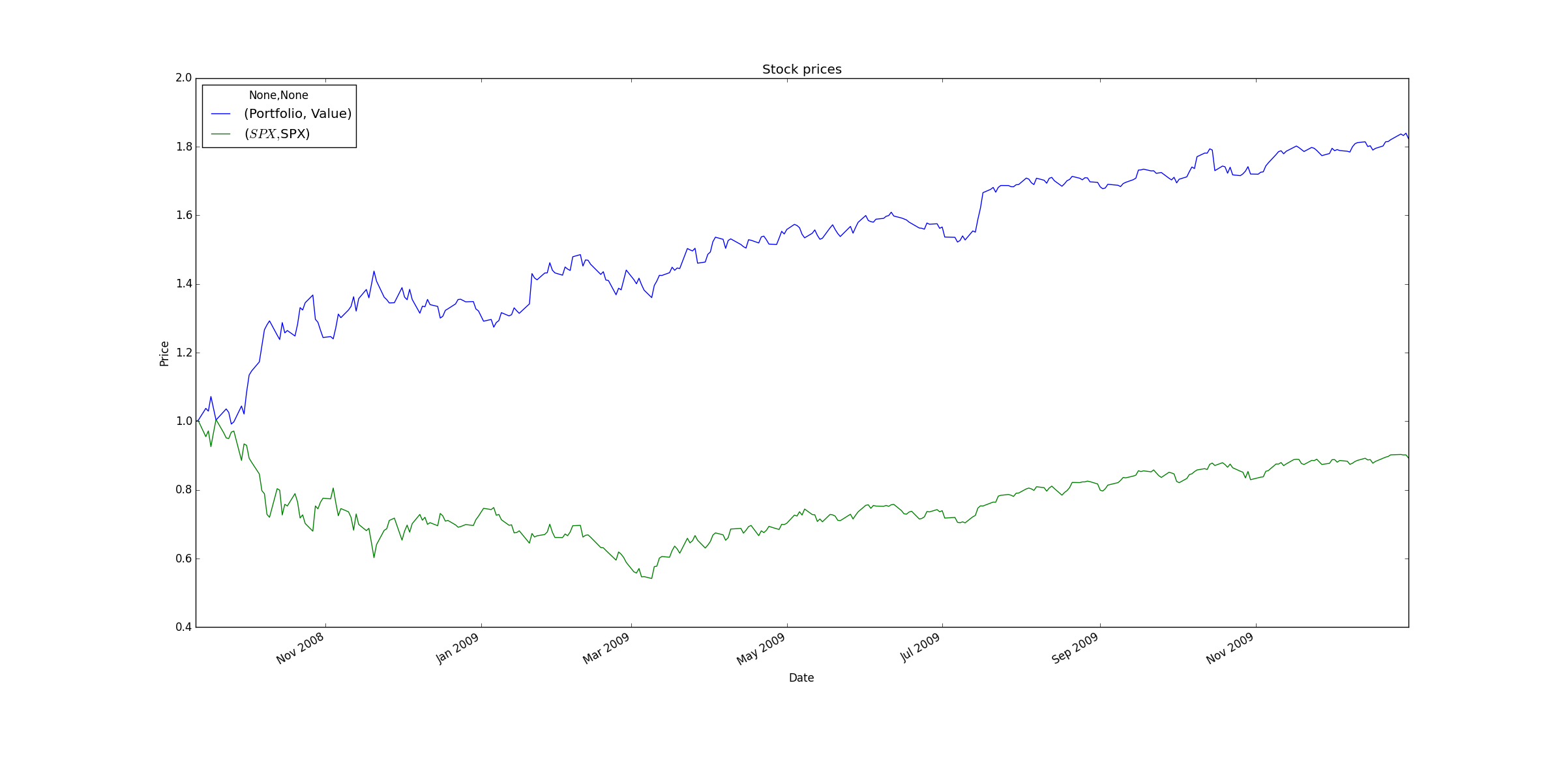
## Entry and Exit Points

For IBM during 2008 and 2009, this results in just a few trades:

1. Short before the big drop in late 2008
2. Change from short to long (buy twice) in early 2009
3. Sell at the end of the time period.



## Backtest Chart In-Sample



## Backtest Performance Statistics

Date Range: 2008-09-11 to 2009-12-31

Sharpe Ratio of Fund: Value 2.090654

Cumulative Return of Fund: 0.8233

Standard Deviation of Fund: Value 0.014686

Average Daily Return of Fund: Value 0.001934

Final Portfolio Value: 18233.0

Performance vs baseline: 2.33626560726