# MC2 Project 2 Report Extra Credit

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## 1.    Introduction

**What do you think of refining and testing your strategy over the same 2 years?  Is that a good practice?  Why or why not?**

Refining and testing our strategy over the same two years is not an optimal way to design a strategy. It will not be a good practice. The main reason for this is that for any particular period of time the stock price may be under influence of some specific event due to which it its performance with respect to the strategy can be found to be very high. However the strategy when tested in different time periods may lead to failure since those specific events might not occur again in other time periods. Hence to build a robust strategy we should refine and test a strategy over larger expanded periods of time. This will help the strategy to be robust and effective in all situations irrespective of any specific events overshadowing a particular span of time.

## 2.    Performance of *myStrategy* before 2008-2009 period i.e 2005-2007

### 2.1.   *Bollinger Band Strategy*

#### 2.1.1.   *Bollinger Backtest Performance Metrics*

```
Data Range: 2005-12-31 to 2007-12-31

Sharpe Ratio of Fund: 0.509660010578
Sharpe Ratio of $SPX: 0.619156351493

Cumulative Return of Fund: 0.1601
Cumulative Return of $SPX: 0.157282471627

Standard Deviation of Fund: 0.0111244345619
Standard Deviation of $SPX: 0.00837589003042

Average Daily Return of Fund: 0.000357156233391
Average Daily Return of $SPX: 0.000326686380163
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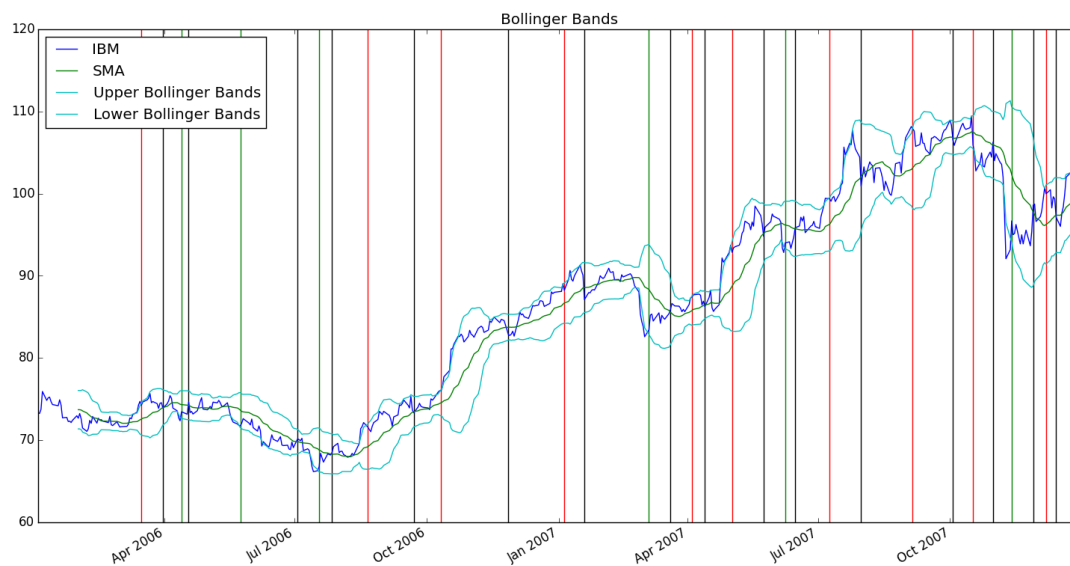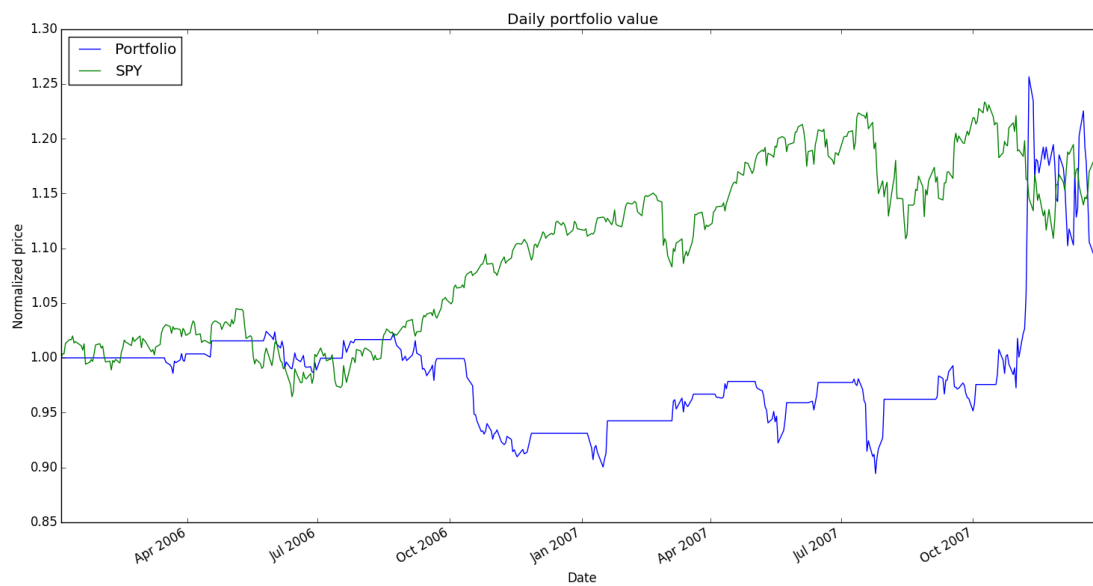
Fig. 1. Bollinger Band Strategy Chart



Fig. 2. Bollinger Band Strategy Backtest Chart

2

Final Portfolio Value: 11601.0
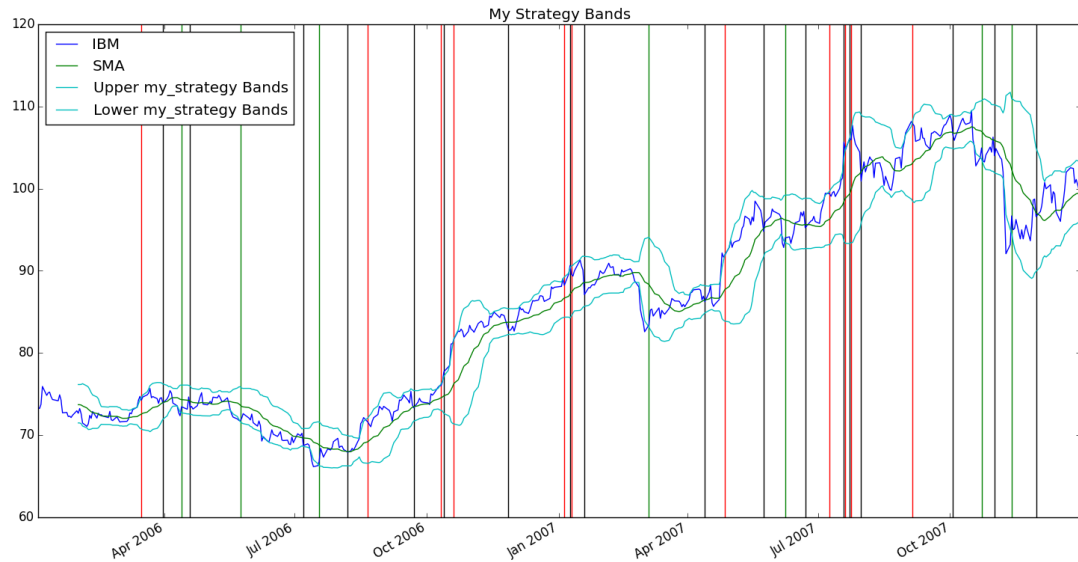
## 2.2.  Own Strategy myStrategy



Fig. 3. My Strategy Chart

### 2.2.1.  myStrategy Backtest Performance Metrics

Data Range: 2005-12-31 to 2007-12-31

Sharpe Ratio of Fund: 1.66213695074
Sharpe Ratio of $SPX: 0.619156351493

Cumulative Return of Fund: 1.645
Cumulative Return of $SPX: 0.157282471627

Standard Deviation of Fund: 0.020556220919
Standard Deviation of $SPX: 0.00837589003042

Average Daily Return of Fund: 0.00215233471454
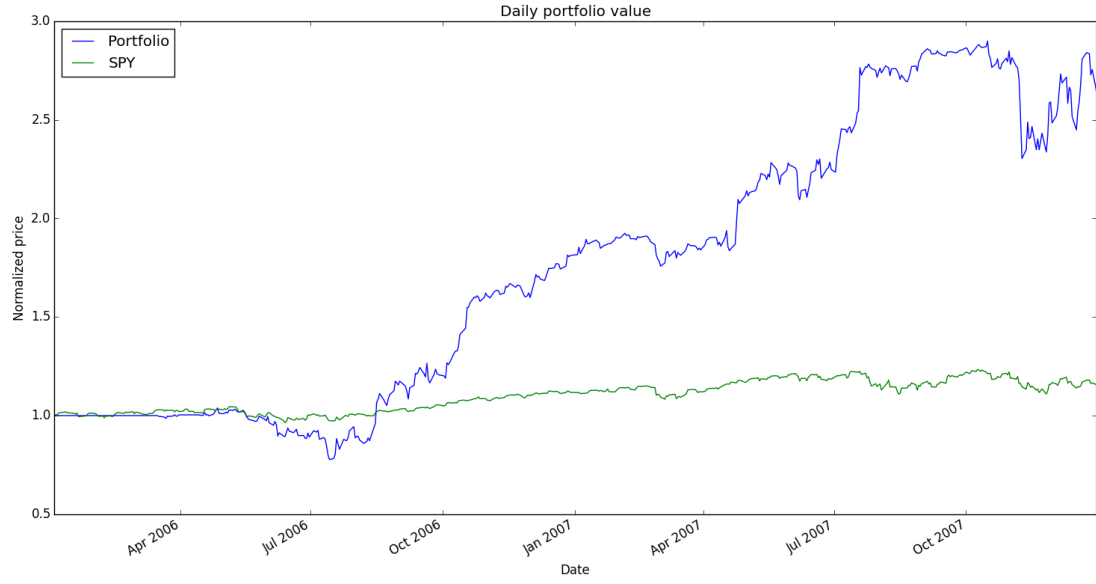Average Daily Return of $SPX: 0.000326686380163

Fig. 4. My Strategy Backtest Chart

Final Portfolio Value: 26450.0

## 2.3. *myStrategy performance comparison with Bollinger Band strategy*

Cumulative Return of fund using myStrategy is 1.645 whereas that of Bollinger Band strategy is 0.1601. We observe a very high increase of Cumulative return using our strategy. The Final portfolio value using myStrategy is 26450.0 as compared to 11601.0 with that of Bollinger Band. Hence we can show that myStrategy is performing better than Bollinger Band with respect to Cumulative Return.

# 3. Performance of *myStrategy* after 2008-2009 period i.e 2009-2011
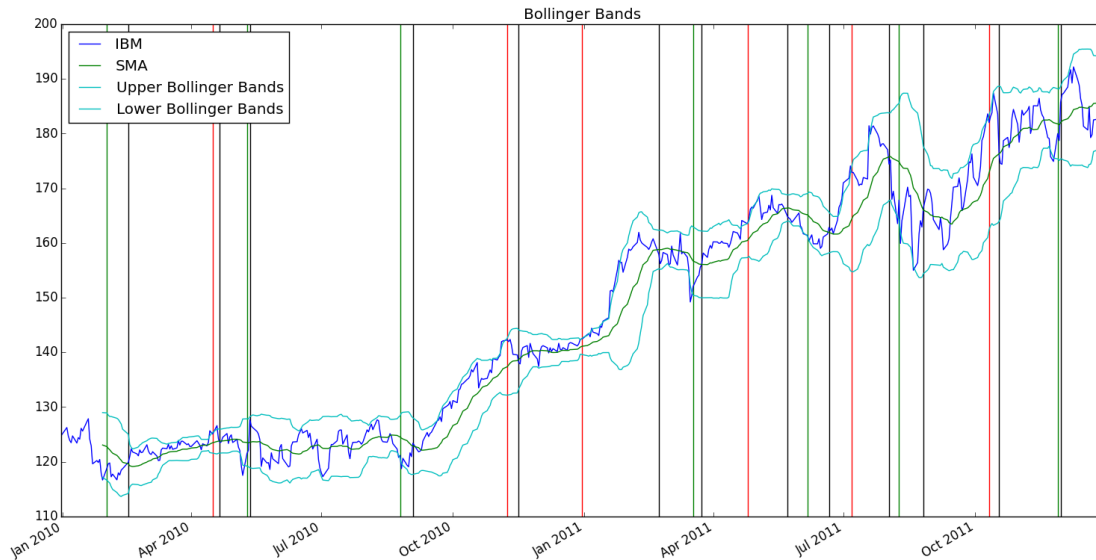
## 3.1. Bollinger Band Strategy



Fig. 5. Bollinger Band Strategy Chart

### 3.1.1. Bollinger Backtest Performance Metrics

Data Range: 2009-12-31 to 2011-12-31

Sharpe Ratio of Fund: 0.409961011065
Sharpe Ratio of $SPX: 0.393165319464

Cumulative Return of Fund: 0.126
Cumulative Return of $SPX: 0.127791229486

Standard Deviation of Fund: 0.0118580043687
Standard Deviation of $SPX: 0.0131086008359

Average Daily Return of Fund: 0.000306234341318
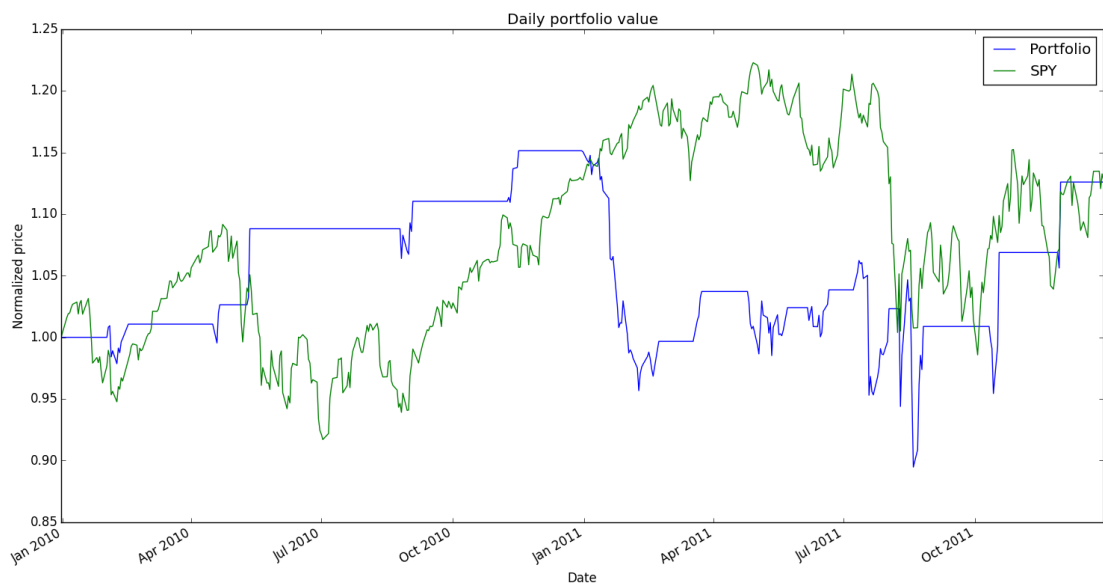Average Daily Return of $SPX: 0.000324661859049

Fig. 6. Bollinger Band Strategy Backtest Chart

Final Portfolio Value: 11260.0
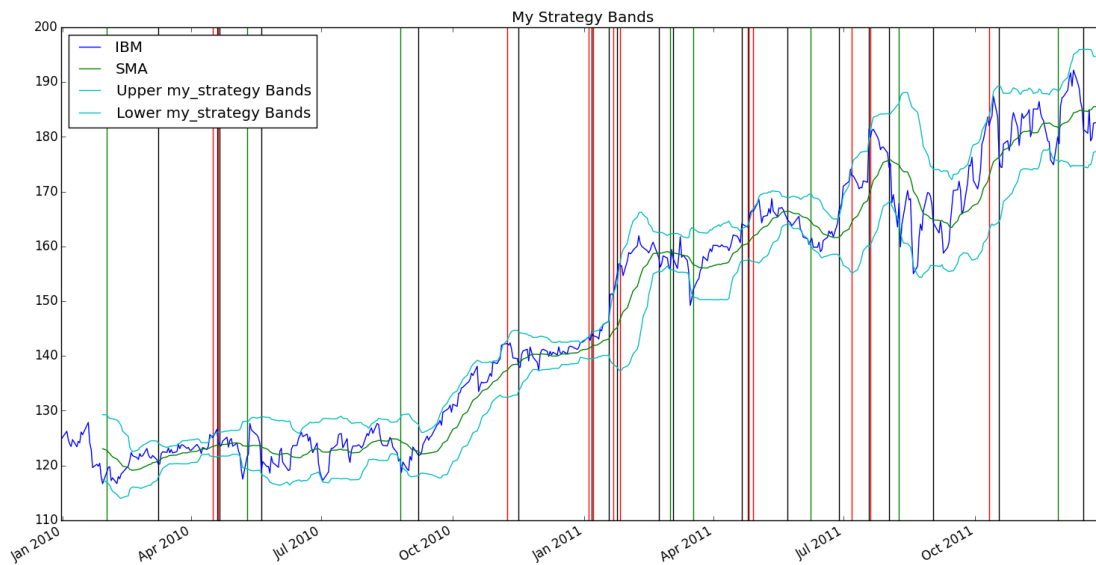
## 3.2. Own Strategy myStrategy



Fig. 7. My Strategy Chart

### 3.2.1. My Strategy Backtest Performance Metrics

Data Range: 2009-12-31 to 2011-12-31

Sharpe Ratio of Fund: 1.19951229352
Sharpe Ratio of $SPX: 0.393165319464

Cumulative Return of Fund: 1.2159
Cumulative Return of $SPX: 0.127791229486

Standard Deviation of Fund: 0.0250086496056
Standard Deviation of $SPX: 0.0131086008359

Average Daily Return of Fund: 0.00188970788253
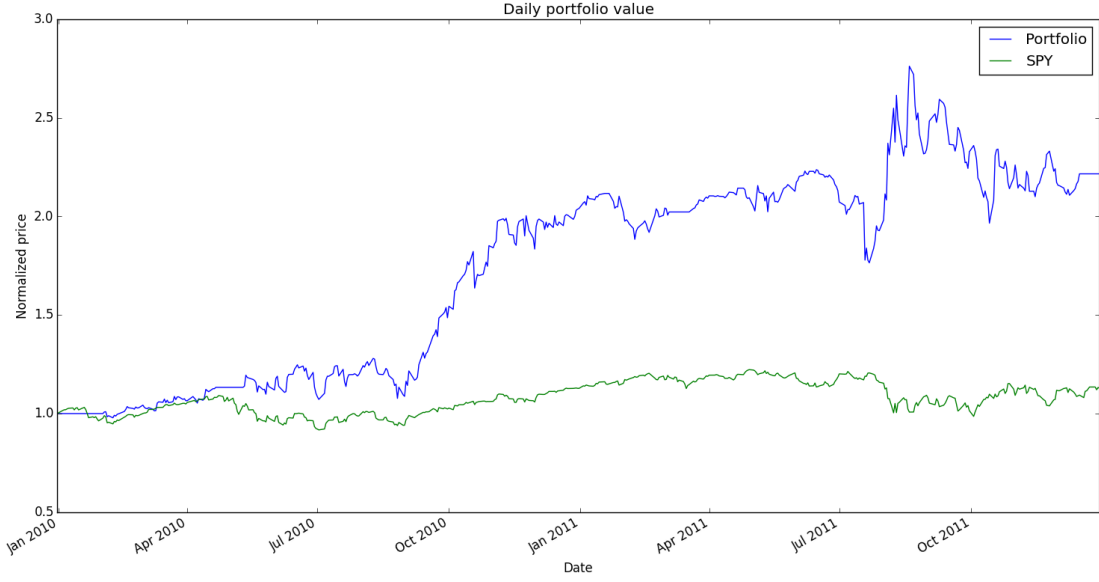Average Daily Return of $SPX: 0.000324661859049

Final Portfolio Value: 22159.0

Fig. 8. My Strategy Backtest Chart

### 3.3. *myStrategy performance comparison with Bollinger Band strategy*

Cumulative Return of fund using myStrategy is 1.2159 whereas that of Bollinger Band strategy is 0.126. We observe a very high increase of Cumulative return using our strategy. The Final portfolio value using myStrategy is 22159.0 as compared to 11260.0 with that of Bollinger Band. Hence we can show that myStrategy is performing better than Bollinger Band with respect to Cumulative Return.

# 4. Why myStrategy continues to work over extended time periods?

The main reason for this strategy to outperform Bollinger Band strategy in diverse time periods is that it is a very generic strategy that builds on logical sense of stock movement above and below certain regions. Since the performance of a stock with respect to the statistical bands will be uniform, the performance of this strategy which is based on movement of stock price with respect to these bands should also perform consistently without being biased towards any specific events.