

# PROJECT MILESTONE REPORT

## FINANCIAL TRADING STRATEGY

*Diane Kamning*

### Contents

<b>1</b>	<b>INTRODUCTION</b>	<b>2</b>
<b>2</b>	<b>DATA SETS</b>	<b>2</b>
<b>3</b>	<b>PRELIMINARY EXPLORATION</b>	<b>3</b>
<b>4</b>	<b>APPROACH</b>	<b>6</b>

## Warning: package 'rmarkdown' was built under R version 3.3.3

## 1 INTRODUCTION

This project aims at building a model that will ideally always output successful bids in the stock market. For that, it builds a model which gives better results when constantly trained in a sliding-time window. Of course, the model advises buying when the prices are low and selling when they are going up. The goal is to design a simple financial trading strategy that will be profitable and that will provide a good risk-adjusted measure of return.

## 2 DATA SETS

Two datasets will be used here to test the strategy:

- The American Electric Company (AEP) dataset from Quandl

Open	High	Low	Close	Volume	Ex-Dividend
32.00	32.00	31.12	31.44	396900	0
31.38	31.94	31.38	31.81	325500	0
31.81	33.12	31.81	33.00	392200	0
32.75	33.69	32.75	33.19	433000	0
33.38	33.75	33.06	33.62	250500	0
33.62	33.81	33.44	33.50	307700	0

- The Chesapeake Energy Corporation (CHK) from Quandl.

Open	High	Low	Close	Volume	Ex-Dividend
2.31	2.38	2.25	2.25	369700	0
2.19	2.25	2.06	2.06	719400	0
2.12	2.19	1.94	2.06	807100	0
1.94	2.12	1.94	2.12	444900	0
2.06	2.12	2.06	2.06	207400	0
2.06	2.12	2.06	2.12	166700	0

An initial exploration of the AEP dataset reveals 5 important fields:

- The date
- The Open price
- The High price
- The Low price
- The Close price.

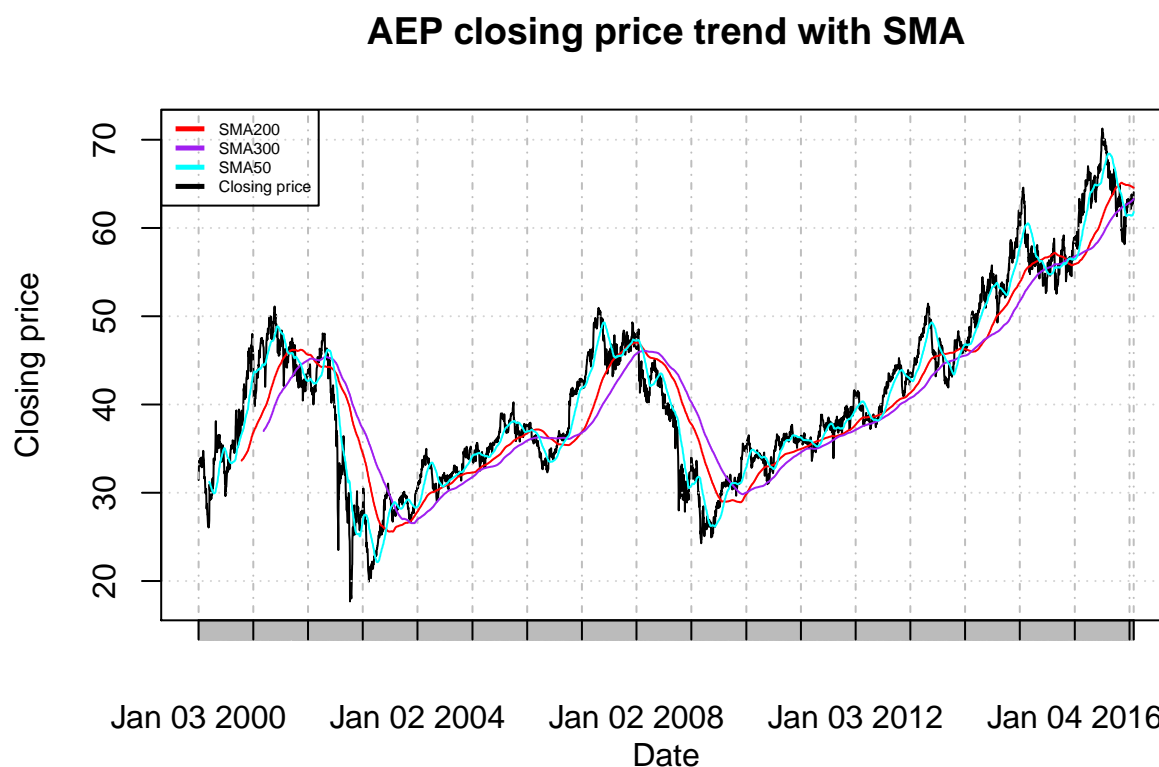
Some of the issues encountered with the data:

- The presence of the adjusted closing price was confusing for some methods in the packages Quandtstrat and xts, as those methods kept throwing errors. I had to remove the adjusted closing price from my data sets and just keep the closing price
- Some functions and arguments were not found because the Quandtstrat package is not yet stable.

### 3 PRELIMINARY EXPLORATION

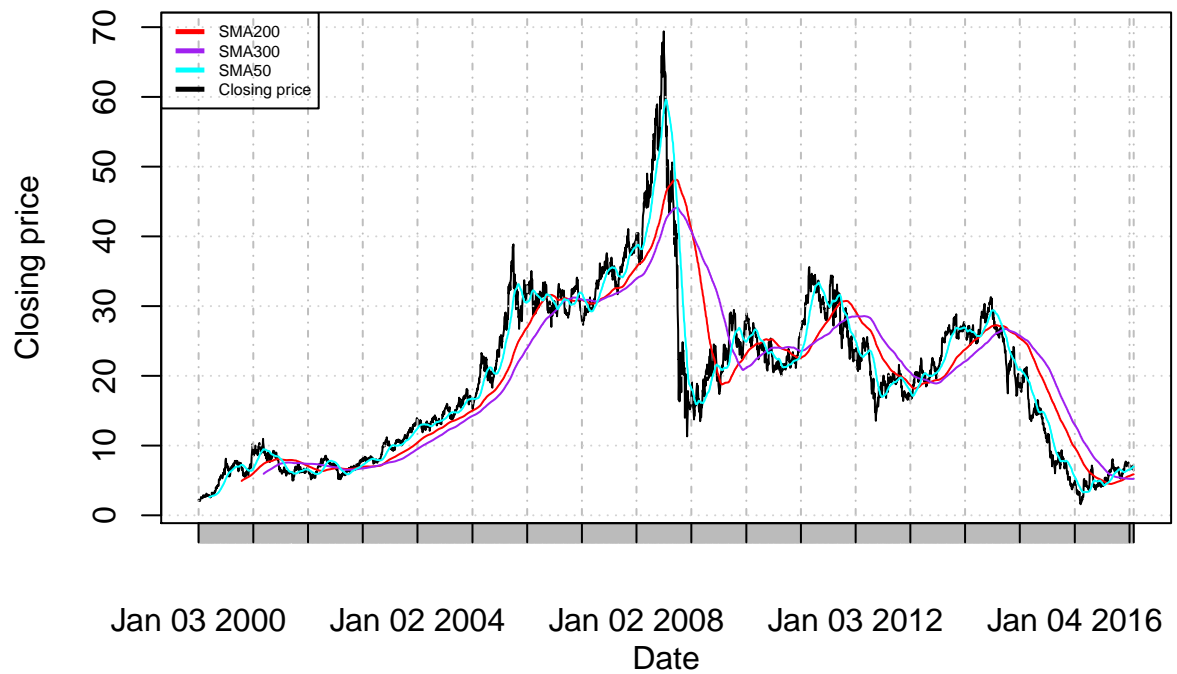
Using trend-following indicators and oscillator/reversion indicators give some insights into the data. On one hand, the preliminary oscillator used is an RSI (Relative Strength Index) with a 3-days lookback period. On the other hand, the preliminary trend indicators are 3 SMA (Simple Moving Average). There are some periods of time where none of the indicators seem to be right. Also, the SMA50 (Simple Moving Average) seems to better mimic the trend of the closing prices for both data sets

- SMA AEP



- SMA CHK

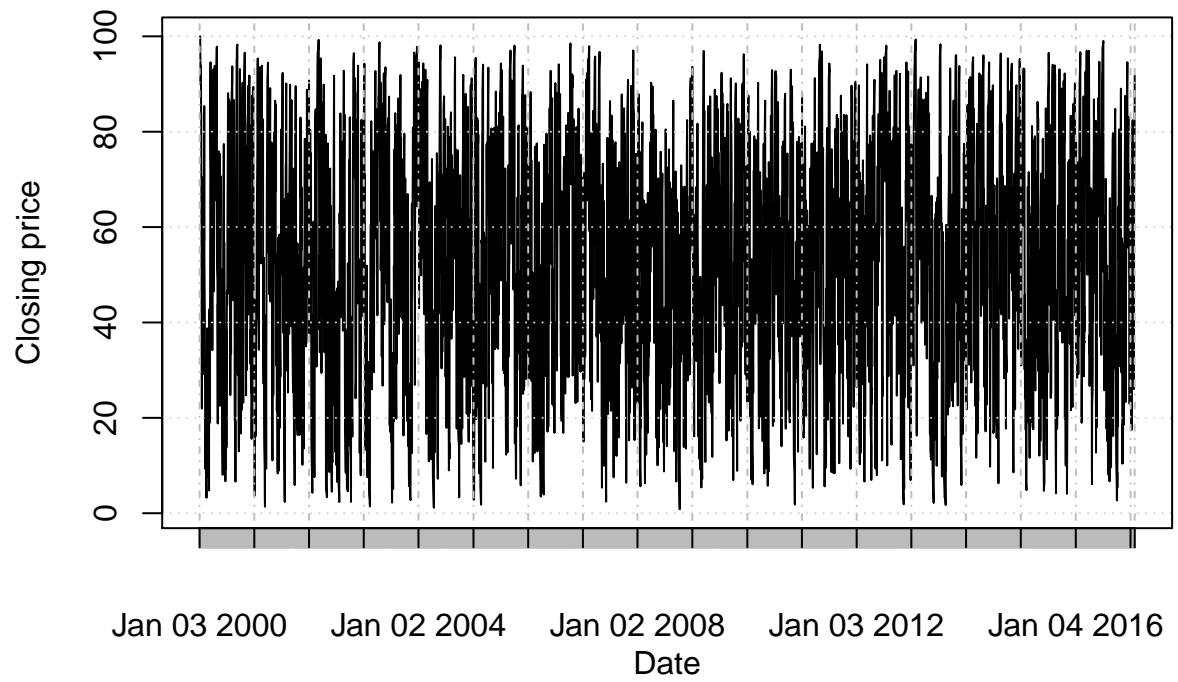
## CHK closing price trend with SMA



An observation of the graphs of the stocks. RSI reveal that there are effectively periods of reversion (2013-09-03 to 2013-9-05 for example) that won't be captured by a trend-following indicator:

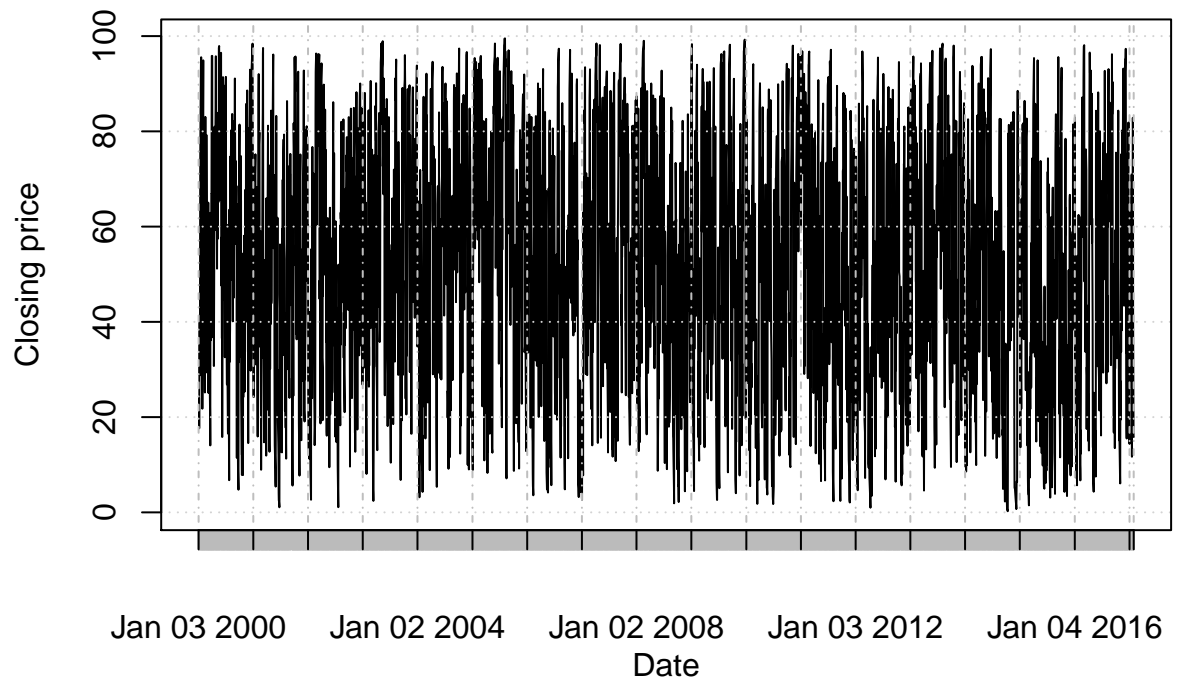
- RSI AEP

### AEP closing price RSI with 3-days lookback



- RSI CHK

### CHK closing price RSI with 3-days lookback



## 4 APPROACH

The main objective is to obtain a profit factor above 1 after running the strategy on each of the data sets. The approach here would be to combine both SMA50 and SMA200 with an oscillator to avoid false signals. The trend-following indicators would help catch up a move and remain in the move.