Project 1

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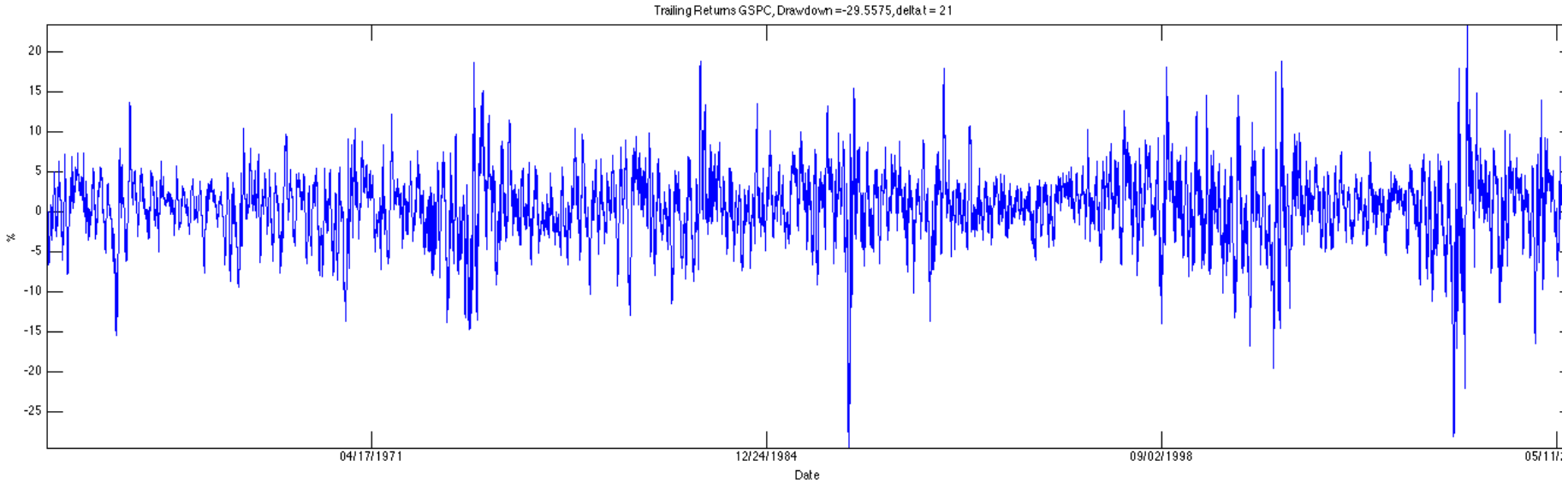
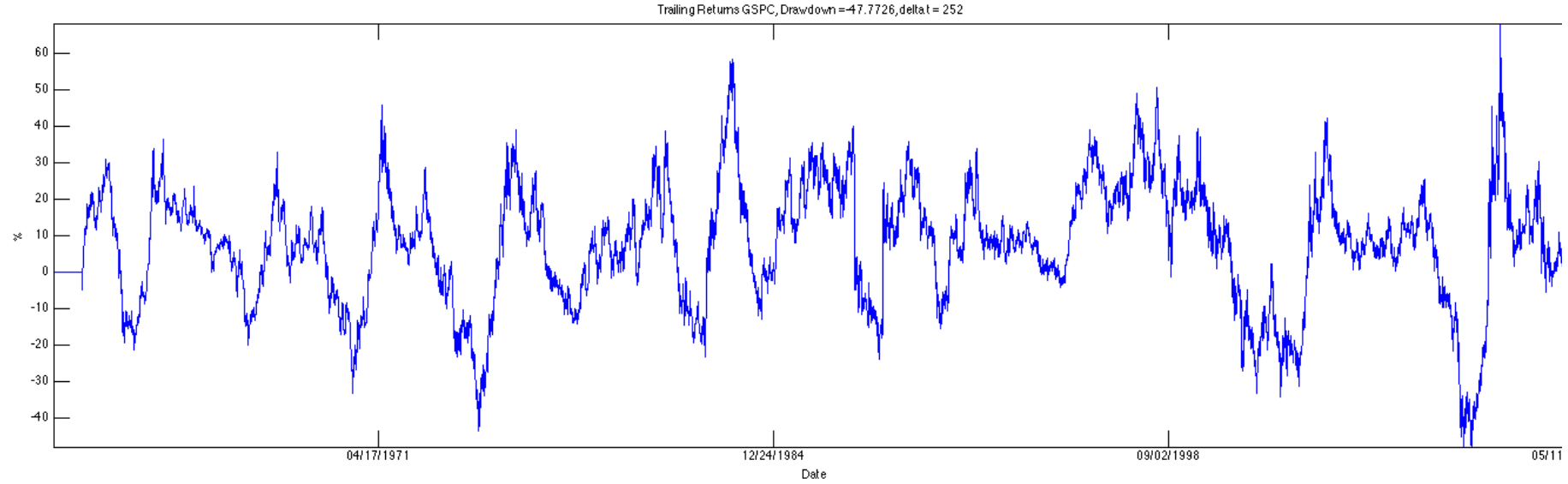
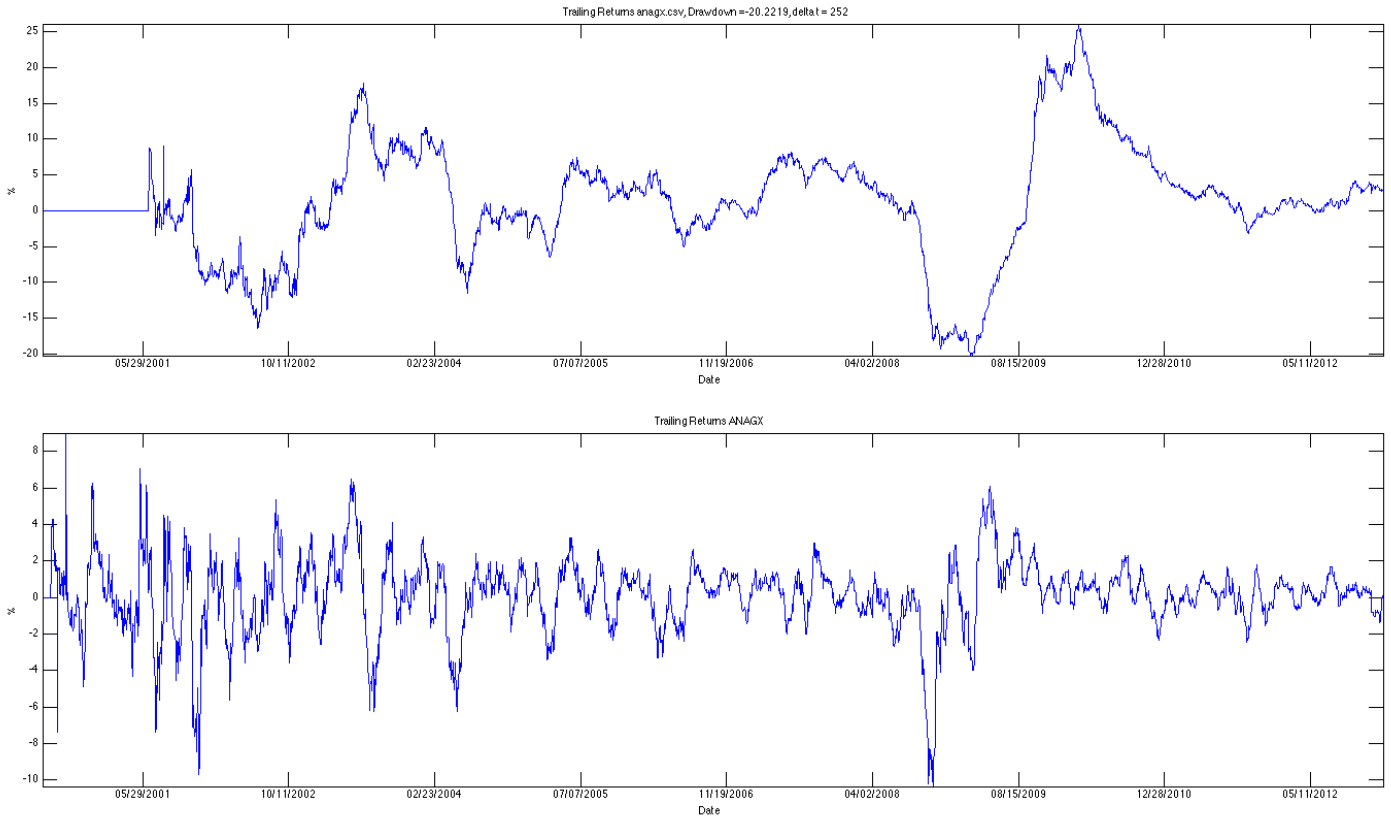
Physics 250 Econophysics, Winter 2013

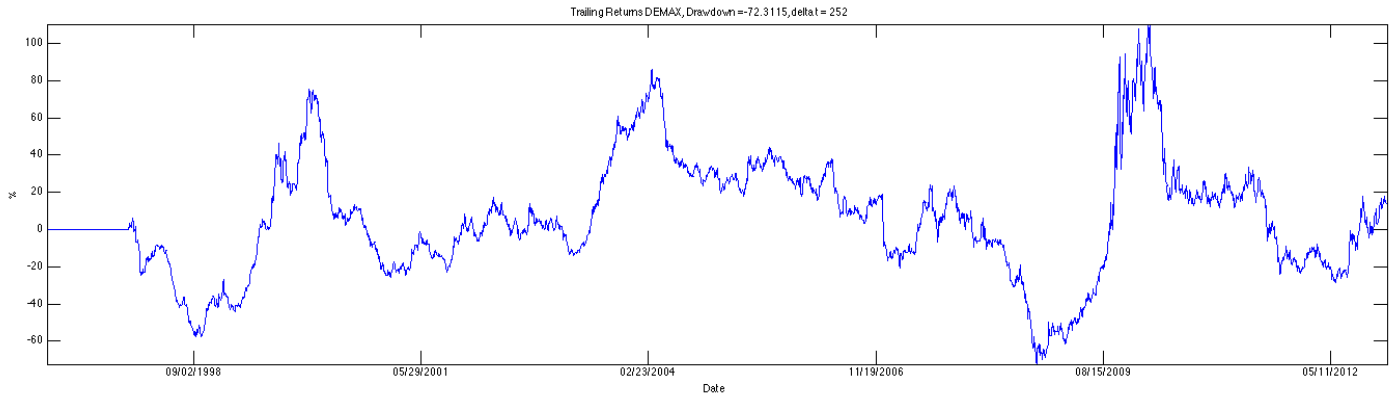
1. Download data from yahoo finance.
2. Write a code that will compute and plot (vs. time) the 3 month and 12 month returns for a given stock, stock index, ETF, or Mutual Fund. Test it on the S&P 500 (SPX) index going back to 1960. Note that for Yahoo finance, the SPX is designated as ^GSPC.

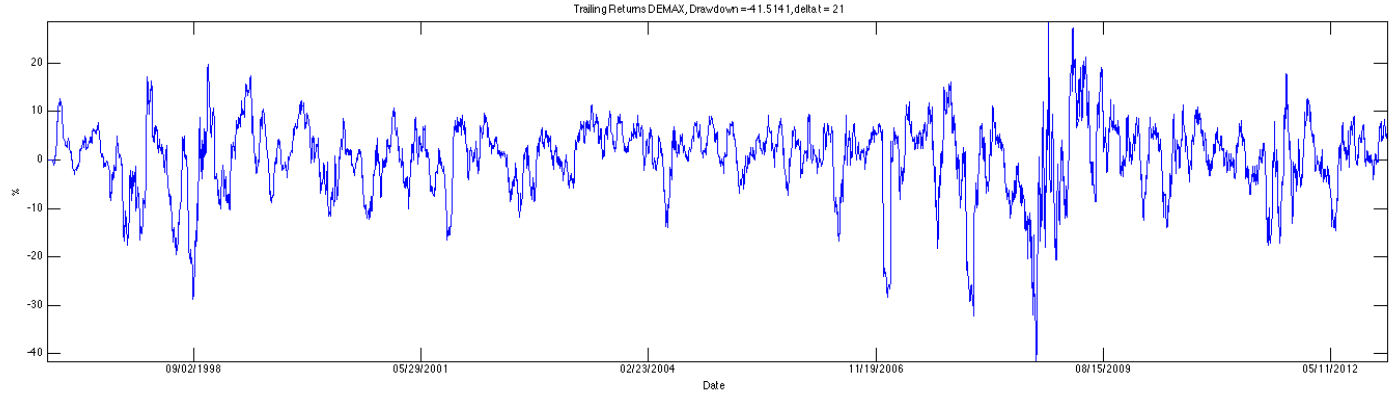

```
%READ CSV FILE
%This creates a matrix without the headings
clear, clc
str = 'SWISX';
fileID = fopen([str '.csv']);
C = textscan(fileID, '%s%*f%*f%*f%f%*f%*f','HeaderLines',1,'Delimiter',',');
fclose(fileID);

date = C{1,1}; %First cell contains dates
date_format= 'yyyy-mm-dd';  %used to convert to datenum
date=datenum(date,date_format);


closing = C{1,2}; %Second cell contains closing values

date=flipud(date); %reverse the order of date
closing=flipud(closing); %reverse the order of date




%need first date in date array: date_1=date(1,1)
% give the number of elements in array numel(date, :, 1)

delta_t = 21;
%Define returns function. This For function steps through the date array
% and performs the returns alogoithm, saving it to an array called Returns
for m = delta_t:numel(date, :, 1)
    Returns(m) = (closing(m)-closing(m-delta_t+1))/closing(m-delta_t+1)*100;
end

drawdown=min(Returns(:)) % returns the minimum value in array:

plot(date, Returns)
title(['Trailing Returns ' str ', Drawdown =' num2str(drawdown) ',delta t = ' num2str(del
ylabel('%')
xlabel('Date')
datetick('x','mm/dd/yyyy', 'keepticks')
hold
axis ([min(date(:)) max(date(:)) min(Returns(:)) max(Returns(:))])
```

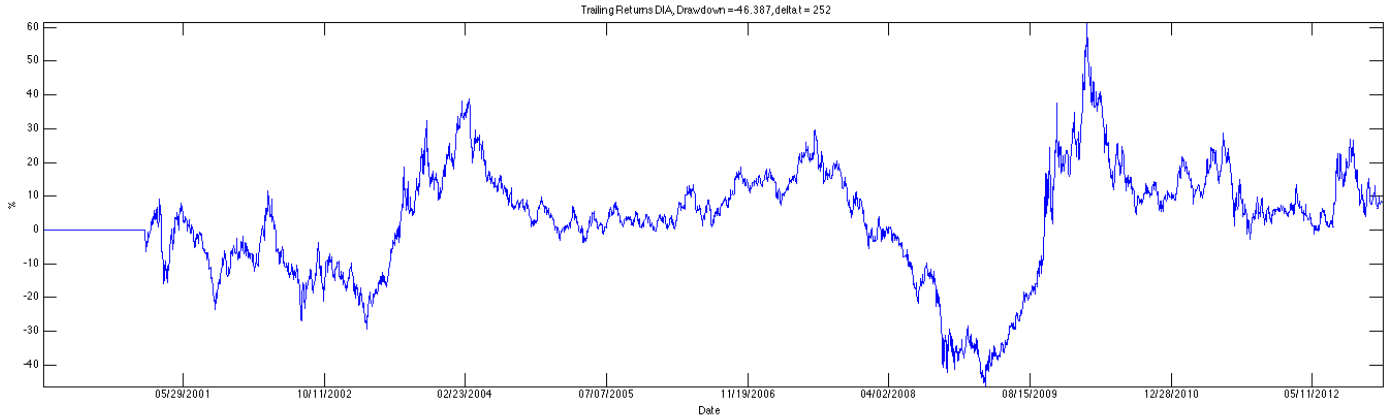

Trailing Returns GSPC, Drawdown =-29.5575, deltat = 21
%
20
15
10
5
0
-5
-10
-15
-20
-25
04/17/1971
12/24/1984
09/02/1998
Date

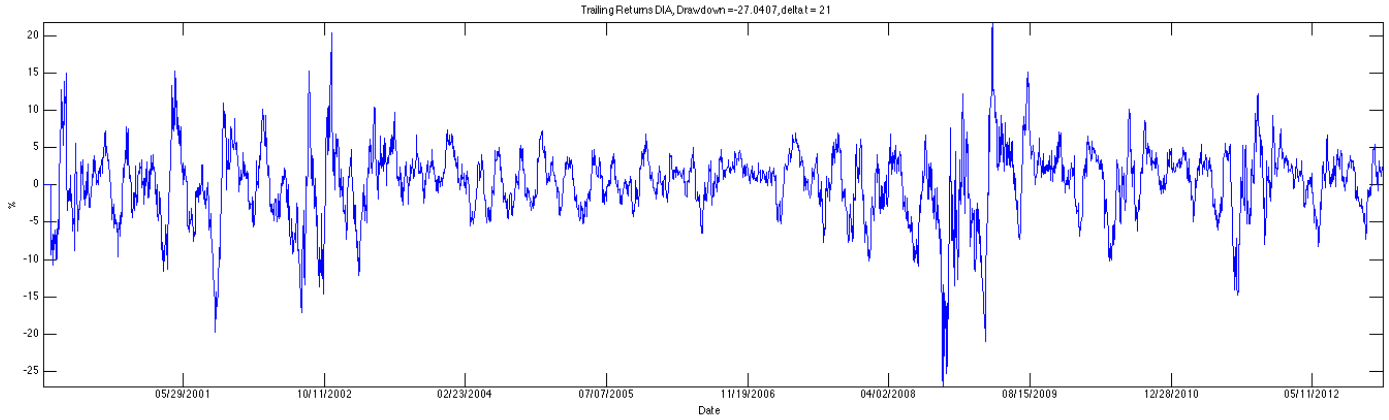

Trailing Returns GSPC, Drawdown =-47.7726, deltat = 252
%
60
50
40
30
20
10
0
-10
-20
-30
-40
04/17/1971
12/24/1984
09/02/1998
Date

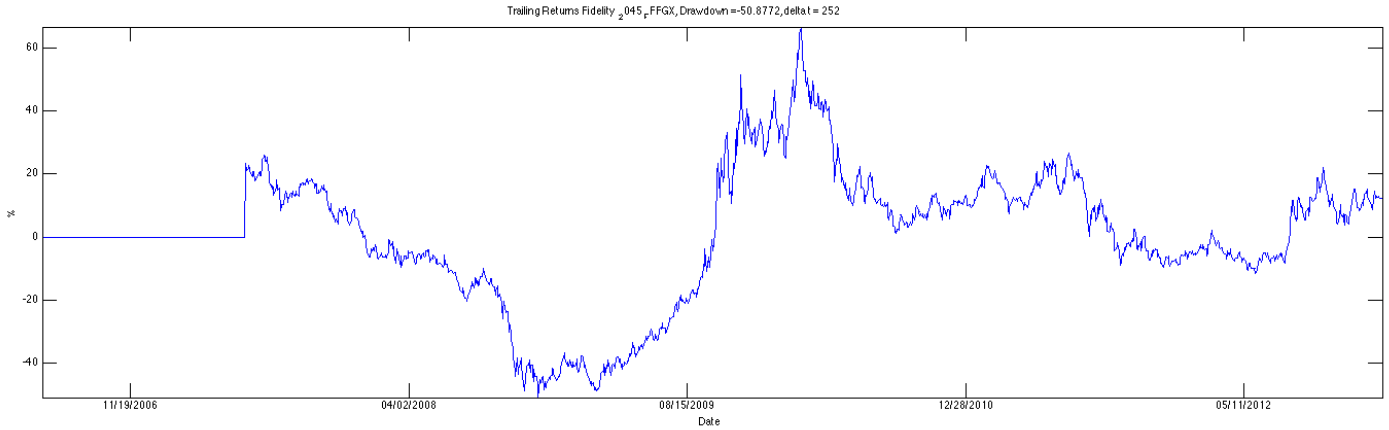

Trailing Returns anagx.csv, Drawdown =-20.2219, delta.t = 252
25
20
15
10
5
0
-5
-10
-15
-20
%
05/29/2001
10/11/2002
02/23/2004
07/07/2005
11/19/2006
04/02/2008
08/15/2009
12/28/2010
05/11/2012
Date
Trailing Returns ANAGX
8
6
4
2
0
-2
-4
-6
-8
-10
%
05/29/2001
10/11/2002
02/23/2004
07/07/2005
11/19/2006
04/02/2008
08/15/2009
12/28/2010
05/11/2012
Date

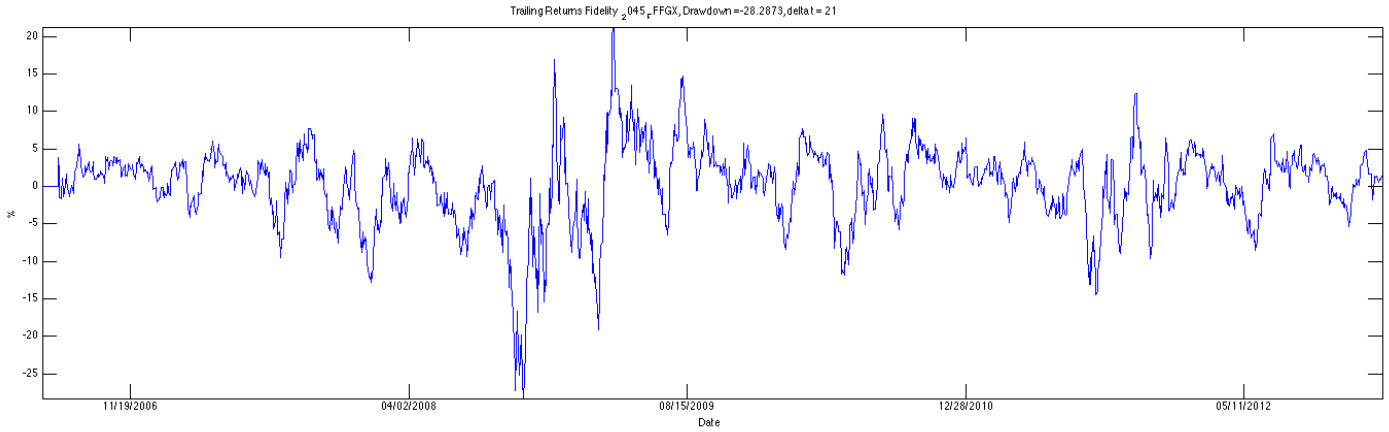

Trailing Returns DEMAX, Drawdown =-72.3115, delta t = 252
100
80
60
40
20
0
-20
-40
-60
%
09/02/1998
05/29/2001
02/23/2004
11/19/2006
08/15/2009
05/11/2012
Date

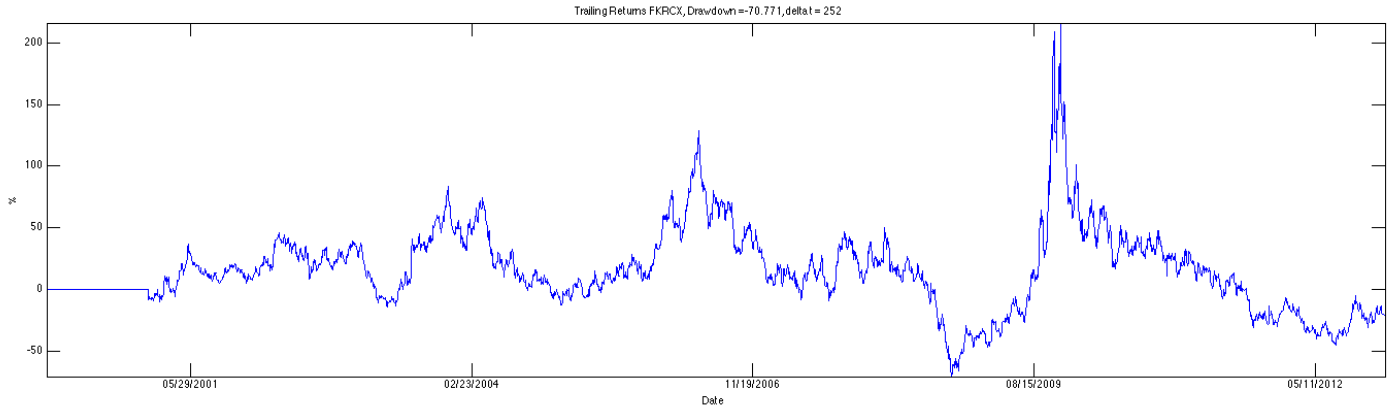

Trailing Returns DEMAX, Drawdown =-41.5141, delta t = 21
20
10
0
-10
-20
-30
-40
%
09/02/1998
05/29/2001
02/23/2004
11/19/2006
08/15/2009
05/11/2012
Date

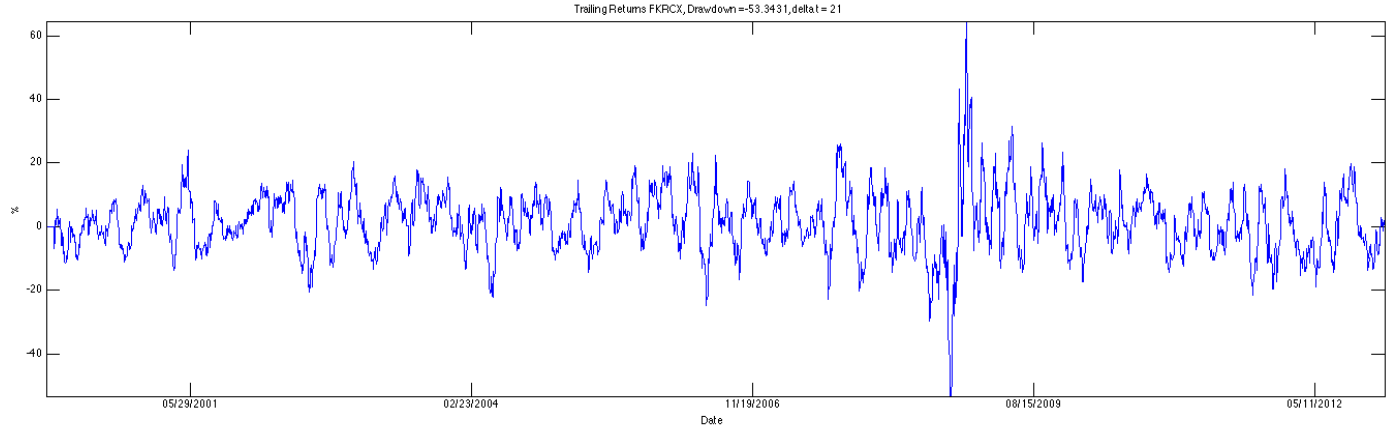

Trailing Returns DIA, Drawdown =-46.387, delta t = 252
60
50
40
30
20
10
0
-10
-20
-30
-40
%
05/29/2001
10/11/2002
02/23/2004
07/07/2005
11/19/2006
04/02/2008
08/15/2009
12/28/2010
05/11/2012
Date

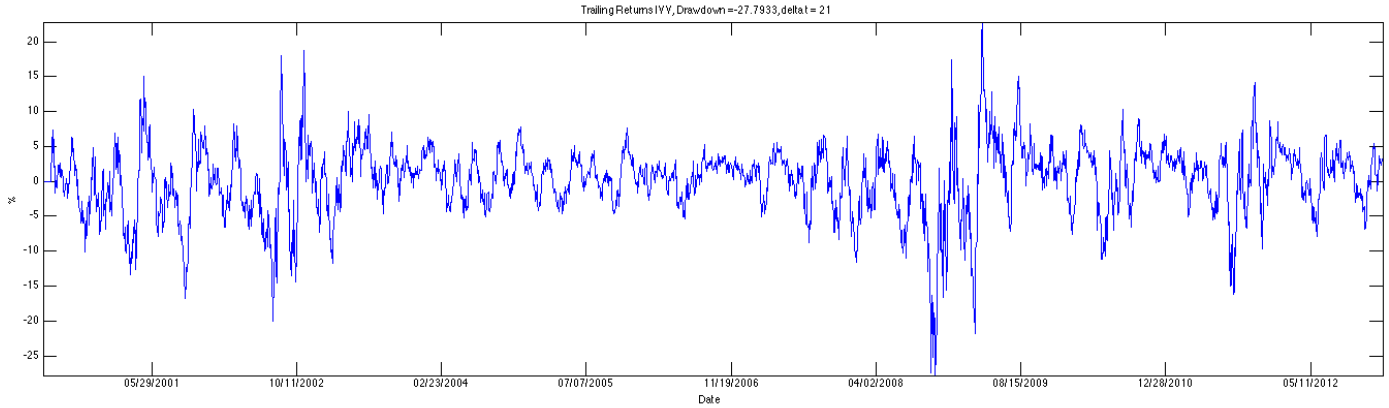

Trailing Returns DIA, Drawdown =-27.0407, delta t = 21
20
15
10
5
0
-5
-10
-15
-20
-25
%
05/29/2001
10/11/2002
02/23/2004
07/07/2005
11/19/2006
04/02/2008
08/15/2009
12/28/2010
05/11/2012
Date

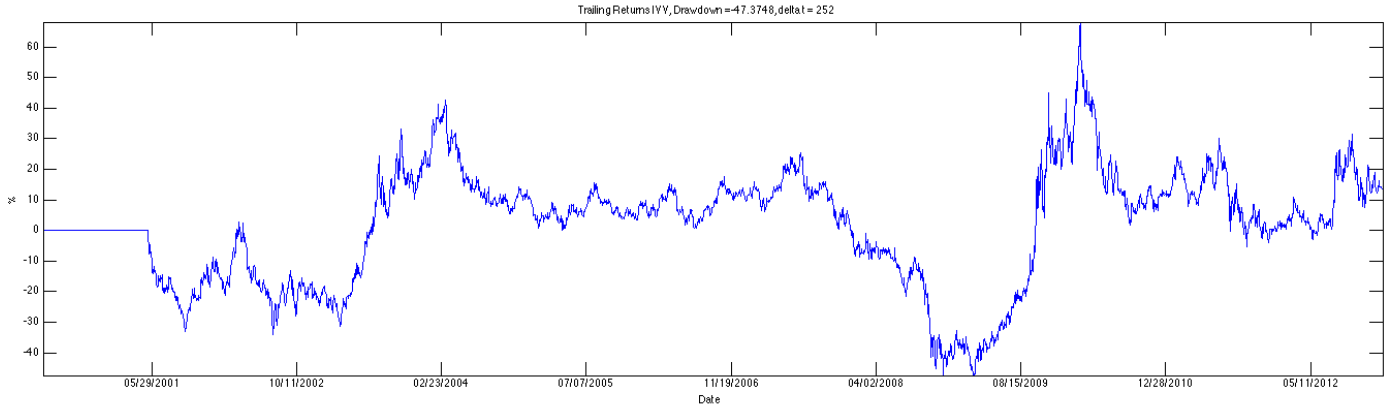

Trailing Returns Fidelity 2045 FFGX, Drawdown =-50.8772, deltat = 252
60
40
20
0
-20
-40
%
11/19/2006
04/02/2008
08/15/2009
12/28/2010
05/11/2012
Date

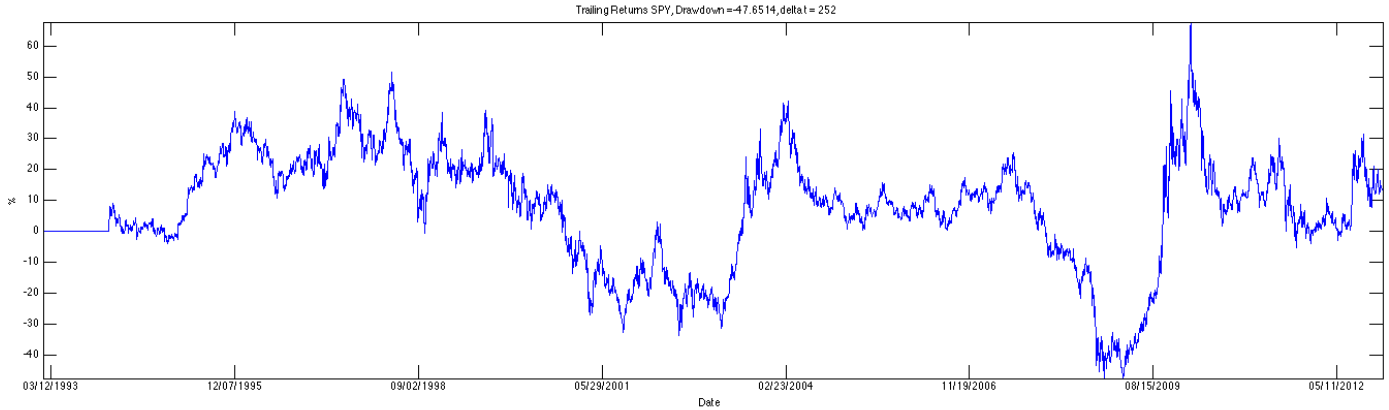

Trailing Returns Fidelity 2045 FFGX, Drawdown =-28.2873, deltat = 21
20
15
10
5
0
-5
-10
-15
-20
-25
%
11/19/2006
04/02/2008
08/15/2009
12/28/2010
05/11/2012
Date

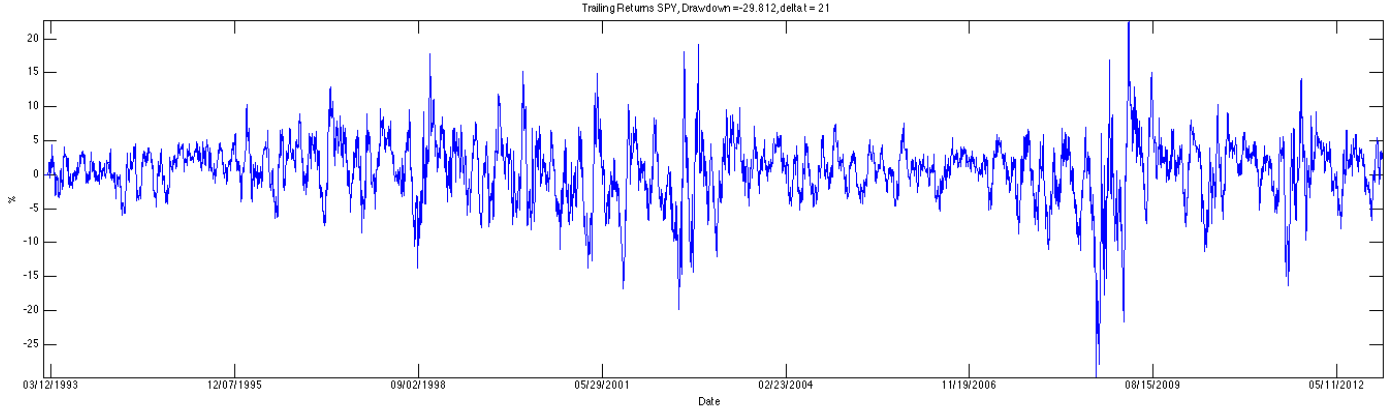

Trailing Returns FKRCX, Drawdown =-70.771, deltat = 252
200
150
100
50
0
-50
%
05/29/2001
02/23/2004
11/19/2006
08/15/2009
05/11/2012
Date

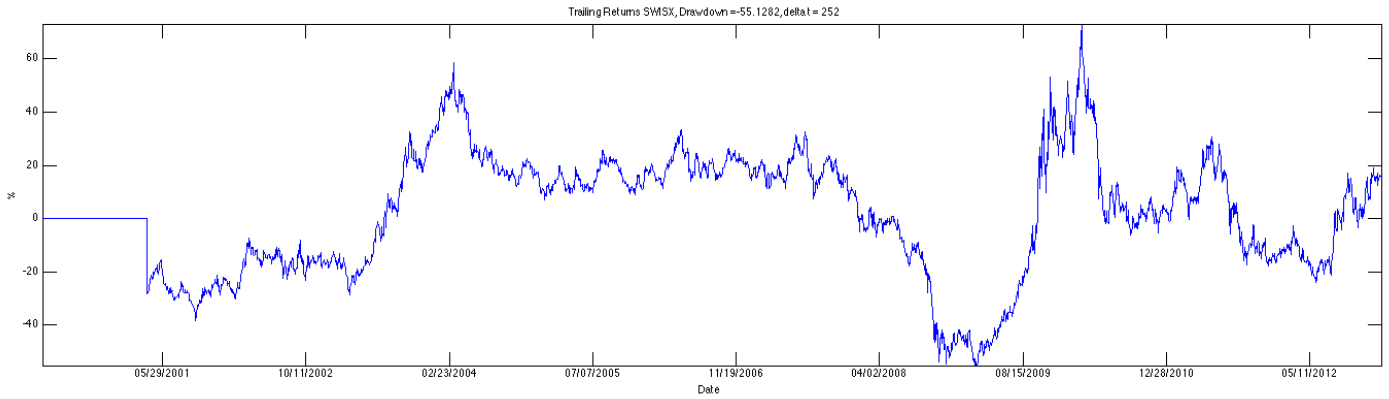

Trailing Returns FKRCX, Drawdown =-53.3431, deltat = 21
60
40
20
0
-20
-40
%
05/29/2001
02/23/2004
11/19/2006
08/15/2009
05/11/2012
Date

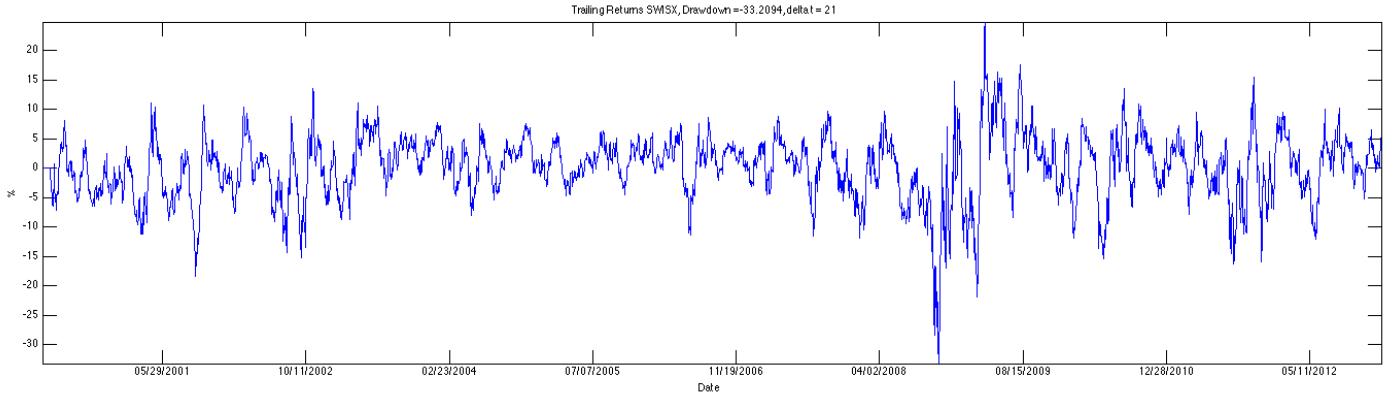

Trailing Returns IVV, Drawdown =-27.7933, deltat = 21
%
20
15
10
5
0
-5
-10
-15
-20
-25
05/29/2001
10/11/2002
02/23/2004
07/07/2005
11/19/2006
04/02/2008
08/15/2009
12/28/2010
05/11/2012
Date

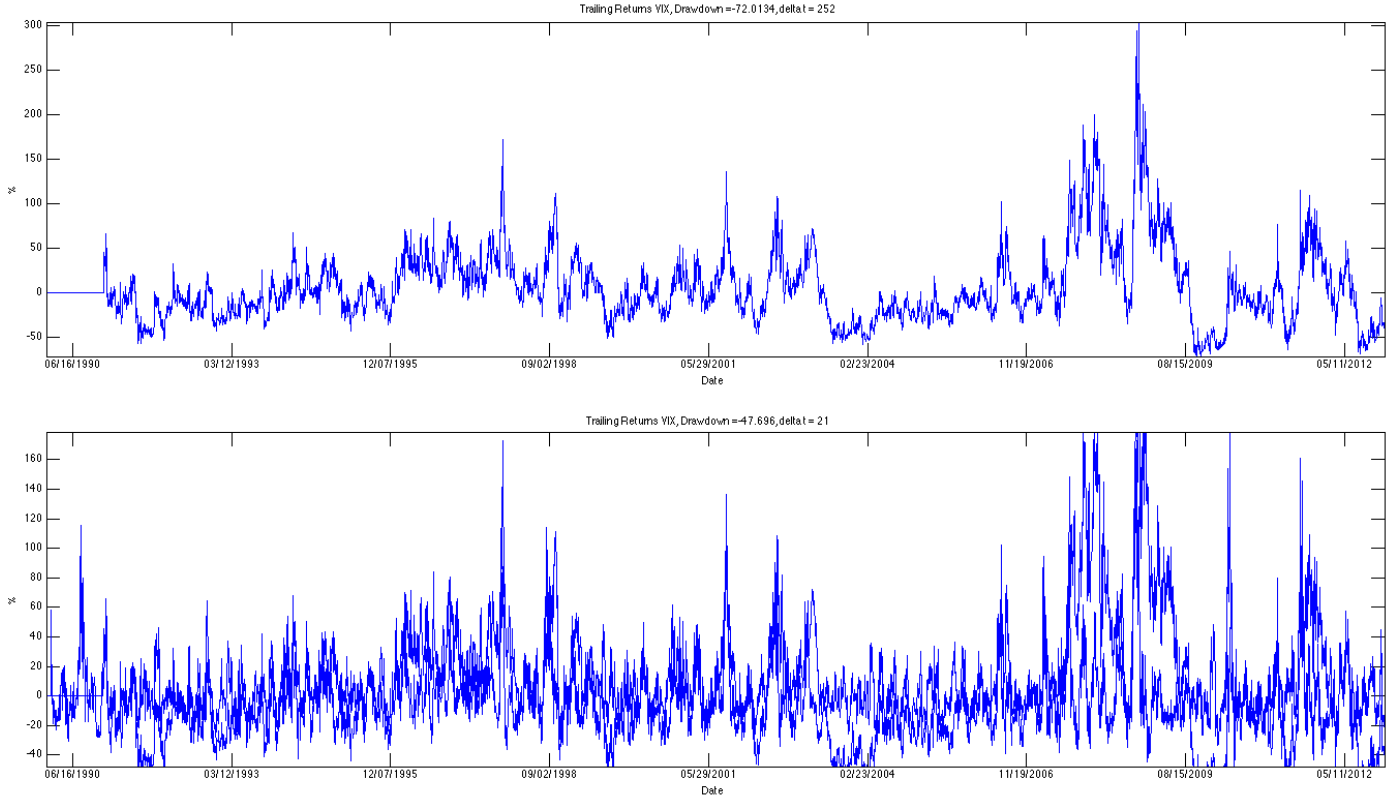

Trailing Returns IVV, Drawdown =-47.3748, deltat = 252
%
60
50
40
30
20
10
0
-10
-20
-30
-40
05/29/2001
10/11/2002
02/23/2004
07/07/2005
11/19/2006
04/02/2008
08/15/2009
12/28/2010
05/11/2012
Date

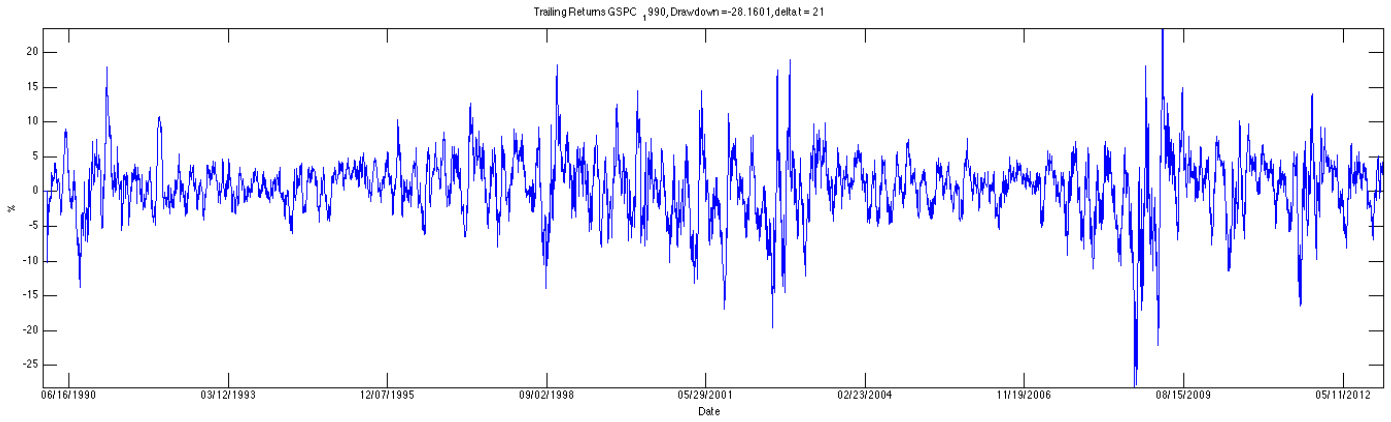

Trailing Returns SPY, Drawdown =-47.6514, deltat = 252
60
50
40
30
20
10
0
-10
-20
-30
-40
%
03/12/1993
12/07/1995
09/02/1998
05/29/2001
02/23/2004
11/19/2006
08/15/2009
05/11/2012
Date

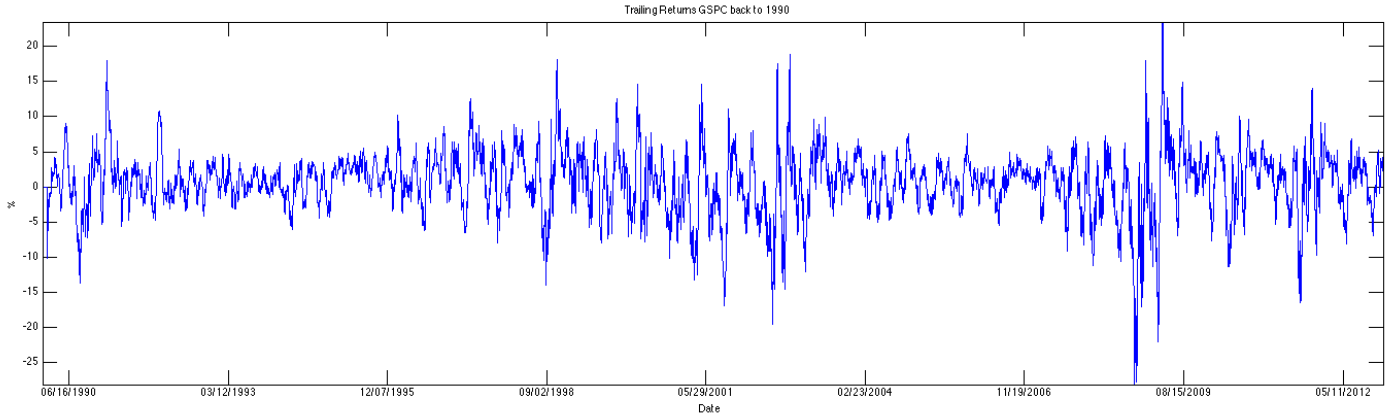

Trailing Returns SPY, Drawdown =-29.812, deltat = 21
20
15
10
5
0
-5
-10
-15
-20
-25
%
03/12/1993
12/07/1995
09/02/1998
05/29/2001
02/23/2004
11/19/2006
08/15/2009
05/11/2012
Date

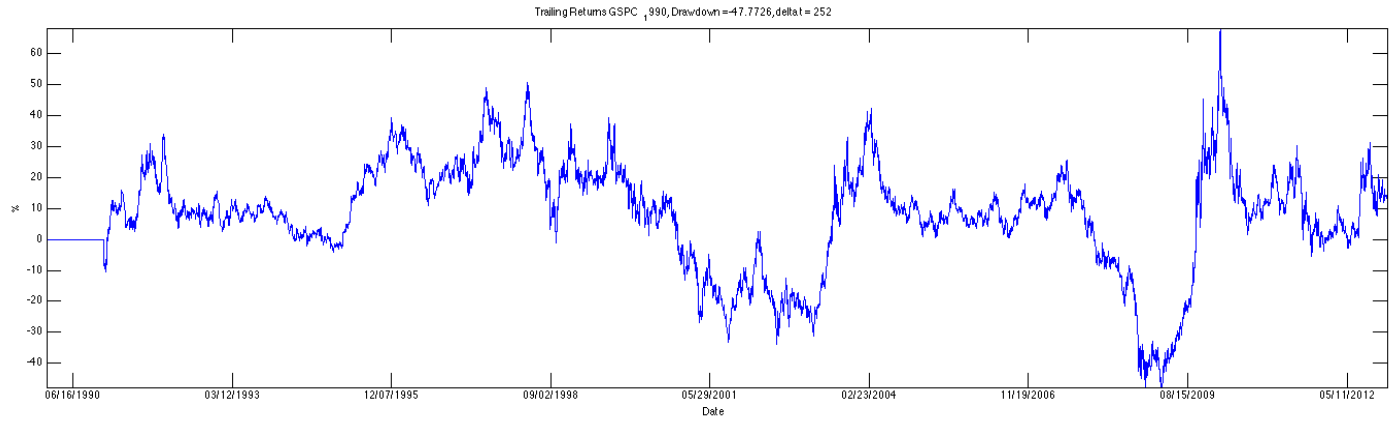

Trailing Returns SWISX, Drawdown =-55.1282, deltat = 252
60
40
20
0
-20
-40
%
05/29/2001
10/11/2002
02/23/2004
07/07/2005
11/19/2006
04/02/2008
08/15/2009
12/28/2010
05/11/2012
Date

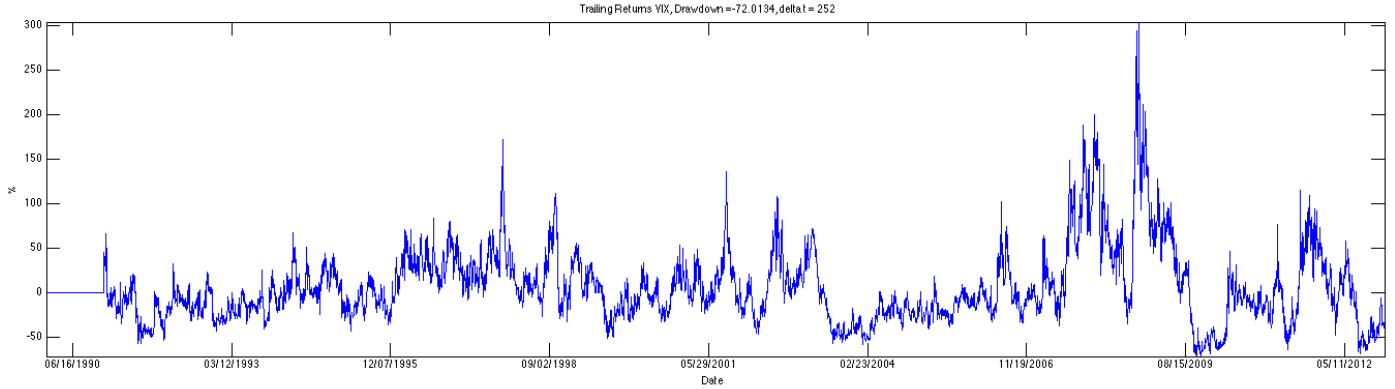

Trailing Returns SWISX, Drawdown =-33.2094, deltat = 21
20
15
10
5
0
-5
-10
-15
-20
-25
-30
%
05/29/2001
10/11/2002
02/23/2004
07/07/2005
11/19/2006
04/02/2008
08/15/2009
12/28/2010
05/11/2012
Date


Trailing Returns VIX, Drawdown =-72.0134, delta t = 252
300
250
200
150
100
50
0
-50
%
06/16/1990
03/12/1993
12/07/1995
09/02/1998
05/29/2001
02/23/2004
11/19/2006
08/15/2009
05/11/2012
Date
Trailing Returns VIX, Drawdown =-47.696, delta t = 21
160
140
120
100
80
60
40
20
0
-20
-40
%
06/16/1990
03/12/1993
12/07/1995
09/02/1998
05/29/2001
02/23/2004
11/19/2006
08/15/2009
05/11/2012
Date


Trailing Returns GSPC 1990, Drawdown=-28.1601, delta t = 21
%
20
15
10
5
0
-5
-10
-15
-20
-25
06/16/1990
03/12/1993
12/07/1995
09/02/1998
05/29/2001
02/23/2004
11/19/2006
08/15/2009
05/11/2012
Date


Trailing Returns GSPC back to 1990
%
20
15
10
5
0
-5
-10
-15
-20
-25
06/16/1990
03/12/1993
12/07/1995
09/02/1998
05/29/2001
02/23/2004
11/19/2006
08/15/2009
05/11/2012
Date





5. What do you notice when you compare the SPX plot with the VIX plot?

Spikes in the VIX are correlated with dips in the SPX