

SectorSurfer: An Initial Look at the New SectorSurfer Capabilities

AKA: The Ugly Truth About
Walk-Forward Testing

Introduction

Tonight's presentation comes in two parts:

- Part 1: The slides originally aimed for the September meeting
 - Presents initial investigation into what the various new “knobs” Scott provided can do for us
 - Holds up pretty well after 2 months... (maybe it didn't say that much...)
- Part 2: A better (??) attempt at sizing the impact of WF testing
 - Reaction to questions along the line of “How optimistic is the normal SectorSurfer for my funds??”
 - Approach inspired by work being done by JBN for other purposes (more later)

And away we go...

SectorSurfer Update

New Features, Applied to Existing Portfolio
(Original date 9/16/13)

What I Did..

- Start off reviewing what Scott states in his documentation
 - Picked a (biased??) set of funds
 - New option screen
 - Walk Forward (WF) options: ST vs. LT, Strong Filtering (default)
 - Reference & Spaghetti
 - SG, SG-AQR and no SG
 - Decision shift days
- He's a little optimistic, IMHO...
- Then we'll look at “Real World” folios

Chart-1. Standard SectorSurfer

SectorSurfer Strategy: Fidelity Super Safe

StormGuard
Status: 2.7%

13-Jun-2013 5:34:02 PM

My-Strategy #1

Options: SG-Std

Data: Investors FastTrack www.fasttrack.net

FUND NAME	SYMBOL	TREND
Fidelity Sel Brokerage Investment	FSLBX	
Fidelity Sel Automotive	FSAVX	
Fidelity Sel Multimedia	FBMPX	
Fidelity Leveraged Company Stock	FLVCX	
Fidelity Sel Industrial Equipment	FSCGX	
Fidelity SER:SmallCap Opportunity	FSOPX	
Fidelity Sel Retailing	FSRPX	
Fidelity Sel Consumer Finance	FSVLX	
Fidelity Blue Chip Growth	FBGRX	
Fidelity OTC	FOCPX	
Fidelity Sel Medical Delivery	FSHCX	
Fidelity AdvntSp Long-Term Treasu	FLBAX	

Unsubscribed Strategy: 90-day old trend data.



Avg.Return/Mo.

Was Born: 18-Jul-2012

Avg. Trades/Yr: 3.8

Last Signal: 31-May-2013

Trade Hold: Month End

RISK: Sep-1988 to Jun-2013

SHARPE RATIO: Excess return above a money market, divided by fund volatility.

S.Surfer 1.37

S&P 500 0.40

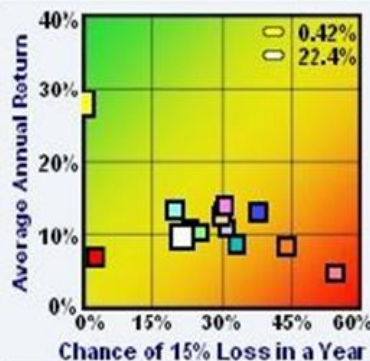
Worse << >> Better

10-Yr MAX DRAWDOWN: The maximum loss from the prior high during the period.

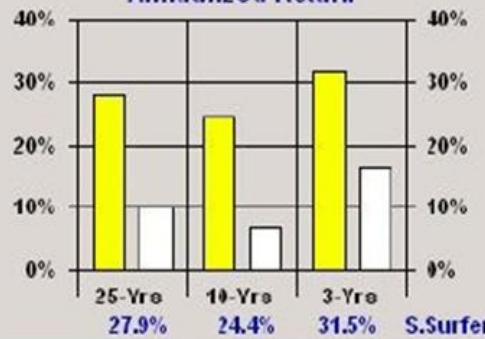
S.Surfer 17%

S&P 500 55%

R: Realized Better << >> Worse



Annualized Return



V:5.031 CB1.01 L218233
SG0 -0.6 CH0 OP0 DSJ co

Email Chart

3 - Year Chart

10-Year Chart

24.8 Years Max

Close Chart

Score: 108
Safety: 135
Alpha: 23%
Beta: 0.51

Charts are theoretical Strategy performance had trades been executed per trade signals provided. Copyright 2013 SumGrowth Strategies, LLC. SectorSurfer is a registered trademark.

SectorSurfer Options

Strategy #10 Information

Customize Strategy Name:

Fidelity Super Safe

?

Minimum Hold Time:

Trade Month End

?

Import/Export Strategy-ID:

635067441689530768-102-10-51275

?

Notes on Strategy:

?

Advanced Options Help - PDF

— Advanced Options —

Charting Options:

Flex Chart Span:

8.33

☒ Less Spaghetti

?

StormGuard Options:

☐ S.G.-Std. ☐ Disable ☒ S.G.-AQR

?

White Reference Index:

☐ Automatic ☐ S&P-500 ☐ AGG-Bond ☒ Average

?

Strategy Tuning Options:

☒ Use Forward-Walk
Progressive Tuning

BornOn Date

12/31/2003

?

More Algorithm Options:

☐ Stronger
Filtering

☒ Bias Toward
Short Trends

Decision

-4

?

Restore Standard Options

Cancel

Save ▶

Chart-2. Options: FWPT, ST, Ref=Average

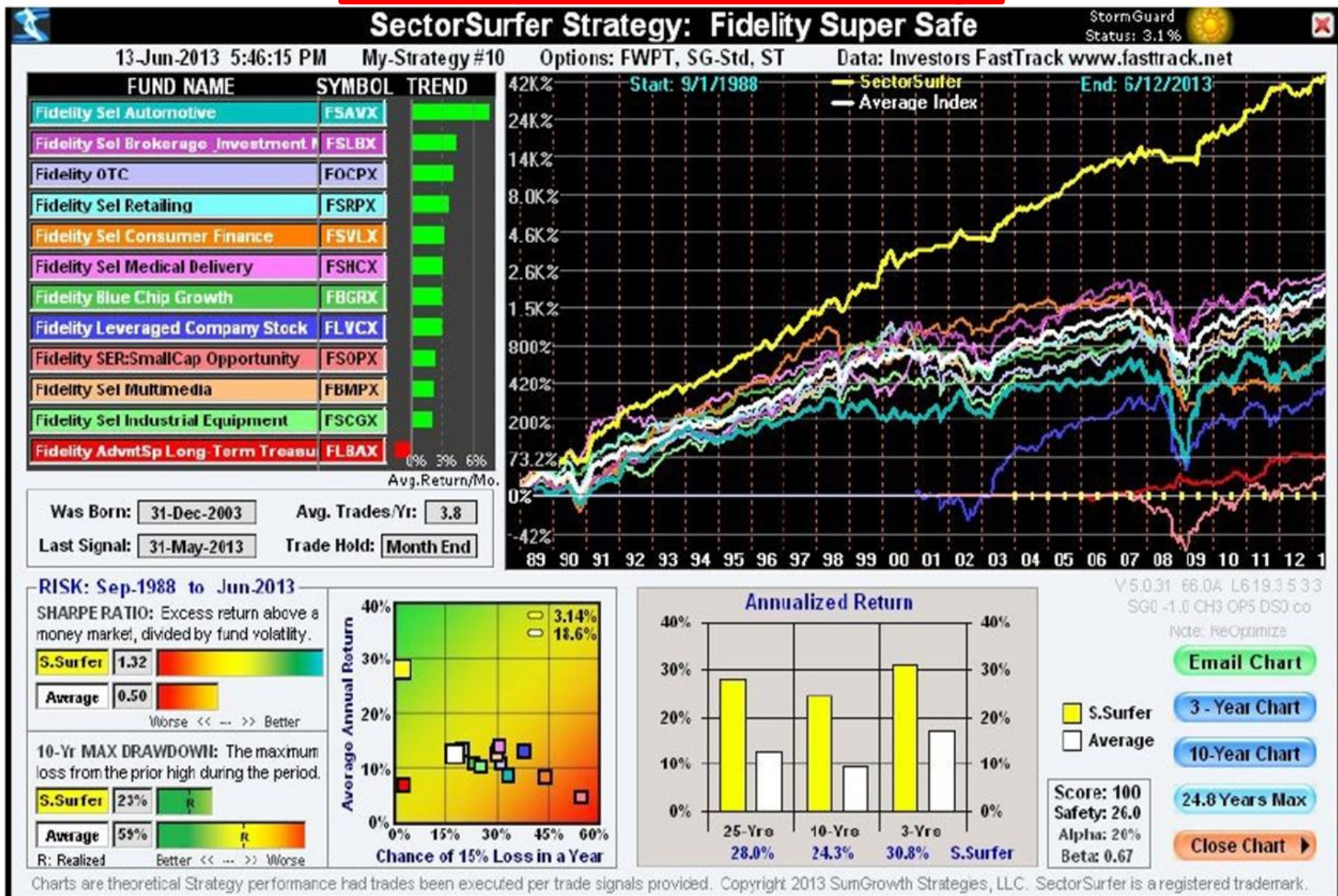
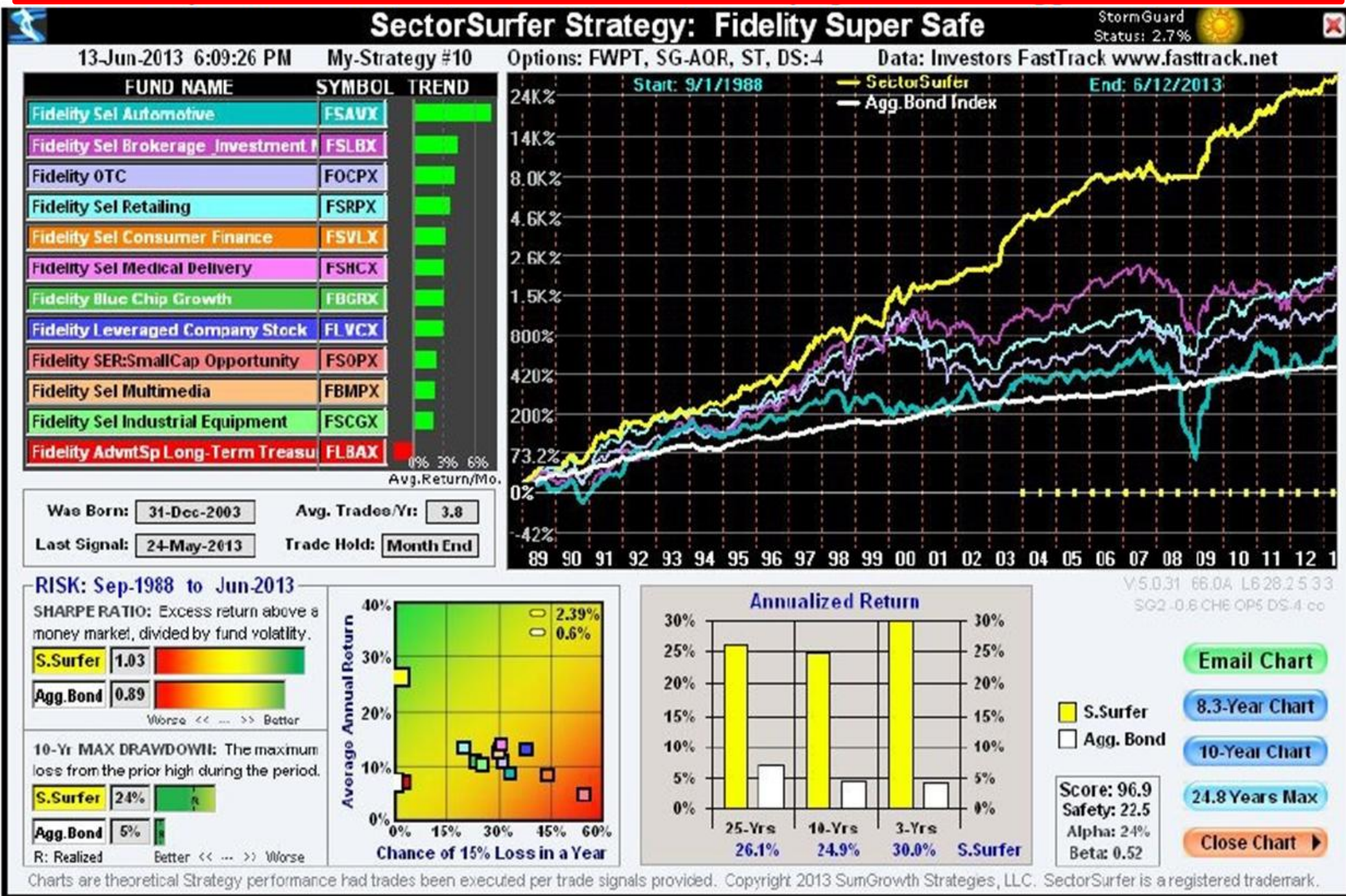


Chart-4. Options: FWPT, ST, SG-AQR, DS-4, Less Spaghetti, Ref=AggBond, Flex= 8.33



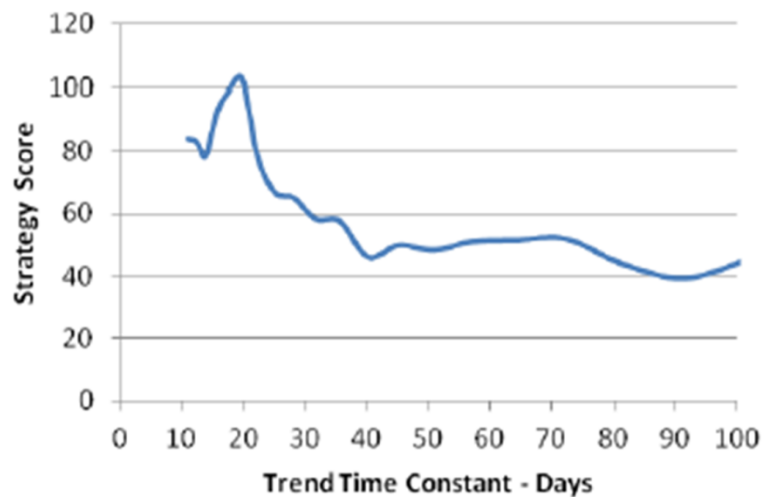
History-1. Options: FWPT, BornOn 12/31/2003, SG-AQR, DS-4

Summary-66.0A.csv [Read-Only] - Microsoft Excel

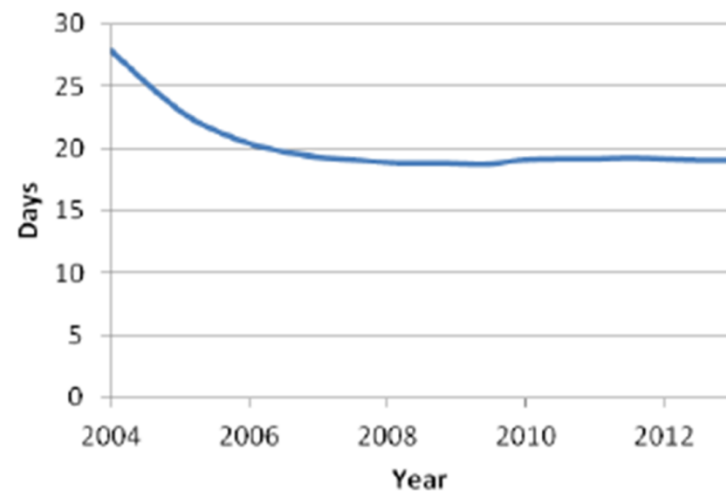
	A	B	C	D	E	F	G	H	I	J	K	L	M	N
142	29-Jan-91	SCASH	FSHCX	15	7.60%	4.10%	14144	17078		6.70%	0.00%	8.60%	0.00%	0.00%
143	14-Jan-91	FSHCX	SCASH	61	-1.90%	5.40%	13142	16404		2.50%	0.00%	8.60%	0.00%	0.00%
144	14-Nov-90	SCASH	FSHCX	57	1.20%	2.80%	13395	15568		2.50%	0.00%	8.60%	0.00%	0.00%
145	18-Sep-90	FSHCX	SCASH	84	-8.80%	-6.60%	13235	15145		-0.30%	0.00%	8.60%	0.00%	0.00%
146	26-Jun-90	FSCGX	FSHCX	91	4.00%	5.50%	14507	16224		-0.30%	0.00%	8.60%	0.00%	0.00%
147	27-Mar-90	FBGRX	FSCGX	60	5.40%	8.60%	13946	15385		-0.30%	0.00%	8.60%	0.00%	0.00%
148	26-Jan-90	FSHCX	FBGRX	184	-2.00%	-2.40%	13234	14170		-0.30%	0.00%	0.00%	0.00%	0.00%
149	26-Jul-89	FBMPX	FSHCX	211	24.60%	43.20%	13506	14522		-0.30%	0.00%	0.00%	0.00%	0.00%
150	27-Dec-88	FSHCX	FBMPX	97	3.40%	1.70%	10838	10144		-0.30%	0.00%	0.00%	0.00%	0.00%
151	21-Sep-88	SCASH	FSHCX	20	4.80%	-0.30%	10477	9974		-0.30%	0.00%	0.00%	0.00%	0.00%
152	1 Sep 88		SCASH	0	0.00%	0.00%	10000	10000		0.00%	0.00%	0.00%	0.00%	0.00%
153														
154														
155	Forward-Walk Progressive Tuning final profile as performanceScore vs. trendDays (averaging period).													
156	Days	11	12.4	13.9	15.7	17.6	19.8	22.3	25.1	28.2	31.8	35.7	40.2	45.2
157	Score	68.5	76	75	79.5	95.2	91.3	86.8	73.9	66.9	66	57.5	53.8	57.1
158														
159	Forward-Walk Progressive Tuning sequential history as tuneDate vs. trendDays.													
160	Date	12/31/2003	7/27/2004	1/26/2005	7/26/2005	1/26/2006	7/26/2006	1/26/2007	7/26/2007	2/26/2008	8/26/2008	3/26/2009	9/25/2009	3/26/2010
161	Days	28.2	28.2	22.8	19.3	16.9	15.4	14.3	13.6	14.3	15.3	15.9	16.3	16.8
162														

T

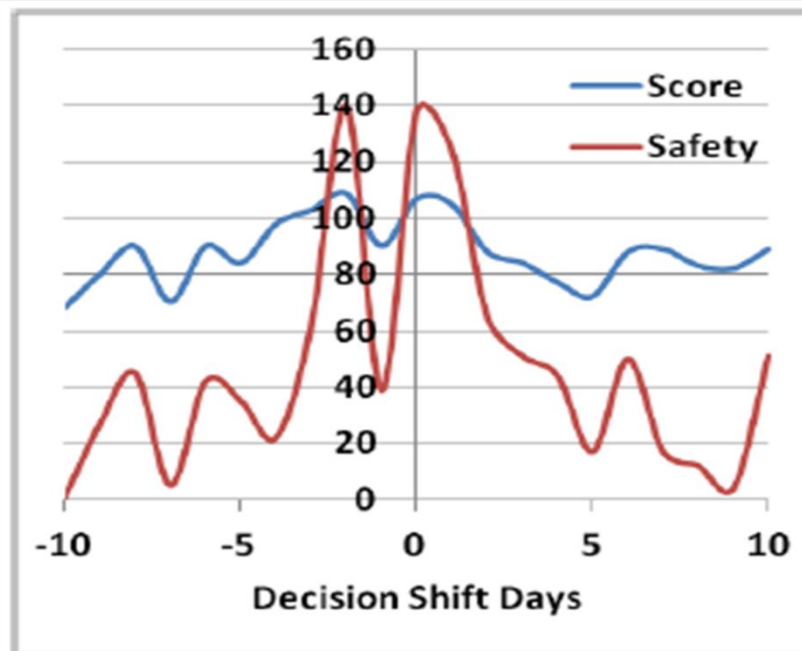
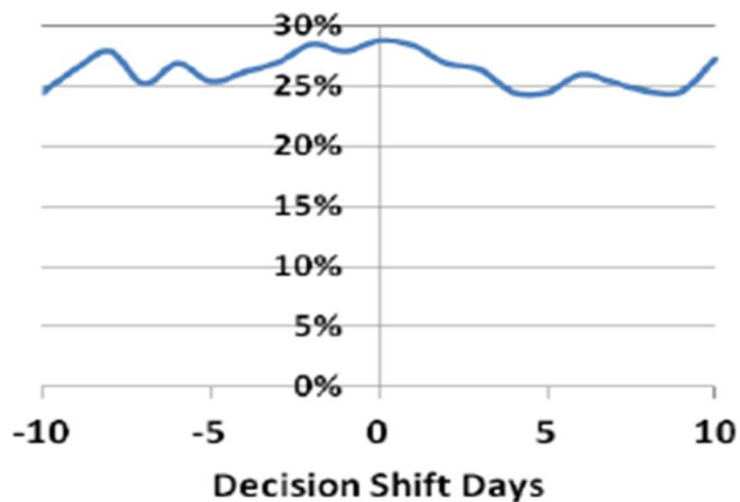
Strategy Tuning Profile



Trend Time Constant



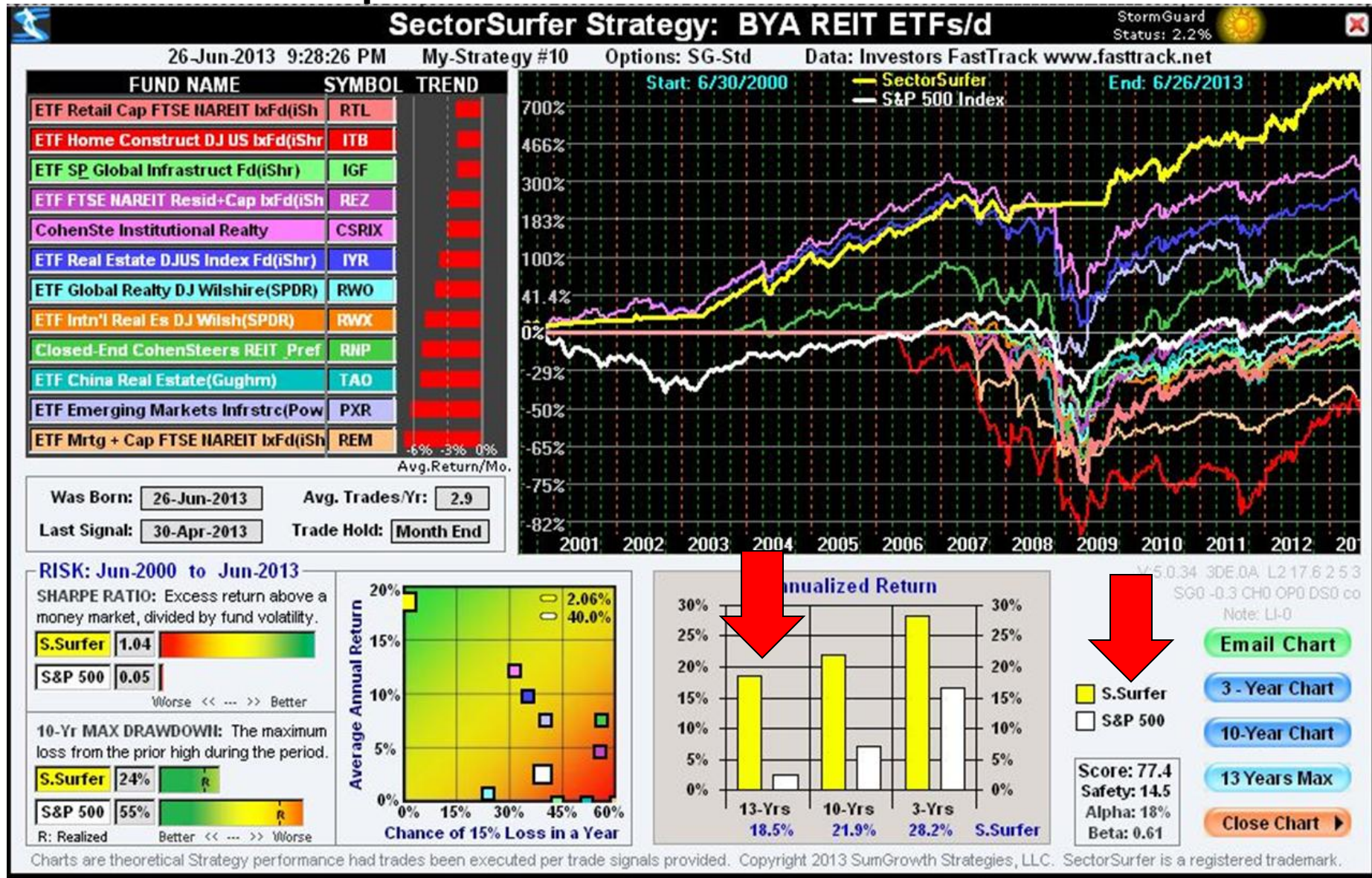
Average Return



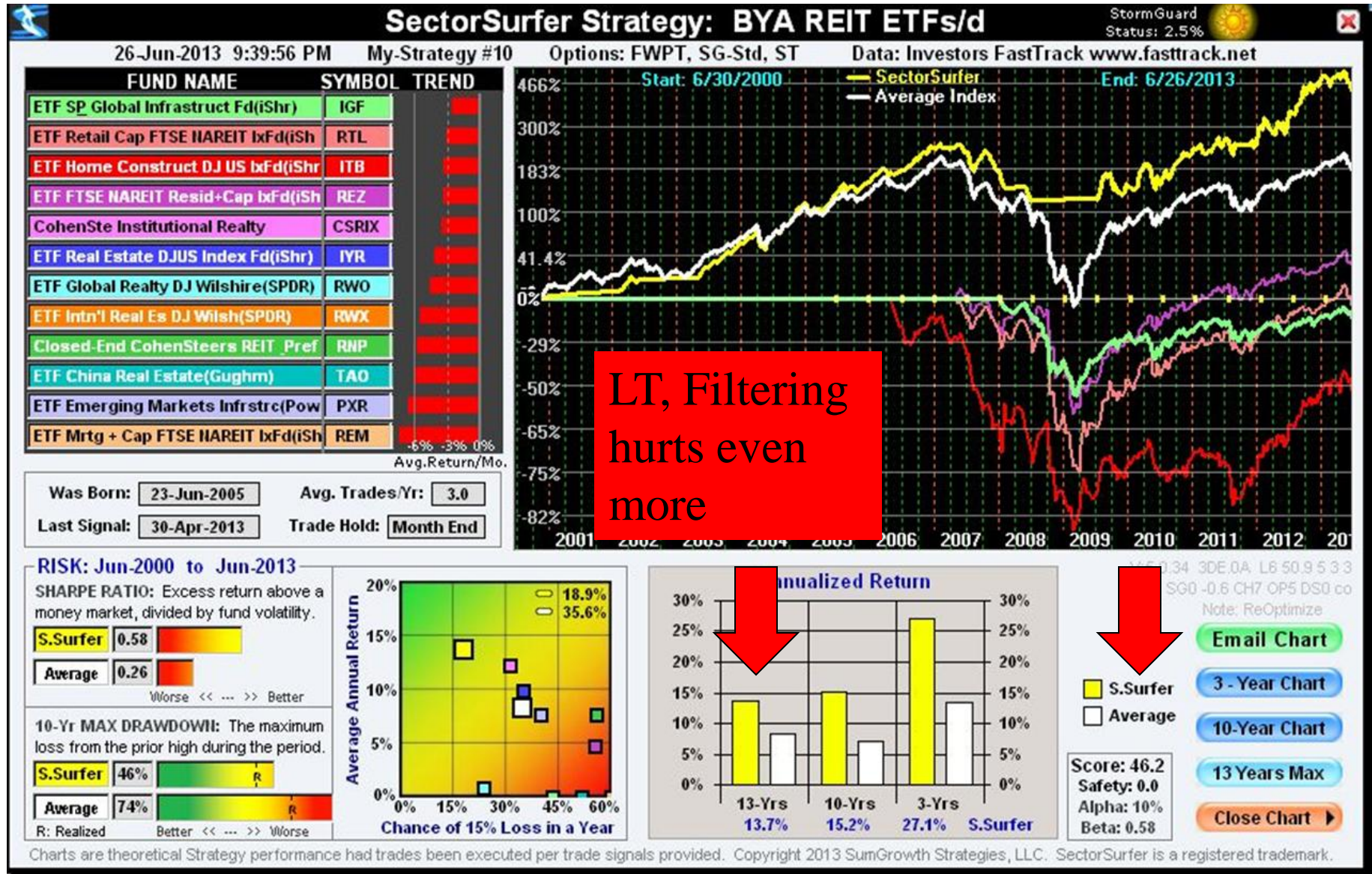
Real World Folios

- So that is how it is supposed to work – what happens with real-world folios??
- To investigate this I tested a few simple variations of my folios
 - Folios: REIT ETFs, Faber10 ETFs, the 10 S&P Sector ETFs
 - Variations: Standard, Standard + SG-AQR
 - (Won't spend much time here since JBN has done good work here)
 - Variations: FWPT w/Strong Filtering (SF), FWPT w/short vs. long term time constant bias
- Following slides show test results from SectorSurfer
- Last slide summarizes test results, makes preliminary recommendations

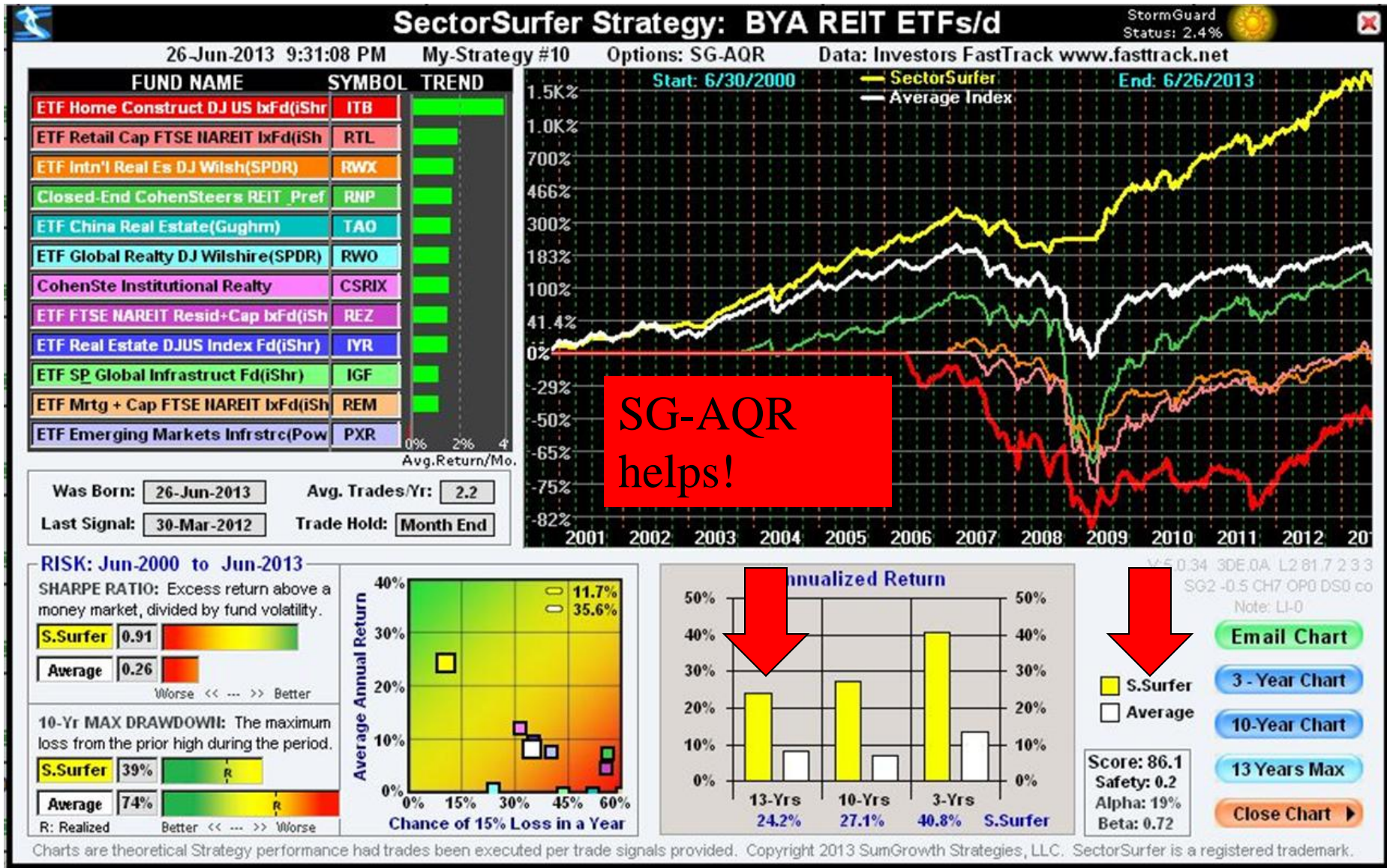
Options: Std Sector Surfer



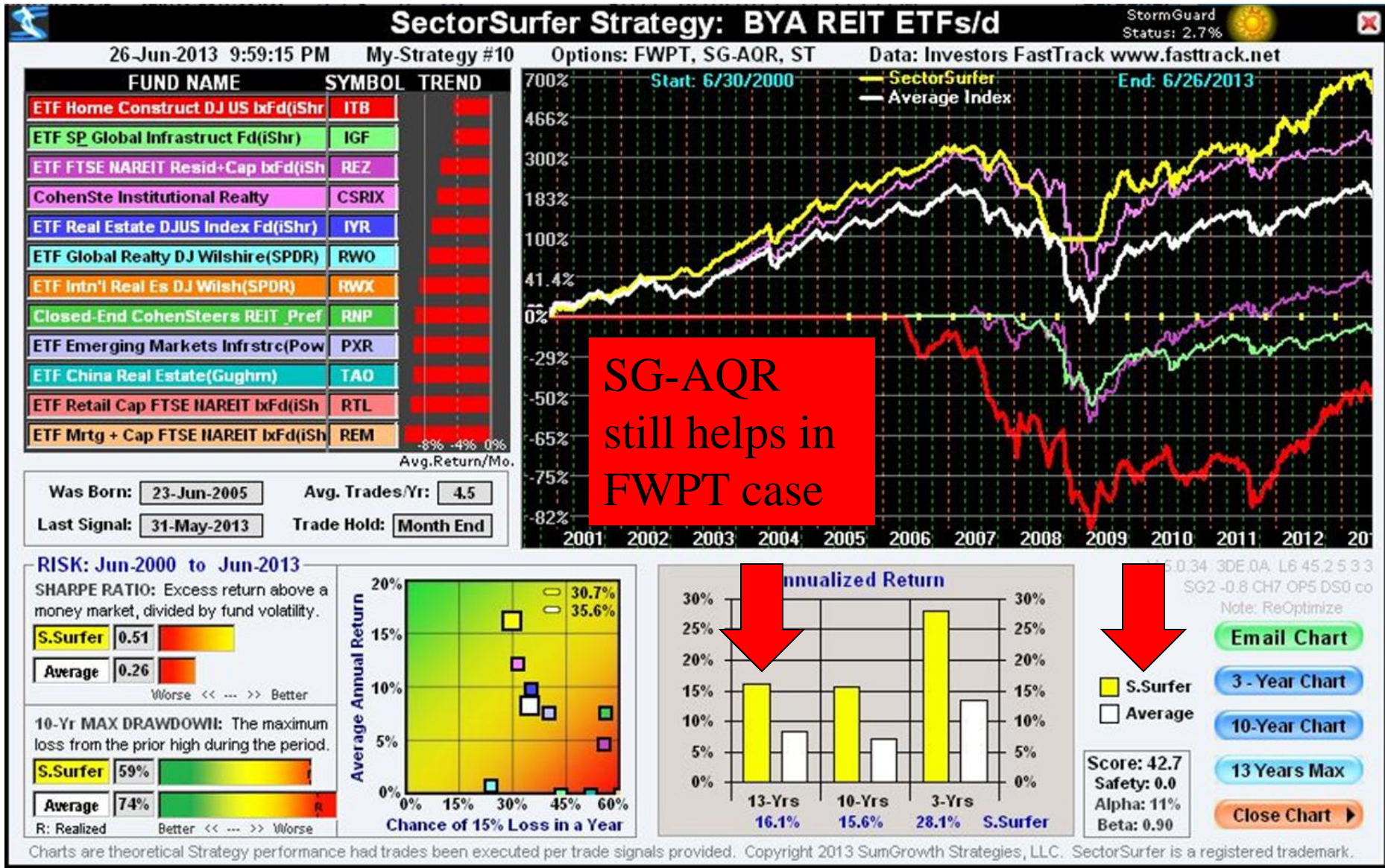
Options: Less Spaghetti, FWPT, ST, Ref: Avg



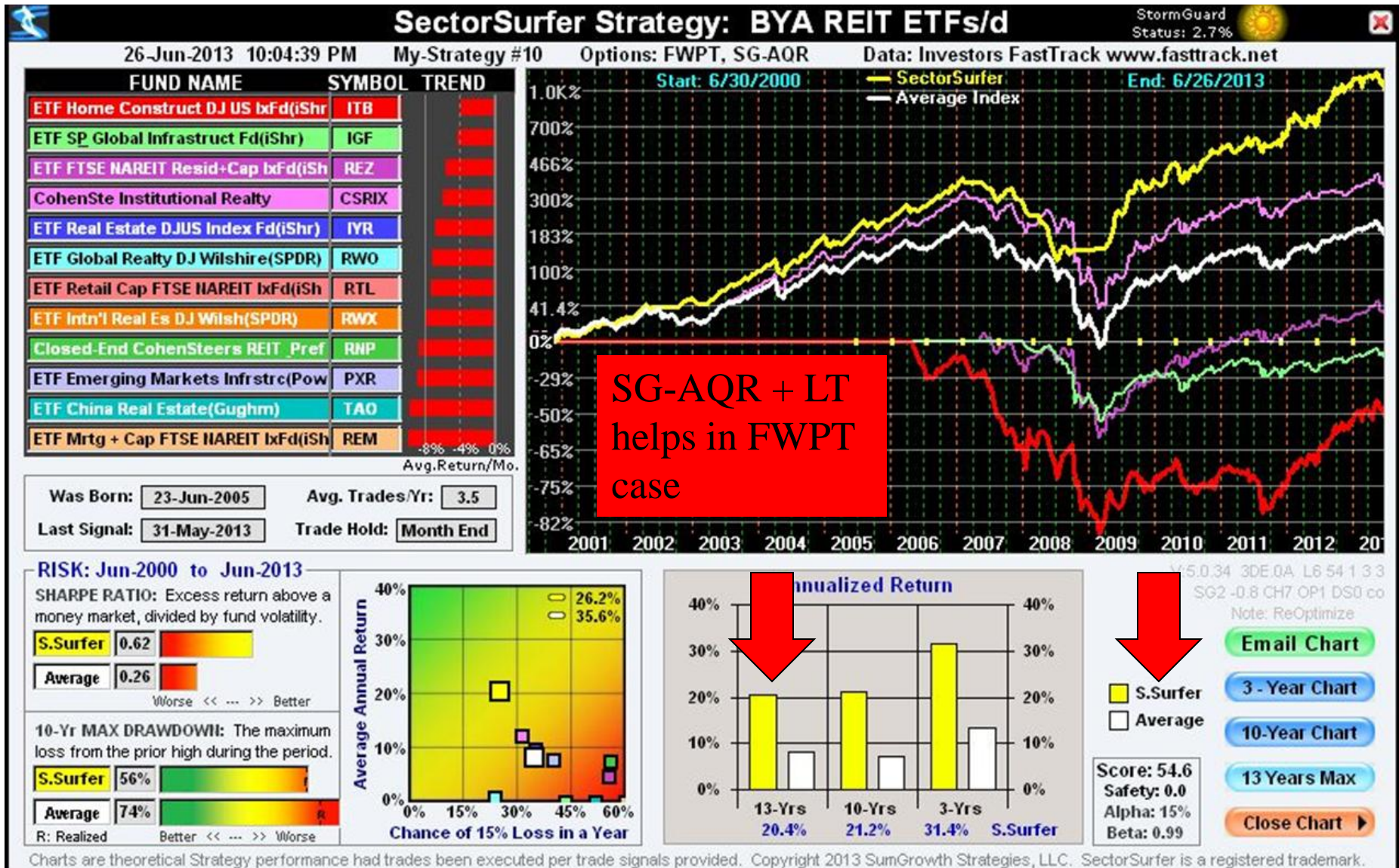
Options: Less Spaghetti, **SG-AQR** Ref: Avg



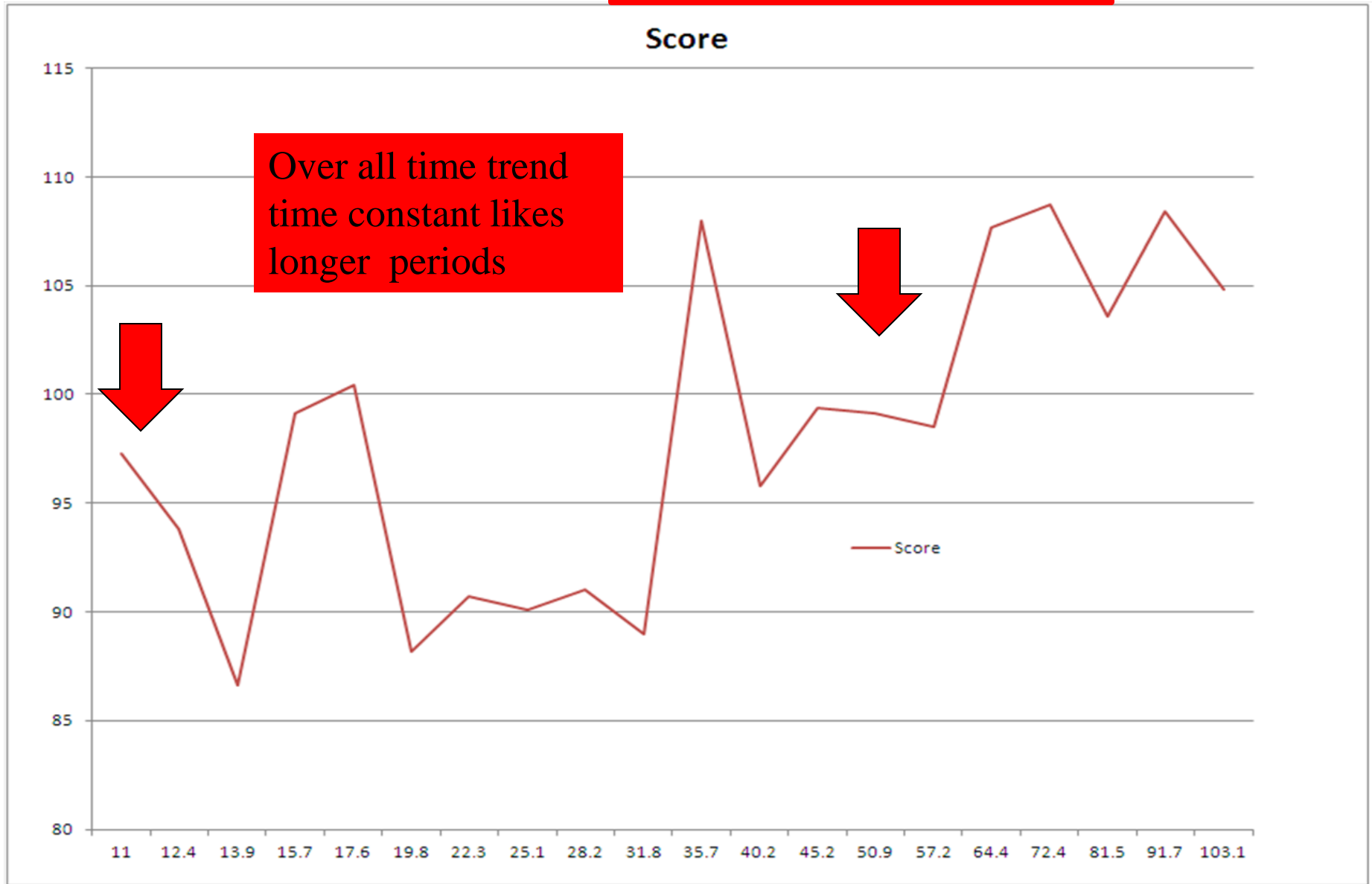
Options: Less Spaghetti, SG-AQR, FWPT, ST, Ref: Avg



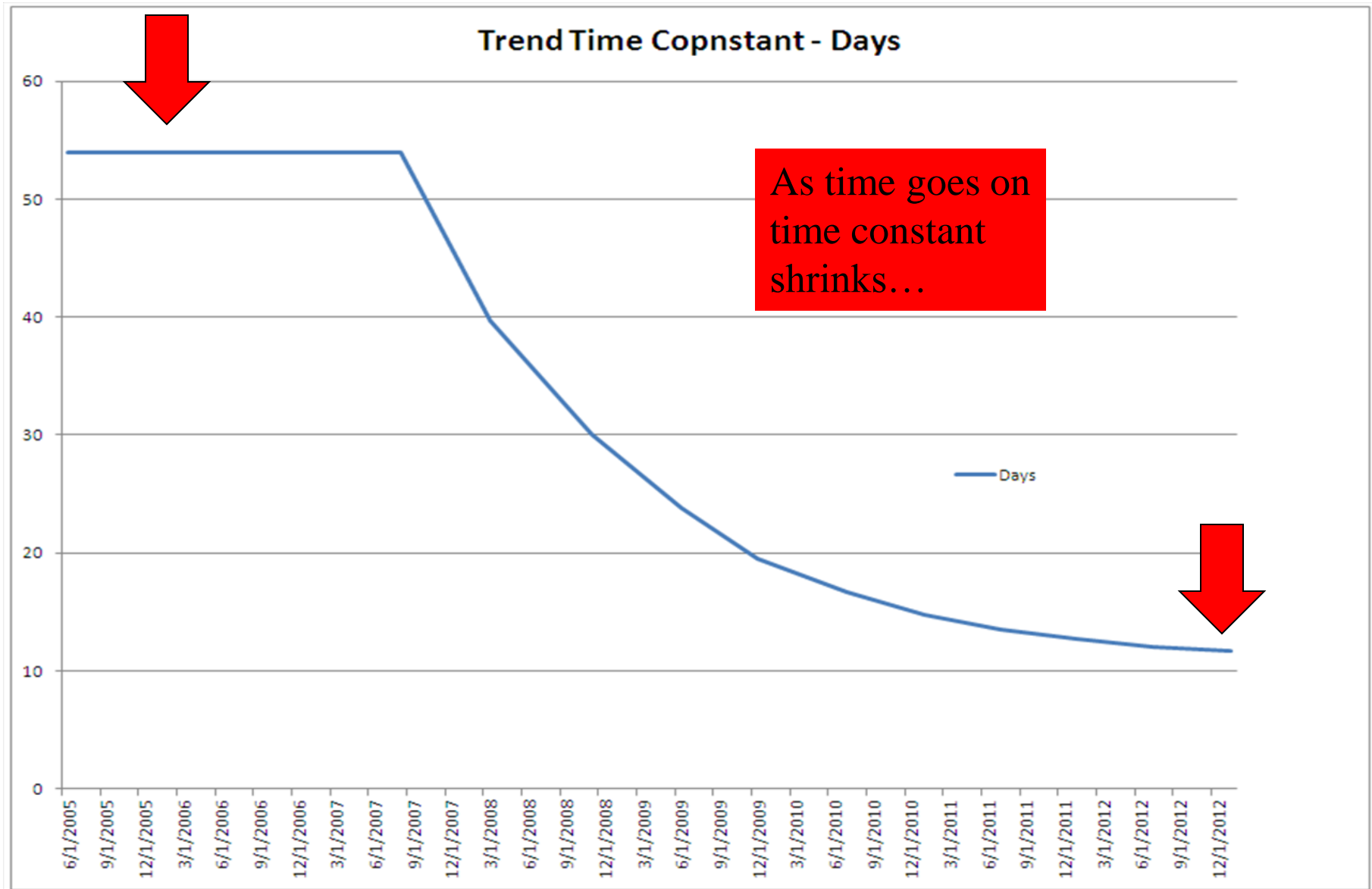
Options: Less Spaghetti, SG-AQR, FWPT, LT, Ref: Avg



Options: Less Spaghetti, **SG-AQR, FWPT, LT**, Ref: Avg



Options: Less Spaghetti, **SG-AQR, FWPT, LT**, Ref: Avg



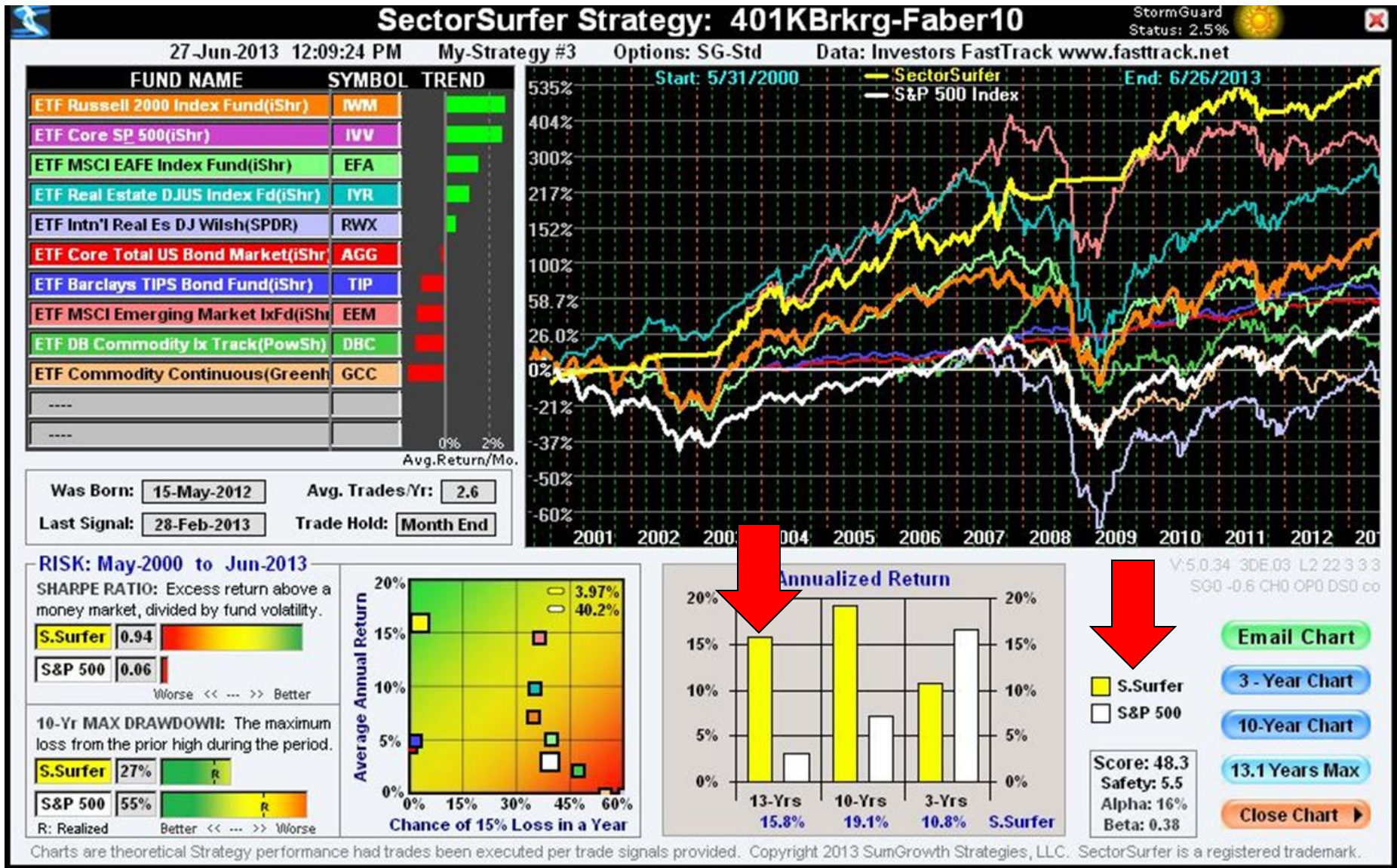
11/6/13

SectorSurfer User Group

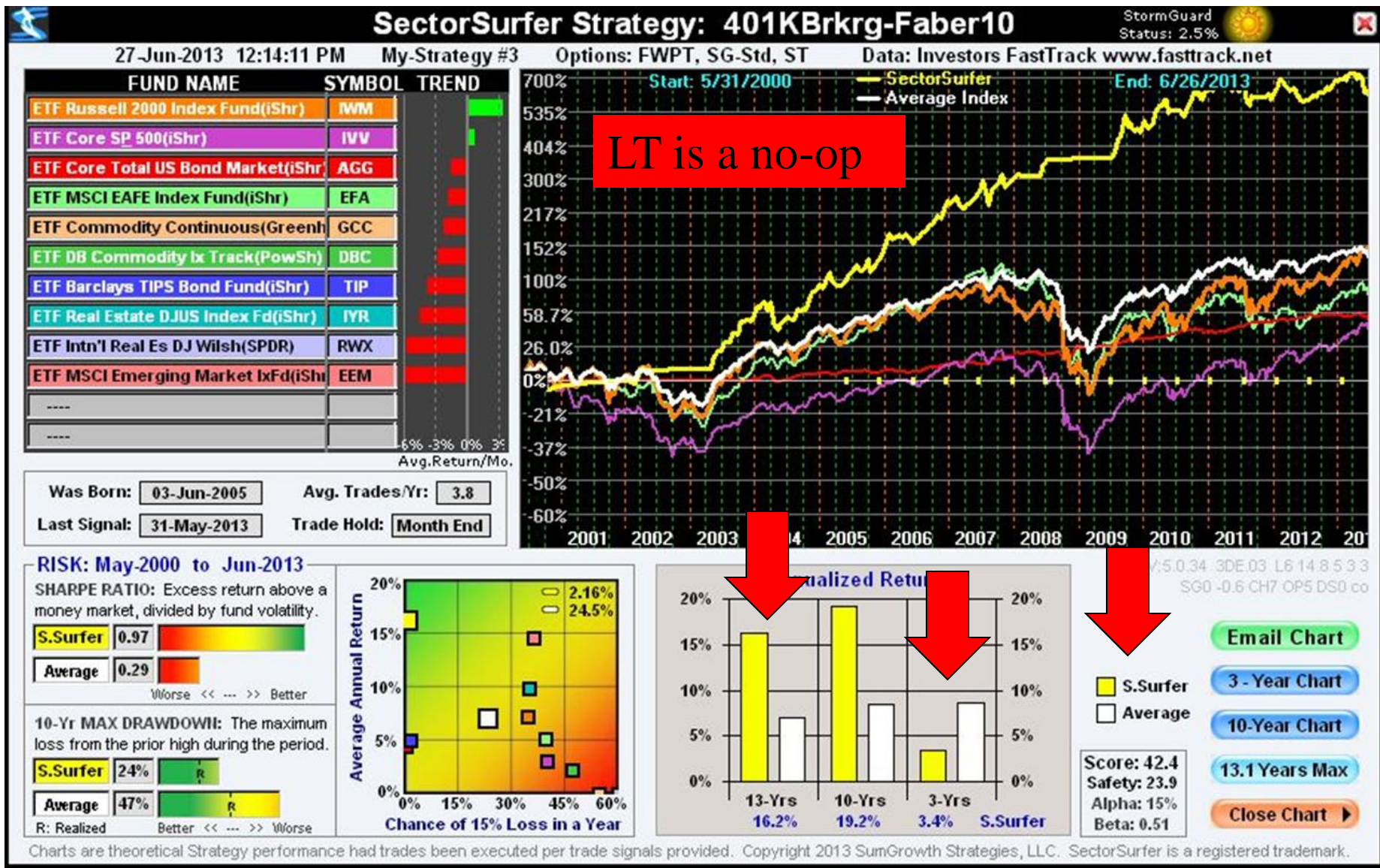
18

Now for the Faber 10 Assets...

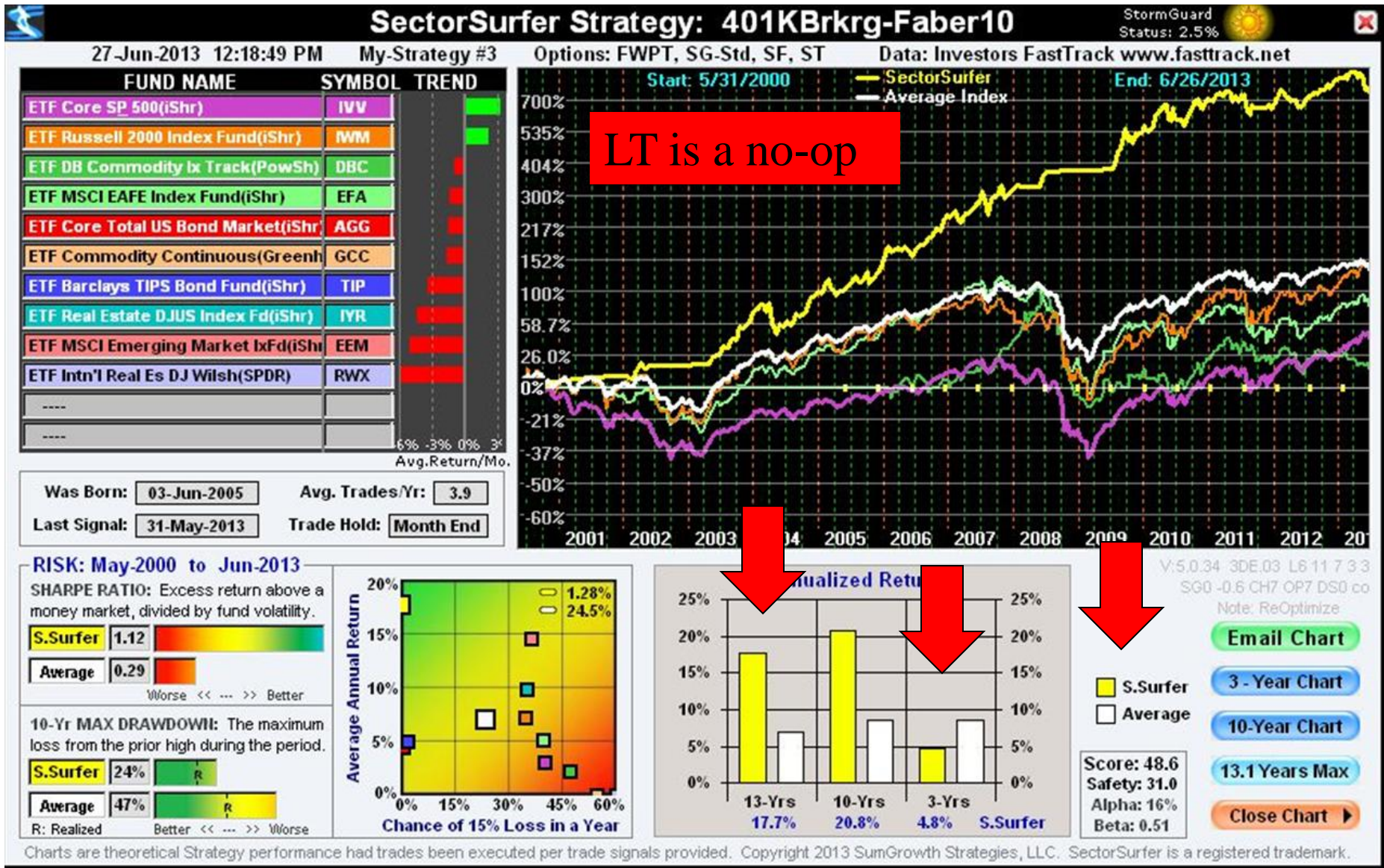
Options: Faber10, Std Sector Surfer



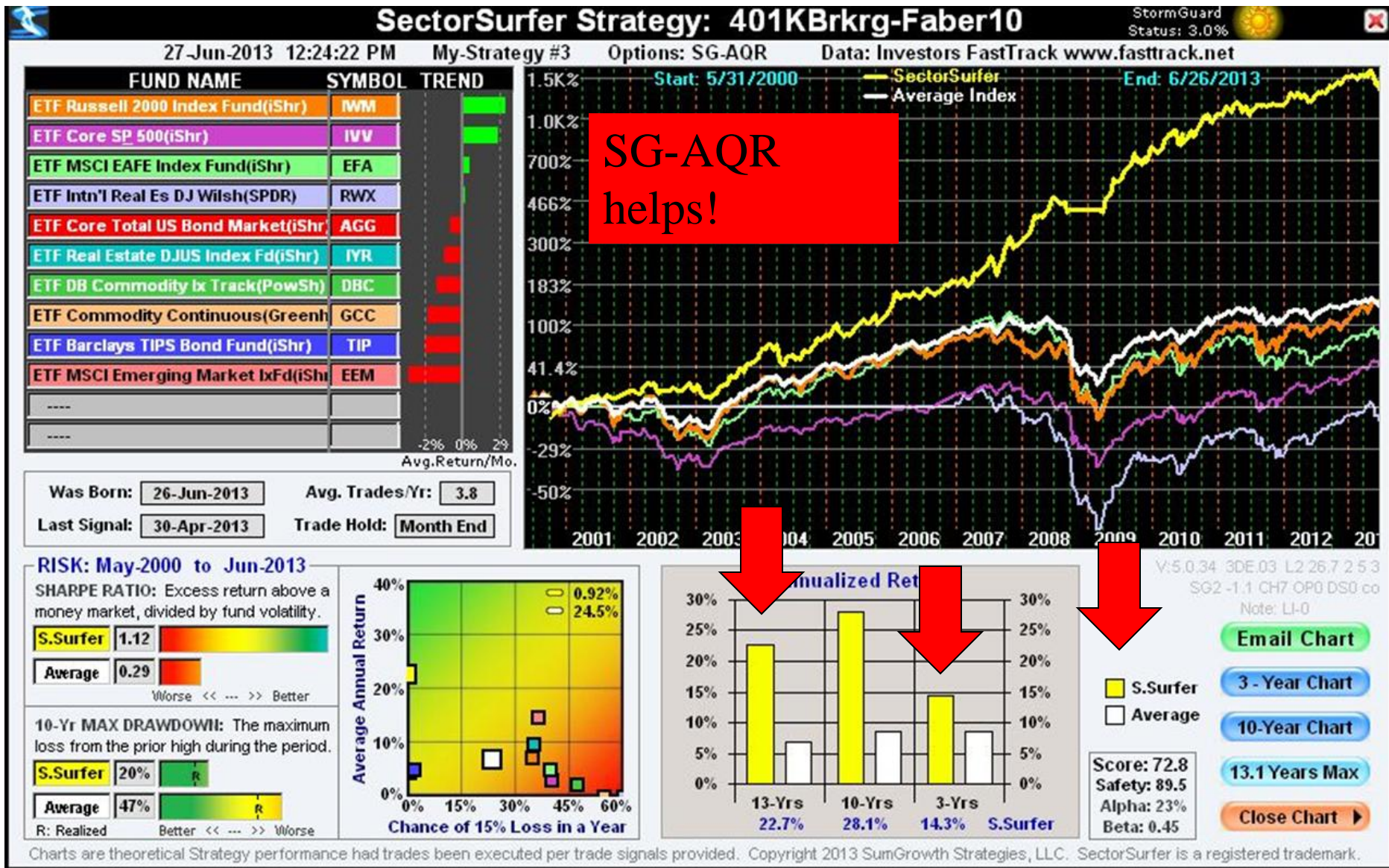
Options: Faber10, Less Spaghetti, **FWPT**, ST, Ref: Avg



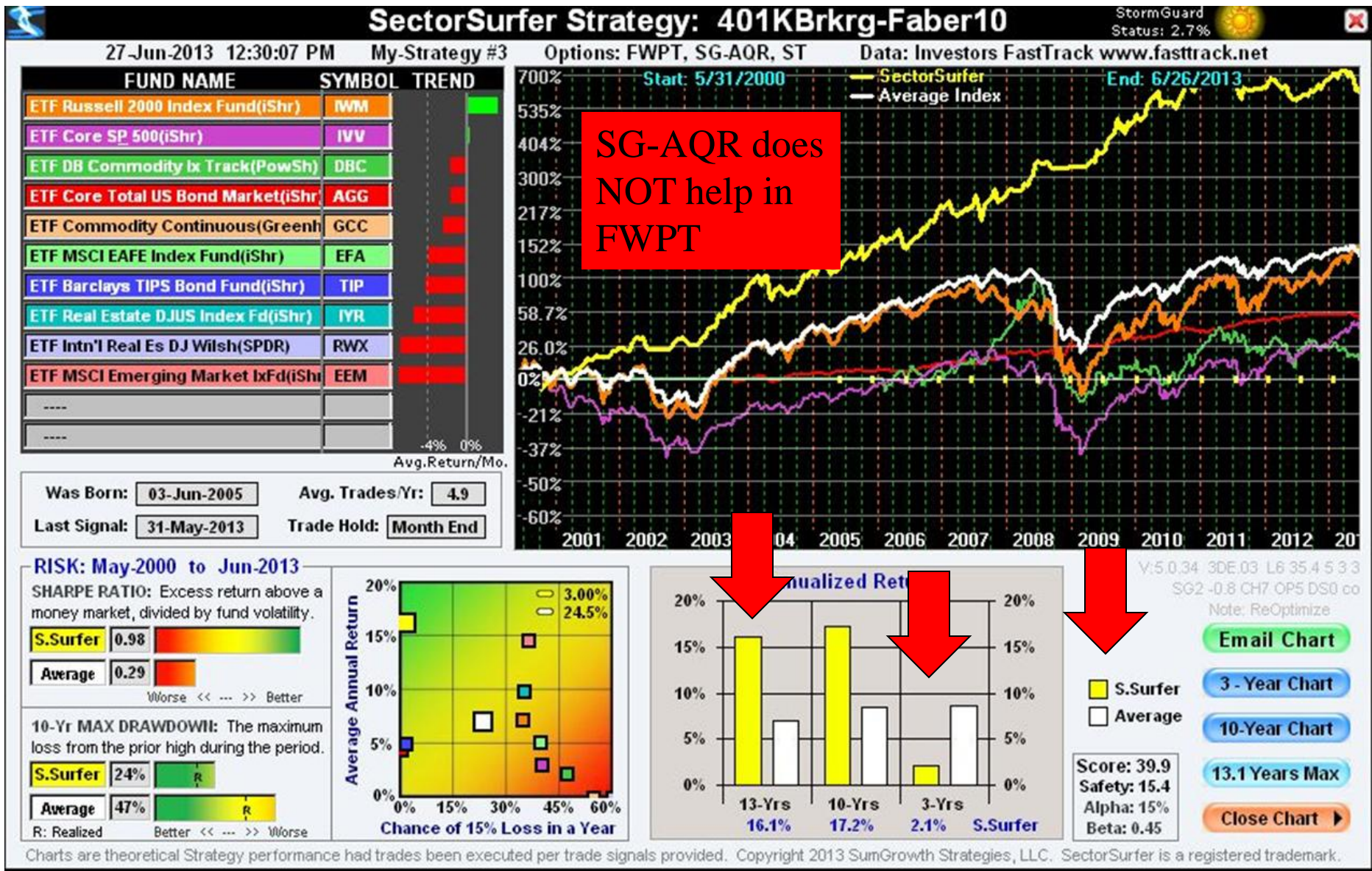
Options: Faber10, Less Spaghetti, **FWPT, SF, ST**, Ref: Avg



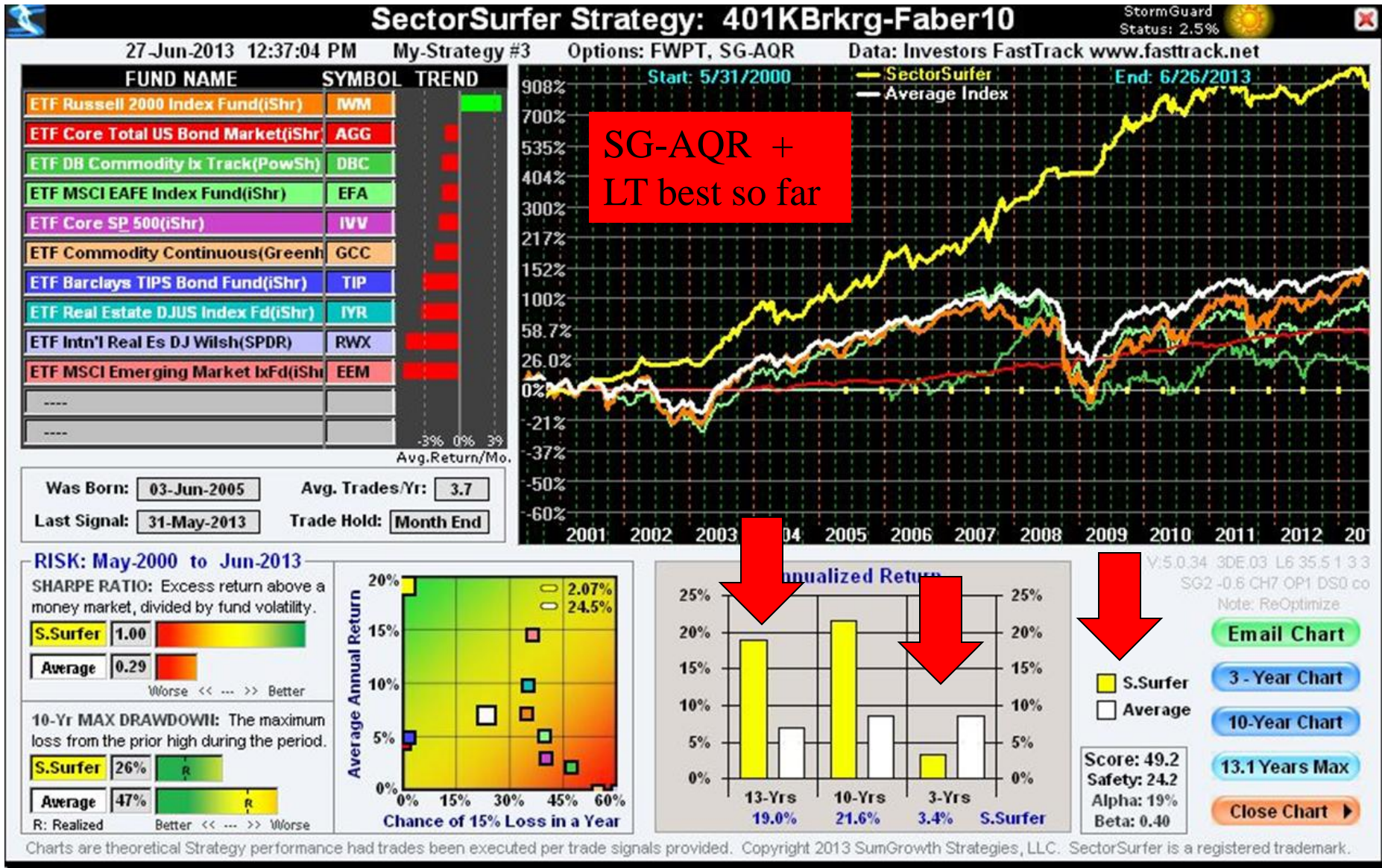
Options: Faber10, Less Spaghetti, **SG-AQR**, Ref: Avg



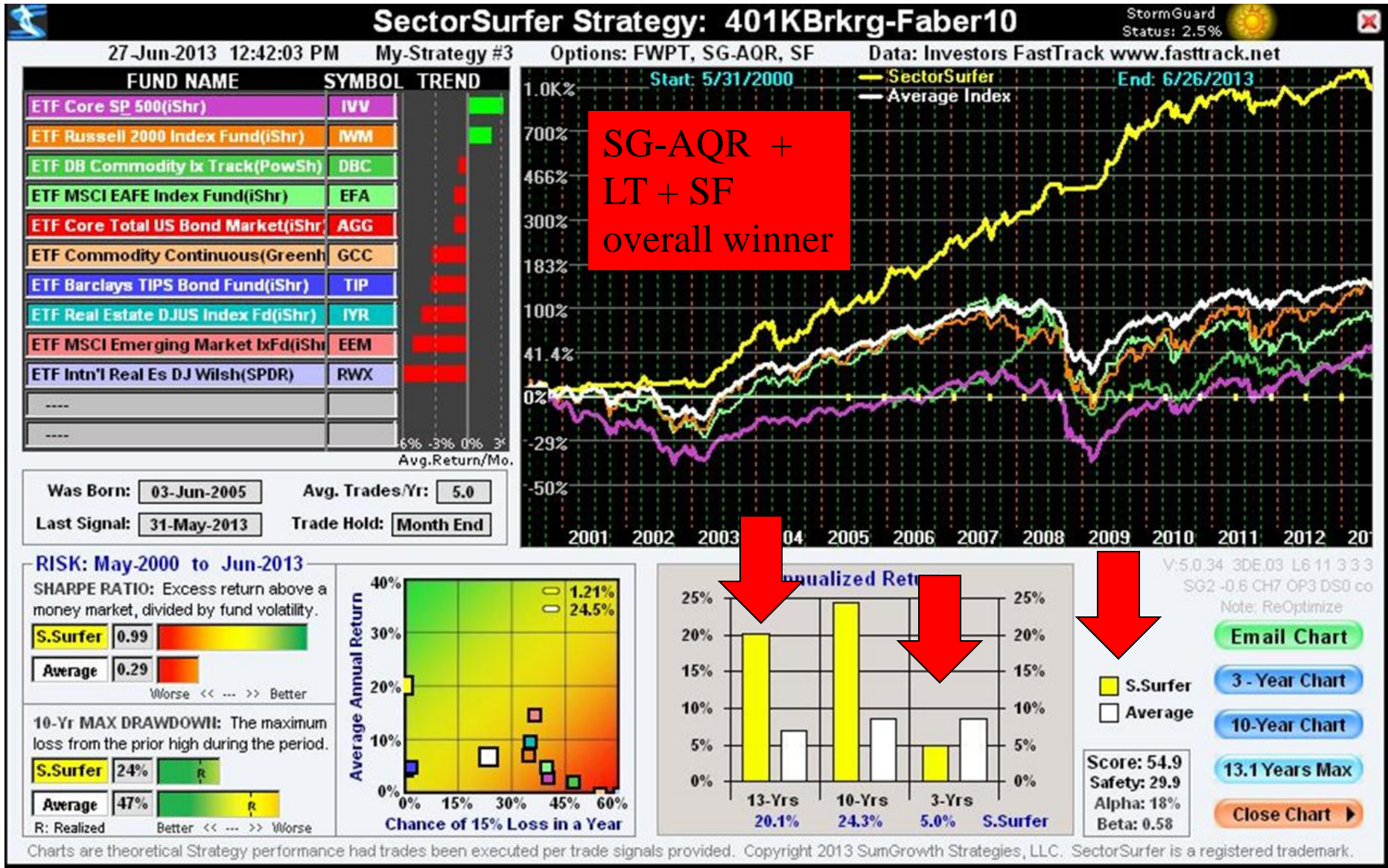
Options: Faber10, Less Spaghetti, **SG-AQR, FWPT, ST**, Ref: Avg



Options: Faber10, Less Spaghetti, **SG-AQR, FWPT, LT**, Ref: Avg

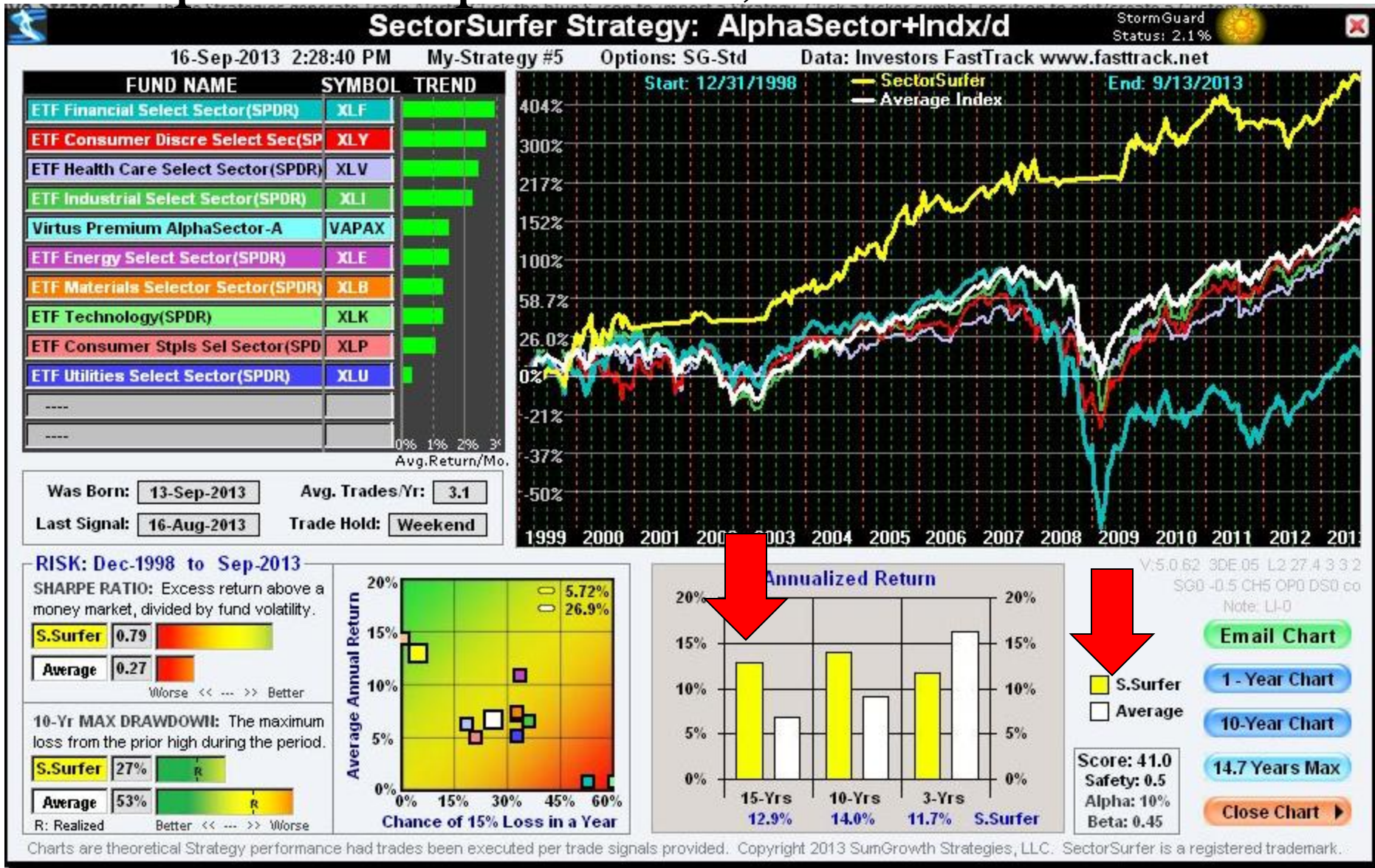


Options: Faber10, Less Spaghetti, **SG-AQR, FWPT, LT, SF** Ref: Avg

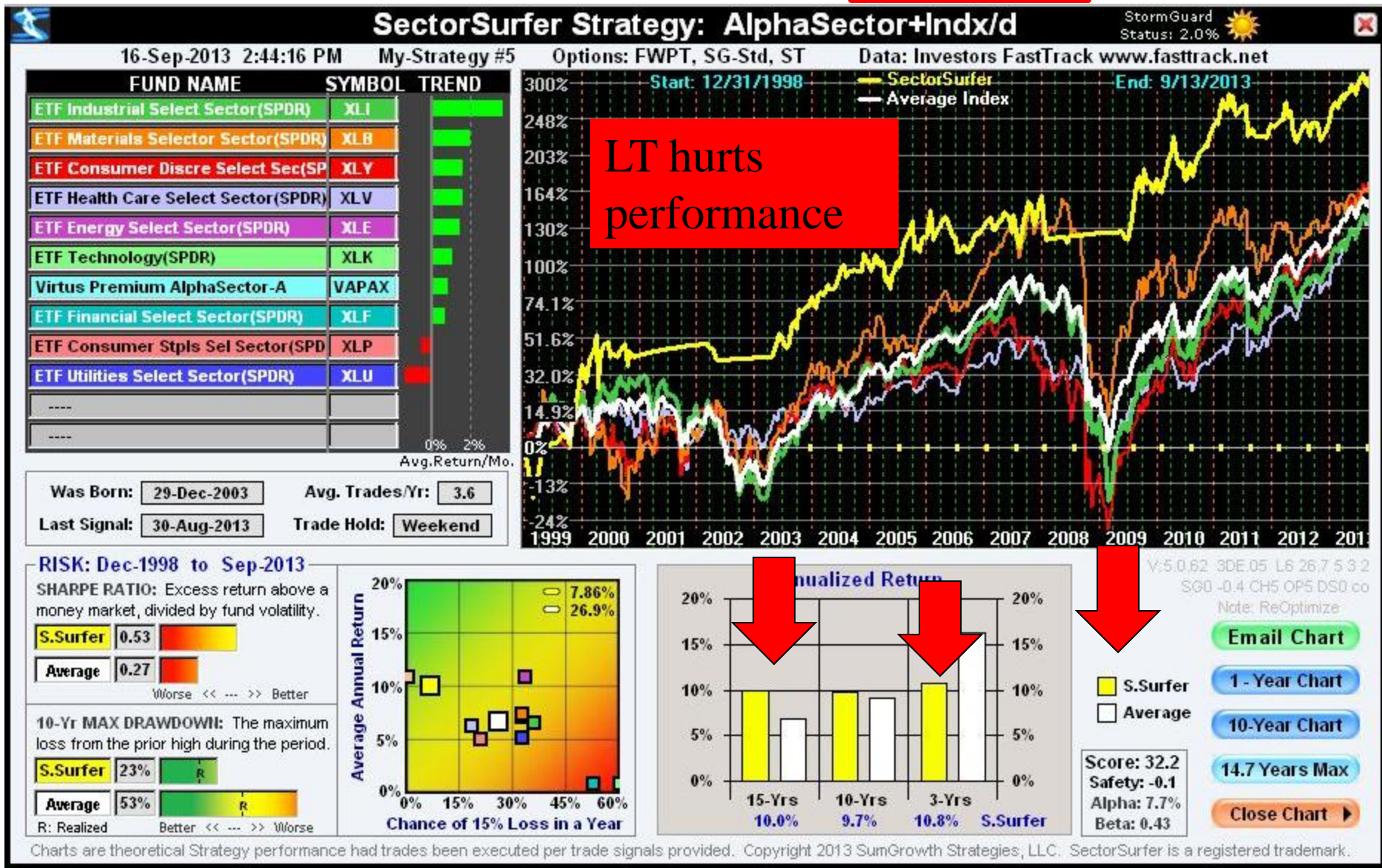


Now for the Classic Sector Funds...

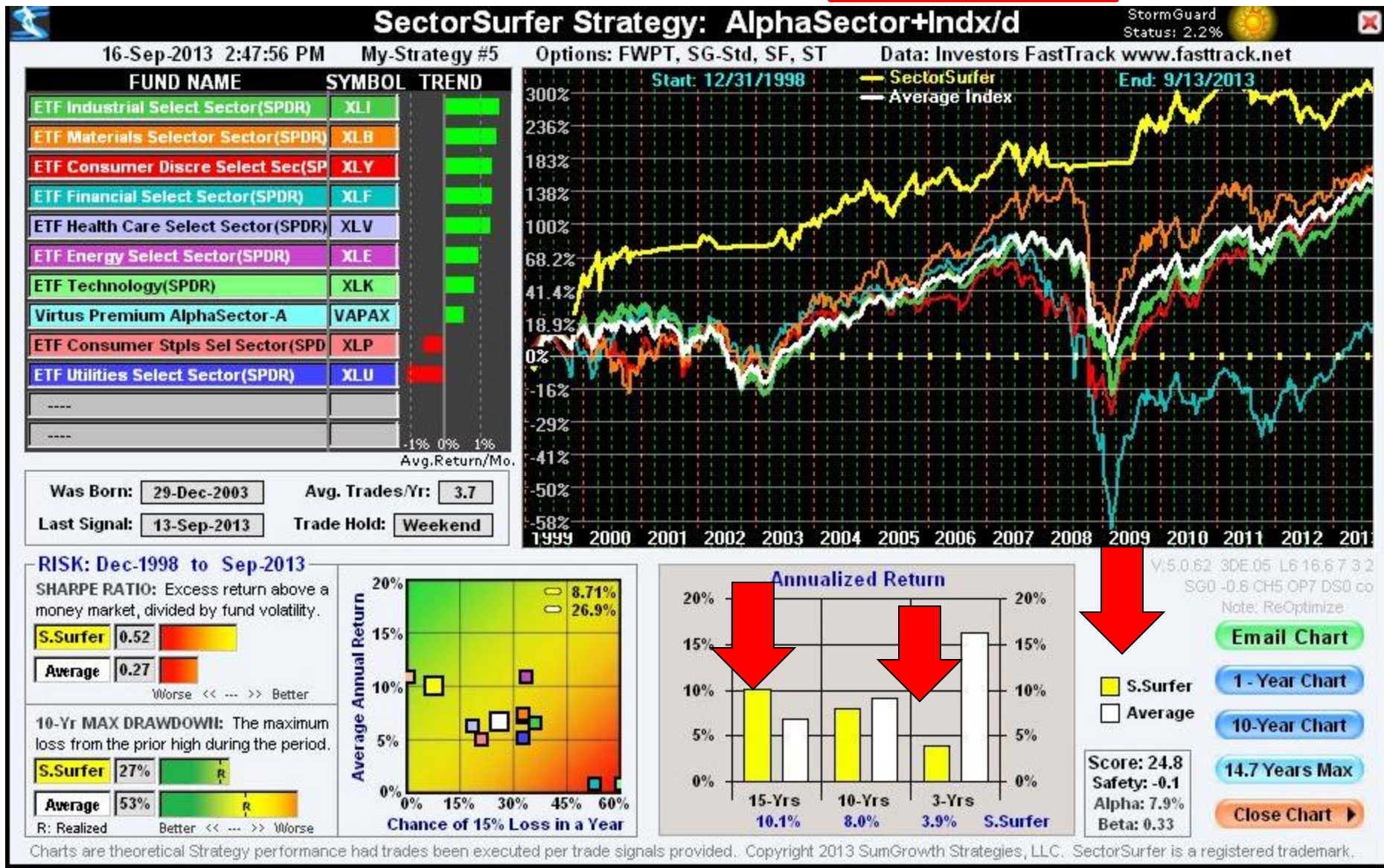
Options: AlphaSector, Std Sector Surfer



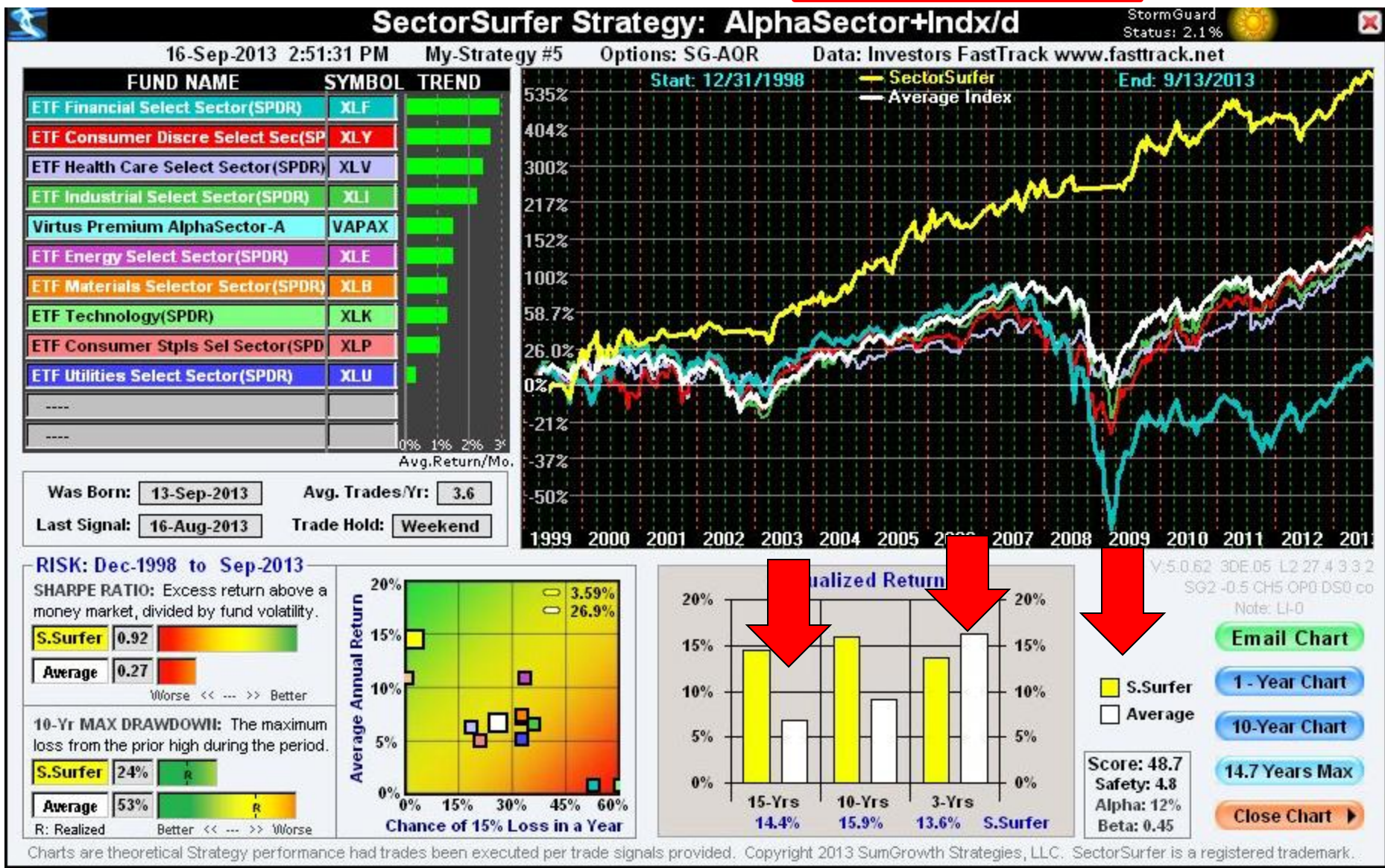
Options: AlphaSector, Less Spaghetti, FWPT, ST, Ref: Avg



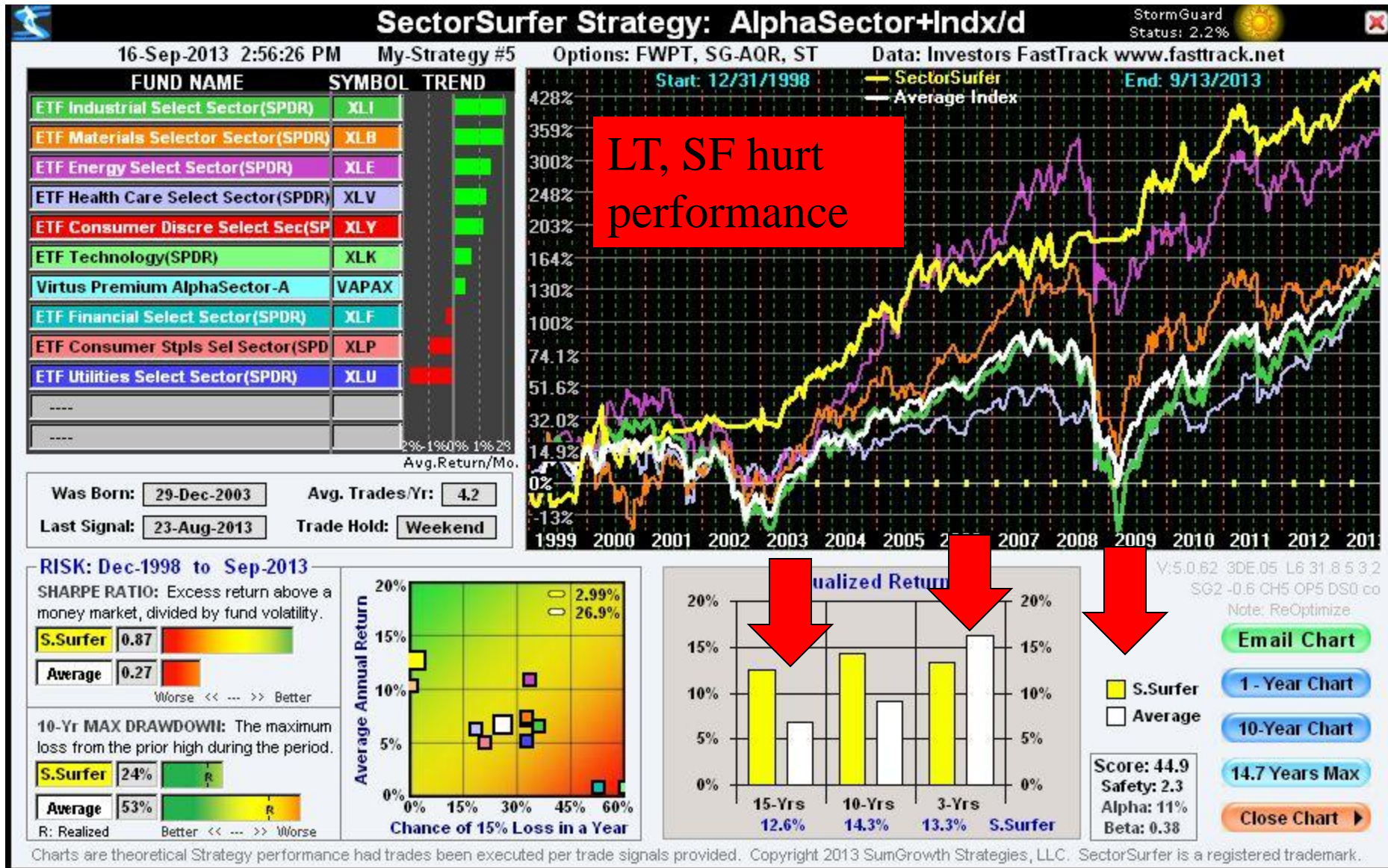
Options: AlphaSector, Less Spaghetti, **FWPT, ST, SF** Ref: Avg



Options: AlphaSector, Less Spaghetti, **Std SS, SG-AQR** Ref: Avg



Options: AlphaSector, Spaghetti, **FWPT, ST, SG-AQR** Ref: Avg



Summary of Test Results, Preliminary Conclusions

REIT ETFS											
SG	SG-AQR	FWPT	LT	ST	SF	13 years	10 years	3 years	score	comments	
Y	N	N	N	Y	Y	18.5%	21.9%	28.2%	77.4		
Y	N	Y	N	Y	N	13.7%	15.2%	27.1%	46.2	WF reduces gain by 25% from base tool	0.74
N	Y	N	N	Y	Y	24.2%	27.1%	40.8%	86.1		
N	Y	Y	N	Y	N	16.1%	15.6%	28.1%	42.7	WF reduces gain by 33% from SG-AQR base	0.67
N	Y	Y	Y	N	N	20.4%	21.2%	31.4%	54.6	WF+LT reduces gain by 16% from SG-AQR base	84%
Faber10 ETFS											
SG	SG-AQR	FWPT	LT	ST	SF	13 years	10 years	3 years	score	comments	
Y	N	N	N	Y	Y	15.80%	19.10%	10.80%	48.3		
Y	N	Y	N	Y	N	16.20%	19.20%	3.40%	42.4	WF increases 13Y gain by 3% from base - but last 3 years poor	1.03
Y	N	Y	N	Y	Y	17.70%	20.80%	4.80%	48.6	WF+ SF increases 13Y gain by 12% from base - but last 3 years poor	112%
N	Y	N	N	Y	Y	22.70%	28.10%	14.30%	72.8		
N	Y	Y	N	Y	N	16.10%	17.20%	2.10%	39.9	WF decreases 13Y gain by 29% from base - and last 3 years poor	0.71
N	Y	Y	Y	N	N	19.00%	21.60%	3.40%	49.2	WF+LT decreases 13Y gain by 16% from base - and last 3 years poor	84%
N	Y	Y	Y	N	Y	20.10%	24.30%	5.00%	54.9	WF+LT+SF decreases 13Y gain by 16% from base - and last 3 years poor	89%

Summary of Test Results, Preliminary Conclusions

AlphaSector ETFs										
SG	SG-AQR	FWPT	LT	ST	SF	15 yrs	10 years	3 years	score	comments
Y	N	N	N	Y	Y	12.90%	14.00%	11.70%	41	
Y	N	Y	N	Y	N	10.00%	9.70%	10.80%	32.2	WF hurts 15 and 10 year perf by 25-40%
Y	N	Y	N	Y	Y	10.10%	8.00%	3.90%	24.8	WF+ SF HURTS 10 and 3 year perf by 20-60%!!
N	Y	N	N	Y	Y	14.40%	15.90%	13.60%	48.7	
N	Y	Y	N	Y	N	12.60%	14.30%	13.30%	44.9	WF decreases 13Y gain by 29% from base - and last 3 years poor

For REITs & Faber10 the 13 & 10 year CAGR figures are overstated since they cover both “normal” & WF periods...

The same is true for the 15 year CAGR for AlphaSector

Summary of **Part 1** Test Results, Preliminary Conclusions

- Obviously FWPT has lower gains – reflects real-world experience
- SQ-AQR helps – independent of FWPT
 - Makes sense – really a change to the timer
 - From **JBN's** work not sure SQ-AQR really helps due to short time frame
- Adding FWPT+SF simply brings this up to what the tool does automatically in standard mode
 - Not a “dodge” to improve numbers
 - Surprised that SF ****hurt**** performance in AlphaSector case
- LT sometimes seems to help – maybe due to a bigger search space???
- Maybe all this -- altering SF, LT/ST -- is just so much curve fitting?? (Always a concern)

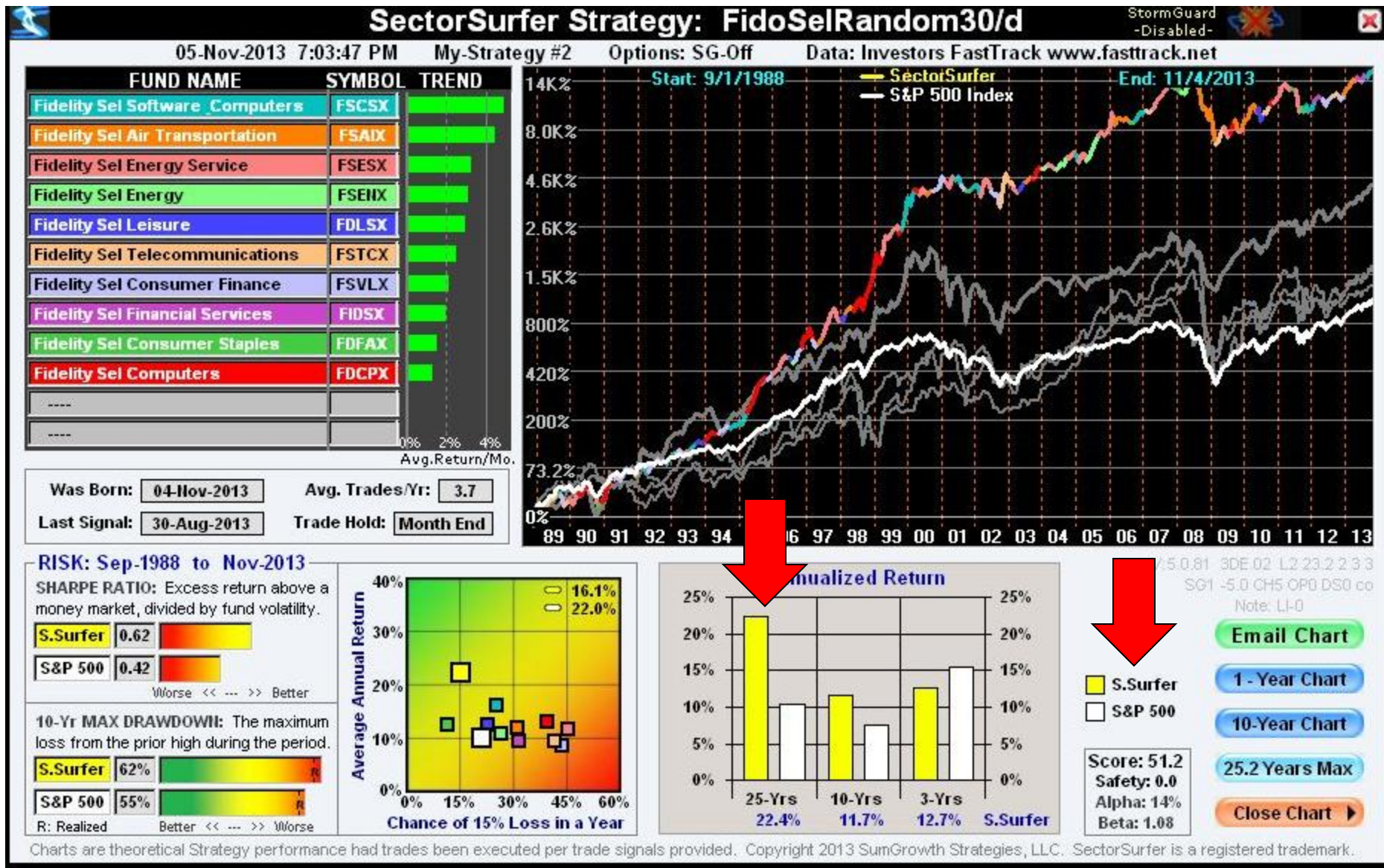
Further Look at the Impact of Walk Forward Testing

aka: The Ugly Truth....
("The New Stuff")

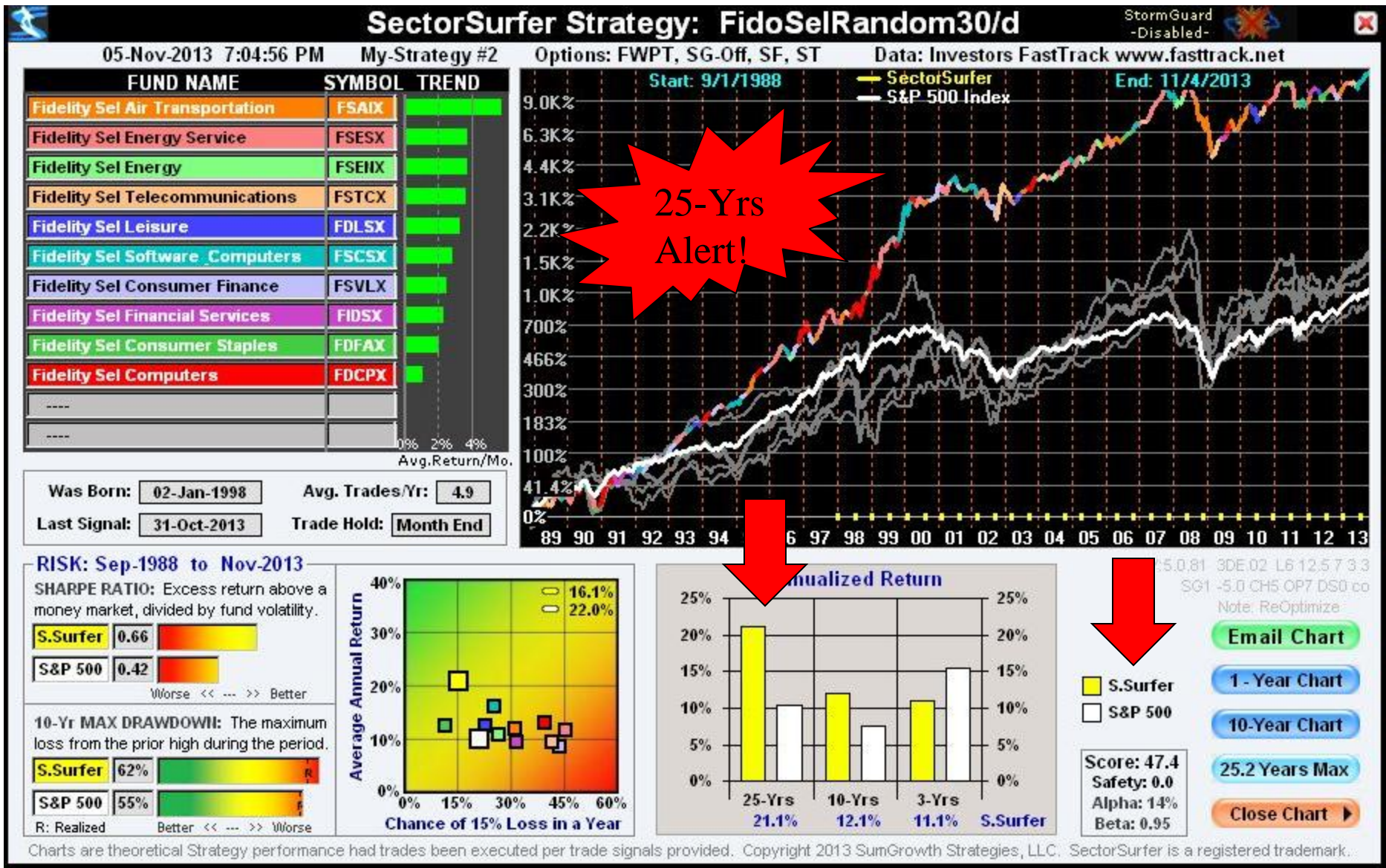
Introduction to Part 2

- This tries to answer the question of “How optimistic is the normal SectorSurfer for my funds??”
 - A very difficult problem to solve – lots of variables (timeframe, fund types, SG/SG-AQR/no SG, fund families, # of funds (max 12), etc.)
- The approach: Use Fido Sector funds
 - The original target of SectorSurfer, US securities, high performers
 - Use 19 sector funds: Long lived (1989), FastTrack data, etc.
 - Randomly pick 10 of 19 of these funds: Will allow us to do some statistics and make more general statements
 - Statistics?? Math?? Ugh! Not to worry, mostly pictures
 - Randomly pick 10 of 19 funds - allows for 92k+ combinations
 - Why 10 (instead of 12) ?? Just because...(actually only 50k combinations)
 - Put selected 10 funds into SS, run with/without WF testing (starting 1/2/98), no timing. Do enough samples and you can draw conclusions
 - Gather the daily EC, compute gain over WF period, compare to normal SS (statistics)
 - Only did 20 samples! This will get fixed in the future..

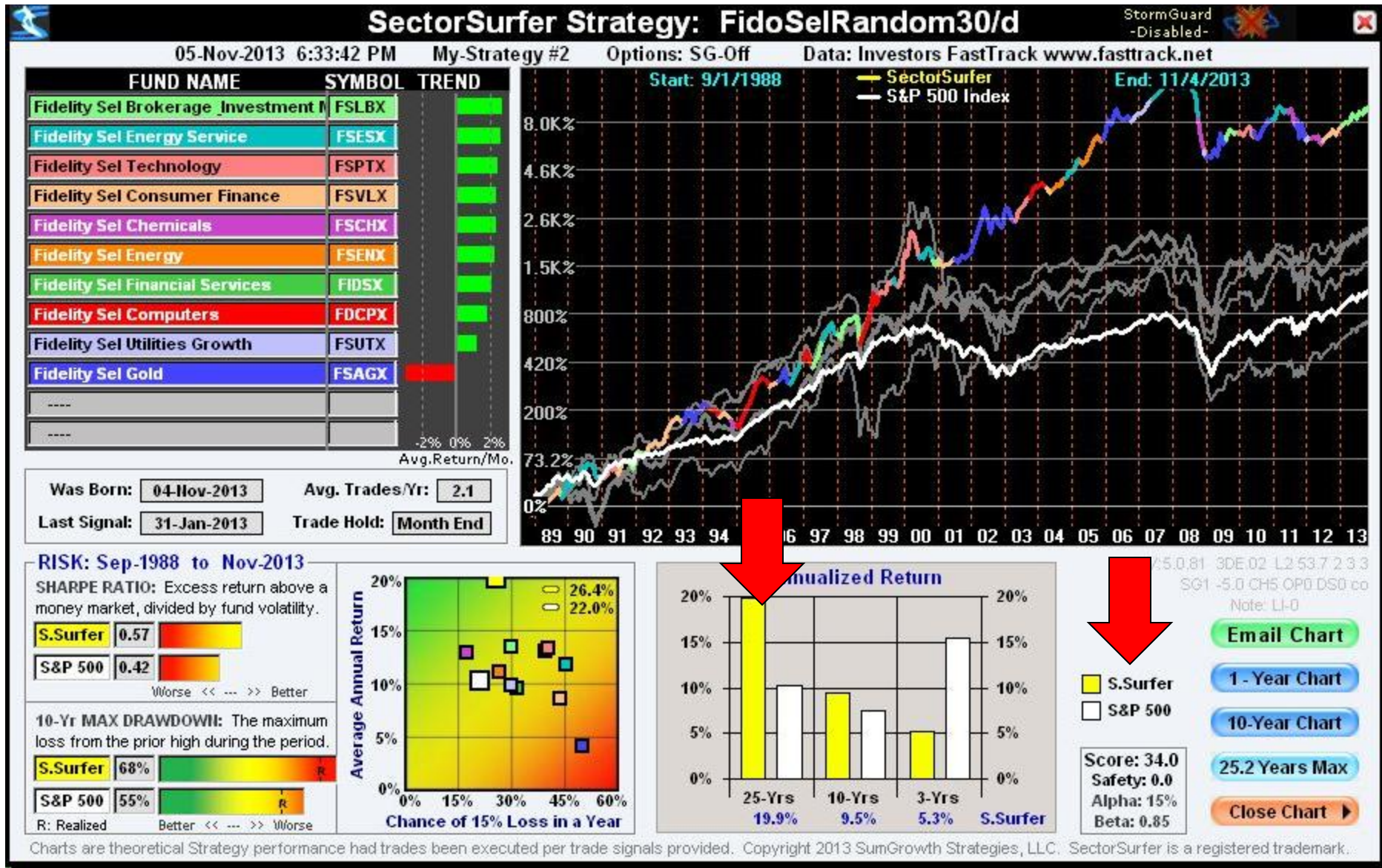
The Best Random 10: Normal SS



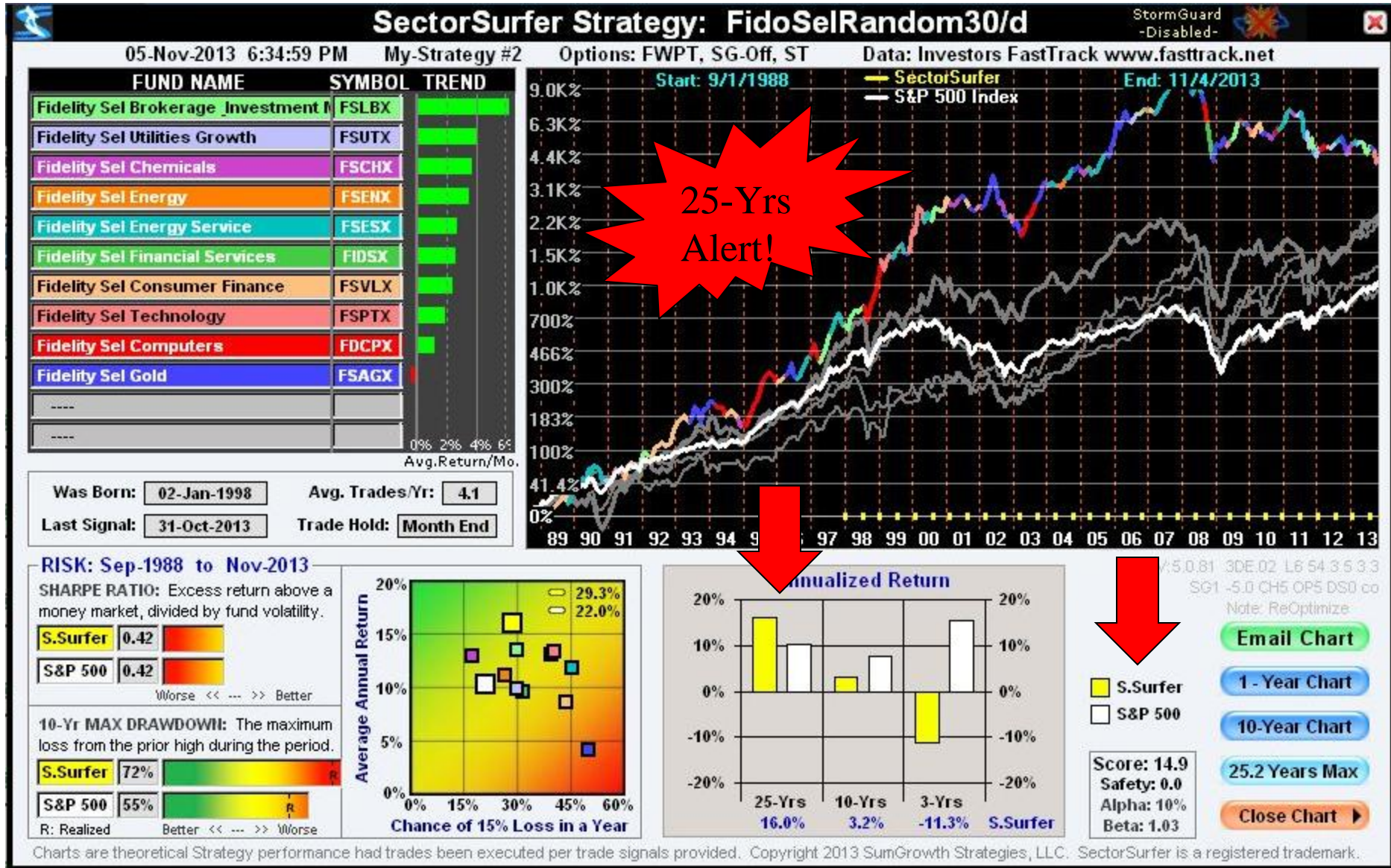
The Best Random 10: WF SS



The Worst Random 10: Normal SS



The Worst Random 10: WF SS



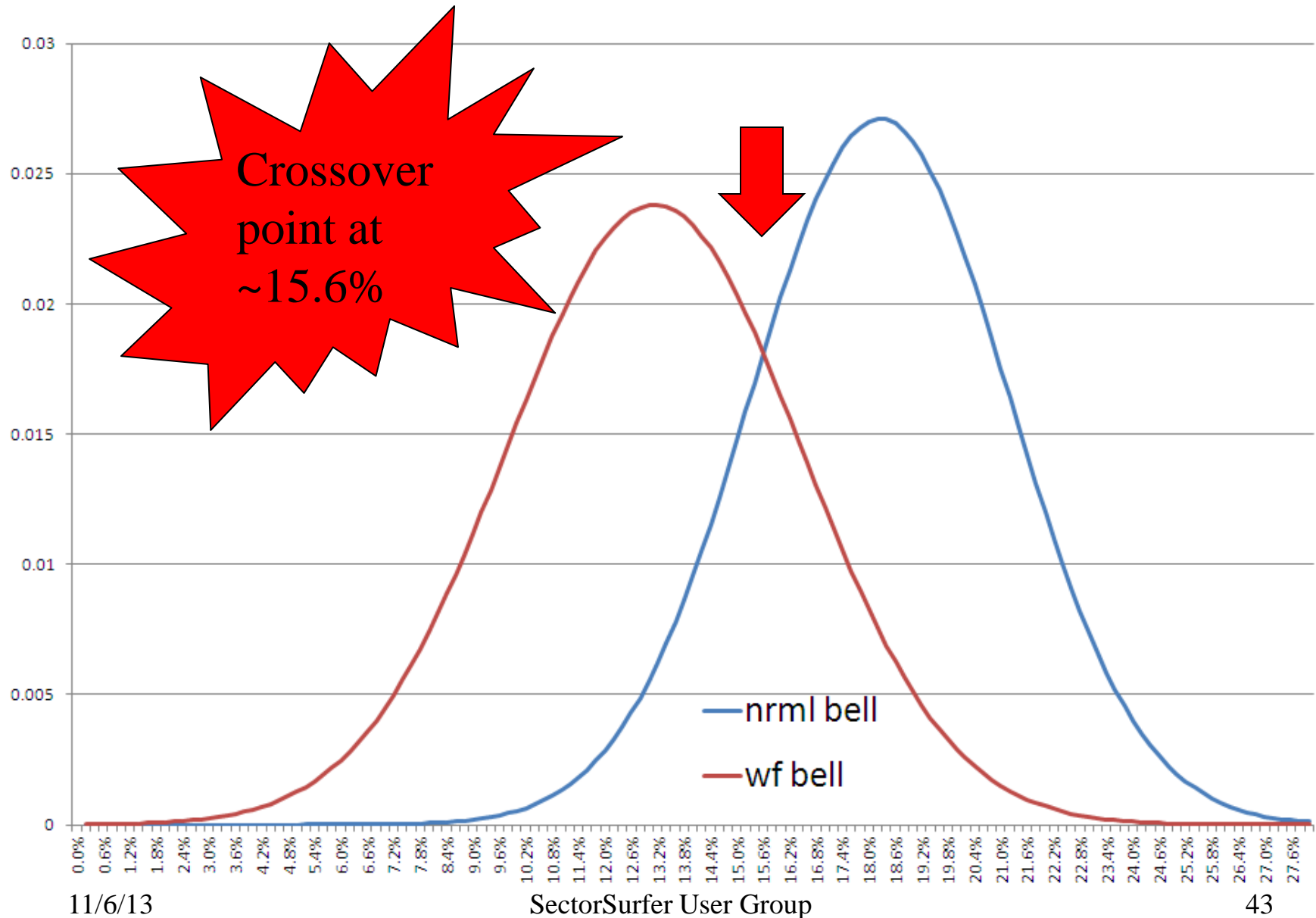
20 Sample CAGR Statistics

	nrml		wf
1	17.0%		10.5%
2	20.6%		11.0%
3	19.8%		14.0%
4	18.5%		15.1%
5	9.6%		7.6%
6	18.3%		10.6%
7	19.3%		11.9%
8	17.7%		8.9%
9	20.0%		17.2%
10	19.8%		18.7%
11	22.6%		15.7%
12	22.1%		17.3%
13	17.3%		15.8%
14	14.5%		10.0%
15	18.9%		15.1%
16	17.9%		11.6%
17	19.1%		15.0%
18	13.8%		6.9%
19	19.6%		15.1%
20	16.7%		12.5%

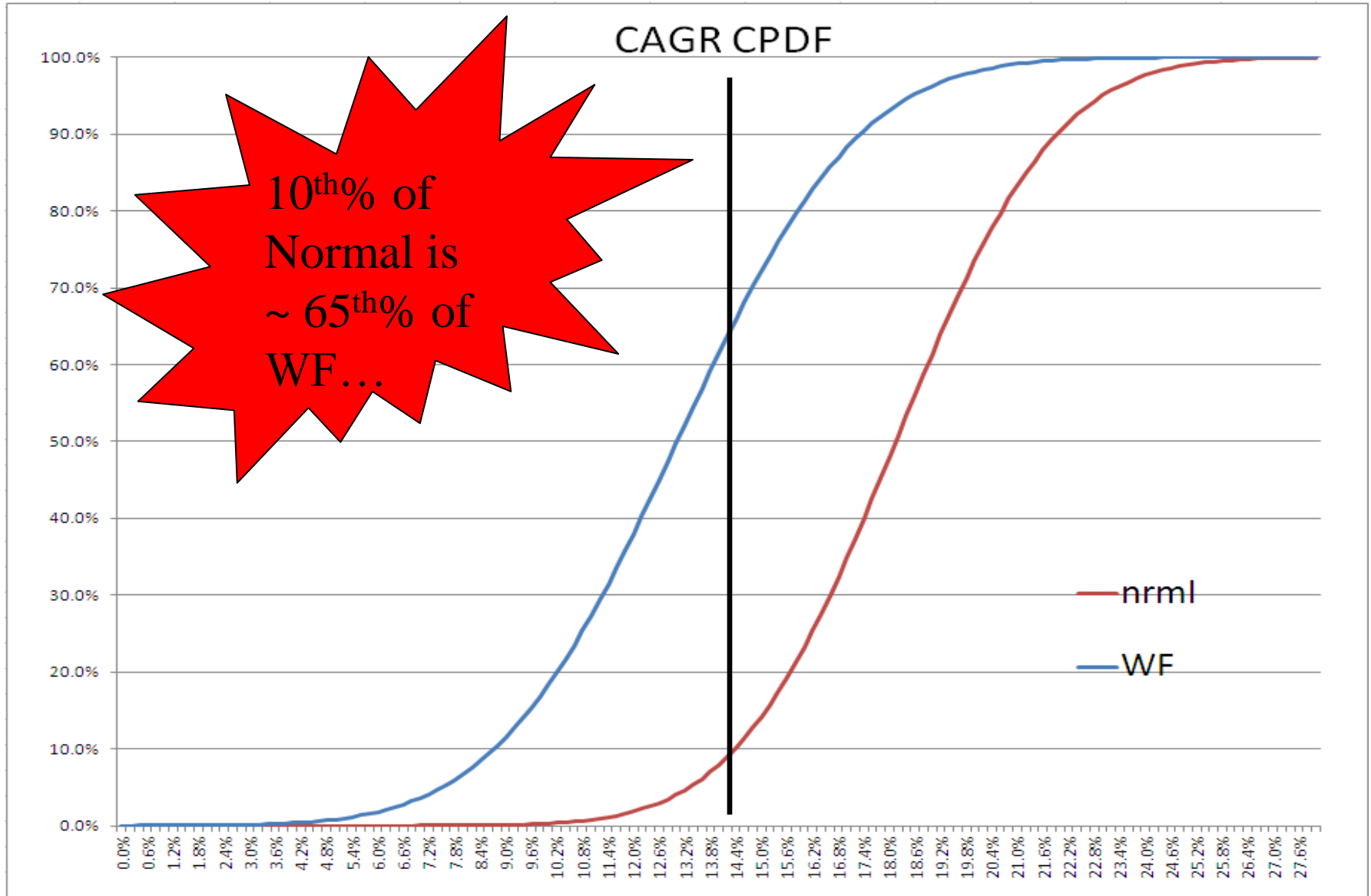
	nrml		wf
18.1%	avg		13.0% avg
2.9%	sd		3.3% sd
18.7%	median		13.3% median
22.6%	hi		18.7% hi
9.6%	lo	% Bell Curve	6.9% lo
21.1%	+1 SD	84.1%	16.4% +1 SD
24.0%	+2 SD	97.7%	19.7% +2 SD
15.2%	-1 SD	15.9%	9.7% -1 SD
12.3%	-2 SD	2.3%	6.3% -2 SD

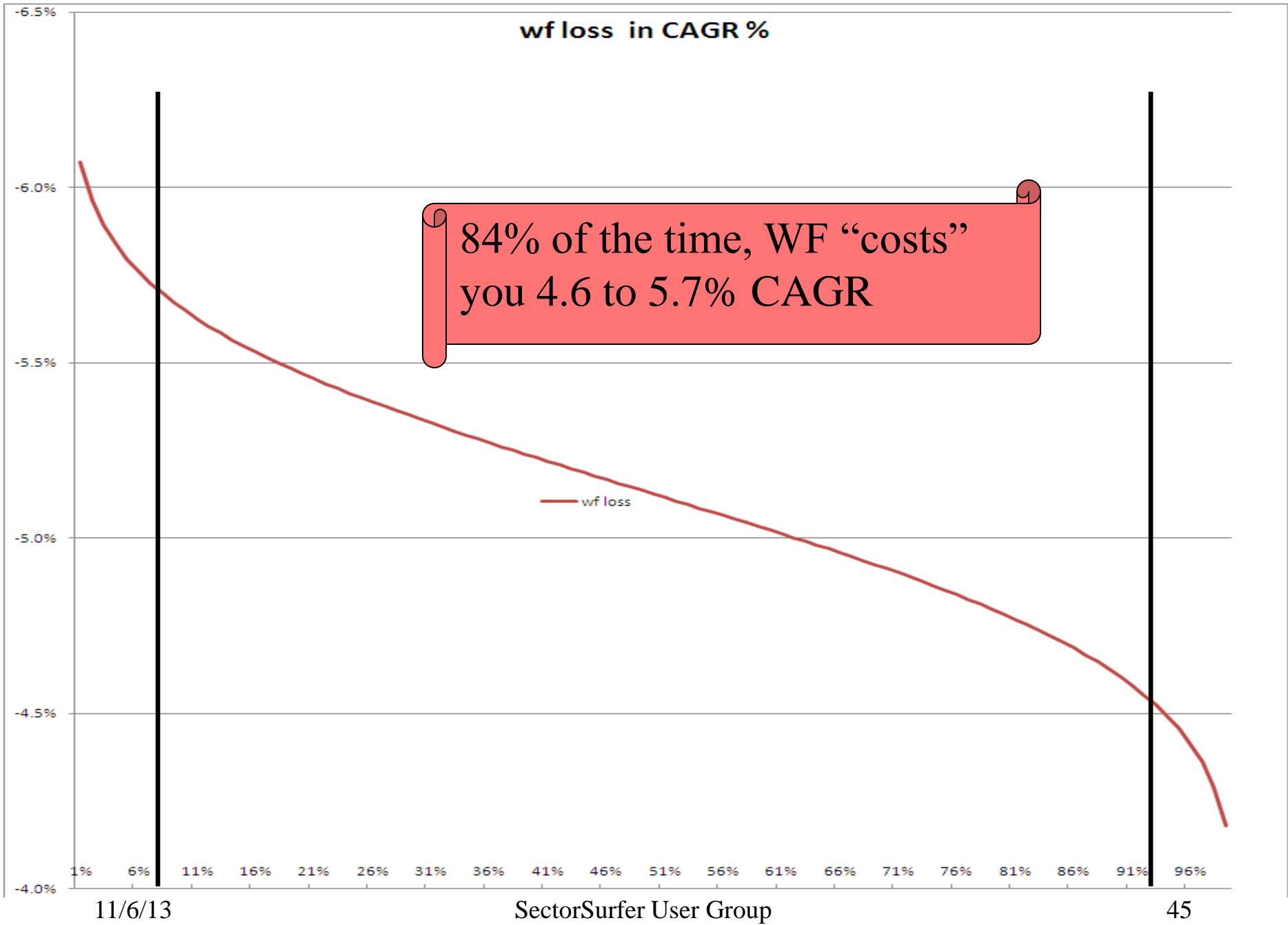
CAGR calculated over WF time period – big impact on how the two ECs compare....

20 Sample Statistics: CAGR Bell Curves

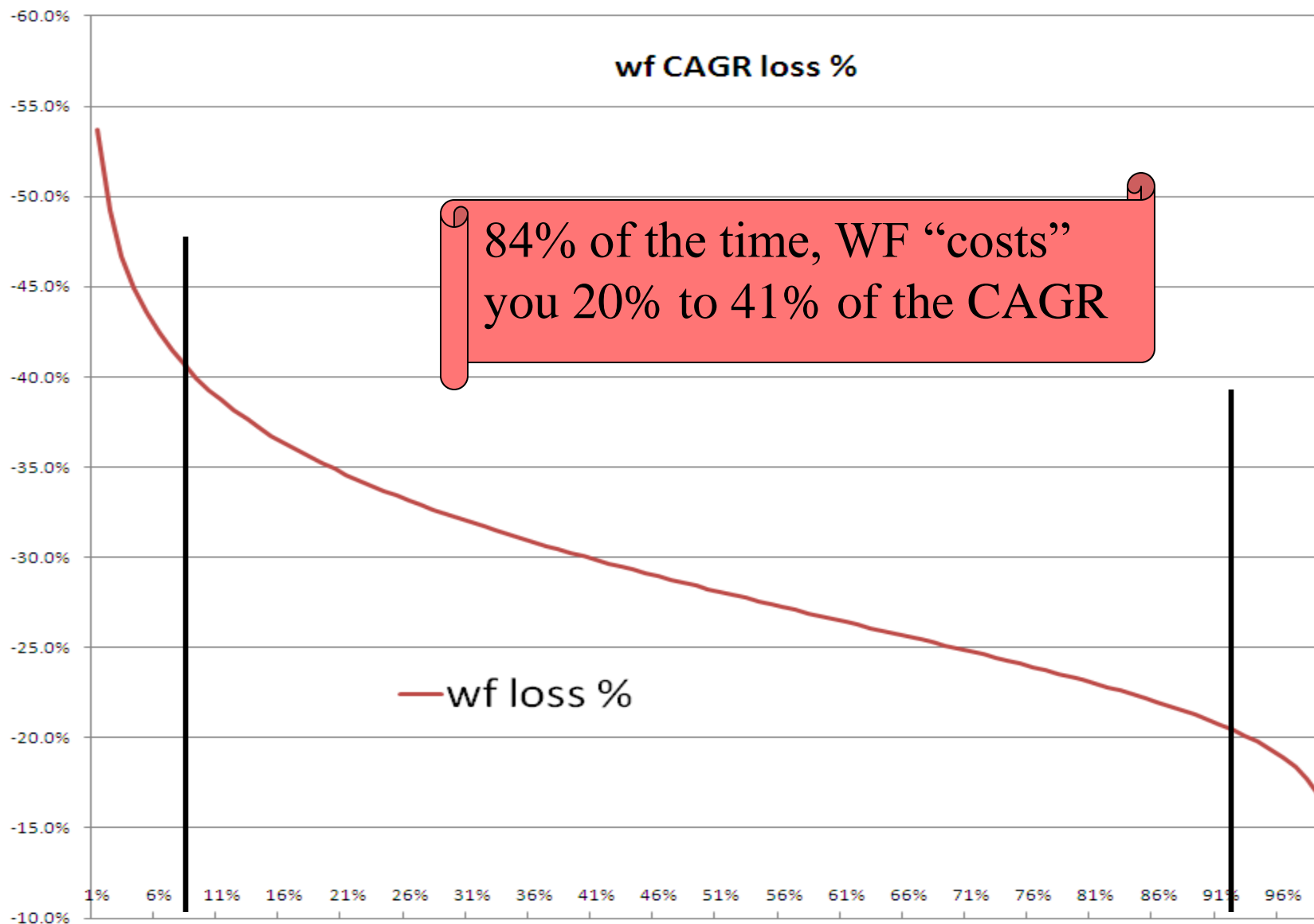


20 Sample Statistics: CAGR CPDF





wf CAGR loss %



Summary of Part 2 Test Results, Preliminary Conclusions

- Have to do more samples (but doubt if conclusions will change)
- Generic statement: “Normal” SectorSurfer CAGR results overstate the reality you will see by 20+%
 - This is not bad or surprising – all optimizers would have the same issue
- What to do?? Proceed with caution
 - Run SS normally, de-rate CAGR as above
 - Run SS in WF mode use last 10 years (at best) as “real” performance
 - Run SS in WF mode, dump the EC, run the stats and know for sure

Coming Next Time...

Do a lot more samples (via bootstrapping)
Comparison of SS trend alg vs. other trend algs