Can Computerized Investing Save Time, Increase Profits and Reduce Risk?

- Introductory Comments
- The SP500 & Bonds
- QTAA Variations
  - Inspired by Meb Faber's AAII-SV February Talk
- The SP500, Gold & Bonds
- A Look at some Asset Allocators
- Q&A/References

- Cell phones, other devices, muted please
- B&W handouts – posted files will be much easier to read – focus on the concepts
- We revisit some previous ideas (QTAA) to see how they are doing, what enhancements can be made
- Happy to have Q&A as we go along – for time reasons, may cut this short

Introductory Comments

- This year's seminar focuses on how computers can help you make investment decisions that increase your profits, reduce your risk – all in a reasonable amount of time
- The time required, time savings an individual will see breaks into two parts:
  - The time required to research, analyze a particular investing strategy
  - The time to implement the strategy. This time typically breaks into two parts: One-time start-up time/costs and ongoing time/costs
  - ***This presentation should minimize both*** – assuming you buy into the investment strategy!
- My particular focus will be on investing strategies using major asset classes that can be invested in via Mutual Funds or ETFs
- After each major section there will be a slide discussing the following items:
  - How well does this work? Can you really implement this?
  - How much time does it take to implement?
  - What are the pitfalls of the strategy? (i.e., how will it fail in principle or operationally)
  - How do I get started?

- And with that --- away we go!

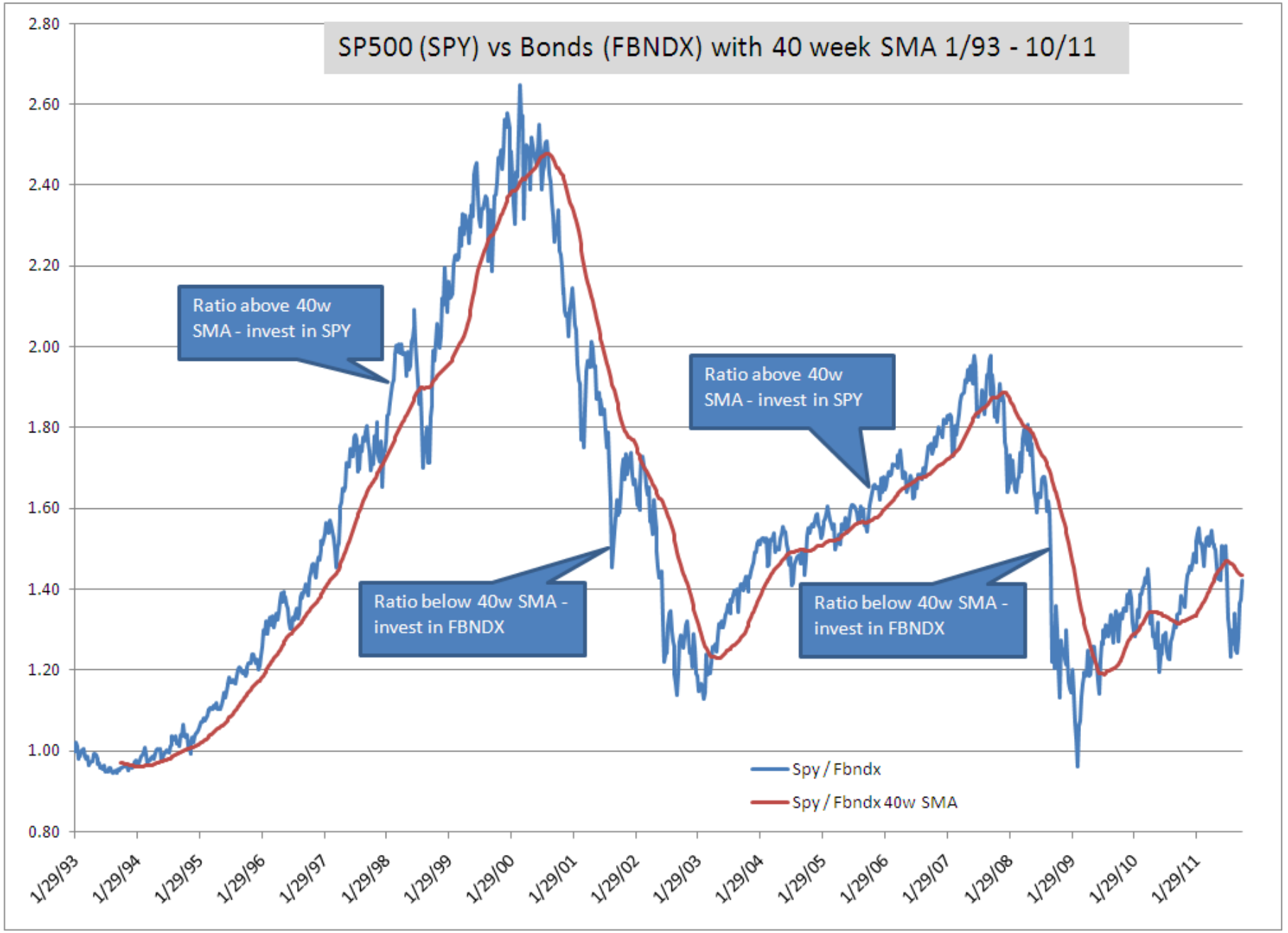
The SP500 and Bonds

(and bonds vs. foreign stocks, real estate and commodities)

The SP500 & Bonds

- Most people place the majority of their investments in two asset classes: US stocks and bonds. But this begs the question of how much to invest in each, when to be in one vs. the other, etc.
  - The examples today use the SPY ETF for stocks and the FBNDX MF for bonds
- Since bonds and stocks are uncorrelated(??) this can be used in developing some simple investment rules
- Below are 3 simple rules for making monthly bond vs. stock decisions
  - The 200 day/40 week/10 month SMA rule: (can be approximated with charts)
    - If the SP500 (SPY) is above its 200 day SMA invest in SPY. If not…
    - If bonds (FBNDX) are above their 200 day SMA invest in bonds. If not – go to cash.
  - The FundX scoring rule:
    - FundX scoring: 1 Month + 3 Month + 6 Month + 12 month gains
    - Invest in the asset that has the highest score
  - The stock/bond ratio rule: (can be approximated with charts)
    - Create a ratio of stocks (SPY) divided by bonds (FBNDX)
    - Apply a 200 day/40 week/10 month SMA to the ratio
    - If the ratio is above its SMA go long stocks; if below go long bonds (if the asset is above its corresponding SMA)

Let's take a look at these…


SP500 (SPY) vs Bonds (FBNDX) with 40 week SMA 1/93 - 10/11
Ratio above 40w SMA - invest in SPY
Ratio below 40w SMA - invest in FBNDX
Ratio above 40w SMA - invest in SPY
Ratio below 40w SMA - invest in FBNDX
Spy / Fbndx
Spy / Fbndx 40w SMA
2.80
2.60
2.40
2.20
2.00
1.80
1.60
1.40
1.20
1.00
0.80
1/29/93
1/29/94
1/29/95
1/29/96
1/29/97
1/29/98
1/29/99
1/29/00
1/29/01
1/29/02
1/29/03
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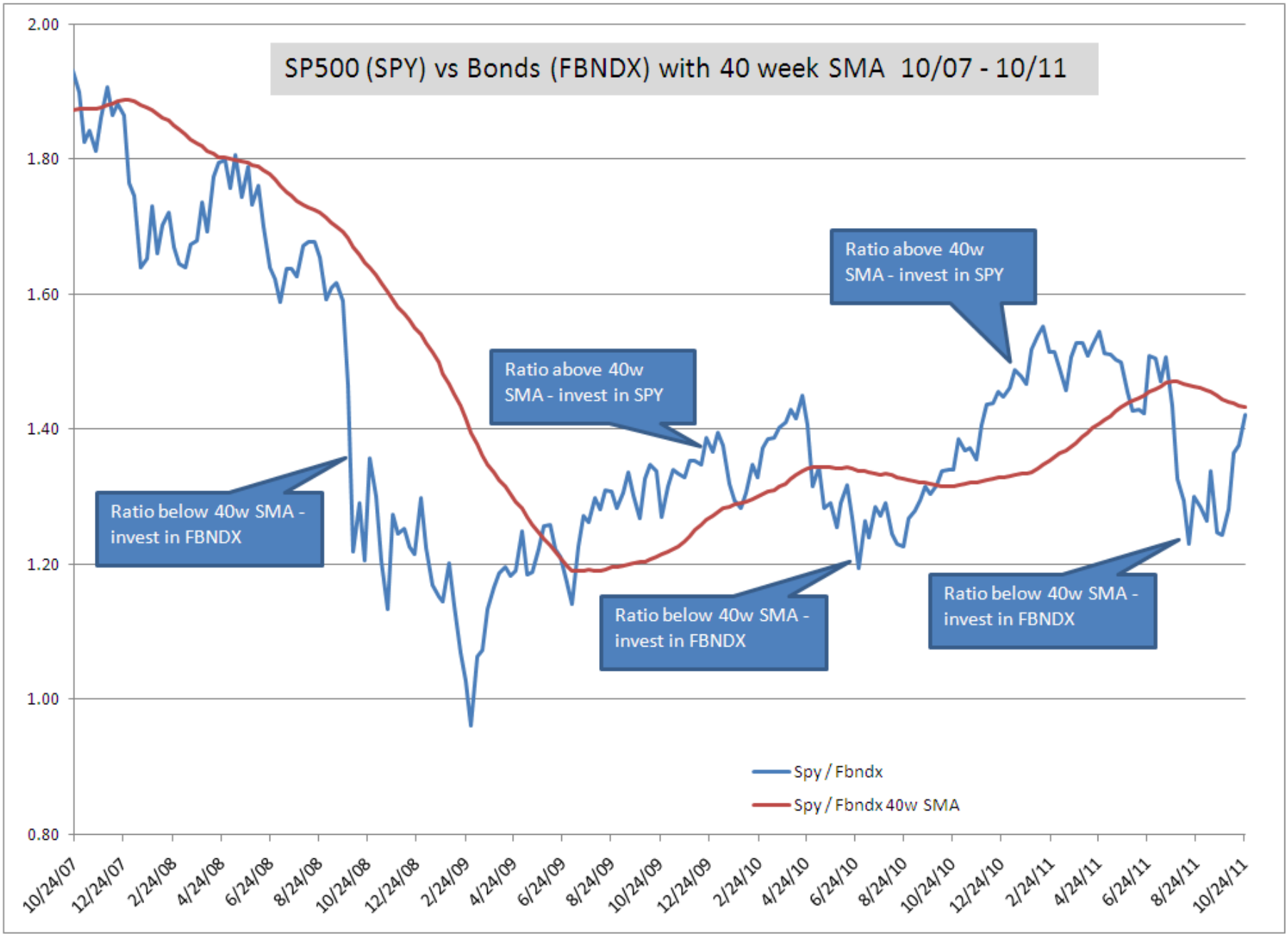
1/29/10
1/29/11


SP500 (SPY) vs Bonds (FBNDX) with 40 week SMA 10/07 - 10/11
2.00
1.80
1.60
1.40
1.20
1.00
0.80
Ratio above 40w SMA - invest in SPY
Ratio above 40w SMA - invest in SPY
Ratio below 40w SMA - invest in FBNDX
Ratio below 40w SMA - invest in FBNDX
Ratio below 40w SMA - invest in FBNDX
Spy / Fbndx
Spy / Fbndx 40w SMA
10/24/07
12/24/07
2/24/08
4/24/08
6/24/08
8/24/08
10/24/08
12/24/08
2/24/09
4/24/09
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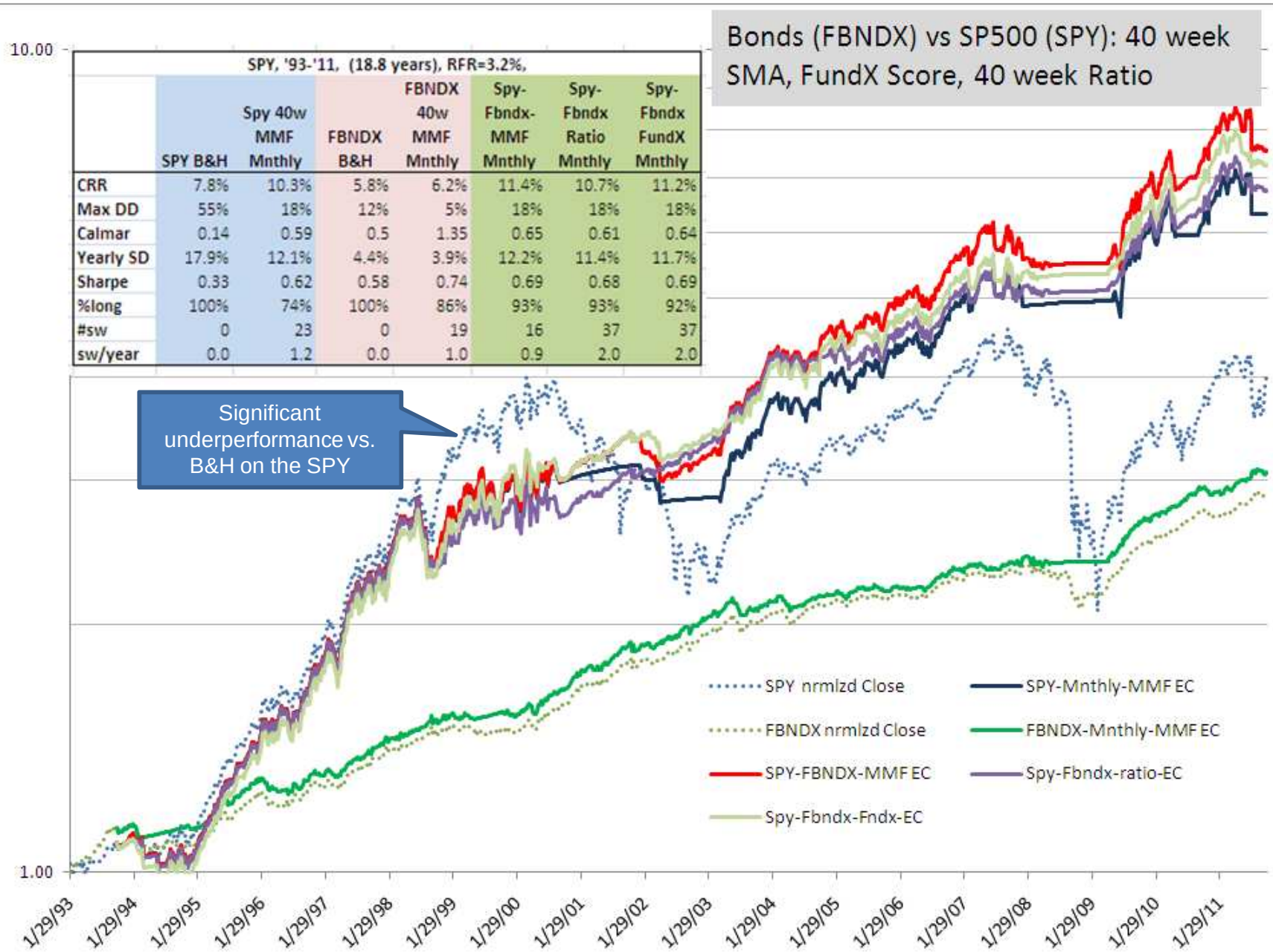
8/24/10
10/24/10
12/24/10
2/24/11
4/24/11
6/24/11
8/24/11
10/24/11

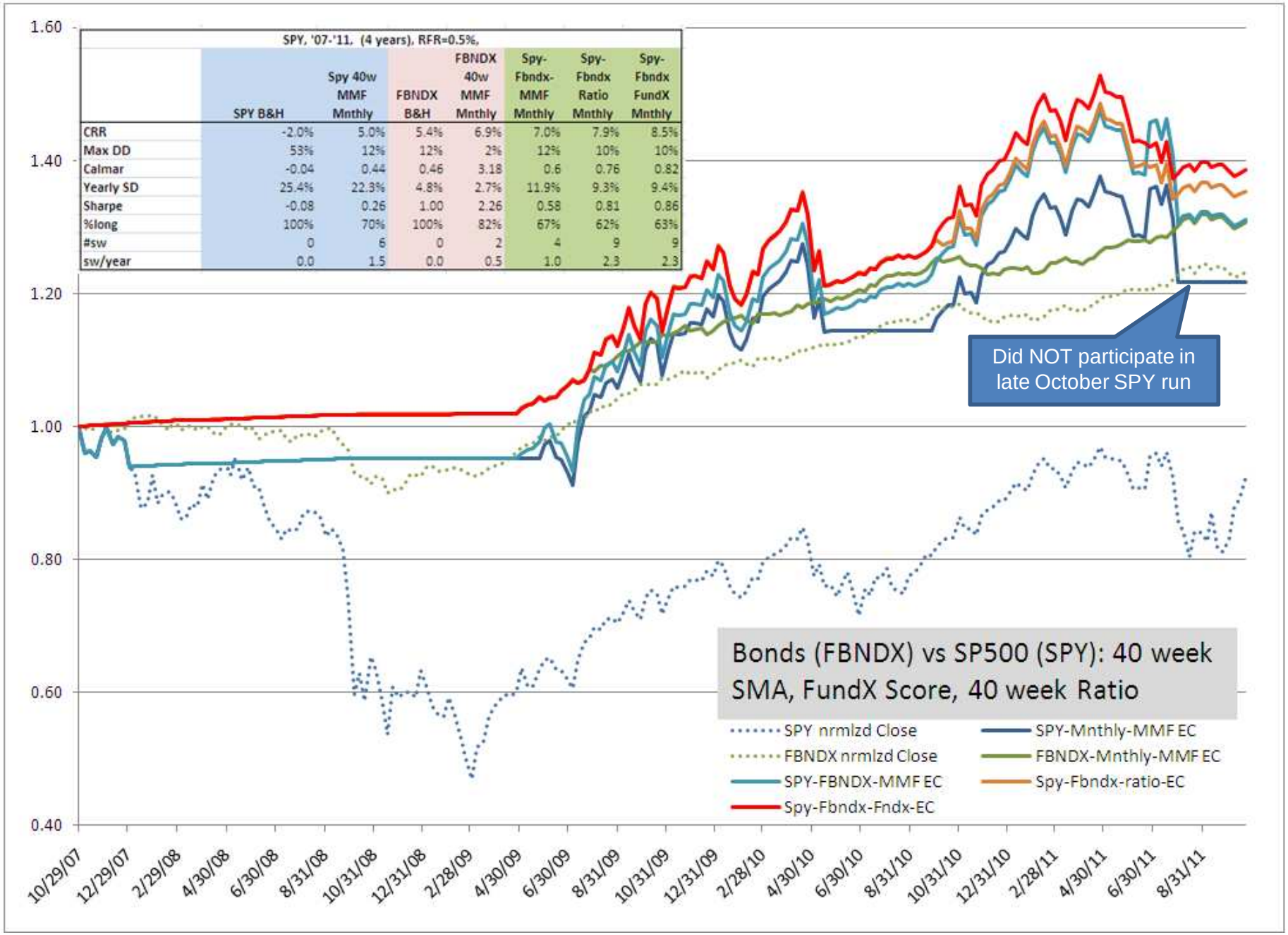

Symbol
Periods
SPY:FBNDX
Weekly
Update
Inspect
SPY:FBNDX (S&P 500 SPDRs/Fidelity Investment Grade Bond Fund) NYSE/USMF
©StockCharts.com
28-Oct-2011
Open 16.25 High 16.94 Low 16.00 Close 16.83 Chg +0.54 (+3.33%)
SPY:FBNDX (Weekly) 16.83
MA(40) 16.98
Volume undef
Ratio above 40w SMA - invest in SPY
Ratio above 40w SMA - invest in SPY
Ratio below 40w SMA - invest in FBNDX
Ratio below 40w SMA - invest in FBNDX
Ratio below 40w SMA - invest in FBNDX
Can monitor via StockCharts.com
(Note: no dividends included)
18.5
18.0
17.5
16.83
16.5
16.0
15.5
15.0
14.5
14.0
13.5
13.0
12.5
12.0
11.5
N D 09 F M A M J J A S O N D 10 F M A M J J A S O N D 11 F M A M J J A S O

Bonds (FBNDX) vs SP500 (SPY): 40 week SMA, FundX Score, 40 week Ratio

SPY, '93-'11, (18.8 years), RFR=3.2%,

	SPY B&H	Spy 40w MMF Mnthly	FBNDX B&H	FBNDX 40w MMF Mnthly	Spy-Fbndx-MMF Mnthly	Spy-Fbndx Ratio Mnthly	Spy-Fbndx FundX Mnthly
CRR	7.8%	10.3%	5.8%	6.2%	11.4%	10.7%	11.2%
Max DD	55%	18%	12%	5%	18%	18%	18%
Calmar	0.14	0.59	0.5	1.35	0.65	0.61	0.64
Yearly SD	17.9%	12.1%	4.4%	3.9%	12.2%	11.4%	11.7%
Sharpe	0.33	0.62	0.58	0.74	0.69	0.68	0.69
%long	100%	74%	100%	86%	93%	93%	92%
#sw	0	23	0	19	16	37	37
sw/year	0.0	1.2	0.0	1.0	0.9	2.0	2.0




SPY, '07-'11, (4 years), RFR=0.5%,
SPY B&H
Spy 40w MMF Mnthly
FBNDX B&H
FBNDX 40w MMF Mnthly
Spy-Fbndx-MMF Mnthly
Spy-Fbndx Ratio Mnthly
Spy-Fbndx FundX Mnthly
CRR -2.0% 5.0% 5.4% 6.9% 7.0% 7.9% 8.5%
Max DD 53% 12% 12% 2% 12% 10% 10%
Calmar -0.04 0.44 0.46 3.18 0.6 0.76 0.82
Yearly SD 25.4% 22.3% 4.8% 2.7% 11.9% 9.3% 9.4%
Sharpe -0.08 0.26 1.00 2.26 0.58 0.81 0.86
%long 100% 70% 100% 82% 67% 62% 63%
#sw 0 6 0 2 4 9 9
sw/year 0.0 1.5 0.0 0.5 1.0 2.3 2.3
Did NOT participate in late October SPY run
Bonds (FBNDX) vs SP500 (SPY): 40 week SMA, FundX Score, 40 week Ratio
SPY nrmlzd Close
FBNDX nrmlzd Close
SPY-FBNDX-MMF EC
Spy-Fbndx-Fndx-EC
SPY-Mnthly-MMF EC
FBNDX-Mnthly-MMF EC
Spy-Fbndx-ratio-EC
1.60
1.40
1.20
1.00
0.80
0.60
0.40
10/29/07
12/29/07
2/29/08
4/30/08
6/30/08
8/31/08
10/31/08
12/31/08
2/28/09
4/30/09
6/30/09
8/31/09
10/31/09
12/31/09
2/28/10
4/30/10
6/30/10
8/31/10
10/31/10
12/31/10
2/28/11
4/30/11
6/30/11
8/31/11

Summary/Checkpoint on SP500 & Bonds

- How well does this work? Does it increase profits? Does it reduce risk?

  Any of the rules generate a higher CRR, Sharpe and Calmar with lower MDD

SPY, '93-'11, (18.8 years), RFR=3.2%,

	SPY B&H	Spy 40w MMF Mnthly	FBNDX B&H	FBNDX 40w MMF Mnthly	Spy-Fbndx-MMF Mnthly	Spy-Fbndx Ratio Mnthly	Spy-Fbndx FundX Mnthly
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Sharpe	0.33	0.62	0.58	0.74	0.69	0.68	0.69
%long	100%	74%	100%	86%	93%	93%	92%
#sw	0	23	0	19	16	37	37
sw/year	0.0	1.2	0.0	1.0	0.9	2.0	2.0

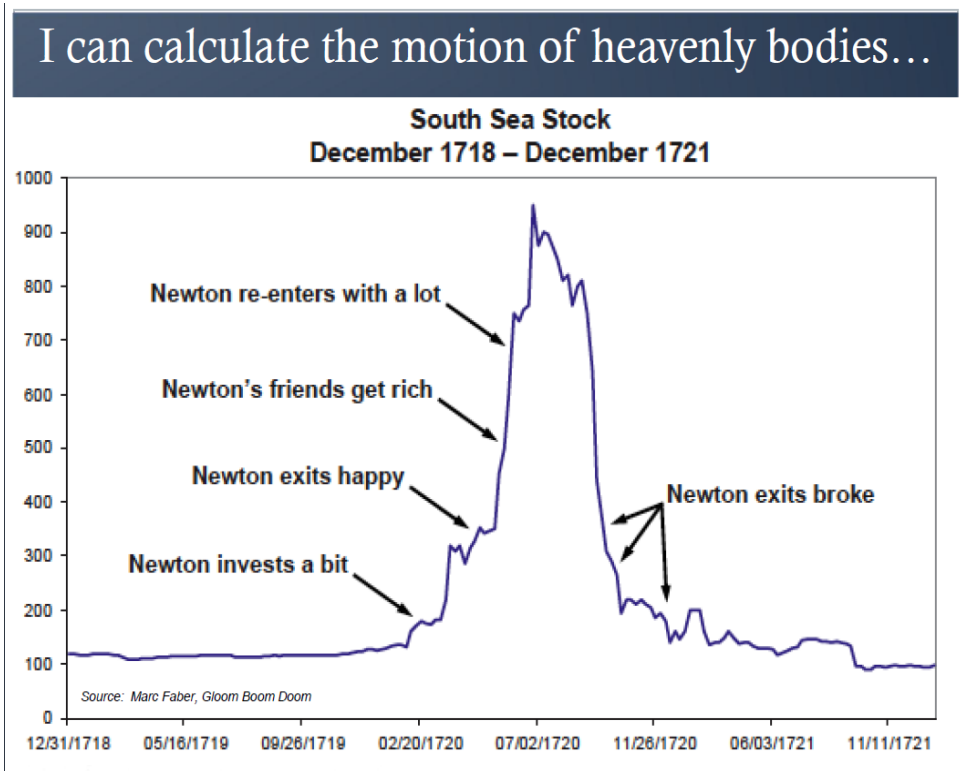
SPY, '07-'11, (4 years), RFR=0.5%,

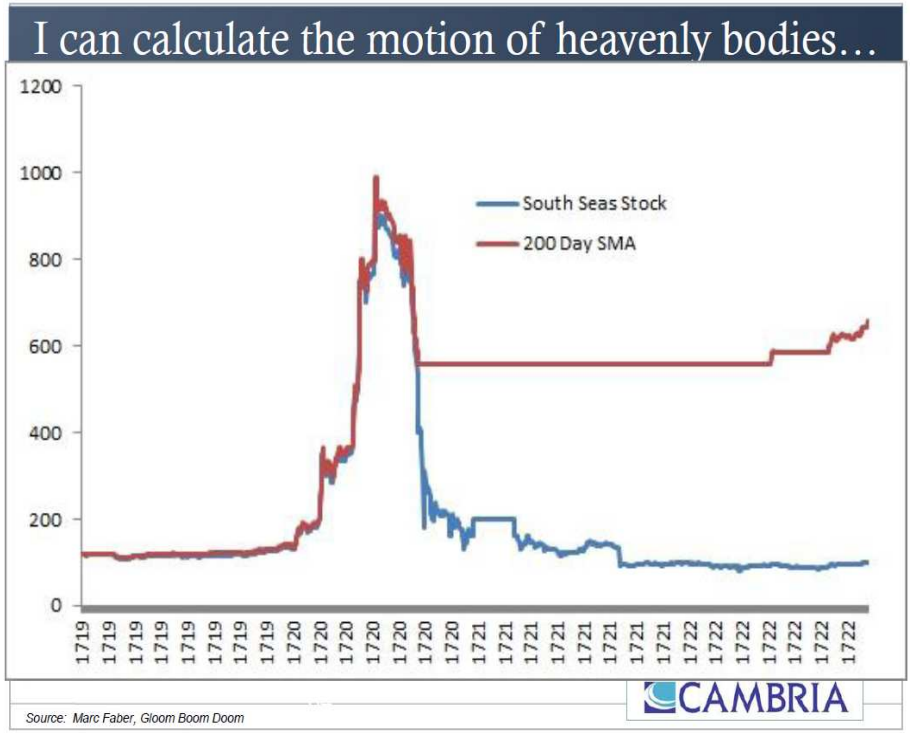
	SPY B&H	Spy 40w MMF Mnthly	FBNDX B&H	FBNDX 40w MMF Mnthly	Spy-Fbndx-MMF Mnthly	Spy-Fbndx Ratio Mnthly	Spy-Fbndx FundX Mnthly
CRR	-2.0%	5.0%	5.4%	6.9%	7.0%	7.9%	8.5%
Max DD	53%	12%	12%	2%	12%	10%	10%
Calmar	-0.04	0.44	0.46	3.18	0.6	0.76	0.82
Yearly SD	25.4%	22.3%	4.8%	2.7%	11.9%	9.3%	9.4%
Sharpe	-0.08	0.26	1.00	2.26	0.58	0.81	0.86
%long	100%	70%	100%	82%	67%	62%	63%
#sw	0	6	0	2	4	9	9
sw/year	0.0	1.5	0.0	0.5	1.0	2.3	2.3

- Can you really implement this? Easily implemented via ETFs, Mutual funds.
- How much time does it take to implement?
  - Start up time: Spreadsheet: 1-4 hours. Charts: 15 minutes.
  - Ongoing: Spreadsheet:1 hour max. Charts: 15 minutes max. Many months it takes a few minutes (if that)
- What are the pitfalls? (i.e., how will it fail in principle or operationally)
  - In principle: Stocks, bonds become correlated; long-term bull or bear markets in both; currency devaluation/debasement; Stocks, bonds, cash deflate vs. other asset classes
  - Operationally: Lack of discipline to monitor, perform trades; Typos and other finger checks
- How do I get started?
  - General: Start slow with small amounts of $$$ to learn the system, build confidence, work through operational details/glitches, etc.
  - Chart based: Setup charts at Yahoo!, StockCharts.com, etc. and begin
  - Spreadsheet based: Download spreadsheet, study, update a few times, and begin

QTAA Variations

(Inspired by Meb Faber's AAII-SV February Talk)

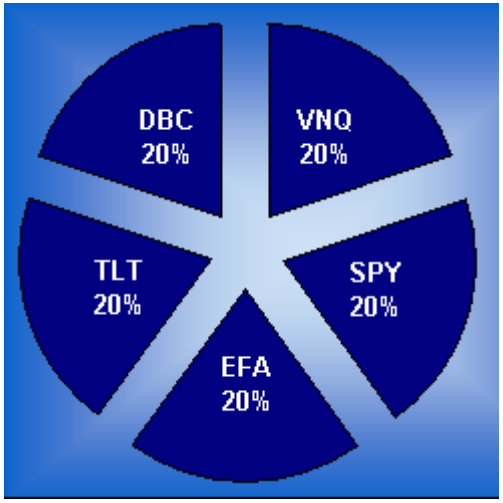




QTAA: A Quick Review

(from '09 seminar)

There are three parts to this scheme:



- Allocate assets with equal weight to:
  - Large Cap US Stocks (SPY, VTI)
  - Foreign-EAFE Stocks (EFA, VEU)
  - Long Term Government Bonds (TLT, BND)
  - Real Estate Investment Trusts (VNQ, IYR)
  - Commodity Index (DBC, GCC)

- Market timing (once/month)
  - Go long when an asset's index is above its 10 month simple moving average (SMA)
  - Go to cash when index drops below its 10 month SMA

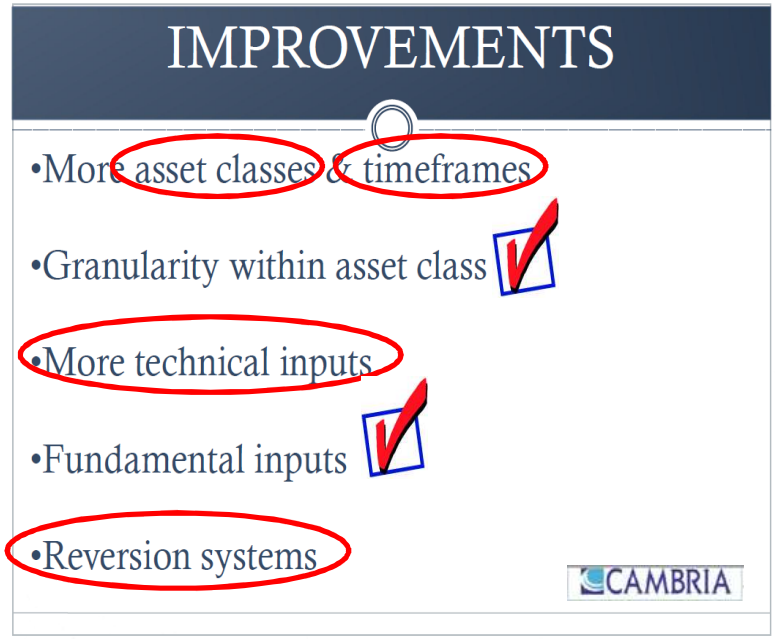
- Cash: Commercial paper return

with permission, Michael Begley, informal notes

QTAA Variations: Introduction

- Meb Faber gave an AAII-SV talk in February
  - You can find his presentation and an audio recording of the session at http://www.siliconvalleyaaii.org/images/2011MebaneFaber.pdf
- In his talk Faber briefly discussed this slide concerning enhancements

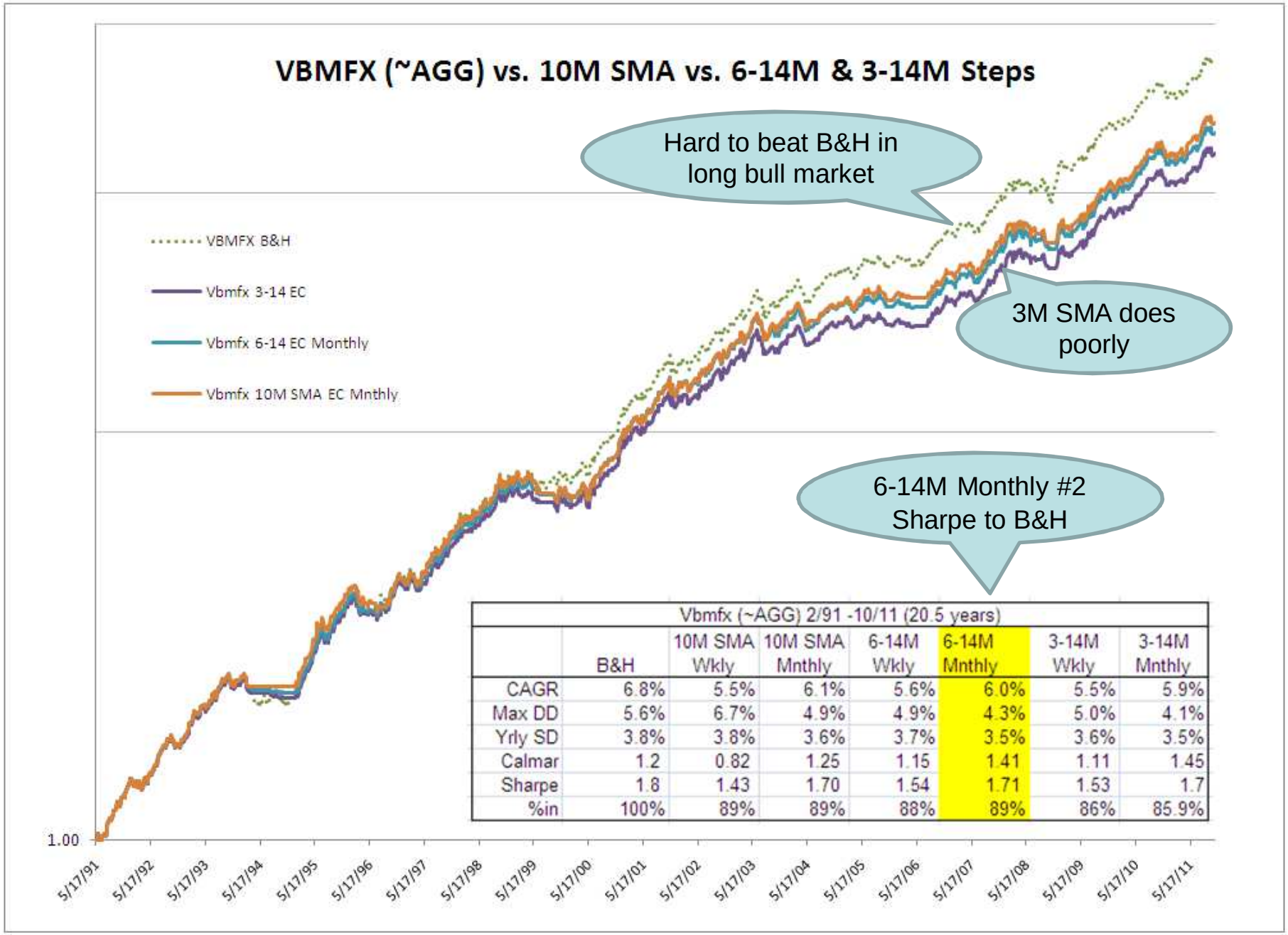
- Back testing these provided some answers to what works, and fostered some new ideas
- Will walk through some major variations tried, results in the following slides



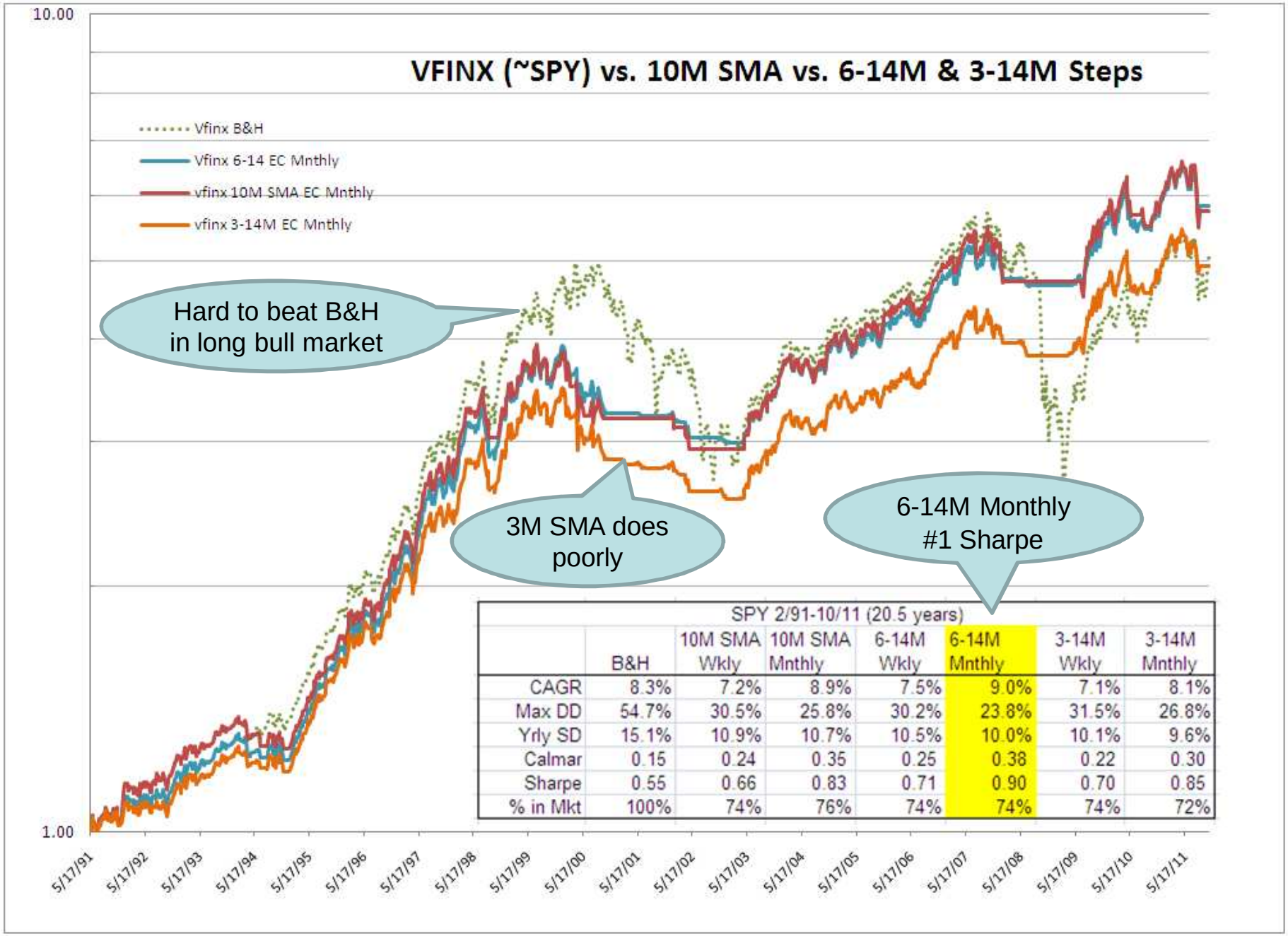
QTAA Variation 1: Timeframes

- I heard three points in this area from Faber's talk
  - Extend the SMA range down to as short as a 65 day/13 week/3 Month SMA
  - Employ phased entries/exist based on the number of SMAs the asset is above/below
    - Phased entry/exit: partial investment (i.e., not 100% of your funds) based on some criterion
  - Weekly switching as a possibility (??)

- Back tests of the above are shown on the following slides. Some details on the studies:
  - Used "near-identical" MFs for this study since ETFs have limited history
  - Used 6-14M SMAs as one possible range for possible phased entry/exit
    - Each SMA is worth an 11% position
  - Used 3-14M SMAs as another possible range for phased entry/exit
    - Each SMA is worth 8.3%
  - Individual results for VFINX (SPY) & VBMFX (AGG) are shown
    - Results for EFA, DBC, IYR-like MFs in the reference section
  - A comparison between the 10M SMA and the phased approach is the end result

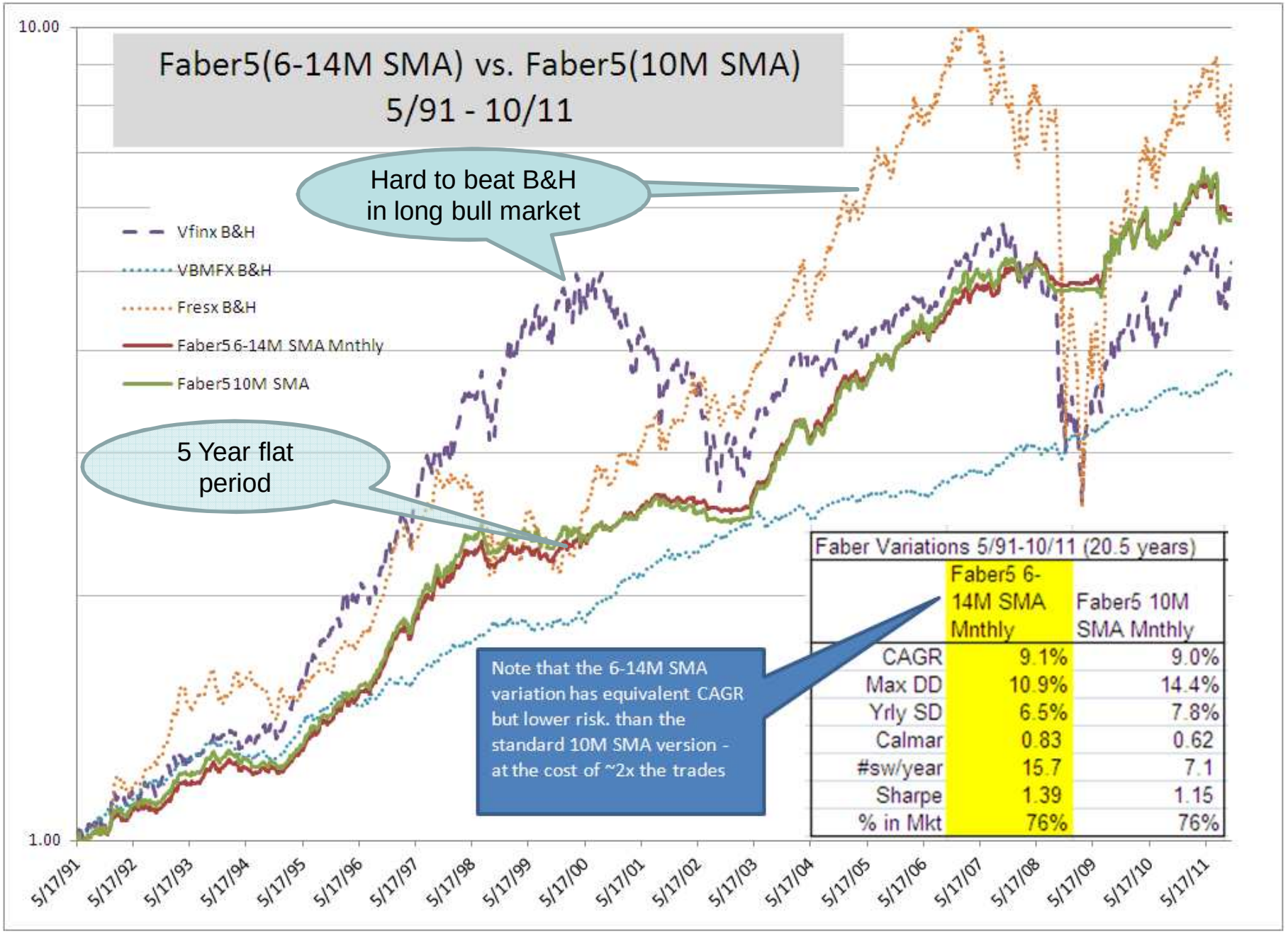


Vbmfx (~AGG) 2/91 -10/11 (20.5 years)							
	B&H	10M SMA Wkly	10M SMA Mnthly	6-14M Wkly	6-14M Mnthly	3-14M Wkly	3-14M Mnthly
CAGR	6.8%	5.5%	6.1%	5.6%	6.0%	5.5%	5.9%
Max DD	5.6%	6.7%	4.9%	4.9%	4.3%	5.0%	4.1%
Yrly SD	3.8%	3.8%	3.6%	3.7%	3.5%	3.6%	3.5%
Calmar	1.2	0.82	1.25	1.15	1.41	1.11	1.45
Sharpe	1.8	1.43	1.70	1.54	1.71	1.53	1.7
%in	100%	89%	89%	88%	89%	86%	85.9%



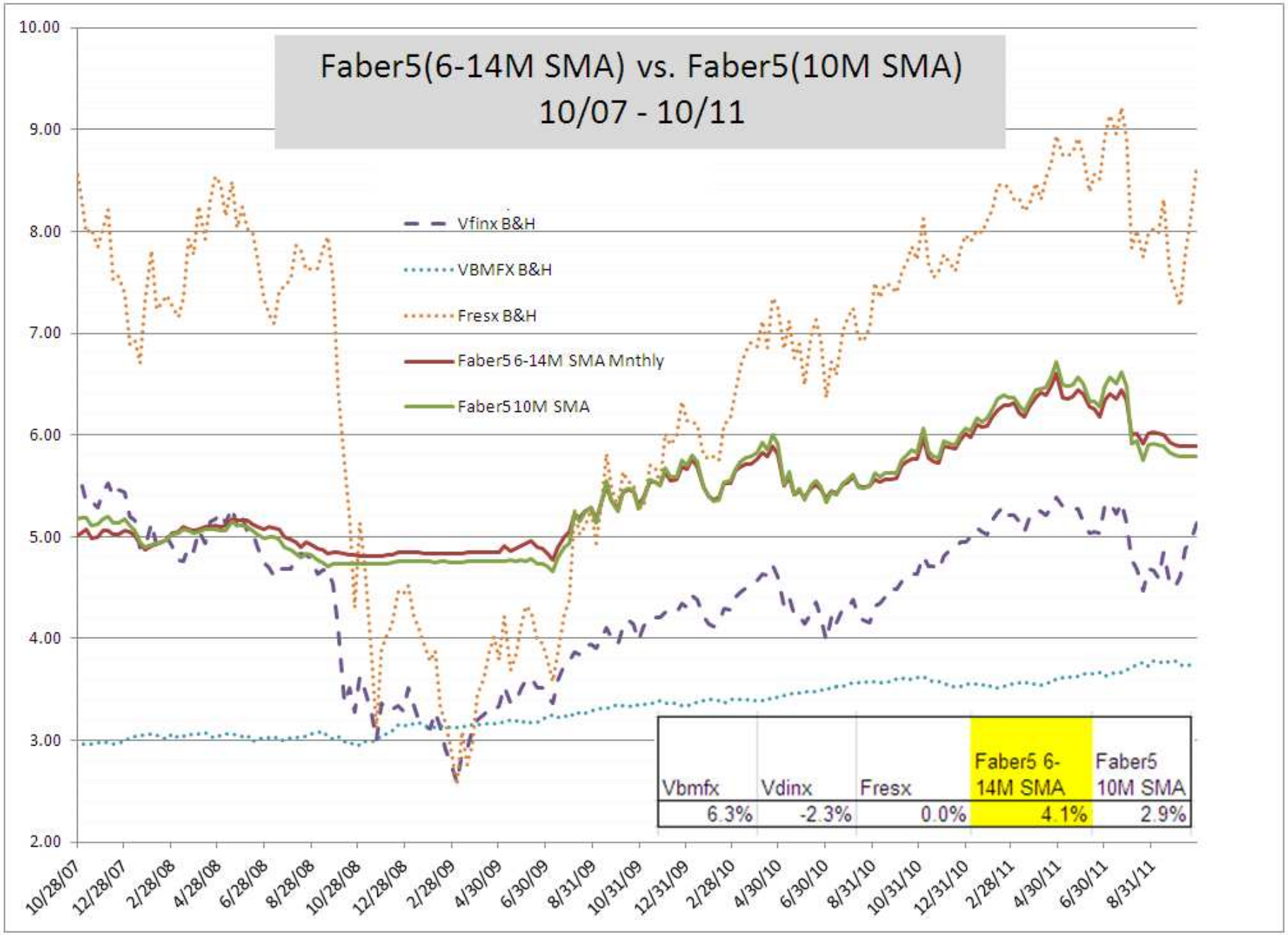
SPY 2/91-10/11 (20.5 years)

	B&H	10M SMA Wkly	10M SMA Mnthly	6-14M Wkly	6-14M Mnthly	3-14M Wkly	3-14M Mnthly
CAGR	8.3%	7.2%	8.9%	7.5%	9.0%	7.1%	8.1%
Max DD	54.7%	30.5%	25.8%	30.2%	23.8%	31.5%	26.8%
Yrly SD	15.1%	10.9%	10.7%	10.5%	10.0%	10.1%	9.6%
Calmar	0.15	0.24	0.35	0.25	0.38	0.22	0.30
Sharpe	0.55	0.66	0.83	0.71	0.90	0.70	0.85
% in Mkt	100%	74%	76%	74%	74%	74%	72%



Faber Variations 5/91-10/11 (20.5 years)

	Faber5 6-14M SMA Mnthly	Faber5 10M SMA Mnthly
CAGR	9.1%	9.0%
Max DD	10.9%	14.4%
Yrly SD	6.5%	7.8%
Calmar	0.83	0.62
#sw/year	15.7	7.1
Sharpe	1.39	1.15
% in Mkt	76%	76%


Faber5(6-14M SMA) vs. Faber5(10M SMA)
10/07 - 10/11
Vfinx B&H
VBMFX B&H
Fresx B&H
Faber5 6-14M SMA Mnthly
Faber5 10M SMA
10.00
9.00
8.00
7.00
6.00
5.00
4.00
3.00
2.00
10/28/07
12/28/07
2/28/08
4/28/08
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4/30/10
6/30/10
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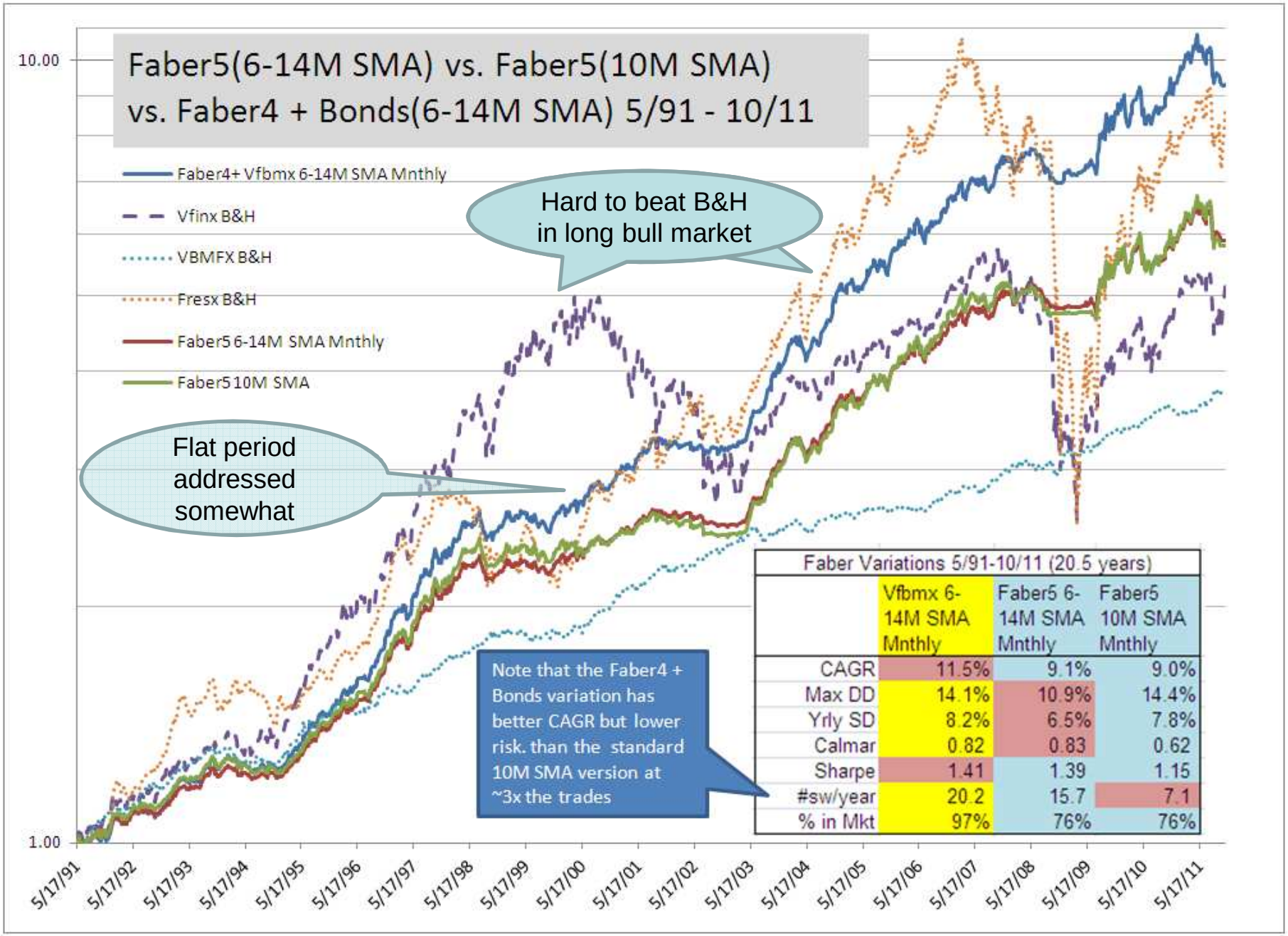
12/31/10
2/28/11
4/30/11
6/30/11
8/31/11
Vbmfx
Vdinx
Fresx
Faber5 6-14M SMA
Faber5 10M SMA
6.3%
-2.3%
0.0%
4.1%
2.9%

QTAA Variation 1: Timeframes

- Takeaways:
  - Shortening the SMA range down to 3M SMAs hurts
  - Weekly switching generally hurts - the exception may be commodities
  - Phased entry/exit appears to reduce risk (not overwhelming evidence)
  - Overall, nothing that exciting

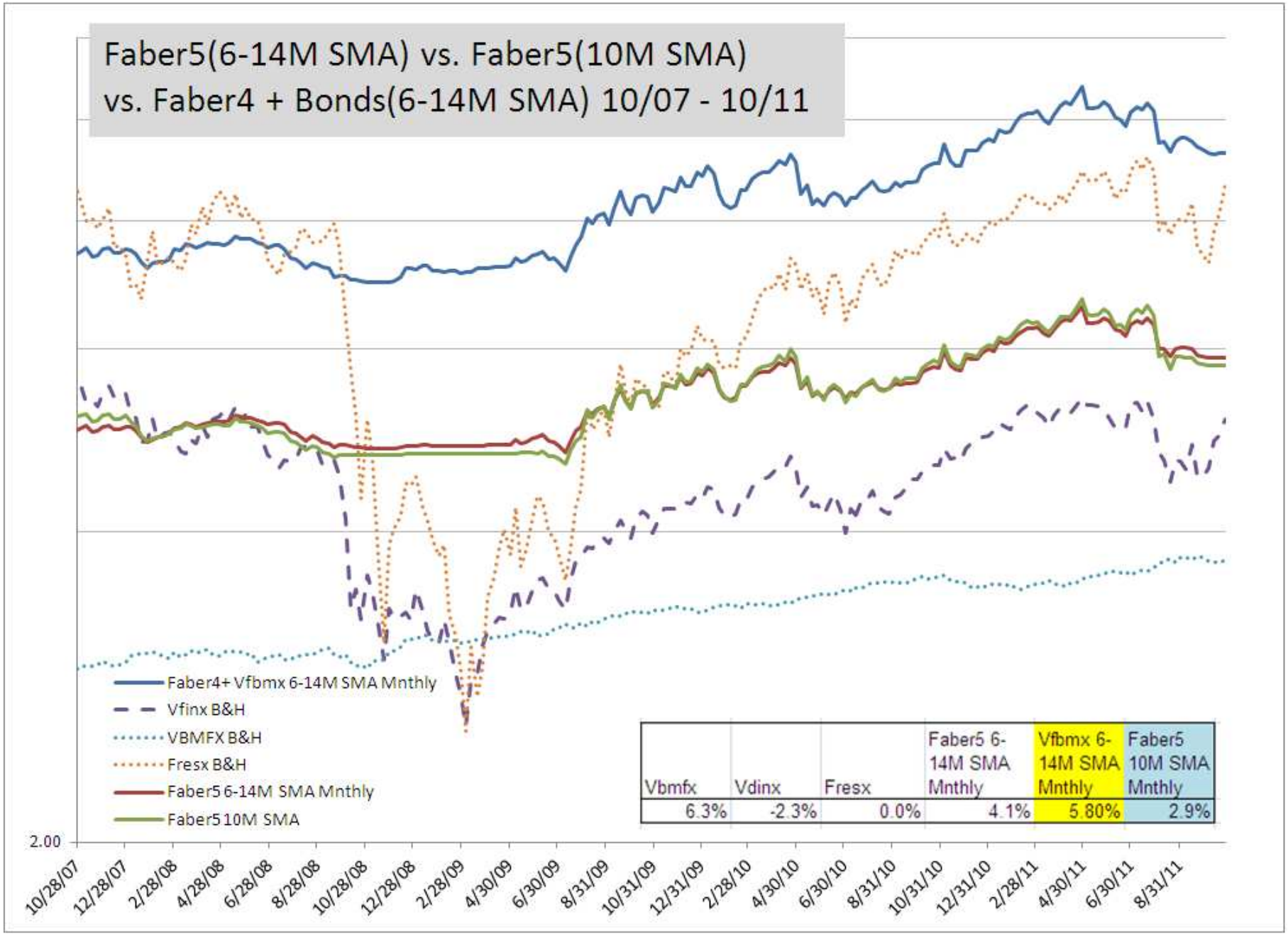
QTAA Variation 2: Faber4 + Bonds

- Faber5 performance suffers because of a constant weighting in bonds – even in the face of the most bullish circumstances
- To address this, you can let the 4 risky assets be 100% of the portfolio in strong bulls
  - Strong Bulls = All 4 assets 100% invested (using SMA phased entry/exit)
- The Faber4 + Bonds weighting rules are given below
  - Faber4%: 0-25% each based on SMA phased entry/exit
    - Portfolios can have 0 – 100% in these 4 asset classes dependent on bullishness
  - Bonds%: (1 – Faber4 total %) * Bond% (again based on SMA phased entry/exit)
    - Portfolios can have 0-100% invested in bonds
  - Cash%: 1 – Faber4 total% - Bond%



Faber Variations 5/91-10/11 (20.5 years)

	Vfbmx 6-14M SMA Mnthly	Faber5 6-14M SMA Mnthly	Faber5 10M SMA Mnthly
CAGR	11.5%	9.1%	9.0%
Max DD	14.1%	10.9%	14.4%
Yrly SD	8.2%	6.5%	7.8%
Calmar	0.82	0.83	0.62
Sharpe	1.41	1.39	1.15
#sw/year	20.2	15.7	7.1
% in Mkt	97%	76%	76%



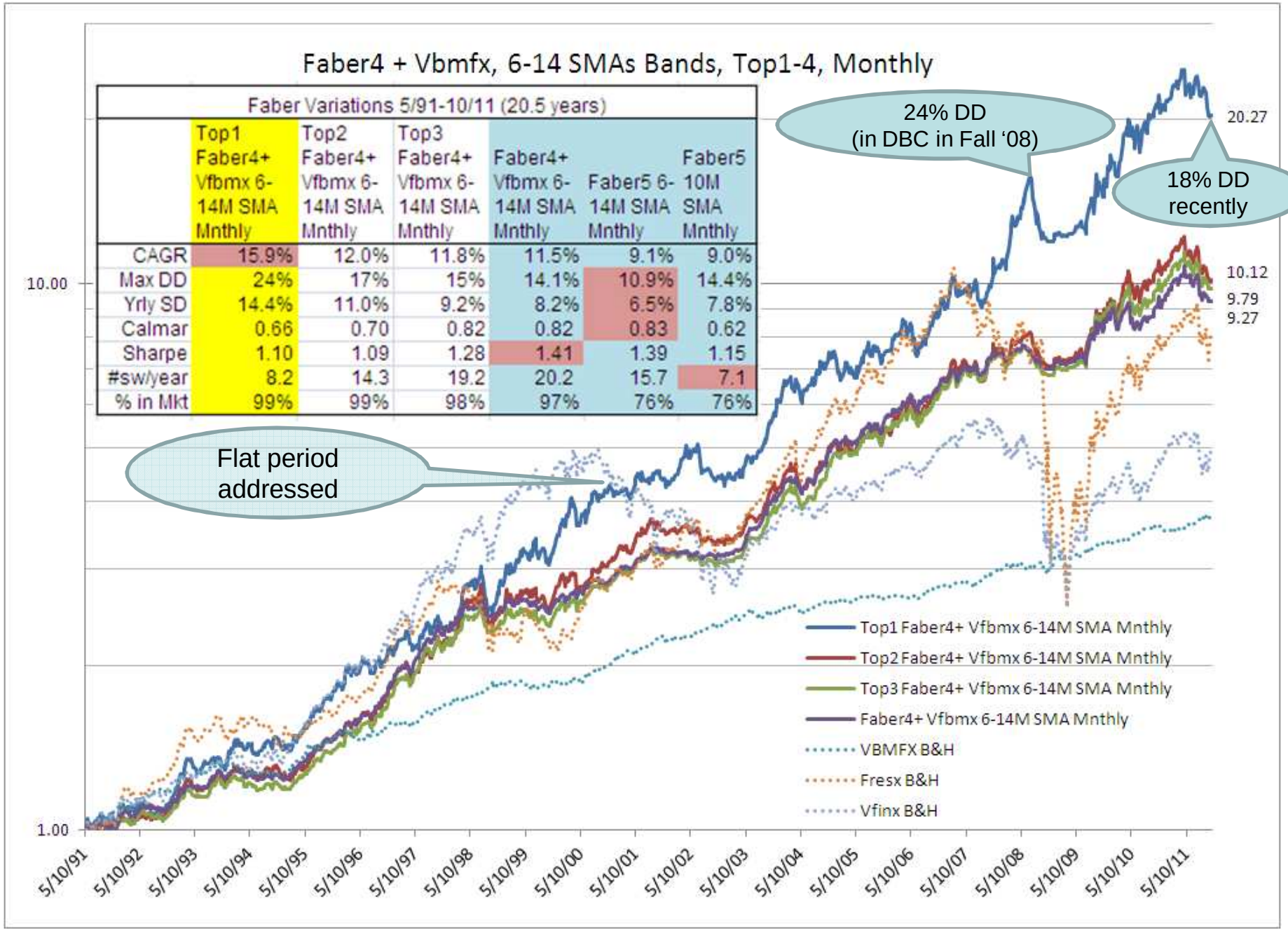
Vbmfx	Vdinx	Fresx	Faber5 6-14M SMA Mnthly	Vfbmx 6-14M SMA Mnthly	Faber5 10M SMA Mnthly
6.3%	-2.3%	0.0%	4.1%	5.80%	2.9%

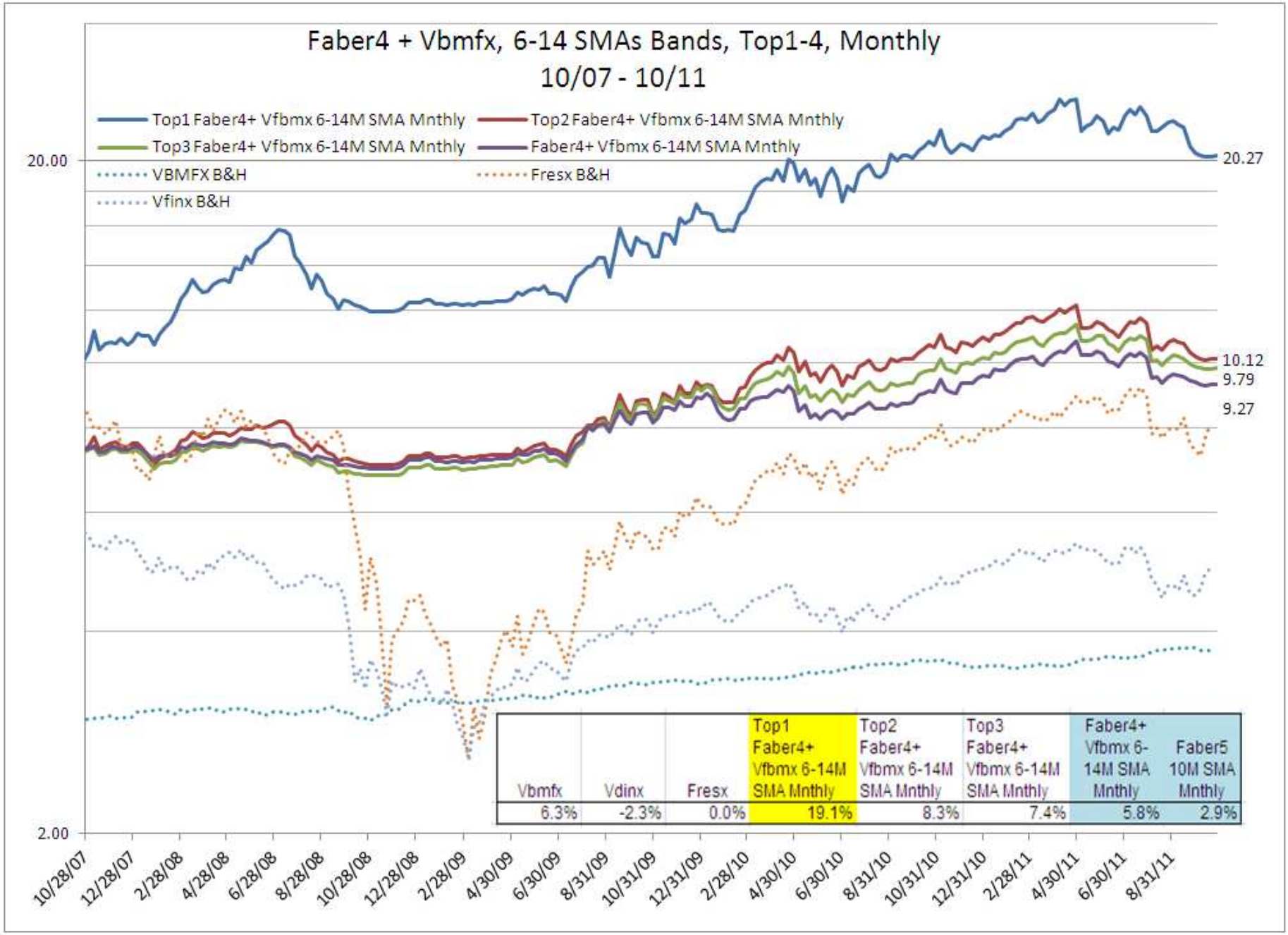
QTAA Variation 2: Faber4 + Bonds

- Takeaways:
  - Significant gain on CAGR without undue risk
  - Sharpe ratio improved
  - Well worth the time spent

QTAA Variation 3: Top1-4 Faber + Bonds

- By constructing a portfolio that uses the highest momentum of the Faber4 asset classes you can increase returns with higher risk
  - A similar approach has been used with the standard Faber5 assets
- As before, if the chosen Top1-3 assets are not 100% invested, the portion not invested is placed in bonds
- The momentum scoring used to rank the assets is the FundX scoring
  - FundX Score = 1mo + 3mo + 6mo + 12mo gains
- The following slides show the results of this approach

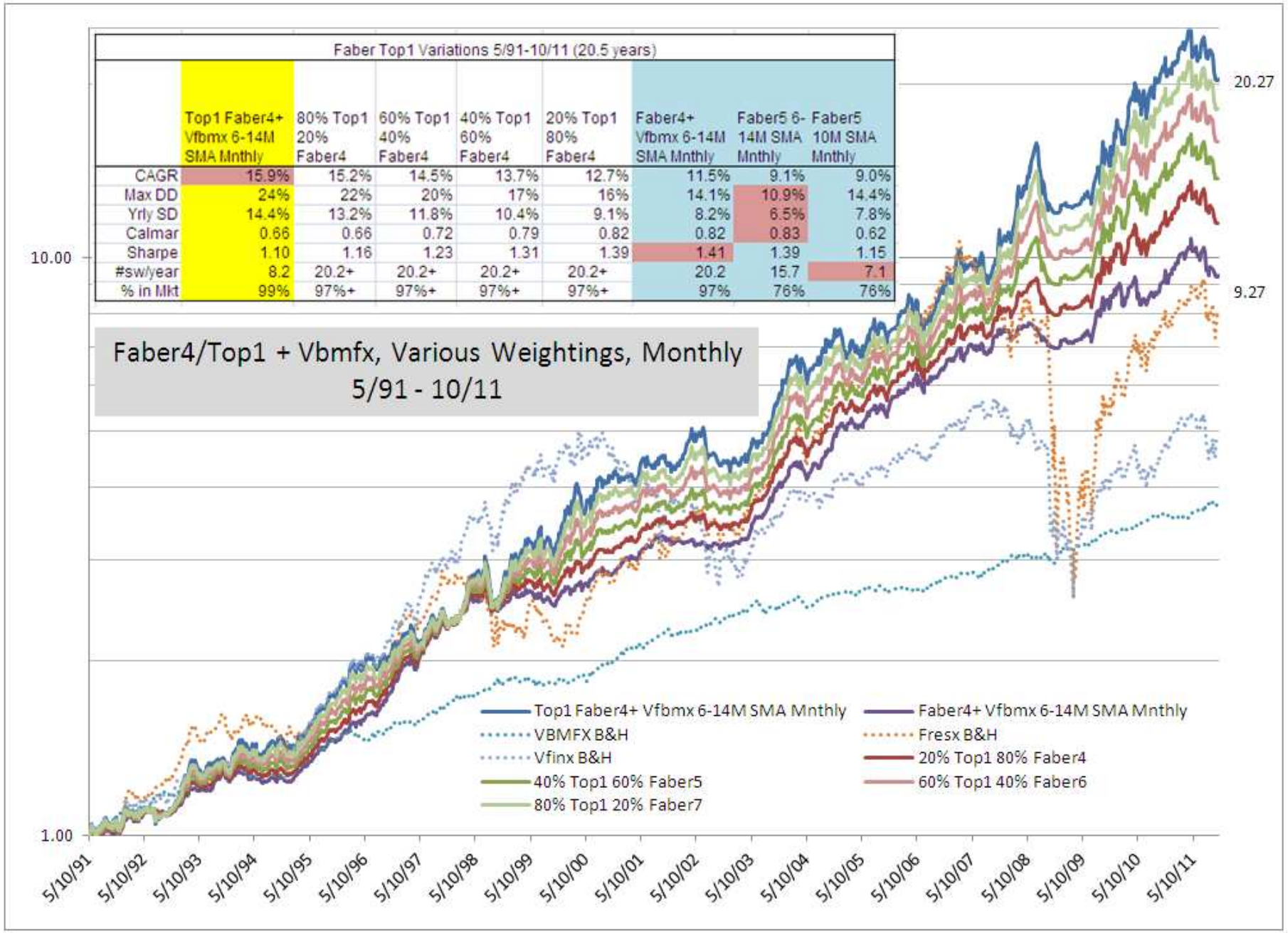

Faber4 + Vbmfx, 6-14 SMAs Bands, Top1-4, Monthly
Faber Variations 5/91-10/11 (20.5 years)
Top1 Faber4+ Vfbmx 6-14M SMA Mnthly
Top2 Faber4+ Vfbmx 6-14M SMA Mnthly
Top3 Faber4+ Vfbmx 6-14M SMA Mnthly
Faber4+ Vfbmx 6-14M SMA Mnthly
Faber5 6-14M SMA Mnthly
Faber5 10M SMA Mnthly
CAGR 15.9% 12.0% 11.8% 11.5% 9.1% 9.0%
Max DD 24% 17% 15% 14.1% 10.9% 14.4%
Yrly SD 14.4% 11.0% 9.2% 8.2% 6.5% 7.8%
Calmar 0.66 0.70 0.82 0.82 0.83 0.62
Sharpe 1.10 1.09 1.28 1.41 1.39 1.15
#sw/year 8.2 14.3 19.2 20.2 15.7 7.1
% in Mkt 99% 99% 98% 97% 76% 76%
24% DD (in DBC in Fall '08)
18% DD recently
Flat period addressed
20.27
10.12
9.79
9.27
10.00
1.00
Top1 Faber4+ Vfbmx 6-14M SMA Mnthly
Top2 Faber4+ Vfbmx 6-14M SMA Mnthly
Top3 Faber4+ Vfbmx 6-14M SMA Mnthly
Faber4+ Vfbmx 6-14M SMA Mnthly
VBMFX B&H
Fresx B&H
Vfinx B&H
5/10/91
5/10/92
5/10/93
5/10/94
5/10/95
5/10/96
5/10/97
5/10/98
5/10/99
5/10/00
5/10/01
5/10/02
5/10/03
5/10/04
5/10/05
5/10/06
5/10/07
5/10/08
5/10/09
5/10/10
5/10/11


Faber4 + Vbmfx, 6-14 SMAs Bands, Top1-4, Monthly
10/07 - 10/11
Top1 Faber4+ Vfbmx 6-14M SMA Mnthly
Top2 Faber4+ Vfbmx 6-14M SMA Mnthly
Top3 Faber4+ Vfbmx 6-14M SMA Mnthly
Faber4+ Vfbmx 6-14M SMA Mnthly
VBMFX B&H
Fresx B&H
Vfinx B&H
20.00
2.00
20.27
10.12
9.79
9.27
Vbmfx 6.3%
Vdinx -2.3%
Fresx 0.0%
Top1 Faber4+ Vfbmx 6-14M SMA Mnthly 19.1%
Top2 Faber4+ Vfbmx 6-14M SMA Mnthly 8.3%
Top3 Faber4+ Vfbmx 6-14M SMA Mnthly 7.4%
Faber4+ Vfbmx 6-14M SMA Mnthly 5.8%
Faber5 10M SMA Mnthly 2.9%
10/28/07
12/28/07
2/28/08
4/28/08
6/28/08
8/28/08
10/28/08
12/28/08
2/28/09
4/30/09
6/30/09
8/31/09
10/31/09
12/31/09
2/28/10
4/30/10
6/30/10
8/31/10
10/31/10
12/31/10
2/28/11
4/30/11
6/30/11
8/31/11

QTAA Variation 3: Top1-4 Faber + Bonds

- While the “Top1” asset may be attractive from a return viewpoint it adds risk (higher MDD, lower Sharpe)
- The Top2 and Top3 assets don’t add enough return to be interesting (IMHO)

- One way to address the higher risk of the “Top1” approach is to create a mix of the Faber4 and Top1 portfolios that meets your risk/return profile
- The example on the next slide shows a family of curves generated by having different weightings (20/80, 40/60, 60/40, 80/20) of the two approaches


Faber Top1 Variations 5/91-10/11 (20.5 years)
Top1 Faber4+ Vfbmx 6-14M SMA Mnthly
80% Top1 20% Faber4
60% Top1 40% Faber4
40% Top1 60% Faber4
20% Top1 80% Faber4
Faber4+ Vfbmx 6-14M SMA Mnthly
Faber5 6-14M SMA Mnthly
Faber5 10M SMA Mnthly
CAGR 15.9% 15.2% 14.5% 13.7% 12.7% 11.5% 9.1% 9.0%
Max DD 24% 22% 20% 17% 16% 14.1% 10.9% 14.4%
Yrly SD 14.4% 13.2% 11.8% 10.4% 9.1% 8.2% 6.5% 7.8%
Calmar 0.66 0.66 0.72 0.79 0.82 0.82 0.83 0.62
Sharpe 1.10 1.16 1.23 1.31 1.39 1.41 1.39 1.15
#sw/year 8.2 20.2+ 20.2+ 20.2+ 20.2+ 20.2 15.7 7.1
% in Mkt 99% 97%+ 97%+ 97%+ 97%+ 97% 76% 76%
Faber4/Top1 + Vbmfx, Various Weightings, Monthly
5/91 - 10/11
20.27
9.27
10.00
1.00
Top1 Faber4+ Vfbmx 6-14M SMA Mnthly
Faber4+ Vfbmx 6-14M SMA Mnthly
VBMFX B&H
Fresx B&H
Vfinx B&H
20% Top1 80% Faber4
40% Top1 60% Faber5
60% Top1 40% Faber6
80% Top1 20% Faber7
5/10/91
5/10/92
5/10/93
5/10/94
5/10/95
5/10/96
5/10/97
5/10/98
5/10/99
5/10/00
5/10/01
5/10/02
5/10/03
5/10/04
5/10/05
5/10/06
5/10/07
5/10/08
5/10/09
5/10/10
5/10/11

Summary/Checkpoint on QTAA Variations

- How well does this work? Does it increase profits? Does it reduce risk?
  - The timeframe variation reduces risk but adds no return
  - The Faber4+Bonds increases returns with the same risk
  - The Top1 Faber + Bonds increases both risk and return
  - A weighted mix of the Faber4 + Top1 allows you to pick your risk/reward point
- Can you really implement this?
  - All the variations can be easily implemented via ETFs, Mutual funds.
  - Trade count, frequency goes up with these variations. Commission costs, taxes (wash sales) and mutual fund restrictions should be considered
- How much time does it take to implement?
  - Start up time: Spreadsheet: 4-8 hours.
  - Ongoing: Spreadsheet:1 hour max. Trades: 1 hour max. Both depend on interface used.
- What are the pitfalls? (i.e., how will it fail in principle or operationally)
  - In principle: Assets become (even more) correlated; long-term bull or bear markets in one or more assets;
  - Operationally: Lack of discipline to monitor, perform trades; Typos and other finger checks
- How do I get started?
  - General: Start slow with small amounts of $$$ to learn the system, build confidence, work through operational details/glitches, etc.
  - Spreadsheet based: Download spreadsheet, study, update a few times, and begin

The SP500, Gold & Bonds

(From last year's presentation…)

SPY/GLD/Bonds: What Works with Gold?

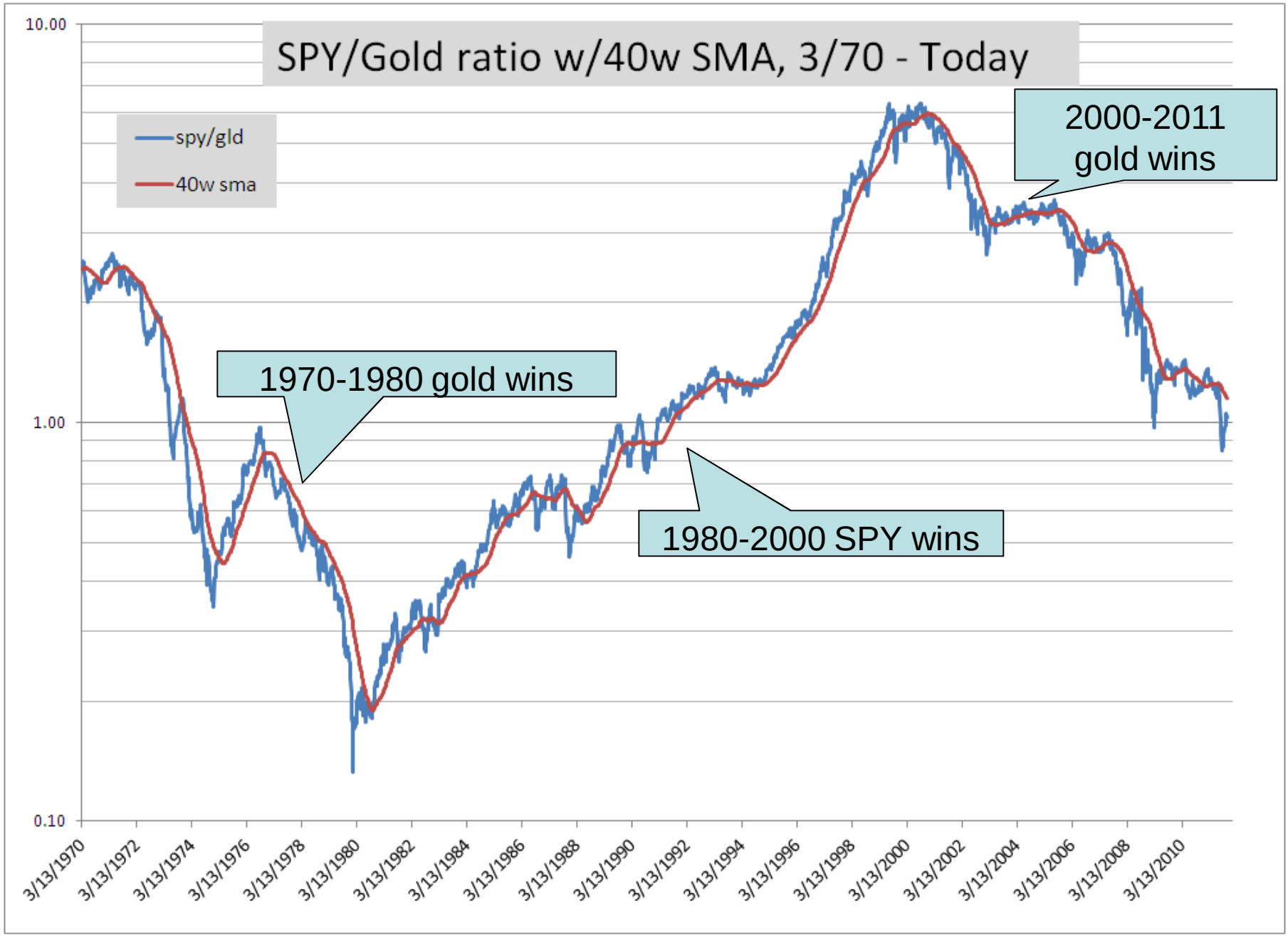
- Do the techniques we've been discussing work with Gold? Yes, BUT….
  - Gold is very volatile and while timing with long term moving averages and switching between gold and other asset classes helps reduce volatility ***it is still quite a wild ride….***

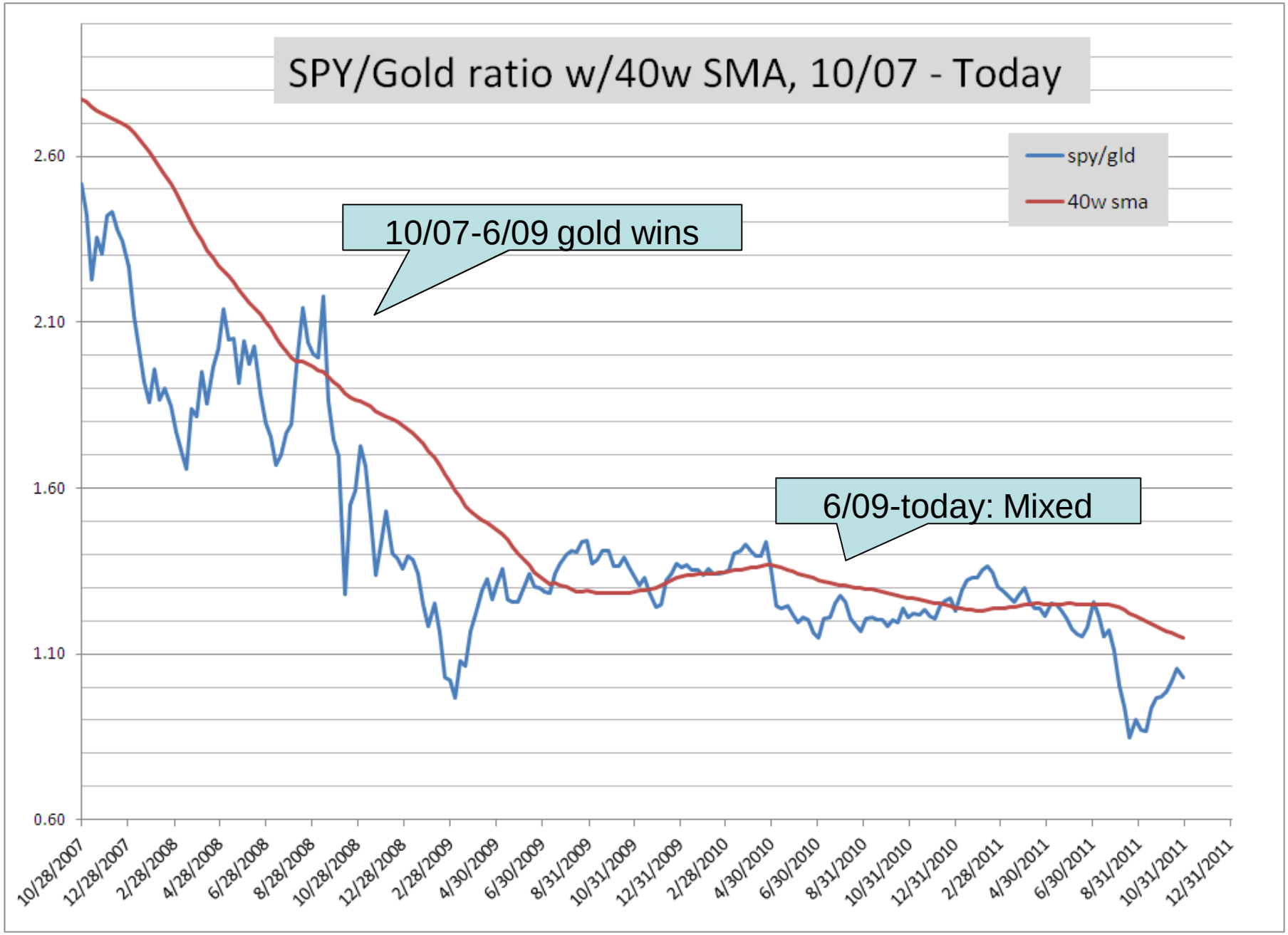
- The following slide show Gold since 1970 timed with a 40w SMA sampled monthly. While it does a good job of keeping you out of gold during its long bear market, it is ***NOT*** a panacea…

	CRR	MDD	Calmar	%in	#sw	sw/year
Gold B&H	9.7%	69.6%	0.14	100%	1	0
Gold 40w SMA sw monthly	11.5%	41.8%	0.28	61%	59	1.4

The SPY/GLD Ratio

- For more aggressive investors, consider the SPY/Gold ratio.
  - This ratio is performed by dividing the SPY (SP500) by the price of gold
  - When the ratio is rising, invest in SPY, when falling invest in Gold
  - Apply a 40w moving average to detect the long term trend
- What is this really doing?
  - You are looking at two uncorrelated assets (SPY, Gold) and detecting which one is in ascendance
  - The 40w SMA is a simple trend detecting mechanism

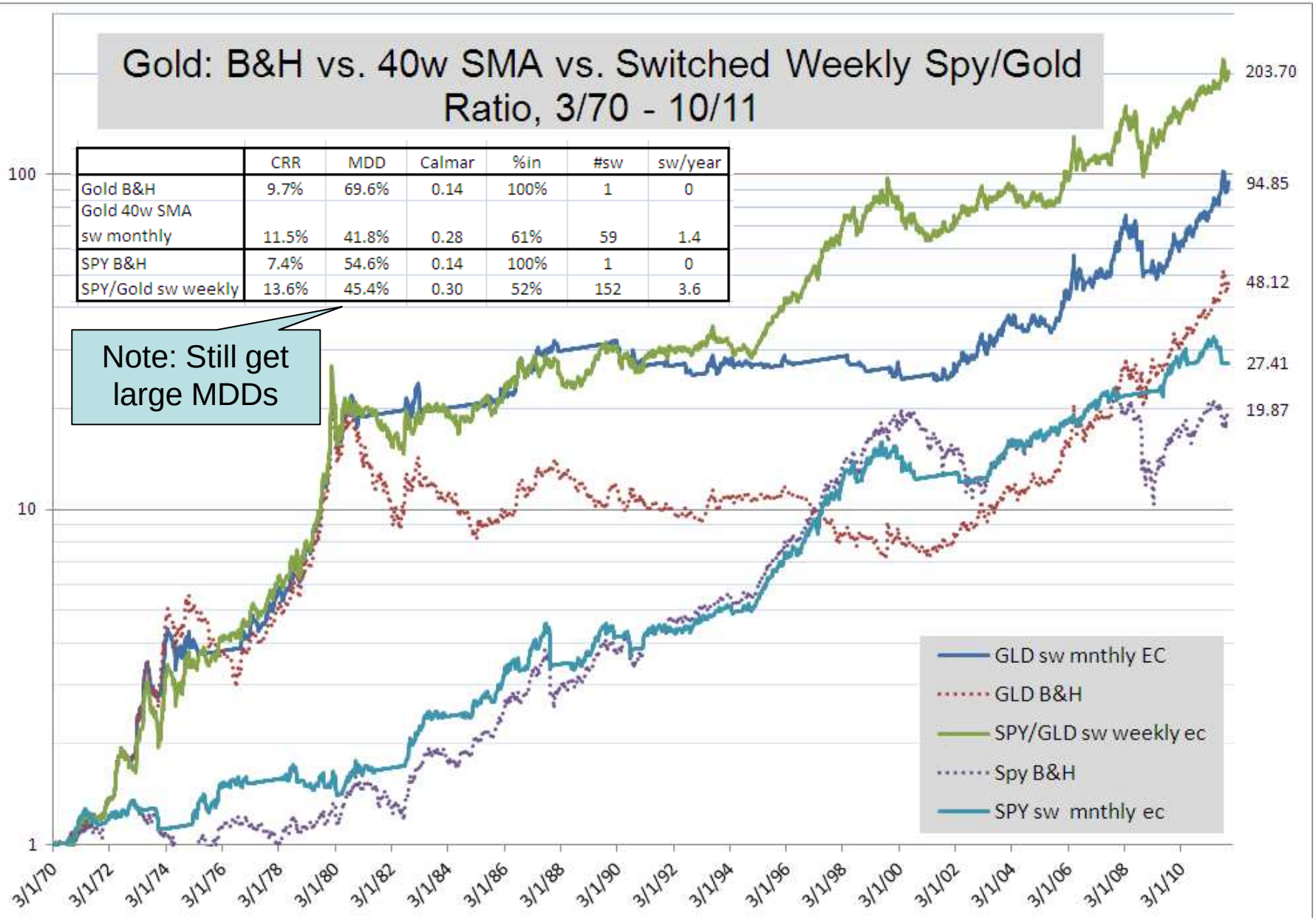

SPY/Gold ratio w/40w SMA, 3/70 - Today
spy/gld
40w sma
2000-2011
gold wins
1970-1980 gold wins
1980-2000 SPY wins
10.00
1.00
0.10
3/13/1970
3/13/1972
3/13/1974
3/13/1976
3/13/1978
3/13/1980
3/13/1982
3/13/1984
3/13/1986
3/13/1988
3/13/1990
3/13/1992
3/13/1994
3/13/1996
3/13/1998
3/13/2000
3/13/2002
3/13/2004
3/13/2006
3/13/2008
3/13/2010

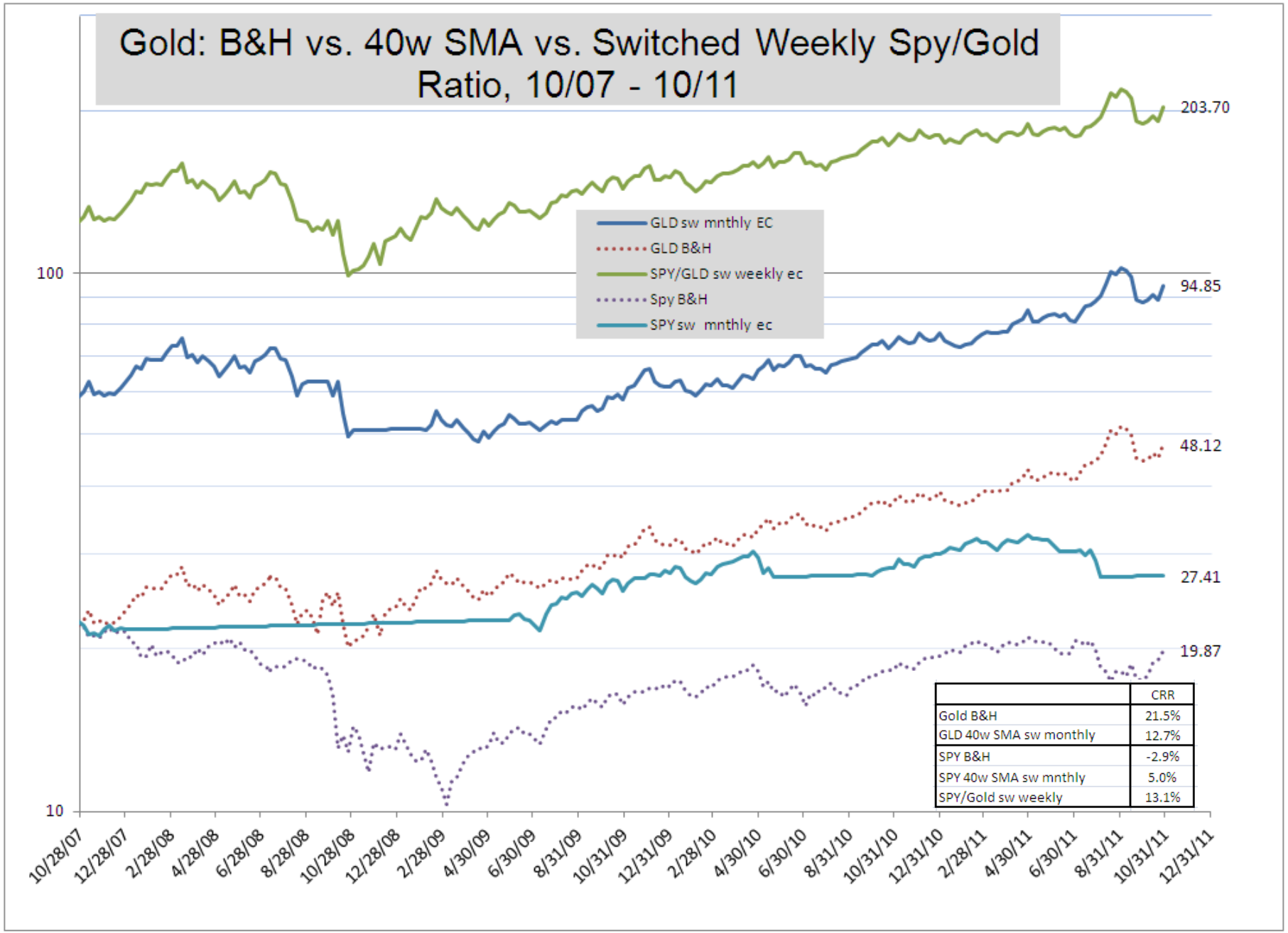

SPY/Gold ratio w/40w SMA, 10/07 - Today
spy/gld
40w sma
10/07-6/09 gold wins
6/09-today: Mixed
2.60
2.10
1.60
1.10
0.60
10/28/2007
12/28/2007
2/28/2008
4/28/2008
6/28/2008
8/28/2008
10/28/2008
12/28/2008
2/28/2009
4/30/2009
6/30/2009
8/31/2009
10/31/2009
12/31/2009
2/28/2010
4/30/2010
6/30/2010
8/31/2010
10/31/2010
12/31/2010
2/28/2011
4/30/2011
6/30/2011
8/31/2011
10/31/2011
12/31/2011

Gold: B&H vs. 40w SMA vs. Switched Weekly Spy/Gold Ratio, 3/70 - 10/11

	CRR	MDD	Calmar	%in	#sw	sw/year
Gold B&H	9.7%	69.6%	0.14	100%	1	0
Gold 40w SMA sw monthly	11.5%	41.8%	0.28	61%	59	1.4
SPY B&H	7.4%	54.6%	0.14	100%	1	0
SPY/Gold sw weekly	13.6%	45.4%	0.30	52%	152	3.6

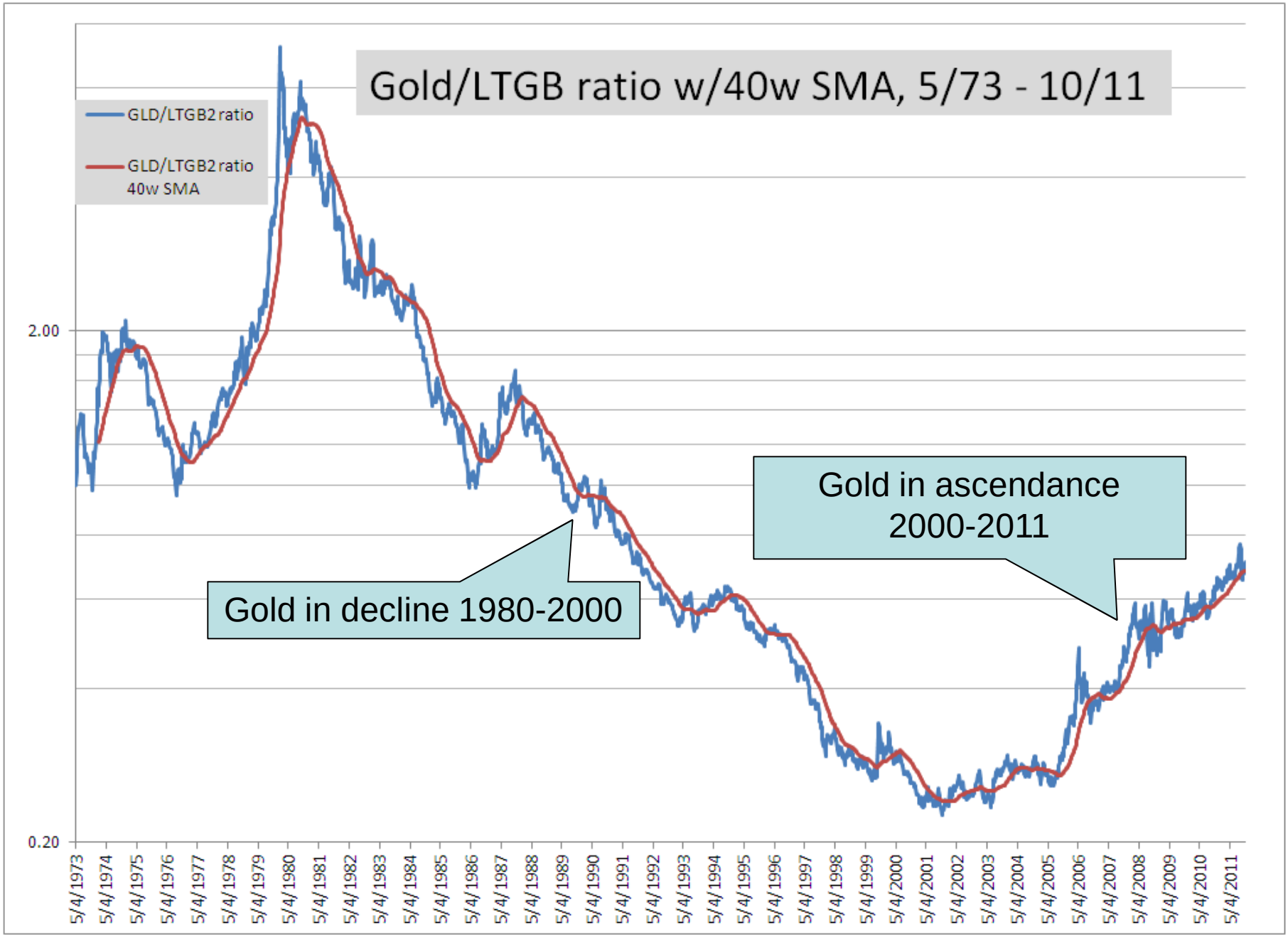
Note: Still get large MDDs




Gold: B&H vs. 40w SMA vs. Switched Weekly Spy/Gold Ratio, 10/07 - 10/11
203.70
94.85
48.12
27.41
19.87
100
10
GLD sw mnthly EC
GLD B&H
SPY/GLD sw weekly ec
Spy B&H
SPY sw mnthly ec
CRR
Gold B&H 21.5%
GLD 40w SMA sw monthly 12.7%
SPY B&H -2.9%
SPY 40w SMA sw mnthly 5.0%
SPY/Gold sw weekly 13.1%
10/28/07
12/28/07
2/28/08
4/28/08
6/28/08
8/28/08
10/28/08
12/28/08
2/28/09
4/30/09
6/30/09
8/31/09
10/31/09
12/31/09
2/28/10
4/30/10
6/30/10
8/31/10
10/31/10
12/31/10
2/28/11
4/30/11
6/30/11
8/31/11
10/31/11
12/31/11

The GLD/Bond Ratio

- Obviously the same ratios can be performed with bonds & gold
  - This ratio is performed by dividing the Gold by bonds (in this case VWESX)
  - When the ratio is rising, invest in Gold, when falling invest in bonds
  - Apply a 40w moving average to detect the long term trend
- What is this really doing?
  - You are looking at two uncorrelated assets (Bonds, Gold) and detecting which one is in ascendance
  - The 40w SMA is a simple trend detecting mechanism


Gold/LTGB ratio w/40w SMA, 5/73 - 10/11
GLD/LTGB2 ratio
GLD/LTGB2 ratio 40w SMA
2.00
0.20
Gold in decline 1980-2000
Gold in ascendance 2000-2011
5/4/1973
5/4/1974
5/4/1975
5/4/1976
5/4/1977
5/4/1978
5/4/1979
5/4/1980
5/4/1981
5/4/1982
5/4/1983
5/4/1984
5/4/1985
5/4/1986
5/4/1987
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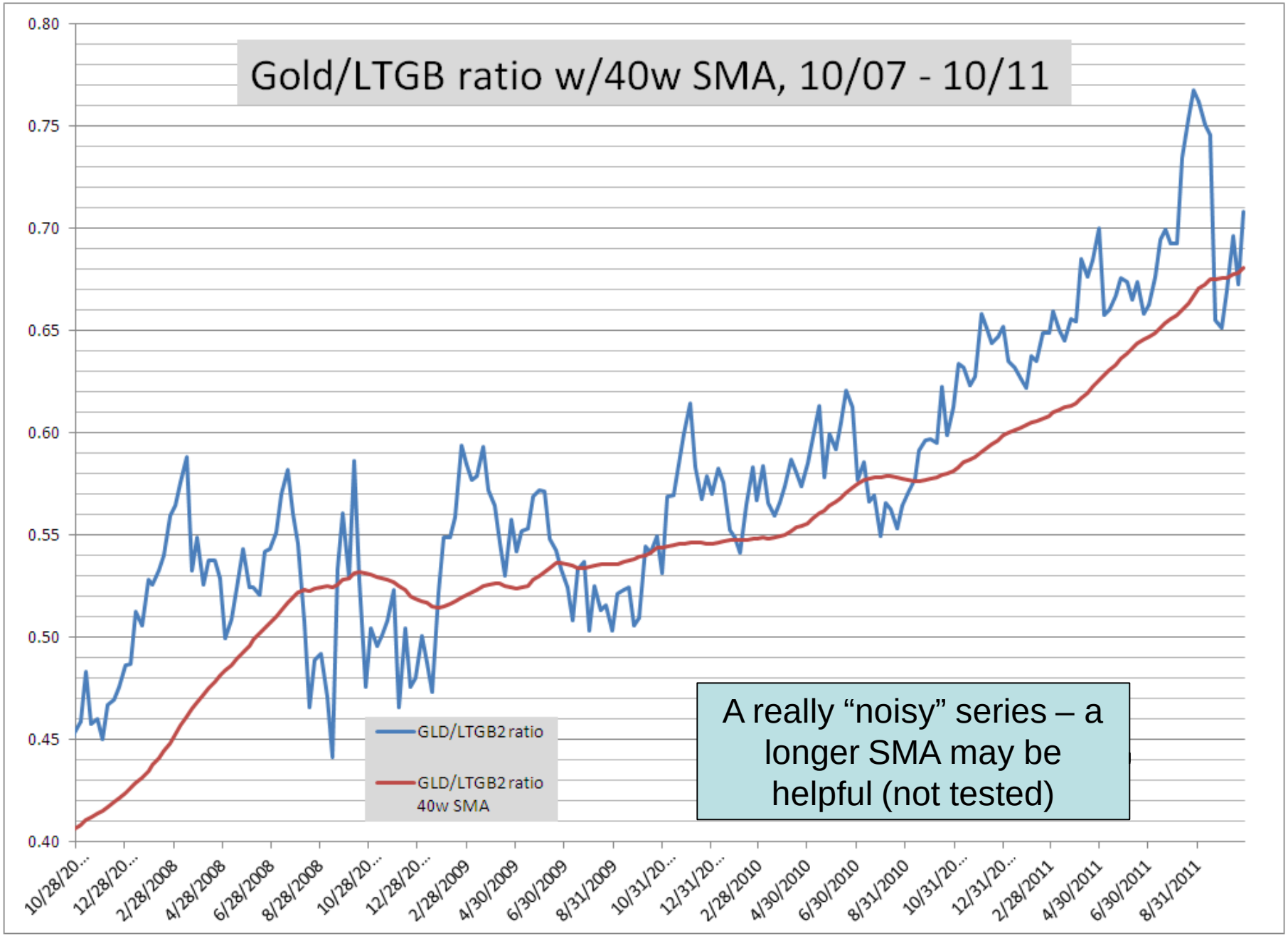
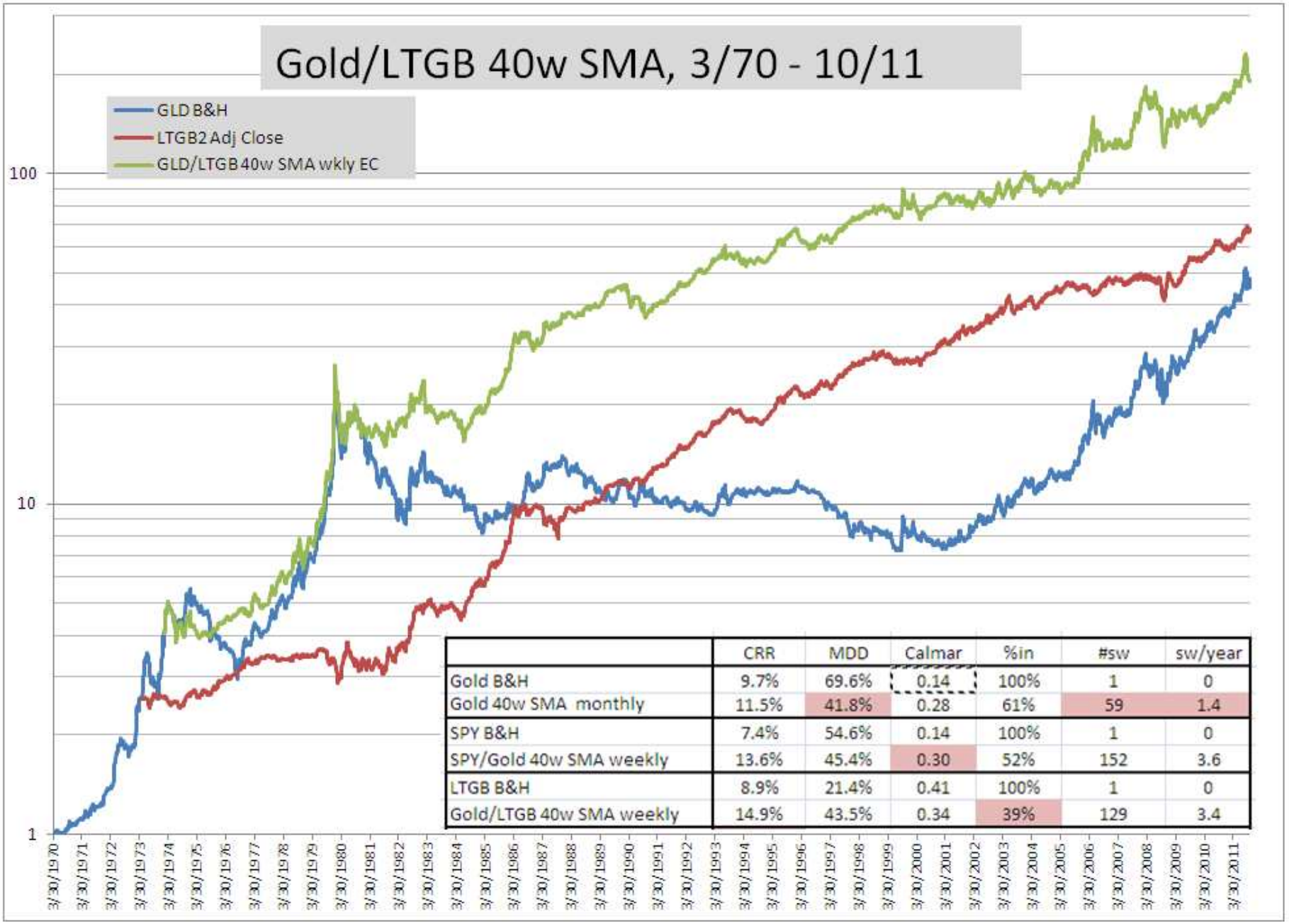
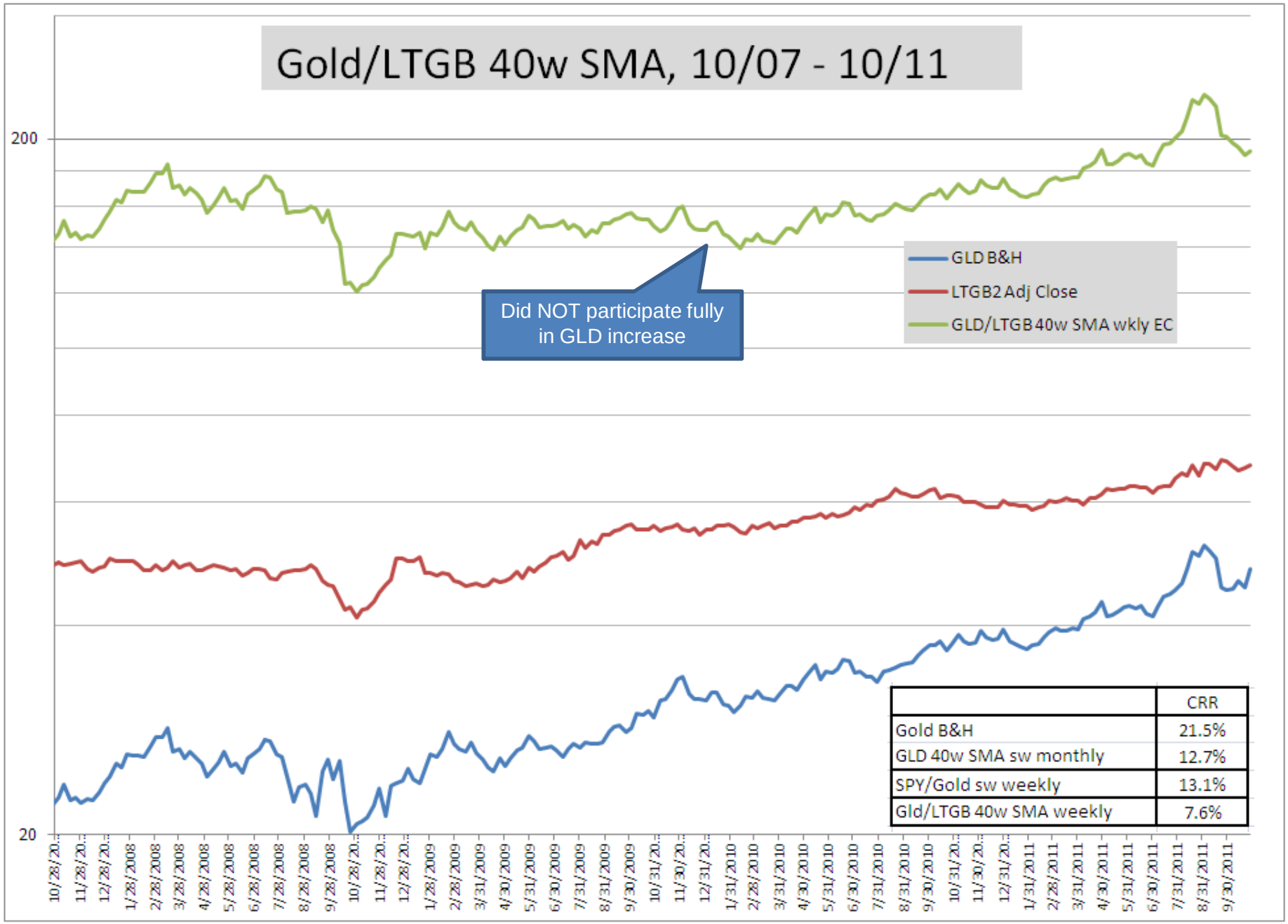
5/4/2007
5/4/2008
5/4/2009
5/4/2010
5/4/2011

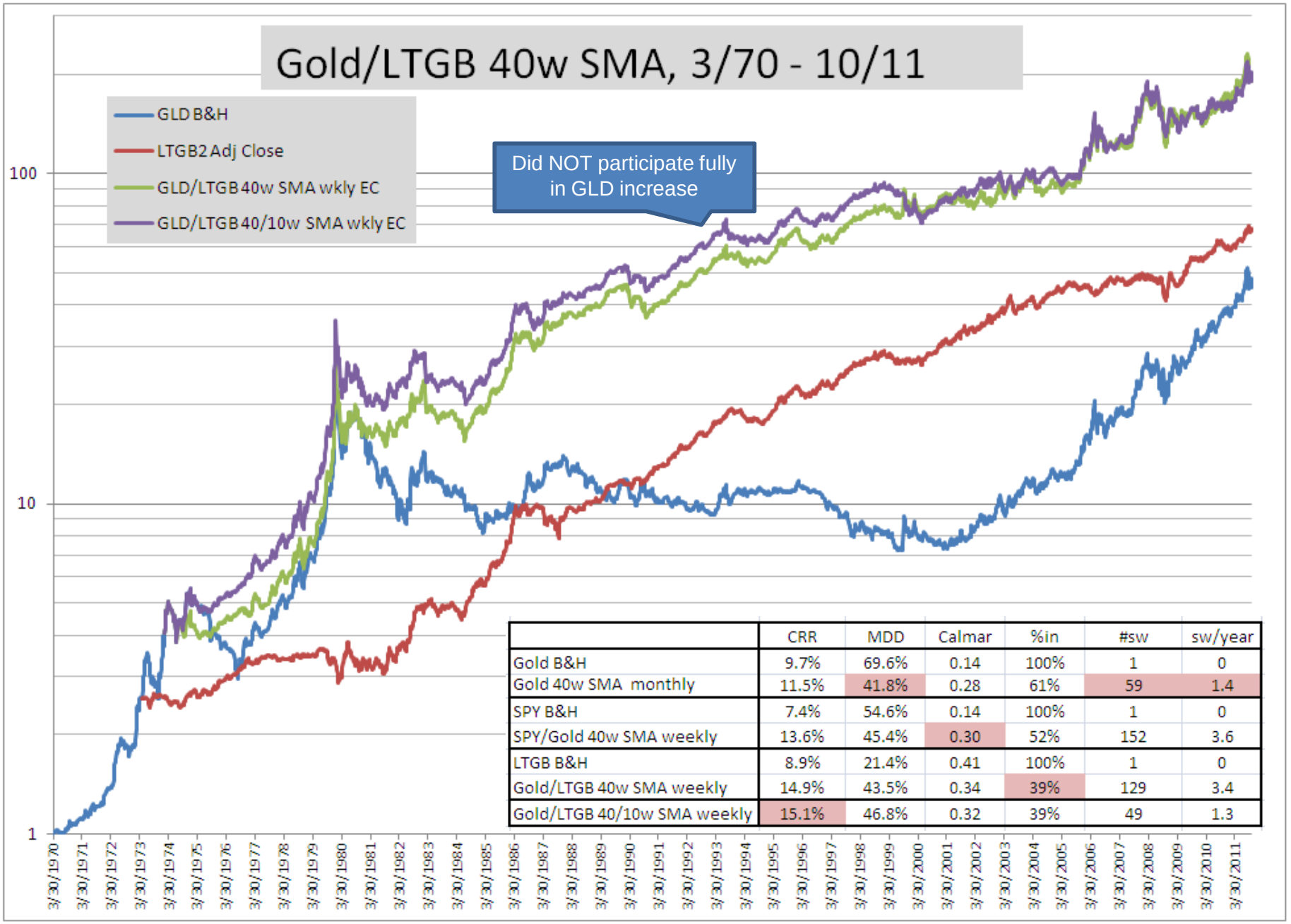

Gold/LTGB ratio w/40w SMA, 10/07 - 10/11
0.80
0.75
0.70
0.65
0.60
0.55
0.50
0.45
0.40
GLD/LTGB2 ratio
GLD/LTGB2 ratio 40w SMA
A really "noisy" series – a longer SMA may be helpful (not tested)
10/28/20...
12/28/20...
2/28/2008
4/28/2008
6/28/2008
8/28/2008
10/28/20...
12/28/20...
2/28/2009
4/30/2009
6/30/2009
8/31/2009
10/31/20...
12/31/20...
2/28/2010
4/30/2010
6/30/2010
8/31/2010
10/31/20...
12/31/20...
2/28/2011
4/30/2011
6/30/2011
8/31/2011


Symbol
Periods
GLD:VWESX
Weekly
Update
Inspect
GLD:VWESX (SPDR Gold Trust Shares/Vanguard Long-Term Corporate Fund) NYSE/USMF
©StockCharts.com
3-Nov-2011
Open 16.13 High 16.54 Low 15.73 Close 16.40 Chg -0.40 (-2.37%)
GLD:VWESX (Weekly) 16.40
MA(10) 16.61
MA(40) 16.20
Ratio above 40w SMA - invest in SPY
Ratio above 40w SMA - invest in SPY
Ratio below 40w SMA - invest in FBNDX
Can monitor via StockCharts.com
(Note: no dividends included)
18.0
17.5
17.0
16.40
16.20
15.5
15.0
14.5
14.0
13.5
13.0
12.5
12.0
11.5
N D 09 F M A M J J A S O N D 10 F M A M J J A S O N D 11 F M A M J J A S O



	CRR	MDD	Calmar	%in	#sw	sw/year
Gold B&H	9.7%	69.6%	0.14	100%	1	0
Gold 40w SMA monthly	11.5%	41.8%	0.28	61%	59	1.4
SPY B&H	7.4%	54.6%	0.14	100%	1	0
SPY/Gold 40w SMA weekly	13.6%	45.4%	0.30	52%	152	3.6
LTGB B&H	8.9%	21.4%	0.41	100%	1	0
Gold/LTGB 40w SMA weekly	14.9%	43.5%	0.34	39%	129	3.4


Gold/LTGB 40w SMA, 10/07 - 10/11
200
20
GLD B&H
LTGB2 Adj Close
GLD/LTGB 40w SMA wkly EC
Did NOT participate fully in GLD increase
CRR
Gold B&H 21.5%
GLD 40w SMA sw monthly 12.7%
SPY/Gold sw weekly 13.1%
Gld/LTGB 40w SMA weekly 7.6%



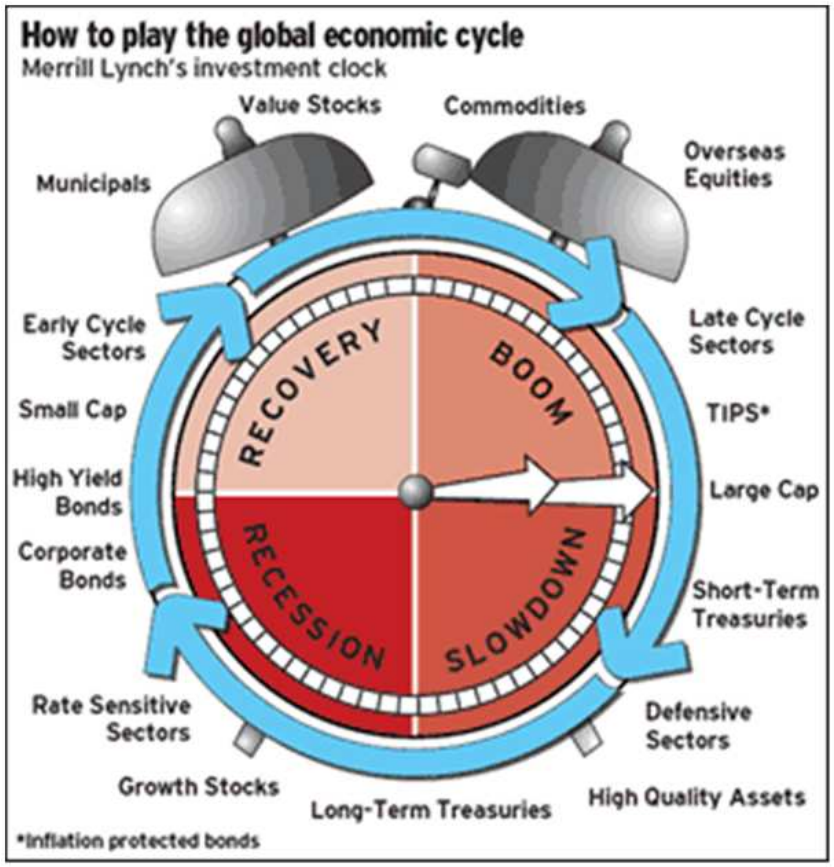
	CRR	MDD	Calmar	%in	#sw	sw/year
Gold B&H	9.7%	69.6%	0.14	100%	1	0
Gold 40w SMA monthly	11.5%	41.8%	0.28	61%	59	1.4
SPY B&H	7.4%	54.6%	0.14	100%	1	0
SPY/Gold 40w SMA weekly	13.6%	45.4%	0.30	52%	152	3.6
LTGB B&H	8.9%	21.4%	0.41	100%	1	0
Gold/LTGB 40w SMA weekly	14.9%	43.5%	0.34	39%	129	3.4
Gold/LTGB 40/10w SMA weekly	15.1%	46.8%	0.32	39%	49	1.3

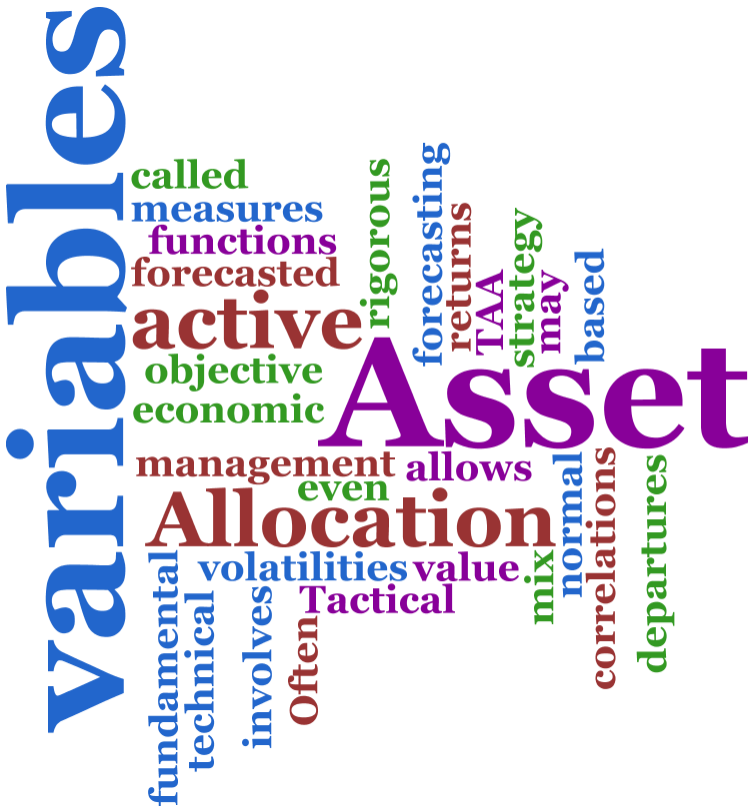
Summary/Checkpoint on SPY/GLD/Bonds

- How well does this work? Does it increase profits? Does it reduce risk?
  - The 40w SMA on GLD helps reduce risk - but it is still a wild ride
  - Switching between SPY & GLD, LTGB & GLD increases return at about the same risk
- Can you really implement this?
  - All the variations can be easily implemented via ETFs (SPY, GLD, TLT/AGG)
  - Trade count reasonable (on average)
  - Since it is a weekly algorithm more attention, time is required.
  - Taxes (wash sales) and mutual fund restrictions should be considered
- How much time does it take to implement?
  - Start up time: Spreadsheet: 4-8 hours. Charts: 1 hour (max)
  - Ongoing: Spreadsheet:1 hour max. Charts: 15 minutes max. Many weeks it takes a few minutes (if that).
- What are the pitfalls? (i.e., how will it fail in principle or operationally)
  - In principle: Stocks/Bonds become correlated with Gold. SMA could fail and cause thrashing.
  - Operationally: Lack of discipline to monitor, perform trades; Typos and other finger checks
- How do I get started?
  - General: Start slow with small amounts of $$$ to learn the system, build confidence, work through operational details/glitches, etc.
  - Spreadsheet based: Download spreadsheet, study, update a few times, and begin
  - Chart based: Setup charts at Yahoo!, StockCharts.com, etc. and begin

A Look at some Asset Allocators

(a *very* quick look…)





A Look at Asset Allocators: Introduction

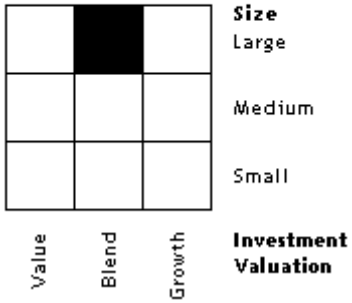
- There are more ETFs, Mutual Funds appearing that provide asset allocation
  - Beyond the classic Growth & Income and Lifecycle funds
  - Some static allocators, some dynamic
  - Some complex, many instruments. Some straightforward
- We will take a quick look to see how “the pros” are doing
  - Helps to makes performance, risk comparisons
  - If you’re interested in an AA approach, and don’t want to DIY you can pick one or more of these types of funds and have the pros do it for you
- Will examine 4 Long-Only ETFs/MFs
  - GTAA: Faber’s Cambria ETF that implements QTAA
  - PRPFX: Permanent Portfolio – “static” allocator
  - HSGFX: Hussman Strategic Growth – dynamic allocator
  - VAPAX: Virtus Premium AlphaSector – dynamic allocator
- In each case will look at Yahoo! performance, profile of the fund
  - A “quick look”/overview - NOT a “long stare”/in depth analysis

- And with that --- away we go!

Quick Look: GTAA

Morningstar Style Box

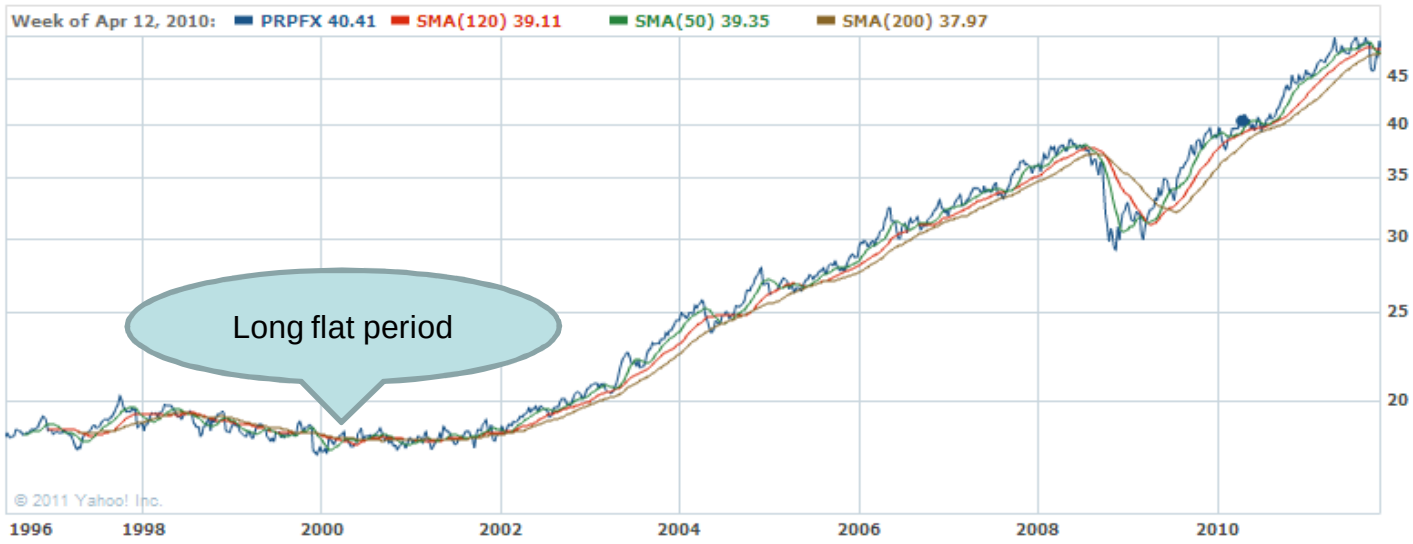
Moderate Allocation
[View Category Definition]



Fund Summary

The investment seeks to preserve and grow capital from investments in the U.S. and foreign equity, fixed income, commodity and currency markets, independent of market direction. The fund is considered a â□□fund-of-fundsâ□□ that seeks to achieve its investment objective by primarily investing in other exchange-traded funds that offer diversified exposure, including inverse exposure to; global regions, countries, styles (market capitalization, value, growth, etc.) or sectors, and exchange-traded products including, but not limited to; exchange-traded notes, exchange-traded currency trusts and closed-end funds.

Quick Look: PRPFX



Quick Look: PRPFX

Holdings as of Sep 30, 2011 Get Holdir

Overall Portfolio Composition (%)	
Cash:	15.76
Stocks:	28.72
Bonds:	30.94
Other:	24.58

Top 10 Holdings (35.94% of Total Assets)			
Company	Symbol	% Assets	YTD Return %
Gold/US Golden Eagles	N/A	7.06	N/A
Gold Canadian Maple Leaf	N/A	7.01	N/A
Gold Bullion Comex Eligible	N/A	5.84	N/A
Silver Bullion Comex Eligible	N/A	3.83	N/A
US Treasury Bond 9%	N/A	2.64	N/A
United States Treas Bds 9%	N/A	2.30	N/A
United States Treas Bds 6%	N/A	1.92	N/A
United States Treas Bds 6.25%	N/A	1.91	N/A
United States Treas Bds 7.25%	N/A	1.84	N/A
United States Treas Bds 5.25%	N/A	1.59	N/A

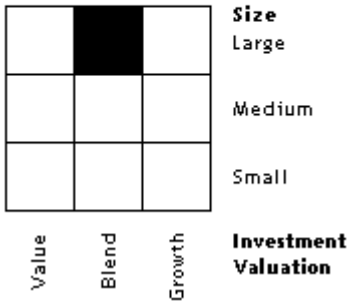
Risk (Modern Portfolio Theory) Statistics		
3 Years		
Statistic	PRPFX	Category
Alpha (against Standard Index)	5.24	1.12
Beta (against Standard Index)	0.86	0.74
Mean Annual Return	0.85	0.42
R-squared (against Standard Index)	76.86	89.42
Standard Deviation	13.90	11.25
Sharpe Ratio	0.72	0.44
Treynor Ratio	10.96	6.47

Fund Summary

The investment seeks to preserve and increase the purchasing power value of its shares over the long term. The fund invests a fixed target percentage of net assets in the following investment categories: gold, silver, Swiss franc assets such as Swiss franc denominated deposits and bonds of the federal government of Switzerland, stocks of U.S. and foreign real estate and natural resource companies, aggressive growth stocks and dollar assets such as U.S. Treasury securities and short-term corporate bonds.

Morningstar Style Box

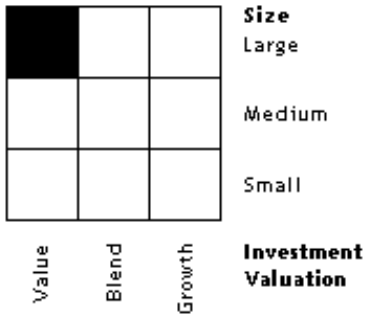
Conservative Allocation
[View Category Definition]



Quick Look: VAPAX

Morningstar Style Box

Large Blend
[View Category Definition]

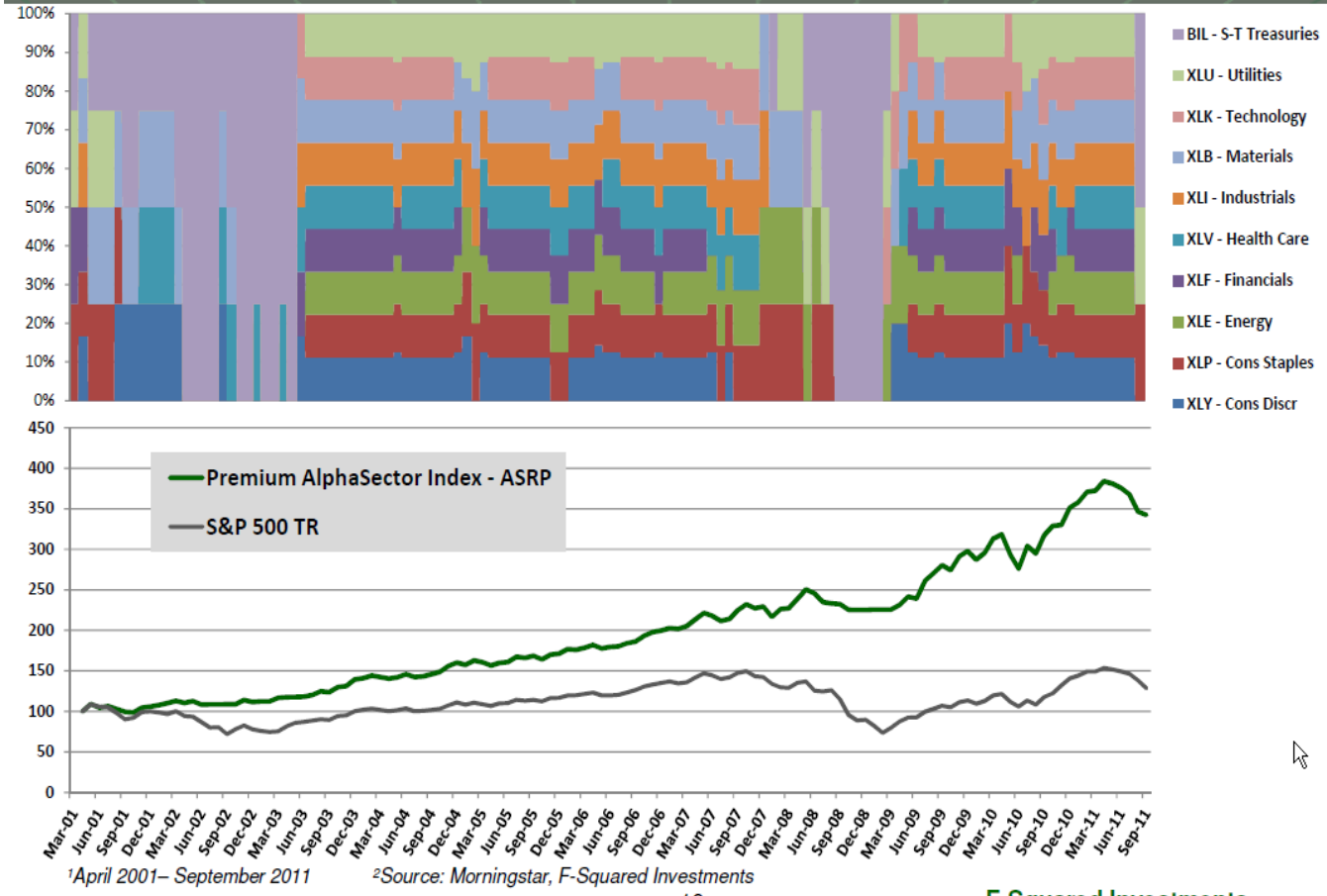


Fund Summary

The investment seeks long-term capital appreciation. The fund seeks to track the Premium AlphaSectorSM Index (ASRP), a public index published by NASDAQ. It may be invested in ETFs representing the primary sectors of the S&P 500Â® Index and high-quality short-term securities. The fund has the flexibility to be invested in any combination of the sector ETFs, a combination of sector ETFs and high-quality short-term securities, or 100% in high-quality short-term securities. It may also invest in stocks of primarily large-cap issuers.

Quick Look: VAPAX

AlphaSector Indexes periodically decide to either eliminate or include a sector from the Index (binary option)[1]



[1]April 2001– September 2011 [2]Source: Morningstar, F-Squared Investments

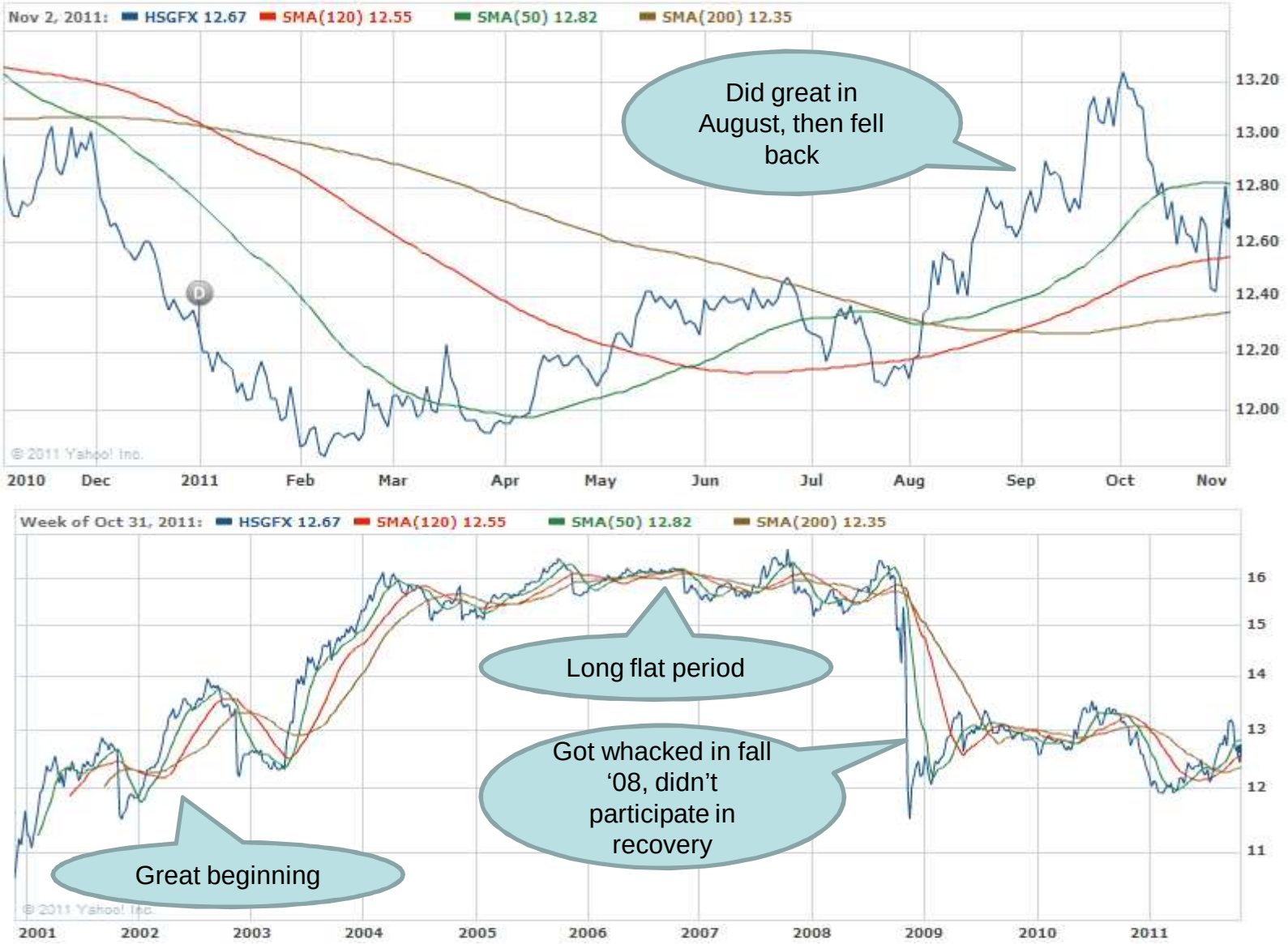
F-Squared Investments

Returns as of September 30, 2011[1]

	AlphaSector Premium	S&P 500
Cumulative Return	241.7%	19.2%
1 Year Return	7.8%	1.1%
3 Yr Return (Annualized)	13.7%	1.2%
5 Yr Return (Annualized)	12.9%	-1.2%
10 Yr Return (Annualized)	13.1%	2.8%
Standard Deviation	10.8%	15.9%
Annual Excess Return	10.7%	N/A
R-Squared	52.0%	N/A
Maximum Drawdown	-13.4%	-51.0%

Note: Returns are for the INDEX

Quick Look: HSGFX



Quick Look: HSGFX

Holdings as of Mar 31, 2011 Get Holdir

Overall Portfolio Composition (%)	
Cash:	11.68
Stocks:	88.15
Bonds:	0.00
Other:	0.17

Top 10 Holdings (42.11% of Total Assets)

Company	Symbol	% Assets	YTD Return %
First American Treasury Obligations Y	N/A	9.32	0.80
Federated US Treasury Cash Reserves I	N/A	5.25	-0.04
S&P 500 Index (Fut) opt(Put)	N/A	4.96	15.38
S&P 500 Index (Fut) opt(Call)	N/A	4.21	-58.64
Humana Inc. Common Stock	HUM	3.34	-32.95
Astrazeneca PLC Common Stock	AZN	3.30	-25.76
Russ 2000 Jun 450 Call	N/A	3.24	13.64
Panera Bread Company	PNRA	3.03	N/A
Netflix, Inc.	NFLX	2.80	1.59
Kohl's Corporation	N/A	2.66	13.53

Risk (Modern Portfolio Theory) Statistics

3 Years

Statistic	HSGFX	Category
Alpha (against Standard Index)	-1.70	-1.47
Beta (against Standard Index)	0.00	0.36
Mean Annual Return	-0.13	-0.03
R-squared (against Standard Index)	0.00	62.34
Standard Deviation	9.88	14.24
Sharpe Ratio	-0.17	-0.06
Treynor Ratio	-1,745.79	-8.15

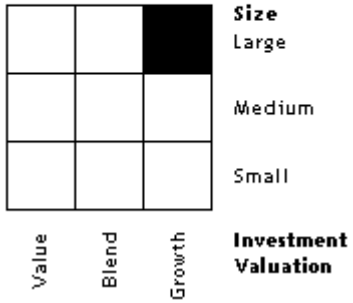
Fund Summary

The investment seeks long-term capital appreciation, with added emphasis on capital preservation in unfavorable market conditions. The fund is designed for investors who want to participate in the stock market, and also want to reduce their exposure to general market fluctuations in conditions that have historically been unfavorable for stocks. It typically invests in common stocks favored by the advisor. The stock selection approach of the investment manager focuses on securities demonstrating favorable valuations and/or market action.

Morningstar Style Box

Long/Short Equity

[View Category Definition]

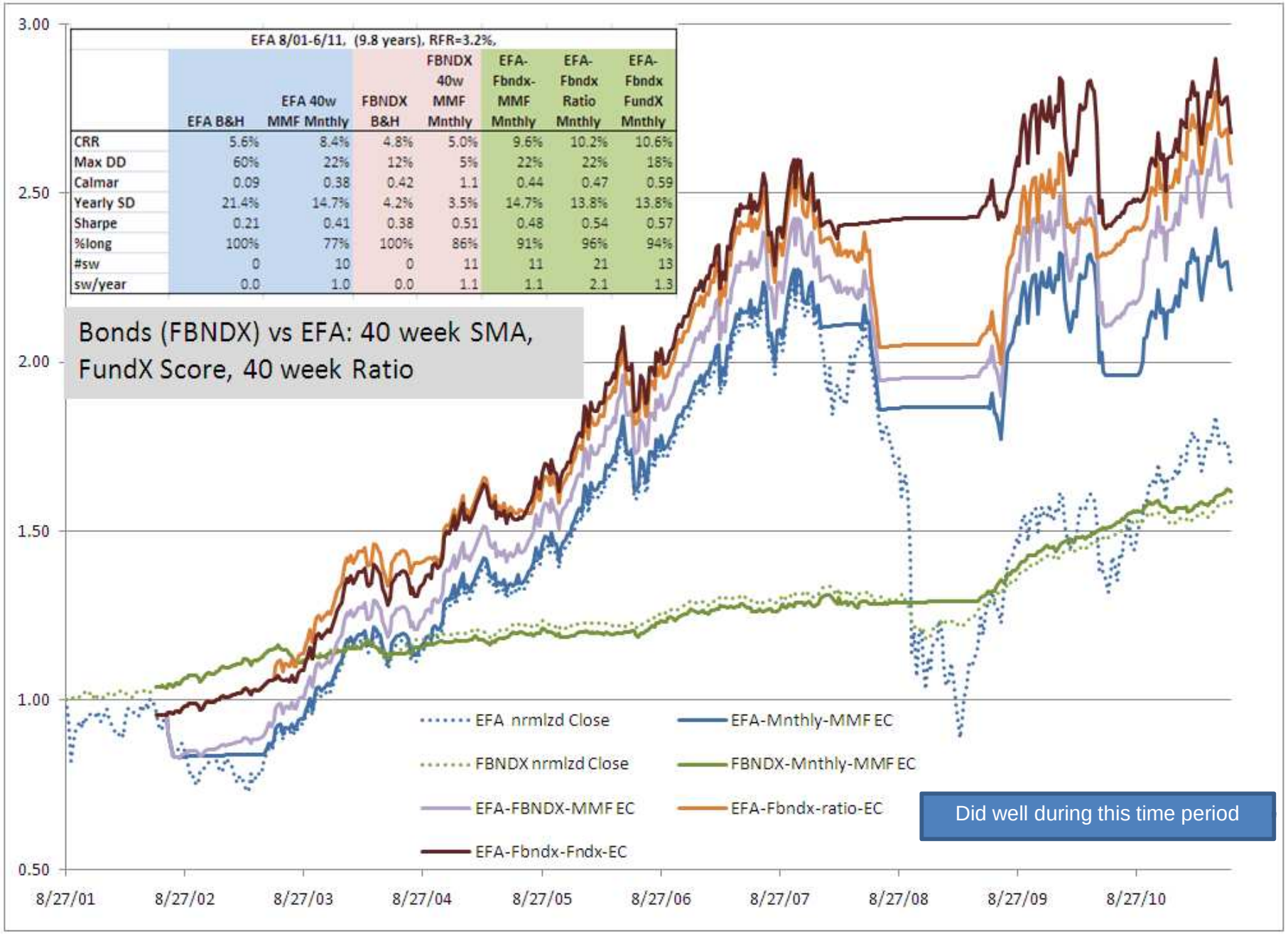


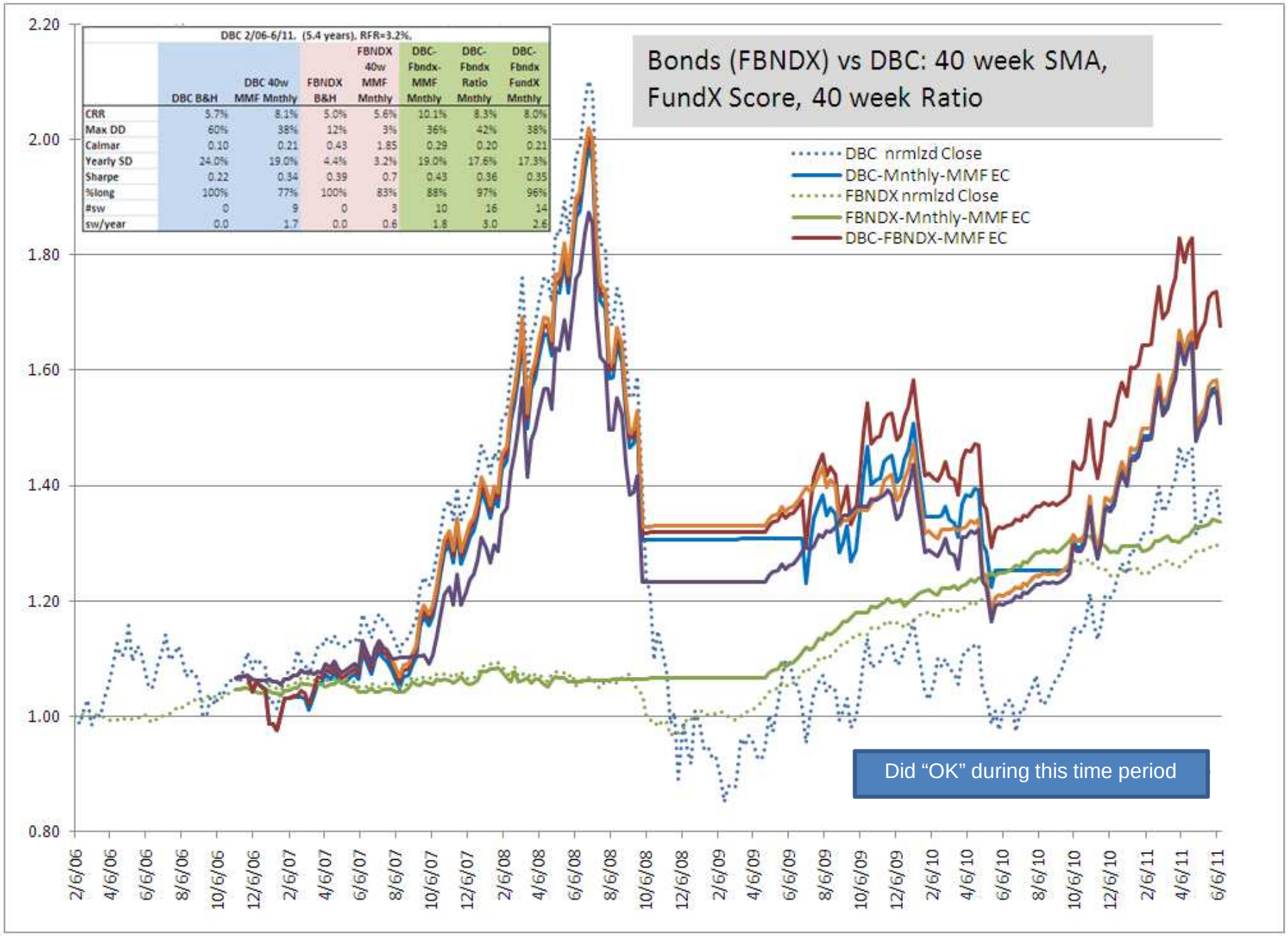
Summary/Checkpoint on Asset Allocators

- How well does this work? Does it increase profits? Does it reduce risk?
  - Risk-return stats previously presented
- Can you really implement this?
  - All the variations can be easily implemented via ETFs, Mutual funds.
  - Trade count is a non-issue. Watch out for fees, minimum amounts, trading restrictions
- How much time does it take to implement?
  - Start up time: 6-12 hours to review prospectuses
  - Ongoing: 15 minutes (??) to track/sanity check performance
- What are the pitfalls? (i.e., how will it fail in principle or operationally)
  - In principle: In general, underlying algorithm breaks or just stops performing
    - GTAA: Same as previous pitfalls for QTAA
    - PRPFX: Very long flat periods
    - VAPAX: Switching algorithm breaks
    - HSGFX: Valuation algorithm breaks/broken (lots of moving parts)
  - Operationally: Discipline to check performance periodically, ***implement sell methodology***
- How do I get started?
  - Read prospectus, decide on initial investment, ***develop sell methodology***
  - Start slow with small amounts of $$$ to learn the system, build confidence, work through operational details/glitches, etc.

Q & A

Appendices:
Bonds vs. EFA, DBC and IYR
QTAA Enhancements: FRESX, FIEUX
References,
Performance Metrics

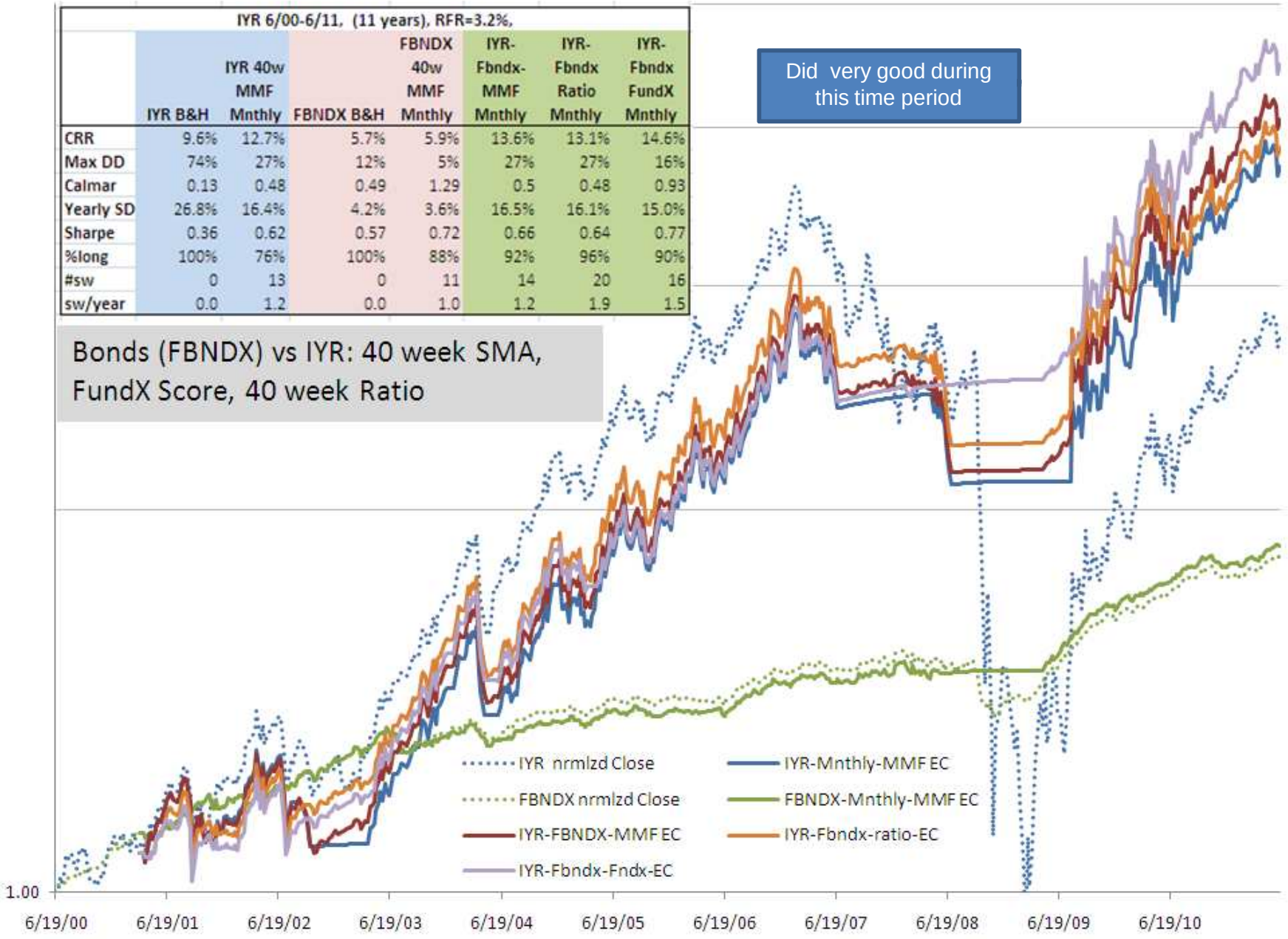

EFA 8/01-6/11, (9.8 years), RFR=3.2%,
EFA B&H
EFA 40w MMF Mnthly
FBNDX B&H
FBNDX 40w MMF Mnthly
EFA-Fbndx-MMF Mnthly
EFA-Fbndx Ratio Mnthly
EFA-Fbndx FundX Mnthly
CRR 5.6% 8.4% 4.8% 5.0% 9.6% 10.2% 10.6%
Max DD 60% 22% 12% 5% 22% 22% 18%
Calmar 0.09 0.38 0.42 1.1 0.44 0.47 0.59
Yearly SD 21.4% 14.7% 4.2% 3.5% 14.7% 13.8% 13.8%
Sharpe 0.21 0.41 0.38 0.51 0.48 0.54 0.57
%long 100% 77% 100% 86% 91% 96% 94%
#sw 0 10 0 11 11 21 13
sw/year 0.0 1.0 0.0 1.1 1.1 2.1 1.3
Bonds (FBNDX) vs EFA: 40 week SMA, FundX Score, 40 week Ratio
3.00
2.50
2.00
1.50
1.00
0.50
8/27/01
8/27/02
8/27/03
8/27/04
8/27/05
8/27/06
8/27/07
8/27/08
8/27/09
8/27/10
EFA nrmlzd Close
FBNDX nrmlzd Close
EFA-FBNDX-MMF EC
EFA-Fbndx-Fndx-EC
EFA-Mnthly-MMF EC
FBNDX-Mnthly-MMF EC
EFA-Fbndx-ratio-EC
Did well during this time period

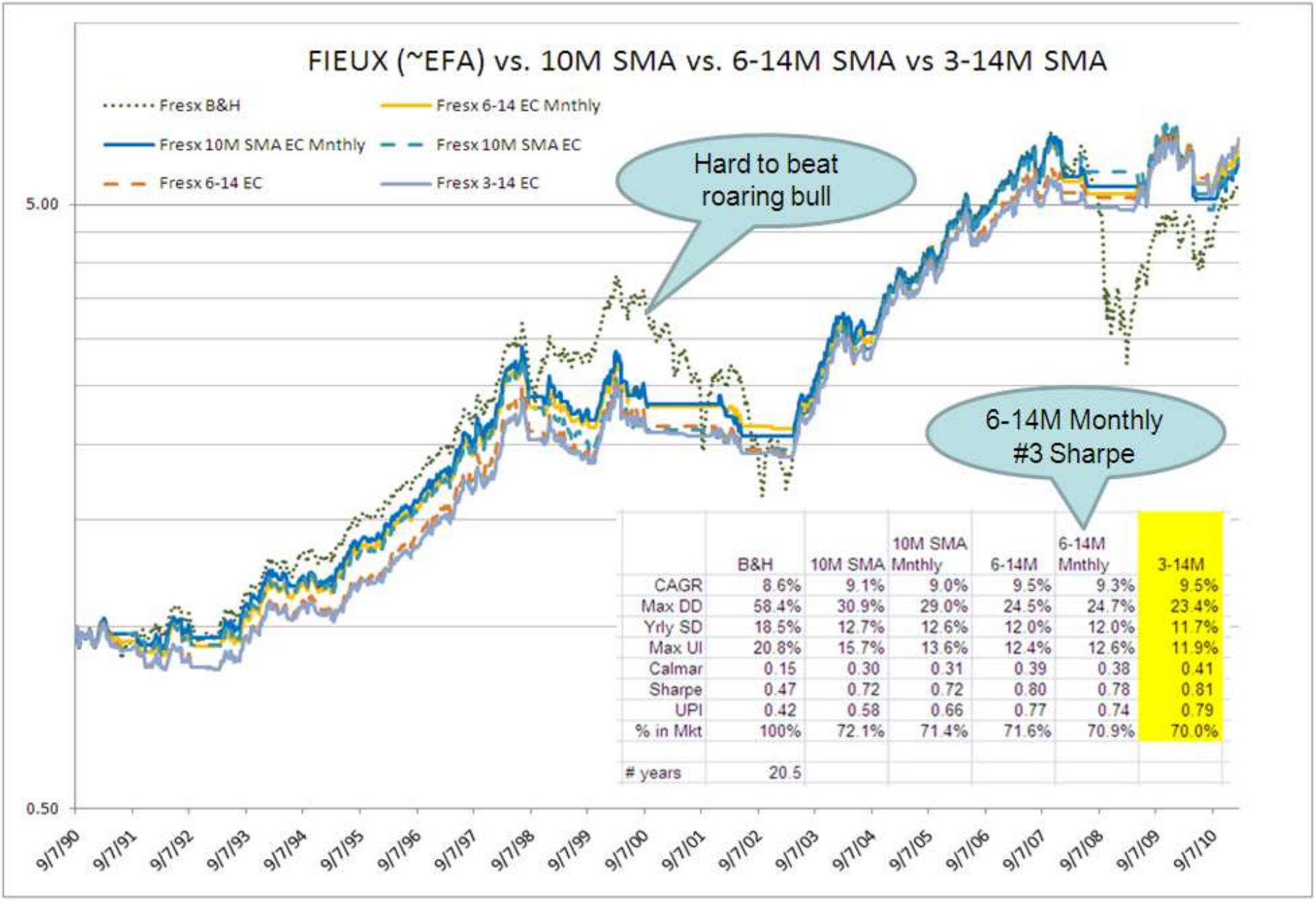

DBC 2/06-6/11. (5.4 years). RFR=3.2%.
DBC B&H | DBC 40w MMF Mnthly | FBNDX B&H | FBNDX 40w MMF Mnthly | DBC-Fbndx-MMF Mnthly | DBC-Fbndx Ratio Mnthly | DBC-Fbndx FundX Mnthly
CRR 5.7% 8.1% 5.0% 5.6% 10.1% 8.3% 8.0%
Max DD 60% 38% 12% 3% 36% 42% 38%
Calmar 0.10 0.21 0.43 1.85 0.29 0.20 0.21
Yearly SD 24.0% 19.0% 4.4% 3.2% 19.0% 17.6% 17.3%
Sharpe 0.22 0.34 0.39 0.7 0.43 0.36 0.35
%long 100% 77% 100% 83% 88% 97% 96%
#sw 0 9 0 3 10 16 14
sw/year 0.0 1.7 0.0 0.6 1.8 3.0 2.6
Bonds (FBNDX) vs DBC: 40 week SMA, FundX Score, 40 week Ratio
DBC nrmlzd Close
DBC-Mnthly-MMF EC
FBNDX nrmlzd Close
FBNDX-Mnthly-MMF EC
DBC-FBNDX-MMF EC
Did "OK" during this time period
2.20
2.00
1.80
1.60
1.40
1.20
1.00
0.80
2/6/06 4/6/06 6/6/06 8/6/06 10/6/06 12/6/06 2/6/07 4/6/07 6/6/07 8/6/07 10/6/07 12/6/07 2/6/08 4/6/08 6/6/08 8/6/08 10/6/08 12/6/08 2/6/09 4/6/09 6/6/09 8/6/09 10/6/09 12/6/09 2/6/10 4/6/10 6/6/10 8/6/10 10/6/10 12/6/10 2/6/11 4/6/11 6/6/11

IYR 6/00-6/11, (11 years), RFR=3.2%,	IYR B&H	IYR 40w MMF Mnthly	FBNDX B&H	FBNDX 40w MMF Mnthly	IYR-Fbndx-MMF Mnthly	IYR-Fbndx Ratio Mnthly	IYR-Fbndx FundX Mnthly
CRR	9.6%	12.7%	5.7%	5.9%	13.6%	13.1%	14.6%
Max DD	74%	27%	12%	5%	27%	27%	16%
Calmar	0.13	0.48	0.49	1.29	0.5	0.48	0.93
Yearly SD	26.8%	16.4%	4.2%	3.6%	16.5%	16.1%	15.0%
Sharpe	0.36	0.62	0.57	0.72	0.66	0.64	0.77
%long	100%	76%	100%	88%	92%	96%	90%
#sw	0	13	0	11	14	20	16
sw/year	0.0	1.2	0.0	1.0	1.2	1.9	1.5

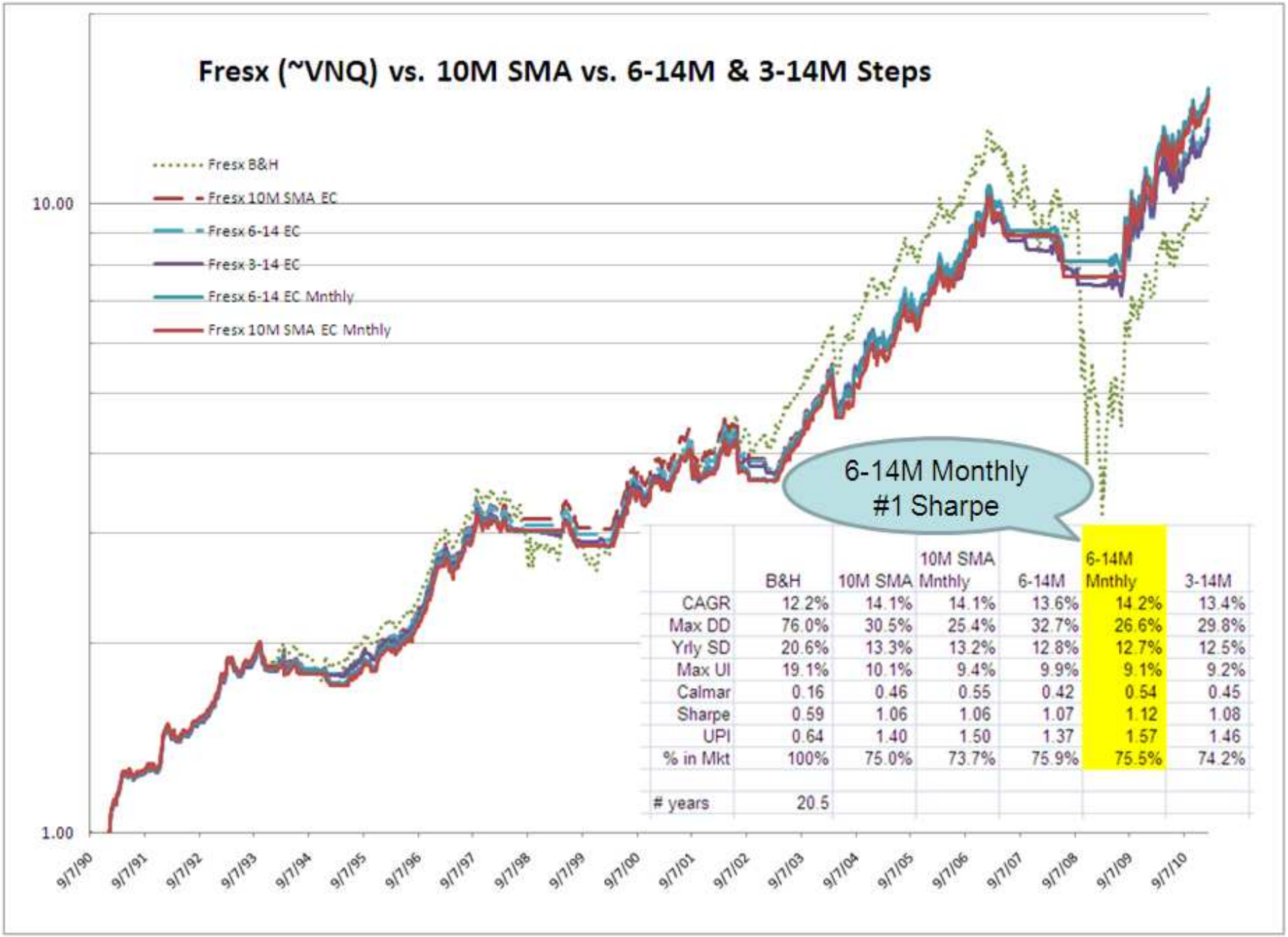
Did very good during this time period

Bonds (FBNDX) vs IYR: 40 week SMA, FundX Score, 40 week Ratio

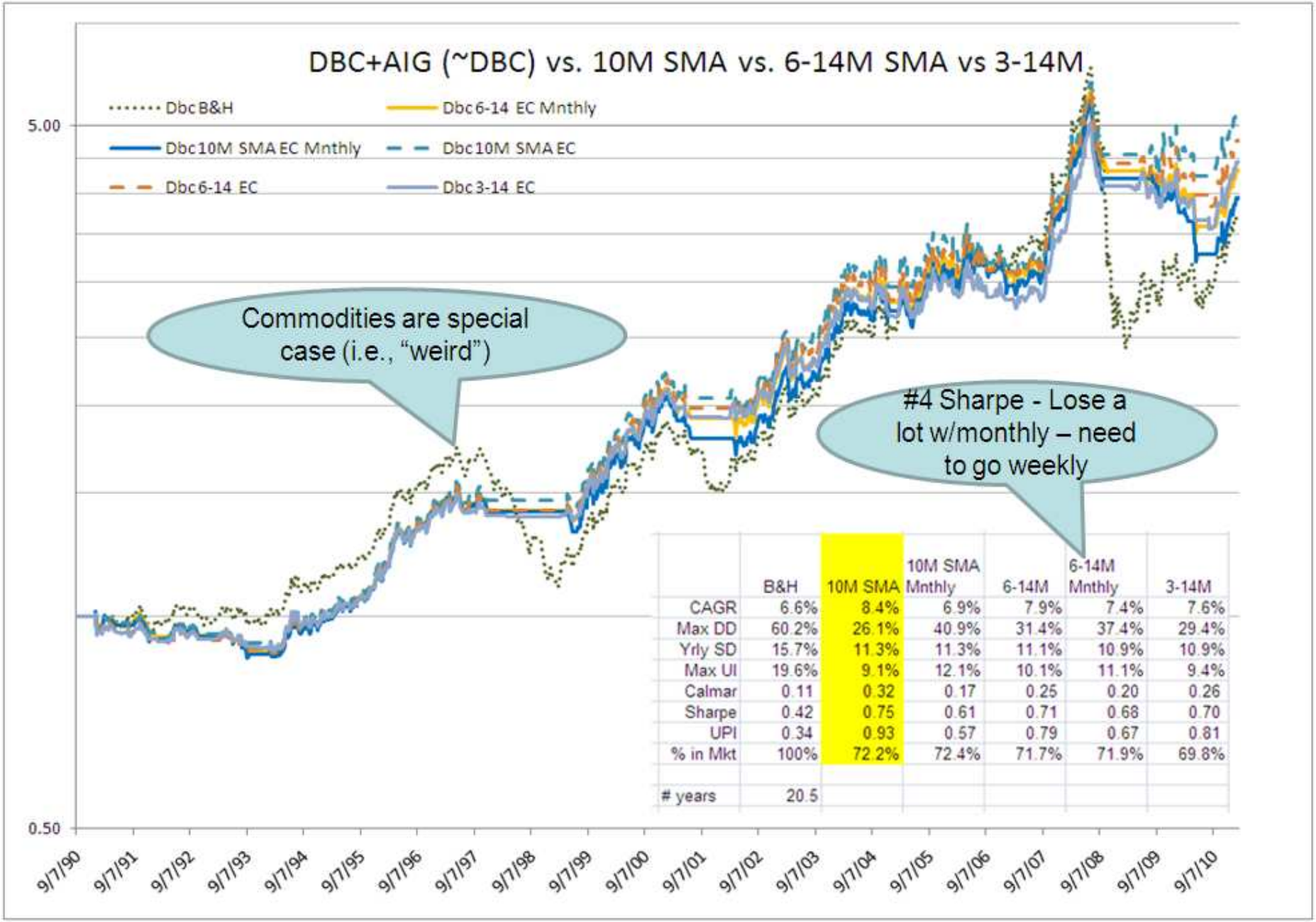




	B&H	10M SMA	10M SMA Mnthly	6-14M	6-14M Mnthly	3-14M
CAGR	8.6%	9.1%	9.0%	9.5%	9.3%	9.5%
Max DD	58.4%	30.9%	29.0%	24.5%	24.7%	23.4%
Yrly SD	18.5%	12.7%	12.6%	12.0%	12.0%	11.7%
Max UI	20.8%	15.7%	13.6%	12.4%	12.6%	11.9%
Calmar	0.15	0.30	0.31	0.39	0.38	0.41
Sharpe	0.47	0.72	0.72	0.80	0.78	0.81
UPI	0.42	0.58	0.66	0.77	0.74	0.79
% in Mkt	100%	72.1%	71.4%	71.6%	70.9%	70.0%
# years	20.5					



	B&H	10M SMA	10M SMA Mnthly	6-14M	6-14M Mnthly	3-14M
CAGR	12.2%	14.1%	14.1%	13.6%	14.2%	13.4%
Max DD	76.0%	30.5%	25.4%	32.7%	26.6%	29.8%
Yrly SD	20.6%	13.3%	13.2%	12.8%	12.7%	12.5%
Max UI	19.1%	10.1%	9.4%	9.9%	9.1%	9.2%
Calmar	0.16	0.46	0.55	0.42	0.54	0.45
Sharpe	0.59	1.06	1.06	1.07	1.12	1.08
UPI	0.64	1.40	1.50	1.37	1.57	1.46
% in Mkt	100%	75.0%	73.7%	75.9%	75.5%	74.2%
# years	20.5					



	B&H	10M SMA	10M SMA Mnthly	6-14M	6-14M Mnthly	3-14M
CAGR	6.6%	8.4%	6.9%	7.9%	7.4%	7.6%
Max DD	60.2%	26.1%	40.9%	31.4%	37.4%	29.4%
Yrly SD	15.7%	11.3%	11.3%	11.1%	10.9%	10.9%
Max UI	19.6%	9.1%	12.1%	10.1%	11.1%	9.4%
Calmar	0.11	0.32	0.17	0.25	0.20	0.26
Sharpe	0.42	0.75	0.61	0.71	0.68	0.70
UPI	0.34	0.93	0.57	0.79	0.67	0.81
% in Mkt	100%	72.2%	72.4%	71.7%	71.9%	69.8%
# years	20.5					

Appendix: References - Books

- Mebane Faber's **The Ivy Portfolio** is the basis for the QTAA approach
- James P. O'Shaugnessy's **What Works on Wall Street** can form the basis of many passive screening portfolios
- Bill Matson's **Data Driven Investing** performs studies similar to O'Shaugnessy's
- Tom Stridsman's **Trading Systems that Work** is an excellent trading system development text covering a number of topics
- Ralph Vince's **The Mathematics of Money Management: Risk Analysis Techniques for Traders** is a good general text on money management techniques

Appendix: References – Web Sites/URLs

URLs specific to the Faber/QTAA scheme:

- URL for Faber's blog: http://www.mebanefaber.com/
- URL for Faber Asset Allocation paper
  - http://trendfollowing.com/whitepaper/CMT-Simple.pdf

Good sites for general information, tools. As always, take discussions on general bulleting boards with caution!

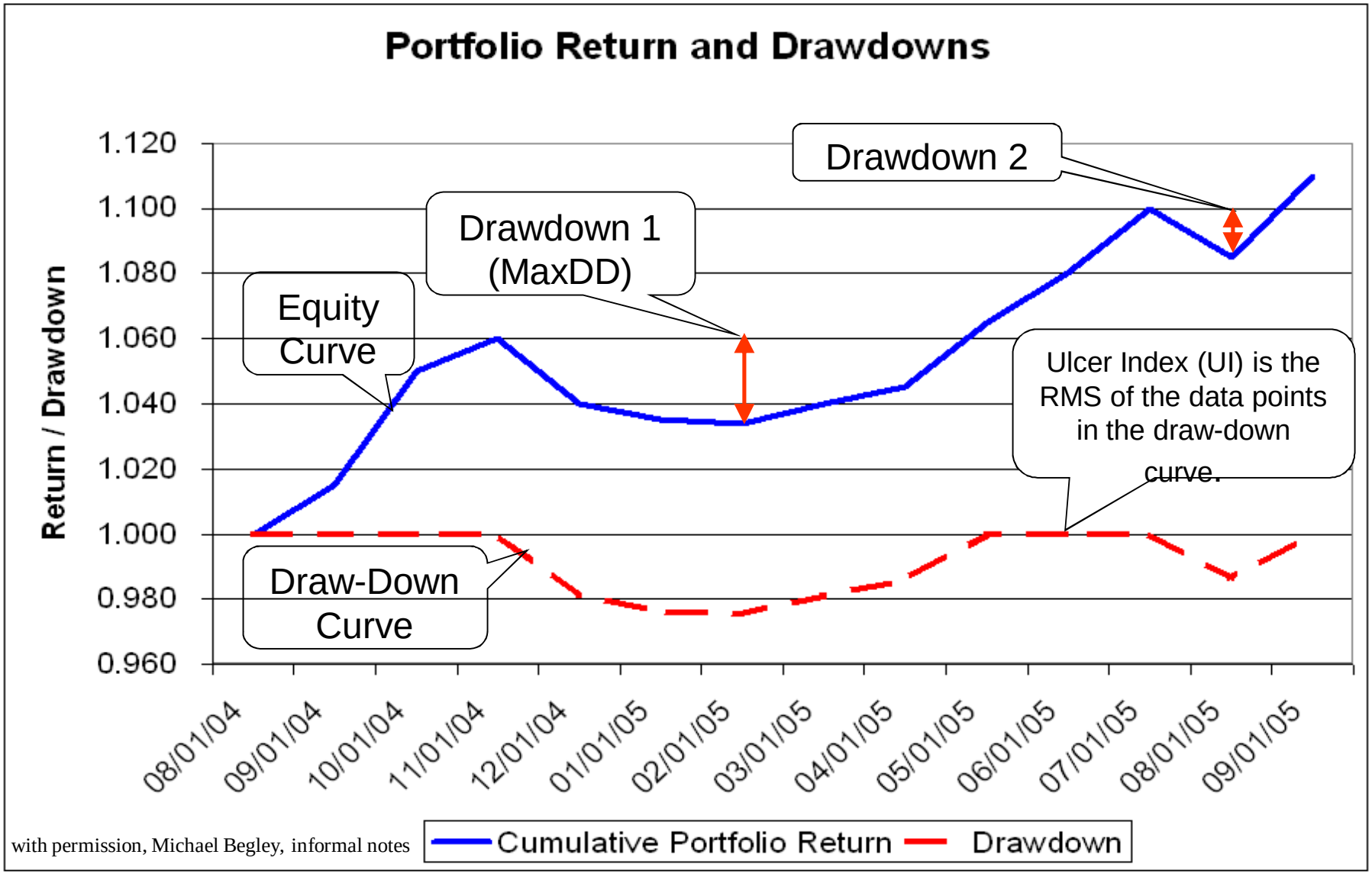
- URL for SIPro information: http://www.aaii.com/stockinvestor/
- URL for Keelix back testing tool: http://keelix.com/
- URL for Vector Vest (a back testing tool): http://www.vectorvest.com/
- URL for portfolio123 (another back testing tool/advisory firm): http://www.portfolio123.com/
- URL for Foliofn (an inexpensive way to buy large baskets of stocks): http://www.foliofn.com/index.jsp
- URL for Motley Fool Mechanical Investing board http://boards.fool.com/Messages.asp?bid=100093
- URL for No Load FundX site: http://www.noloadfundx.com/

Performance Metrics

EC	Equity Curve	Portfolio Value plotted against time
CRR	Compound Rate of Return	Reward Measurement -- Annualized compound, or geometric, rate of return
DD	Drawdown	Percentage difference in portfolio value on a given date from the maximum portfolio value on all prior dates
MDD	Maximum Drawdown	Risk Measurement - Maximum observed DD over all portfolio valuation dates
UI	Ulcer Index	Risk Measurement - Root Mean Square of the DD measurements for all portfolio evaluation dates. For each date, measure DD and square it. Then take the square root of the average of all the DD^2 measurements. The result is the Ulcer Index where a high number means the portfolio has large drawdowns that take a long time to recover to a new portfolio high value.
UPI	Ulcer Performance Index	Reward to Risk Measure -- CRR / UI
CR	Calmar Ratio	Reward to Risk Measure -- CRR / MDD This measure is inferior to the UPI because a single large DD will result in a low Calmar Ratio forever

with permission, Michael Begley, informal notes

Performance Metrics: Examples



with permission, Michael Begley, informal notes