

AN IN-DEPTH LOOK AT OPTIMAL REBALANCING STRATEGIES

3.13.2019 | FPA EAST TENNESSEE

MICHAEL E. KITCES

MSFS, MTAX, CFP®, CLU, ChFC, RHU, REBC, CASL

Partner, Director of Research, Pinnacle Advisory Group

Publisher, The Kitces Report, www.kitces.com

Blogger, Nerd's Eye View, www.kitces.com/blog

Twitterer, @MichaelKitces, www.twitter.com/MichaelKitces



Handouts/Additional Materials at: kitces.com/FPAETN19

1

PORTFOLIO REBALANCING

- Conventional view on rebalancing:



Cliff Asness, AQR Investments

*Make sure you rebalance
your portfolio.*

*Rebalancing is one of the few
free lunches out there.*

*You're generally selling
things that have gone up the
most and buying things that
have gone down the most.*

Asness, *Bursting the (Latest)
Bubble*, WSJ, 1/14/2004

2

PORTFOLIO REBALANCING

- Concerns about rebalancing?



Jason Hsu, Research Affiliates

When you buy risk assets during economic distress, there is a significant probability that, in the interim, your portfolio may suffer a greater decline than if you didn't rebalance.

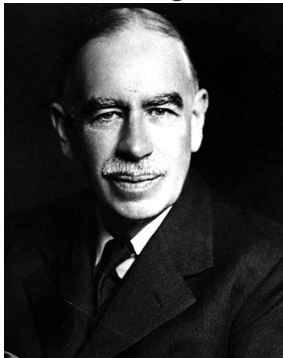
In the short run, your probability of being fired as a fiduciary, of being blamed by clients you advise, and, most importantly, of marital strife, becomes moderately higher when you rebalance.

Hsu, *Why We Don't Rebalance*,
Research Affiliates, July 2012

3

PORTFOLIO REBALANCING

- The timing of rebalancing?



John Maynard Keynes

"The market can remain irrational longer than you can remain solvent."

[Or employed]

[Or happily married]

4

PORTFOLIO REBALANCING

- An In-Depth Look At Rebalancing
 - What is rebalancing?
 - Does it enhance returns?
 - Does it increase risk? Does it reduce risk?
 - Does it matter what you rebalance between?
 - How often *should* you Rebalance?
 - What are the “best practices” for rebalancing?
 - What is rebalancing really worth at the end of the day?
 - What are the potential benefits?
 - What are the risks to consider?

© 2013 Michael Kitces | kitces.com

Handouts/Materials: kitces.com/FPAETN19

 @michaelkitces

5

PORTFOLIO REBALANCING

- What Is Rebalancing?
 - Setting the portfolio back to its original asset allocation, after market returns distort the original allocation



- Otherwise your portfolio risk exposure changes!

© 2013 Michael Kitces | kitces.com

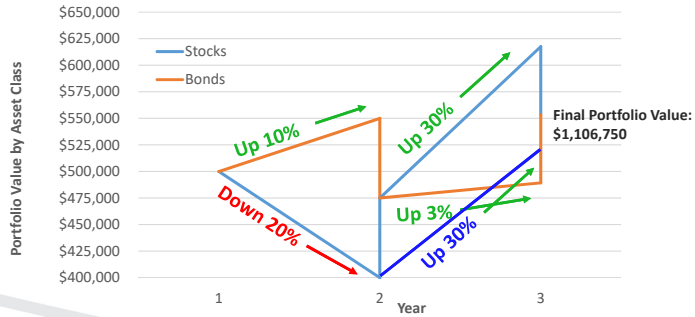
Handouts/Materials: kitces.com/FPAETN19

 @michaelkitces

6

PORTFOLIO REBALANCING

- What Is Rebalancing?
 - Returns may be enhanced by selling what was up, and buying what was down!



© 2013 Michael Kitces | kitces.com

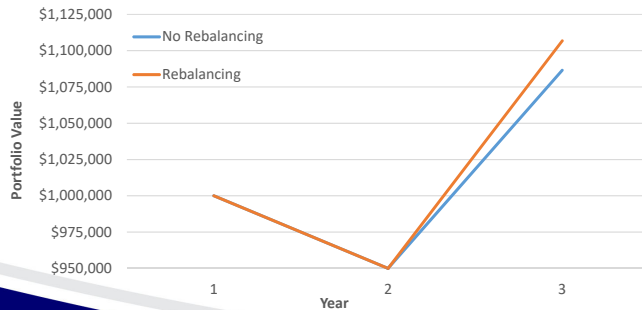
Handouts/Materials: kitces.com/FPAETN19

[@michaelkitces](https://twitter.com/michaelkitces)

7

PORTFOLIO REBALANCING

- What Is Rebalancing?
 - Returns may be enhanced by selling what was up, and buying what was down!



© 2013 Michael Kitces | kitces.com

Handouts/Materials: kitces.com/FPAETN19

[@michaelkitces](https://twitter.com/michaelkitces)

8

PORTFOLIO REBALANCING

- Fundamental benefit of rebalancing
 - Create sell-high-buy-low opportunities (return enhancement)
 - Buy stocks when they're down, using bonds that were up

© 2013 Michael Kitces | kitces.com

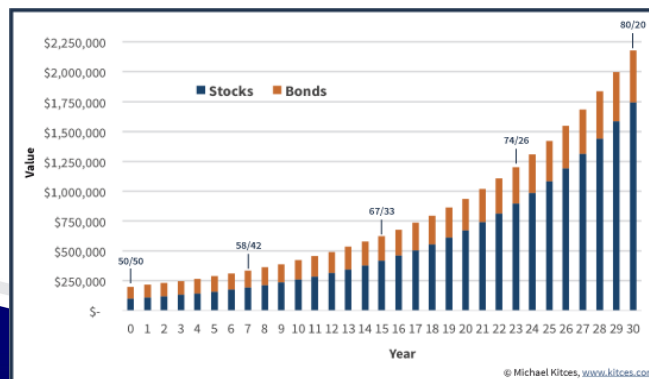
Handouts/Materials: kitces.com/FPAETN19

 @michaelkitces

9

PORTFOLIO REBALANCING

- Why Stock/Bond Rebalancing matters
 - Stocks also have better returns in the long run...
 - Causes the portfolio to overweight stocks over time!



© 2013 Michael Kitces | kitces.com

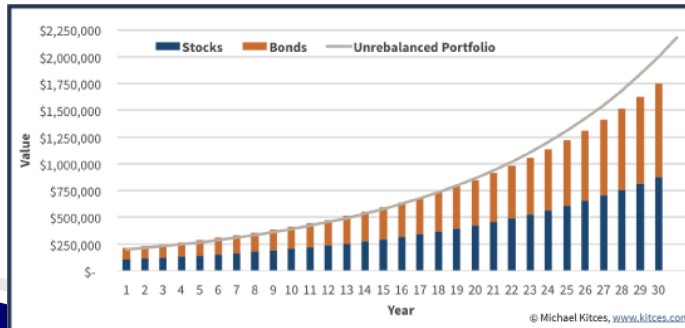
Handouts/Materials: kitces.com/FPAETN19

 @michaelkitces

10

PORTFOLIO REBALANCING

- The “problem” with stock/bond rebalancing
 - Return drift causes stocks to become overweight...
 - But rebalancing just reduces exposure to the higher returns!



© 2013 Michael Kitces | kitces.com

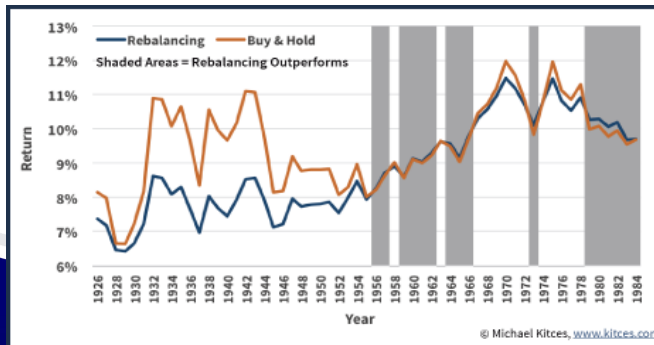
Handouts/Materials: kitces.com/FPAETN19

@michaelkitces

11

PORTFOLIO REBALANCING

- Real-world stock/bond rebalancing
 - In practice stocks don't always go straight up
 - They may temporarily decline and recover later
 - On average is it good more than it's bad? Rarely.



Note: Based on Rolling 30-Year Returns, with a 50/50 Stock/Bond Portfolio

© 2013 Michael Kitces | kitces.com

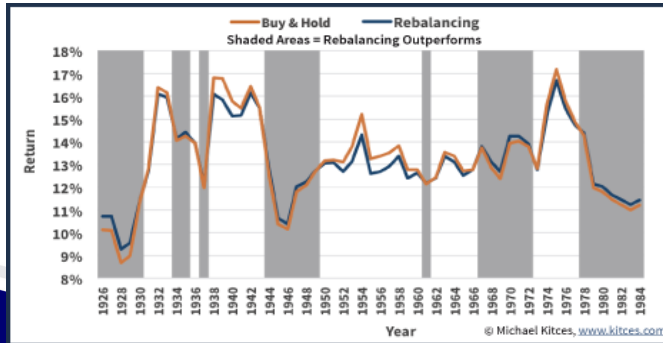
Handouts/Materials: kitces.com/FPAETN19

@michaelkitces

12

PORTFOLIO REBALANCING

- Rebalancing between *similar-return asset classes*
 - Less return drag, and more opportunities for enhancement?
 - Still not necessarily much better, but at least 'less bad'!?



Note: Based on Rolling 30-Year Returns, 50/50 Large Cap/Small Cap.

PORTFOLIO REBALANCING

- Impact of Rebalancing:
Depends on WHAT You're Rebalancing!?

 - Similar- or different-return asset classes?

	IMPACT ON EXPECTED RETURNS	IMPACT ON RISK MANAGEMENT
Investments with Similar Returns	↑	→
Investments with Different Returns	↓	↑

PORTFOLIO REBALANCING

- Optimal Rebalancing Frequency
 - How often SHOULD you rebalance?
 - Often enough to capture buy-low sell-high opportunities
 - Often enough to limit becoming too overweight to equities
 - But you can rebalance *too* frequently...

© 2013 Michael Kitces | kitces.com

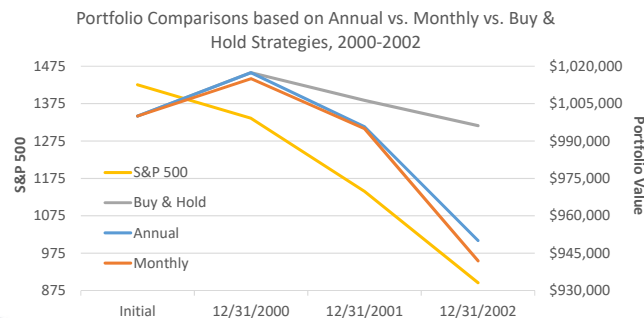
Handouts/Materials: kitces.com/FPAETN19

 @michaelkitces

15

PORTFOLIO REBALANCING

- Frequent Rebalancing And Momentum
 - Monthly vs Annual Rebalancing in a Bear Market



© 2013 Michael Kitces | kitces.com

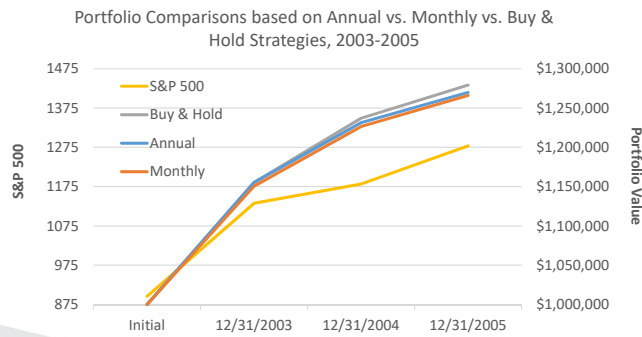
Handouts/Materials: kitces.com/FPAETN19

 @michaelkitces

16

PORTFOLIO REBALANCING

- Frequent Rebalancing And Momentum
 - Monthly vs Annual Rebalancing in a Bull Market



© 2013 Michael Kitces | kitces.com

Handouts/Materials: kitces.com/FPAETN19

@michaelkitces

17

PORTFOLIO REBALANCING

- Momentum and Optimal Rebalancing Frequency
 - And watch out for transaction costs, too!

	Never	Annually	Quarterly	Monthly
Avg. Equity Allocation	84.1%	60.5%	60.2%	60.1%
Annual Turnover	0%	1.7%	2.2%	2.7%
No. Rebalancing Events	0	83	335	1,008
Avg. Annualized Return	9.1%	8.6%	8.6%	8.5%
Volatility	14.4%	11.9%	12.2%	12.1%

Source: Jaconetti, C. M., Kinniry Jr., F. M., & Zilbering, Y. (2010). *Best practices for portfolio rebalancing*. Vanguard. Figure 6: Comparing portfolio rebalancing results for 'time-only' strategy: Various frequencies, 1926 - 2009 (p. 8).

© 2013 Michael Kitces | kitces.com

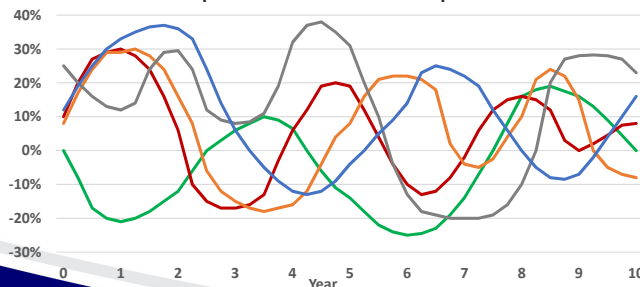
Handouts/Materials: kitces.com/FPAETN19

@michaelkitces

18

PORTFOLIO REBALANCING

- Momentum and Optimal Rebalancing Frequency
 - Often enough to capture the extremes
 - Not so often you cut off the momentum along the way
 - But is that even possible with multiple asset classes?



© 2013 Michael Kitces | kitces.com

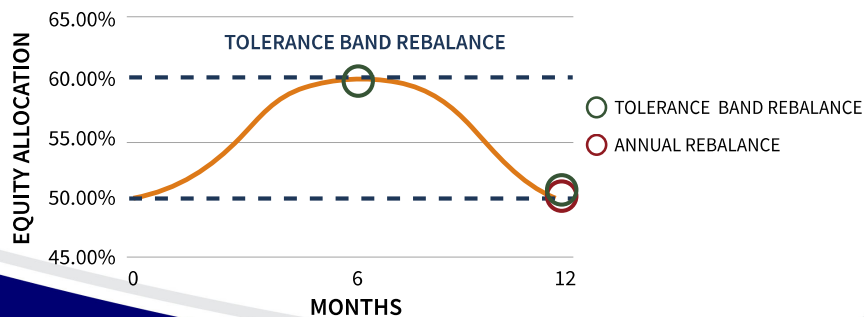
Handouts/Materials: kitces.com/FPAETN19

@michaelkitces

19

PORTFOLIO REBALANCING

- Tolerance Band Rebalancing
 - If we're trying to rebalance at the extremes, don't do it based on the times, do it based on the extremes



© 2013 Michael Kitces | kitces.com

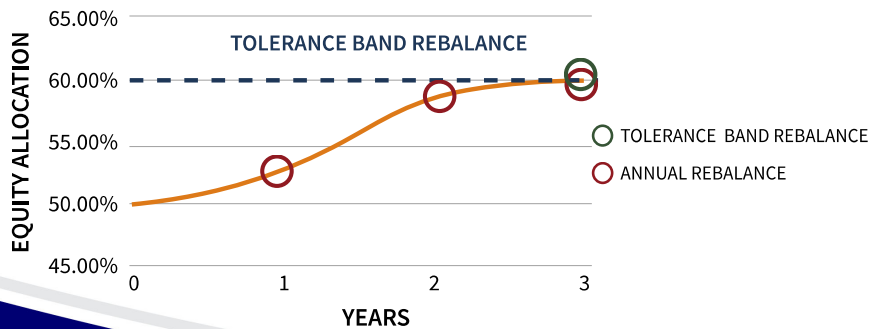
Handouts/Materials: kitces.com/FPAETN19

@michaelkitces

20

PORTFOLIO REBALANCING

- Tolerance Band Rebalancing
 - Can trigger rebalancing more or less frequently!



© 2013 Michael Kitces | kitces.com

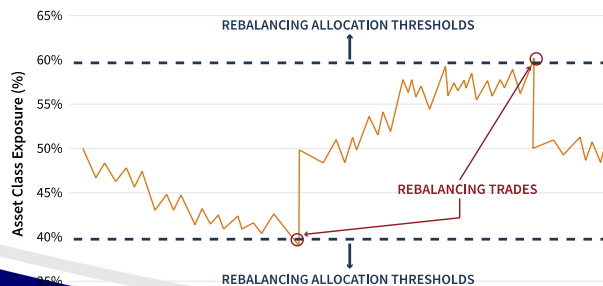
Handouts/Materials: kitces.com/FPAETN19

[@michaelkitces](https://twitter.com/michaelkitces)

21

PORTFOLIO REBALANCING

- Tolerance Band Rebalancing
 - Presumes that asset classes will only outperform or underperform each other by “so much” before snapping back
 - Sample tolerance band could be +/- 20% of target weighting



© 2013 Michael Kitces | kitces.com

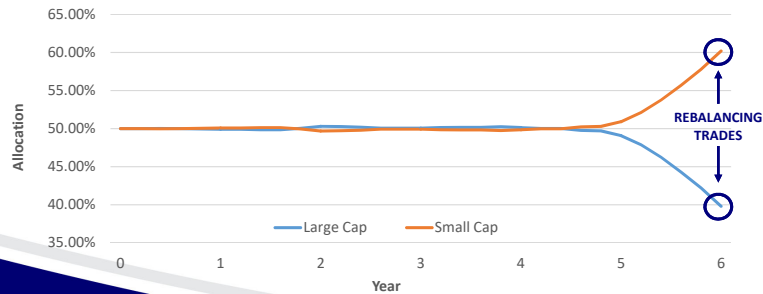
Handouts/Materials: kitces.com/FPAETN19

[@michaelkitces](https://twitter.com/michaelkitces)

22

PORTFOLIO REBALANCING

- Tolerance Band Rebalancing
 - If investments trend together, rebalancing trade frequency (and transaction costs) are just reduced
 - So it's really all about *relative* returns



© 2013 Michael Kitces | kitces.com

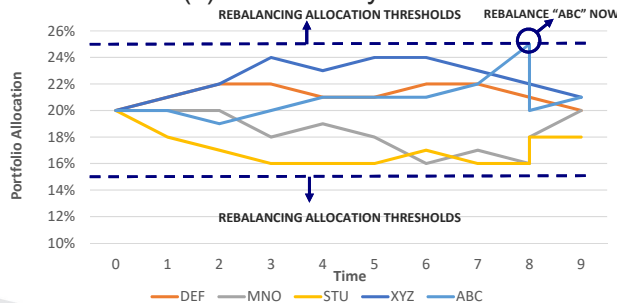
Handouts/Materials: kitces.com/FPAETN19

@michaelkitces

23

PORTFOLIO REBALANCING

- Tolerance Band Rebalancing
 - In a multi-asset-class portfolio, rebalancing only triggers for the investment(s) that actually cross the thresholds



© 2013 Michael Kitces | kitces.com

Handouts/Materials: kitces.com/FPAETN19

@michaelkitces

24

PORTFOLIO REBALANCING

- Finding the Optimal Tolerance Bands
 - Absolute thresholds
 - Become impossible to trigger for small investments and with uneven weightings
 - If the portfolio is 90/10, then going +/- 10% will “never” trigger a bond trade, might have to be smaller
 - If the portfolio is 50/10/10/5/5/5/5 then a smaller threshold will trigger ‘constant’ rebalancing on the core!

© 2013 Michael Kitces | kitces.com

Handouts/Materials: kitces.com/FPAETN19

 @michaelkitces

25

PORTFOLIO REBALANCING

- Finding the Optimal Tolerance Bands
 - Relative thresholds becomes necessary
 - 20% of original target
 - 50% allocation is at +/- 10%
 - 5% allocation is at +/- 1%
 - Still has to beat *everything else* by ~20% to actually trigger this (even just for a 1% change)

© 2013 Michael Kitces | kitces.com

Handouts/Materials: kitces.com/FPAETN19

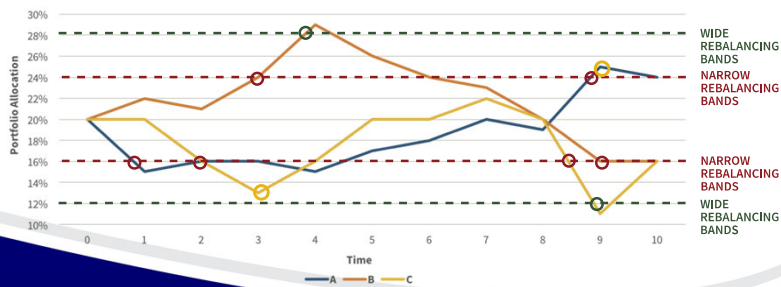
 @michaelkitces

26

PORTFOLIO REBALANCING

- Finding the Optimal (Relative) Tolerance Bands

- Still has a similar challenge to manage momentum
 - Narrow tolerance bands trigger 'extra' trades and sell winners early or over-invest losers still falling
 - But wide tolerance bands never trigger at all!



© 2013 Michael Kitces | kitces.com

Handouts/Materials: kitces.com/FPAETN19

[@michaelkitces](https://twitter.com/michaelkitces)

27

PORTFOLIO REBALANCING

- Finding the Optimal Tolerance Bands

- What appears to work in multi-asset-class portfolios?

Averages of Rebalance Return Benefits; 15 Rolling Periods with 12 Monthly Starts

Look Intervals in Market Days

Rebalance Bands	250	125	60	20	10	5	1
0%	0.13%	0.07%	0.08%	-0.02%	-0.16%	-0.40%	-2.44%
5%	0.13%	0.09%	0.11%	0.10%	0.10%	0.11%	0.09%
10%	0.15%	0.13%	0.18%	0.16%	0.19%	0.18%	0.16%
15%	0.15%	0.19%	0.30%	0.26%	0.25%	0.23%	0.22%
20%	0.16%	0.22%	0.25%	0.33%	0.38%	0.39%	0.38%
25%	0.14%	0.21%	0.21%	0.22%	0.27%	0.30%	0.35%
100%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Source: Daryanani, G. (2008). Opportunistic Rebalancing: A New Paradigm for Wealth Managers. Panel A of Table 3. *Journal of Financial Planning*.

© 2013 Michael Kitces | kitces.com

Handouts/Materials: kitces.com/FPAETN19

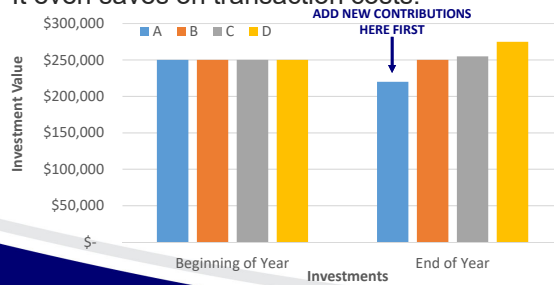
[@michaelkitces](https://twitter.com/michaelkitces)

28

PORTFOLIO REBALANCING

• Rebalancing Strategies For Savers

- For savers, simply add to the investment that is performing the worst!
- You're systematically buying low!
- It even saves on transaction costs!



© 2013 Michael Kitces | kitces.com

Handouts/Materials: kitces.com/FPAETN19

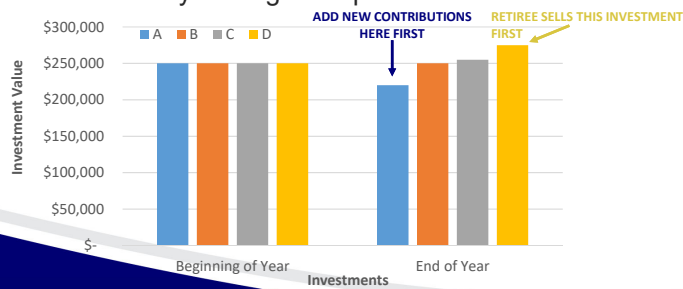
@michaelkitces

29

PORTFOLIO REBALANCING

• Rebalancing Strategies For Retirees

- Works in reverse of savers – sell whatever is overweight
- You're systematically selling high!
- Again saves on transaction costs!
- Also indirectly manages sequence risk!



© 2013 Michael Kitces | kitces.com

Handouts/Materials: kitces.com/FPAETN19

@michaelkitces

30

PORTFOLIO REBALANCING

- Using Dividends & Interest For Rebalancing?
 - Better than just auto-reinvesting into the original?
 - But will depend on your transaction costs for reinvest (vs buying something new?)
 - May want to accumulate until cash is at a critical mass?
 - Large enough to manage transaction cost, low enough to avoid cash drag?
 - Unless you have NTF investment options?

© 2013 Michael Kitces | kitces.com

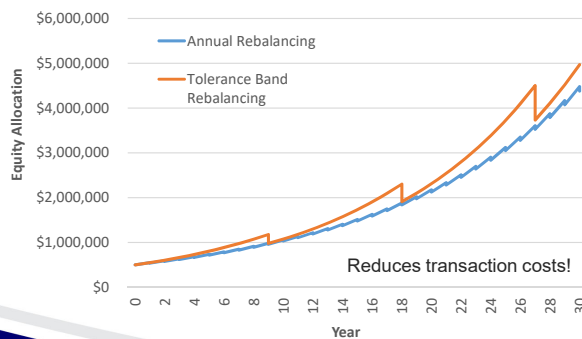
Handouts/Materials: kitces.com/FPAETN19

 @michaelkitces

31

PORTFOLIO REBALANCING

- Tolerance Vs Time Interval Rebalancing
 - More favorable when markets are up on average



© 2013 Michael Kitces | kitces.com

Handouts/Materials: kitces.com/FPAETN19

 @michaelkitces

32

PORTFOLIO REBALANCING

- Economic Benefits of Rebalancing

- Returns generally 0.50% *lower* from time-based rebalancing
 - Though *risk-adjusted* returns were improved

	Never	Annually	Quarterly	Monthly
Average Annualized Return	9.1%	8.6%	8.6%	8.5%
Volatility	14.4%	11.9%	12.2%	12.1%

- Daryanani found slight return enhancement from tolerance bands
 - Long-term value of ~0.40%/year
 - Greater value in times of volatility?

Averages of Rebalance Return Benefits; 15 Rolling Periods with 12 Monthly Starts							
Look Intervals in Market Days							
Rebalance Bands	250	125	60	20	10	5	1
0%	0.13%	0.07%	0.08%	-0.02%	-0.16%	-0.40%	-2.44%
10%	0.15%	0.13%	0.18%	0.16%	0.19%	0.18%	0.16%
20%	0.16%	0.22%	0.25%	0.33%	0.38%	0.39%	0.38%
25%	0.14%	0.21%	0.21%	0.22%	0.27%	0.30%	0.35%

© 2013 Michael Kitces | kitces.com

Handouts/Materials: kitces.com/FPAETN19

 @michaelkitces

33

PORTFOLIO REBALANCING

- Economic Benefits of Rebalancing

- Value depends on what you rebalance amongst?

	Expected Returns	Volatility	Correlations
Good for Rebalancing	Similar	High	Low
Bad for Rebalancing	Different	Low	High

© 2013 Michael Kitces | kitces.com

Handouts/Materials: kitces.com/FPAETN19

 @michaelkitces

34

PORTFOLIO REBALANCING

- Psychological Benefits of Rebalancing
 - A systematic way of selling high and buying low?
 - May provide a unique 'discipline'?
 - Effective way for savers to add more to what's doing worst?
 - Comforting for retirees that they only ever sell what's up and take gains off the table?

© 2013 Michael Kitces | kitces.com

Handouts/Materials: kitces.com/FPAETN19

 @michaelkitces

35

PORTFOLIO REBALANCING

- “Cutting Edge” Rebalancing Theory
 - Different tolerance bands for different investments?
 - Asymmetric tolerance bands?
 - Since markets rise up longer/further than they decline...
 - Ideal frequency to “check” rebalancing opportunities?
 - Check monthly? Weekly? Daily?
 - Software to automate checking?

© 2013 Michael Kitces | kitces.com

Handouts/Materials: kitces.com/FPAETN19

 @michaelkitces

36

PORTFOLIO REBALANCING

- Summary of Rebalancing
 - More about risk management than return enhancement
 - Across stocks/bonds, return improvement is *modest at best*
 - Time-based rebalancing is somewhat inefficient
 - Excess frequency and transaction costs in momentum markets
 - And can miss short-term opportunities in volatility
 - Improves risk-adjusted returns “in spite of” itself?
 - Tolerance-band strategies appear more favorable
 - Can target ~20% bands
 - Check often, trade when necessary
 - Target existing inflows/outflows to further minimize transaction costs

© 2013 Michael Kitces | kitces.com

Handouts/Materials: kitces.com/FPAETN19

 @michaelkitces

37

QUESTIONS?

Handouts & additional materials:
www.kitces.com/FPAETN19

Contact: questions@kitces.com

© 2013 Michael Kitces | kitces.com

 @michaelkitces

38