TAA revisited - An honest view of pros and cons

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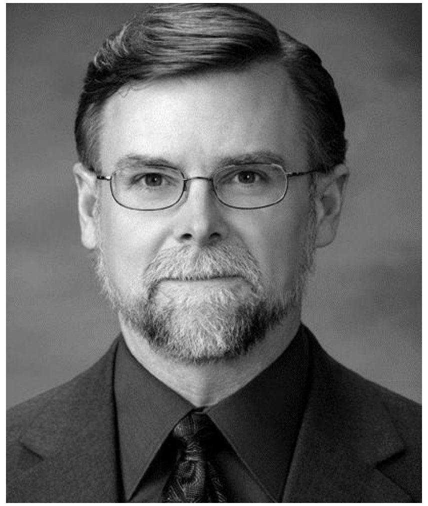

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"Markets can remain irrational longer than you can remain solvent"

John Maynard Keynes

Objective

- Provide an honest hardnosed assessment of TAA (tactical asset allocation)
- Looking at a live portfolio, even if its been live for 20 years . . . Is misleading

- Instead, one has to look across the great range of market and macroeconomic environments

- WHY?
- Because the last 20 years is incredibly non-representative

How do we examine TAA over the last 100+ years?

- Grab quality data
  - Global Financial Data, Inc.
  - Kenneth R. French Data Library - Dartmouth College

- Use an incredibly simple quantitative rule
  - Unambiguous
  - Flawlessly transparent
  - Anyone could replicate
  - Was <u>NOT</u> backfitted . . . i.e., was not designed to outperform

Assumed model

- Start with 28 asset categories

- Once each month . . . select the 8 that just trended the most strongly
- Equal-weight the portfolio

- Repeat

28 asset classes utilized - stocks, bonds, commodities

Exhibit 1
28 asset categories utilized

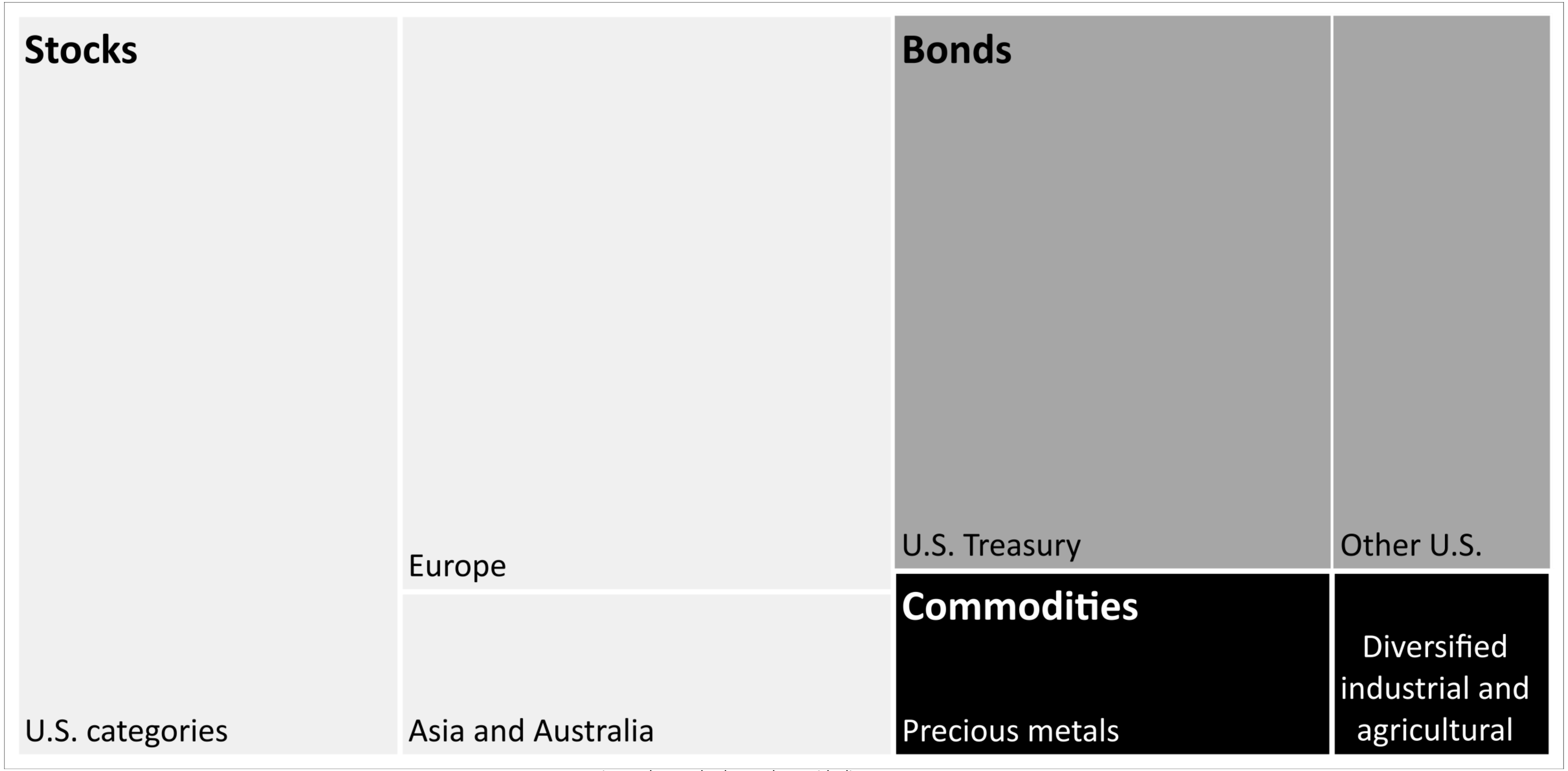

Exhibit 2

Assumed one-way trading (a BUY or a SELL) costs, shown in basis points

Government/Corporate U.S. Bond Index (50% U.S. Treasury and 50% Investment Grade U.S. Corporate)	Dow Jones Corporate Bond Return Index	Bank of America Merrill Lynch US High Yield Master II Total Return Index Value	Gold Spot Price-London PM Fixing (US$/ounce)	Palladium (USD per Troy Ounce)	Reuters CRB Total Return Index (w/GFD extension)	All stocks and U.S. Treasury bonds
38	53	8	23	83	68	0

Four comparative performance benchmarks (with NO trading costs)

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Exhibit 3

Portfolio and comparative benchmark definitions

TAA portfolio	Benchmark - Exact same asset mix	Benchmark - U.S. stocks/bonds only	Benchmark - Global stocks/bonds only	Benchmark - S&P 500/10-year U.S. Treasuries only
Tactical asset allocation portfolio described in this article. Assumes significant trading costs for all asset categories other than stocks and U.S. Treasury bonds.	Passive benchmark that exactly matches the average asset allocation of the referenced TAA portfolio. Uses all 28 asset categories. Assumes zero trading costs, zero transactions costs, zero internal expenses, and monthly rebalancing.	Passive benchmark allocated 80.611% to stocks and 19.389% to bonds. Stocks are equal-weighted across 7 US stock indices. Bonds are equal-weighted across 9 US bond indices (6 Treasury and 3 other). Assumes zero trading costs, zero transactions costs, zero internal expenses, and monthly rebalancing.	Passive benchmark allocated 80.611% to stocks and 19.389% to bonds. Stocks are equal-weighted across 16 stock indices (7 are US and 9 are non-US). Bonds are equal-weighted across 9 US bond indices (6 Treasury and 3 other). Assumes zero trading costs, zero transactions costs, zero internal expenses, and monthly rebalancing.	Passive benchmark allocated 80.611% to S&P 500 Index and 19.389% to 10-year constant-maturity US Treasury bonds. Assumes zero trading costs, zero transactions costs, zero internal expenses, and monthly rebalancing.

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Exhibit 4

Geometric mean inflation-adjusted return (in %) over the entire time period (101.6 years)

TAA portfolio	Benchmark - Exact same asset mix	Benchmark - U.S. stocks/bonds only	Benchmark - Global stocks/bonds only	Benchmark - S&P 500/10-year U.S. Treasuries only
11.46	6.68	7.12	6.86	6.81

Return over "typical" 12 ½ year investment time window

Exhibit 5

Anticipated annualized inflation-adjusted return for the typical 12.5-year investment time period

Statistic	TAA portfolio	Benchmark - Exact same asset mix	Benchmark - U.S. stocks/bonds only	Benchmark - Global stocks/bonds only	Benchmark - S&P 500/10-year U.S. Treasuries only
Mean 12.5-year inflation-adjusted return (in %) over 1,070 different rolling time windows	11.81	6.61	6.71	6.82	6.28
Median 12.5-year inflation-adjusted return (in %) over 1,070 different rolling time windows	11.40	6.21	7.13	6.48	6.51

Percentile outcomes for 12 ½ year investment time periods

Exhibit 6

Percentile outcomes expressed as annualized inflation-adjusted returns for a random 12.5-year long time period

Percentile	TAA portfolio	Benchmark - Exact same asset mix	Benchmark - U.S. stocks/bonds only	Benchmark - Global stocks/bonds only	Benchmark - S&P 500/10-year U.S. Treasuries only
99.5	1.97	0.27	-1.36	0.28	-1.91
99	2.62	0.70	-1.00	0.67	-1.74
98	3.85	1.56	-0.72	1.10	-1.65
97	4.76	2.09	-0.55	1.64	-1.37
96	5.52	2.33	-0.30	1.92	-1.16
95	6.03	2.46	-0.17	2.20	-0.88
90	8.43	3.06	0.99	2.74	0.39
85	8.92	3.40	2.38	3.21	0.97
80	9.20	3.88	3.11	3.71	1.82
75	9.55	4.37	3.91	4.09	3.22
70	10.02	4.67	4.98	4.59	4.41
65	10.50	5.16	5.58	5.23	5.05
60	10.81	5.63	6.14	5.76	5.62
55	11.13	5.94	6.51	6.10	6.09

Worst ever outcomes for 12 ½ year investment time periods

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Exhibit 7

Annualized inflation-adjusted return for the sixteen worst-ever 12.5-year investment time periods (drawn from 1,070)

Different 12.5-year long investment time periods	TAA portfolio	Benchmark - Exact same asset mix	Benchmark - U.S. stocks/bonds only	Benchmark - Global stocks/bonds only	Benchmark - S&P 500/10-year U.S. Treasuries only
worst	1.11	-0.35	-2.61	-0.38	-2.58
2nd worst	1.27	-0.02	-2.40	0.03	-2.49
3rd worst	1.31	0.03	-1.68	0.07	-2.19
4th worst	1.41	0.14	-1.61	0.15	-2.05
5th worst	1.77	0.18	-1.52	0.18	-1.98
6th worst	1.90	0.27	-1.37	0.26	-1.92
7th worst	2.12	0.28	-1.33	0.31	-1.90
8th worst	2.20	0.52	-1.29	0.49	-1.89
9th worst	2.27	0.57	-1.08	0.55	-1.86
10th worst	2.30	0.57	-1.06	0.63	-1.77
11th worst	2.45	0.68	-1.02	0.64	-1.77
12th worst	2.69	0.71	-0.98	0.68	-1.73
13th worst	2.88	0.73	-0.97	0.72	-1.73
14th worst	2.89	0.78	-0.97	0.76	-1.71
15th worst	3.05	0.78	-0.96	0.78	-1.71
16th worst	3.07	0.87	-0.84	0.84	-1.71

Probability of success for randomly selected 12 ½ year window

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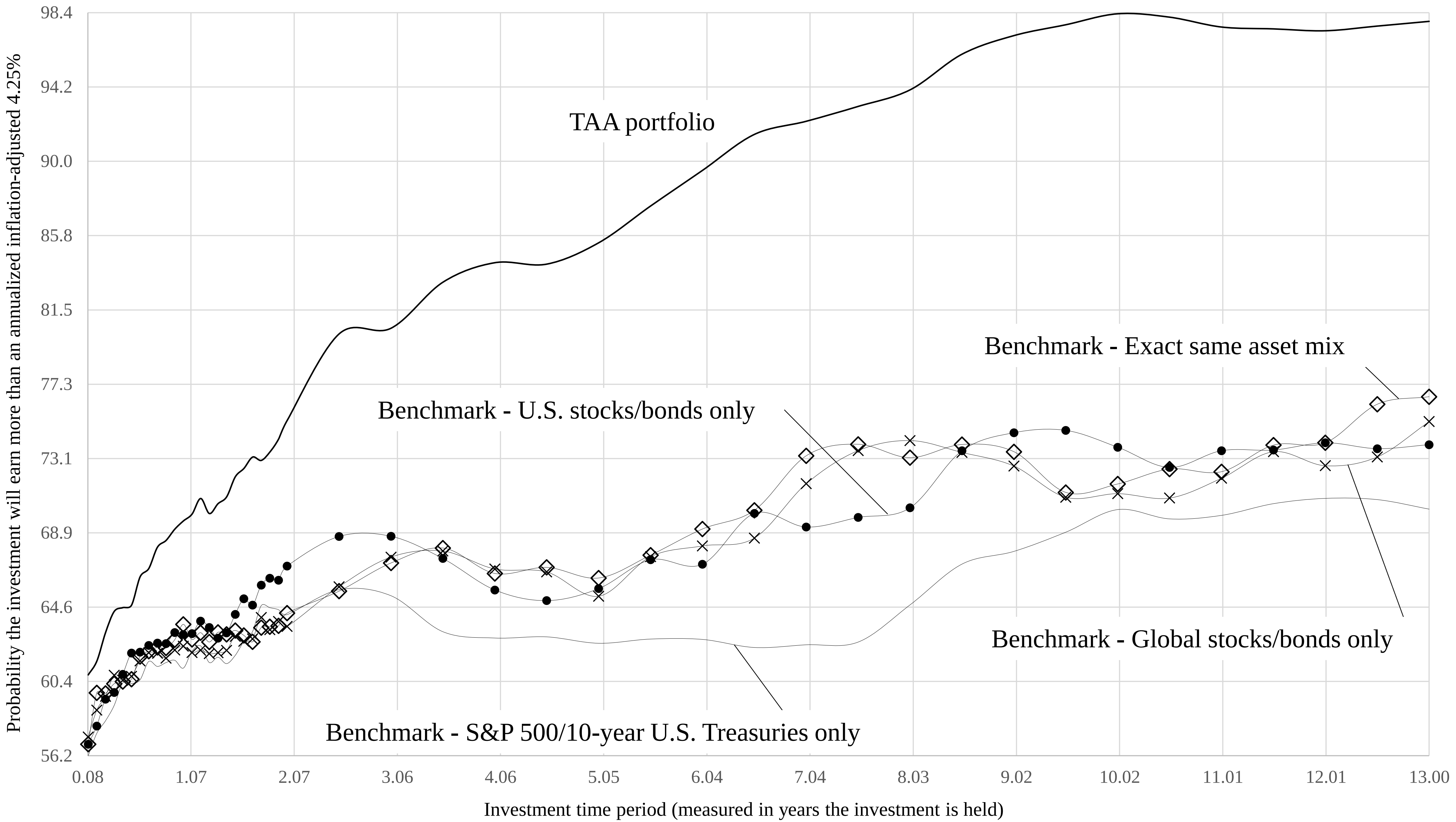
Exhibit 8

Likelihood of success

	TAA portfolio	Benchmark - Exact same asset mix	Benchmark - U.S. stocks/bonds only	Benchmark - Global stocks/bonds only	Benchmark - S&P 500/10-year U.S. Treasuries only
Probability of earning more than 4.25% inflation-adjusted over a randomly selected 12.5-year long investment time period	97.7	76.2	73.6	73.2	70.7

Probability of success as a function of your investment holding period

Exhibit 9
Impact of investment time period on the likelihood of success



Is TAA's superior performance declining over time?

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Exhibit 10

Probability of earning more than 4.25% inflation-adjusted during a random 12.5-year long investment time period

Number of unique 12.5-year long investment time periods that end during the date range shown to the right	Date range	TAA portfolio	Benchmark - Exact same asset mix	Benchmark - U.S. stocks/bonds only	Benchmark - Global stocks/bonds only	Benchmark - S&P 500/10-year U.S. Treasuries only
153	10/31/08 to 6/30/21	100.0	79.7	64.7	63.4	55.6
153	1/31/96 to 9/30/08	100.0	100.0	100.0	100.0	99.3
153	4/30/83 to 12/31/95	100.0	86.9	79.1	81.7	75.8
153	7/31/70 to 3/31/83	100.0	33.3	21.6	26.1	20.9
153	10/31/57 to 6/30/70	100.0	100.0	100.0	100.0	100.0
153	1/31/45 to 9/30/57	83.7	41.8	81.7	45.8	75.2
152	5/31/32 to 12/31/44	100.0	91.4	68.4	95.4	68.4
1,070	5/31/32 to 6/30/21	97.7	76.2	73.6	73.2	70.7

Bear markets here in the U.S. - measured properly

Bear markets for inflation-adjusted U.S. stocks since 1846

	Cumulative percentage return, unannualized	Duration in years	Start date	End date	Volatility, annualized standard deviation of monthly returns	Percentage of monthly returns that were POSITIVE	Annualized return during BEAR market
	-30	1.25	Aug 1853	Nov 1854	27.6	27	-25.1
	-31	0.83	Dec 1856	Oct 1857	19.2	10	-36.4
	-35	0.67	Jul 1864	Mar 1865	32.4	38	-47.1
	-32	1.25	Mar 1876	Jun 1877	7.8	7	-26.2
	-37	1.17	Sep 1906	Nov 1907	13.8	14	-32.7
	-27	2.00	Oct 1912	Oct 1914	11.0	38	-14.8
	-48	4.08	Nov 1916	Dec 1920	15.9	41	-14.8
	-79	2.75	Aug 1929	May 1932	37.3	36	-43.7
	-50	1.08	Feb 1937	Mar 1938	31.6	23	-47.1
	-39	2.58	Sep 1939	Apr 1942	19.3	42	-17.3
	-37	1.75	May 1946	Feb 1948	14.5	29	-23.4
	-35	1.58	Nov 1968	Jun 1970	14.8	26	-24.1
	-52	1.75	Dec 1972	Sep 1974	15.2	14	-34.2
	-30	0.25	Aug 1987	Nov 1987	33.9	0	-76.3
	-47	2.08	Aug 2000	Sep 2002	17.8	36	-26.4
	-52	1.33	Oct 2007	Feb 2009	19.2	25	-42.1
Median BEAR market	-37	1.46			18.5	26	-29.6
Mean BEAR market	-41	1.65			20.7	25	-33.2

TAA's performance during 12 ½ year windows ending during a bear market

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Exhibit 11

150 investment intervals of 12.5-years in length, ending during an S&P 500 bear market - How did they perform?

Statistic	TAA portfolio	Benchmark - Exact same asset mix	Benchmark - U.S. stocks/bonds only	Benchmark - Global stocks/bonds only	Benchmark - S&P 500/10-year U.S. Treasuries only
Mean 12.5-year inflation-adjusted return (in %) over 150 different rolling time windows	11.31	5.87	5.45	6.01	5.28
Median 12.5-year inflation-adjusted return (in %) over 150 different rolling time windows	10.72	5.73	5.51	5.97	5.19
Probability of earning more than 4.25% (annualized inflation-adjusted) if your investment time period ends during a bear market	100.0	79.3	68.7	77.3	64.0

EXAMPLE - when should I load up on emerging markets

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Markets

Goldman, BofA See Lost Decade Over for Emerging Markets

By Farah Elbahrawy, Ben Bartenstein, and Srinivasan Sivabalan
August 22, 2021, 3:04 AM PDT *Updated on August 23, 2021, 2:03 AM PDT*

- Demand for commodities, earnings outlook ignite bullish bets
- As vaccine rollouts pick up, EM equities seen catching up

Expectations for a recovery in commodity prices and earnings growth are igniting bullish bets on emerging-market equities after more than a decade of underperformance that left them approaching a 20-year low against developed-nation stocks.

EXAMPLE - when should I load up on emerging markets

Client-facing collateral

Investment Library collateral

Sometimes People Just Don't Fact-Check

Some have falsely claimed that market cycles are getting shorter

Tactical Asset Allocation (TAA) relies on trending or momentum for its success. Some have falsely claimed that market cycles are getting shorter, and therefore TAA no longer has the inherent advantage that it once did. Let's fact-check this claim in order to determine its truth or falsehood.

Read More

Which Portfolio is Lower Risk?

We care most about risk when the sky is falling

When the market is going up, we don't care about risk. But when it's collapsing, we do. Since 1920, there have been nine stock bear markets. Let's compare how four hypothetical portfolios performed during these nine traumatic events.

Read More

But Has TAA Worked Better Than Bonds?

Investment Library collateral

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PERSPECTIVES ON TACTICAL ASSET ALLOCATION (AKA SECTOR ROTATION)

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What happens when interest rates rise?

How does TAA perform during rising/falling interest rate environments?

To answer this question, we must:

- Identify a time period to examine,
- Specify how we define rising and falling interest rate environments,
- Identify a simple transparent TAA portfolio that anyone could replicate, and
- Provide comparative passive index benchmarks.

PERSPECTIVES ON TACTICAL ASSET ALLOCATION (AKA SECTOR ROTATION)

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Time - Can be your best friend

Matching a need - with an investment portfolio

I've determined how much I plan to spend (and gift) during years 10 through 15 (in the future). To support this plan, my portfolio will be invested for 12 ½ years (on average), the midpoint of this interval.

Many would suggest that an appropriate and common-sense asset mix would be 50% stocks and 50% bonds given this investment time horizon. No, not necessarily today, given current market valuations, but certainly as a normal average asset mix when one's investing for 12 ½ years.

PERSPECTIVES ON TACTICAL ASSET ALLOCATION (AKA SECTOR ROTATION)

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Why doesn't BlackRock offer TAA?

If TAA is so good, then why doesn't everyone offer it?

First off, BlackRock, Nationwide, Invesco, and Fidelity all offer TAA products. Nevertheless, the investment industry widely appreciates that TAA is not commercially viable, i.e., it won't sell well. How do we understand this seeming contradiction? As we explore this question, keep in mind the distinction between a product selling well in a commercial setting . . . and that same product being the best possible investment solution for an individual investor. The two have little if any overlap. Let's begin.

PERSPECTIVES ON TACTICAL ASSET ALLOCATION (AKA SECTOR ROTATION)

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A Pretty Good Outcome

Let's try a thought experiment - What if . . .

What if we build a passive portfolio from the 32 asset categories shown in the graphic below using the following weighs: 30.3% US stocks, 29.3% international stocks, 5.0% US Treasury bonds, 31.5% US investment grade corporate bonds, 1.4% international bonds, 1.3% gold, and 1.2% other commodities. Over the last 102 years (ending 1/31/2021) this portfolio would have delivered 11.53% per annum. That's pretty good.

PERSPECTIVES ON TACTICAL ASSET ALLOCATION (AKA SECTOR ROTATION)

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But has TAA worked better than bonds?

Is TAA versus bonds the right comparison?

Probably not. But to answer this question, we must first identify the all-important investment timeframe. I'm assuming here that the investor is targeting needs arriving between 5 and 20 years in the future. Therefore, their investment holding period or time horizon is 5 to 20 years.

For such an investor, a pure 100% bond portfolio won't work. It won't be able to generate the needed returns. Similarly, a pure 100% stock portfolio won't work. It'll be too volatile, exposing the investor to an undue likelihood of having to liquidate at an unfortunate point in time (when their account value is down).

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A Century of Evidence on Trend-Following Investir

PERSPECTIVES ON TACTICAL ASSET ALLOCATION (AKA SECTOR ROTATION)

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PERSPECTIVES ON TACTICAL ASSET ALLOCATION (AKA SECTOR ROTATION)

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The way back is closed, only the path forward remains open

There are different types of change

It's a trite phrase to say *"change is the natural order of things,"* sounds too much like an excuse.

Worse yet, it serves to mask the different types of change - and how the best approach for dealing with one type of change is the worst for another.

Different types of change are distinguished by two attributes:

- Speed or pace
- Smoothness or direction

AQR

A Century of Evidence on Trend-Following Investing

Brian Hurst
Principal

Yao Hua Ooi
Principal

Lasse H. Pedersen, Ph.D.*
Principal

Fall 2014

Executive Summary

We study the performance of tren investing across global markets s extending the existing evidence by mo years. We find that trend following ha

PERSPECTIVES ON TACTICAL ASSET ALLOCATION (AKA SECTOR ROTATION)

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Sometimes people just don't fact-check

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Tactical Asset Allocation (TAA) relies on trending or momentum for its success. Some have falsely claimed that market cycles are getting shorter, and therefore TAA no longer has the inherent advantage that it once did. Let's fact-check this claim in order to determine its truth or falsehood.

But first, let's work to better understand this issue. The following graph shows two different market paths. Each starts and ends at the same spot, and therefore both generate the same total return after many years.

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Important Disclosures

All data and statistics were provided by Global Financial Data, Inc., Kenneth French Data Library Dartmouth College, and www.robbrownonline.com

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One of the limitations of hypothetical performance results is that they are generally prepared with the benefit of hindsight. In addition, hypothetical trading does not involve financial risk, and no hypothetical trading record can completely account for the impact of financial risk in actual trading. For example, the ability to withstand losses or adhere to a particular trading program in spite of trading losses are material points which can also adversely affect actual trading results. There are numerous other factors related to the markets in general or to the implementation of any specific trading program which cannot be fully accounted for in the presentation of hypothetical performance results and all of which can adversely affect actual trading results.

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