

Lessons From a Hundred Year Tactical Allocation Strategy

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Silicon Valley Computerized Investing Group

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Peter Lingane

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Peter “converted” to momentum a decade ago and has benefited from the ideas, criticisms and stimulation of the Silicon Valley Computerized Investing Group since 2013.

Peter invests in the SIMPLE and N100 strategies. Peter receives no financial compensation from Julex Capital Management.

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It's Worth Repeating ...

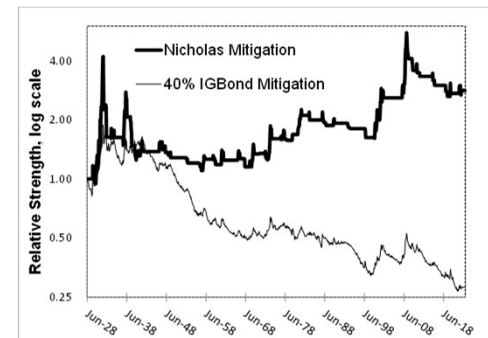
- This research is unverified; it could be wrong or even fraudulent.
- Backtesting is clairvoyant. It knows closing prices and is able to invest at these prices.
- Historical performance provides no guarantees; one can't invest in the past.
- Results may not be applicable to your circumstances. A qualified strategy is generally unattractive outside qualified funds, for example.

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Mitigation Strategies Are Imperfect

Relative Strength of Two Mitigation Strategies versus the Untimed Portfolio of Large Capitalization US Stocks



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- My Goals

Drawdowns and volatility comparable to the 60:40 portfolio.

Returns greater than the 60:40 portfolio. And, since I am impatient, higher returns within 36 months.

Upward trending RS without the ups and downs inherent with timing.

- My Approach

Tactical allocation within a broad based portfolio of stocks, bonds and commodities. No timing.

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“Winners Repeat, Losers Repeat” Rob Brown, *J. Investing*, August 2022.

- Pragmatic goals from the investor’s perspective .

CAGR $\geq$ 4% (net of inflation) over 90 months.

$\geq$ 5% (net of inflation) over 120 months.

$\geq$ 6% (net of inflation) over 180 months.

Adequate sustainable withdrawal.

- A hundred years of history, which he graciously shared.

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The Benchmark

- Lower drawdown, higher return, upward trending relative strength, higher probability of a minimum CAGR and higher withdrawal rate RELATIVE TO THE BENCHMARK.
- Since success is convincing the investor to change from the investor’s current investment strategy to a different strategy, the benchmark should be the investor’s current strategy.
- For this study, the benchmark is 40% 5-year US government bonds and 60% S&P500® Composite, rebalanced monthly.

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Investable Universe

- 77 constituents; 60 have histories from Jul 1928.
Long only
19 US equity sectors
31 Foreign equity regions or countries
13 US fixed income sectors
2 Foreign fixed income sectors
12 Precious metal and commodity sectors
- Each index is landed to an ETF. Recent returns are the returns of the ETFs.
- Expenses and capacities reflect the ETFs.

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Expenses (bps per month). TAA assumes 2*N trades per month.

	ETF	Bid/Ask	Mgmt. Fee	Total
Benchmark (VOO/IEI)	0.7	0.2		0.9
SP500 (VOO)	0.3	2	4	6
NG Futures (UNG)	9	17	4	30
Palladium (PALL)	5	31	4	40
New Zealand (ENZL)	4	59	4	67

Assuming 100% turnover overstates costs. Costs were higher in the past. Benchmark expense is 0.1% annually and average TAA expense is 1.7%. And then there are taxes.

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Capacity

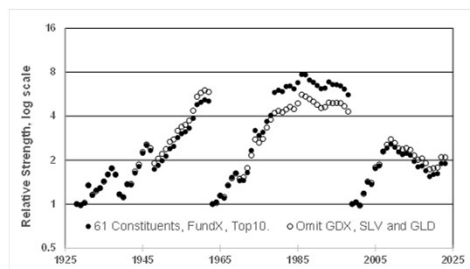
- Stock trades which are small compared to the average daily volume are unlikely to affect prices.
- Trading volume is not always a good indicator of the capacity of an ETF because it may be possible to structure a large trades as creation units and effect the trade near the bid or ask price.
- 16 ETFs were omitted due to low capacity.

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Jul 1928 – Nov 2023. FundX, Top10

	DD	WIN36	4% CAGR 90 months	5% CAGR 120 months	6% CAGR 180 months
BM	63	Reference	57	51	38
61 funds	47	71	86	88	87
Omit GDx, SLV, GLD	46	73	88	90	92

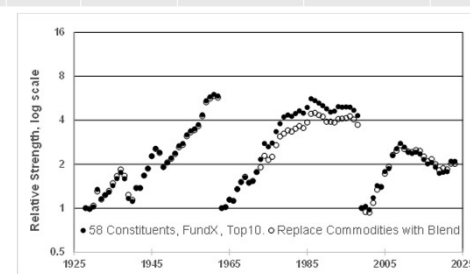


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Jul 1928 – Nov 2023. FundX, Top10. Replace 3 Commodity Funds with 2:1 Reuters/NG Blend (Brown idea)

	DD	WIN36	4% CAGR 90 months	5% CAGR 120 months	6% CAGR 180 months
58	46	73	88	90	92
56	47	74	89	90	92

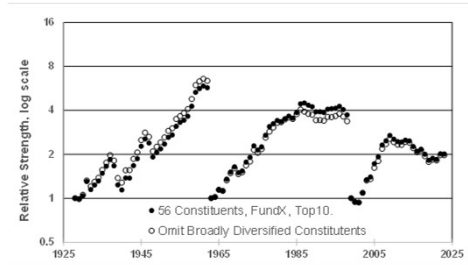


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Jul 1928 – Nov 2023. FundX, Top10.
Omit Broadly Diversified Constituents.

# Funds	DD	WIN36	4% CAGR 90 months	5% CAGR 120 months	6% CAGR 180 months
56	47	74	89	90	92
49	44	75	90	91	93

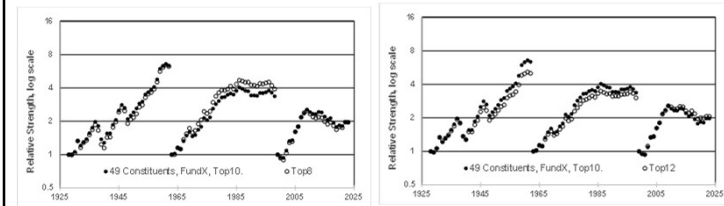


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Volatility Decreases with TopN but
Probabilities of Achieving Goals
Decreases. FundX, 49 Constituents.

N	DD	WIN36	4% CAGR 90 months	5% CAGR 120 months	6% CAGR 180 months
8	47	72	91	91	92
10	44	75	90	91	93
12	41	77	89	88	88



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- Results are substantially the same with the sma(11m) trend algorithm.
- These results provide two challenges: Drawdowns are high and relative strength declines after 2010.

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Drawdowns Would Be Smaller If
Defensive Constituents Were Always
Chosen In Times Of Market Turmoil.

The first row is 49 constituents. The second row is the fixed income constituents plus the commodity blend. FundX/Top10.

DD	WIN36	4% CAGR 90 months	5% CAGR 120 months	6% CAGR 180 months
49	75	90	91	93
9	32	34	30	17

Why doesn't the trend algorithm choose
fixed income more frequently?

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Trend Algorithms Tend to Pick High Volatility Constituents.

Number of times a constituent is picked, Fx(1,1,1,1). 49 Constituents + SP500, 1928-2023.

	Top4	Top8	Top12
SP500	8	126	386
2xSP500	502	675	746

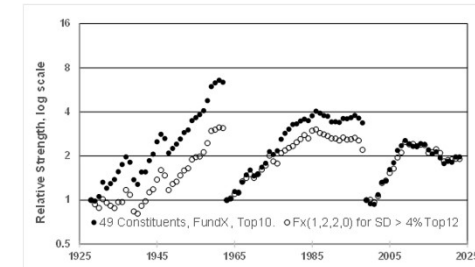
Maurer added this universe to the N100 universe without timing. The added constituents had only a negligible effect on drawdown, 1995 - 2023.

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Solution 1: Reduce the Trends of the More Volatile Constituents.

- Fx(1,1,1,1) if $SD \leq 4\%$ per month.
- Fx(1,1,2,0) if $SD > 4\%$ per month.



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Solution 2. Dividing the Trends by the SD (MSCI, Fan, *et al*)

This approach may be useful when SDs are similar, but it must fail when there is a wide variation in SD. Since the adjusted trends of the volatile constituents are much less than the adjusted trends of the less volatile, the allocation is to the less volatile constituents and performance suffers.

Trend	DD	WIN36	4% CAGR 90 months	5% CAGR 120 months	6% CAGR 180 months
FundX	44	75	90	91	93
FundX / SD	12	23	19	6	0

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Solution 3. Normalize the Monthly Returns to the Volatility of SP500. (SD measured 2000-2023)

$$\text{Normalized Return} = \text{Return} * \text{SD SP500} / \text{SD}$$

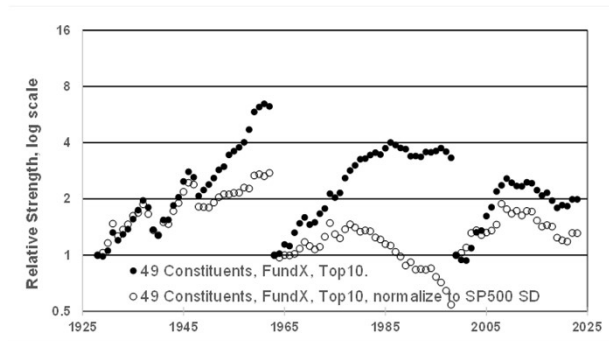
1928-2023	DD	WIN36	4% CAGR 90 months	5% CAGR 120 months	6% CAGR 180 months
BM	63	reference	57	51	38
FundX	44	75	90	91	93
Normalized	36	55	71	69	54

Normalization reduces volatility and performance, but performance is better than benchmark.

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But Relative Strength is Terrible

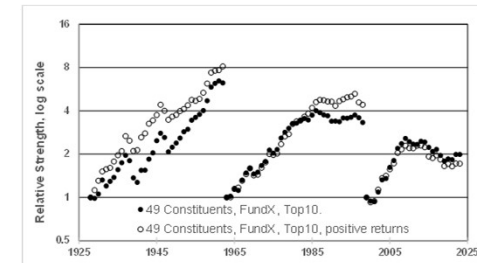


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Solution 4. Require Positive 1m-Return (Julex idea)

Trend	DD	WIN36	4% CAGR 90 months	5% CAGR 120 months	6% CAGR 180 months
FundX	44	75	90	91	93
Pos. Returns	29	79	91	90	95

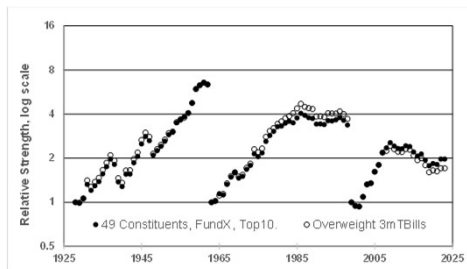


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Solution 5. Overweight 3mTBills 72x. (Analogous to Brown.)

	DD	WIN36	4% CAGR 90 months	5% CAGR 120 months	6% CAGR 180 months
Equal Wt.	44	75	90	91	93
Overweight	40	75	90	90	90



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Pause to Hear Your Ideas About Modifying Trend Algorithms to Choose Defensive Funds In Times of Market Stress

Still to come

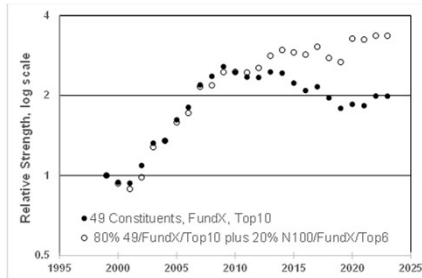
- A high performance "sleeve"
- Comparison to Julex strategies

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Recent Underperformance Unaffected by the Trend Algorithm, TopN and the Investable Universe.

20% "sleeve" of Maurer's true history N100, FundX, Top6, no timing. 17 bps/month expense.

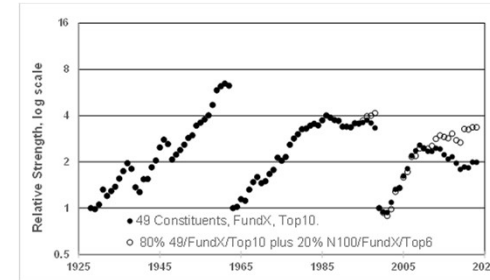


2000-2023	DD	WIN36	4% CAGR 90 months	5% CAGR 120 months	6% CAGR 180 months
No Sleeve	27	60	76	71	76
Sleeve	30	89	100	100	100

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20% "sleeve" of Maurer's N100, FundX, Top6, no timing. 17 bps/month expense.

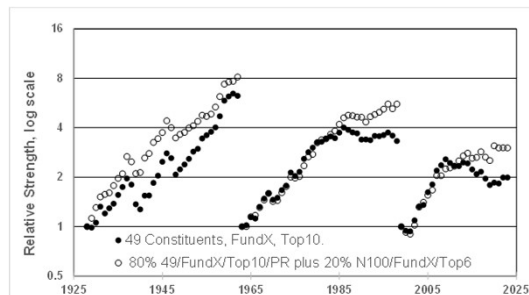


1928 - 2023	DD	WIN36	4% CAGR 90 months	5% CAGR 120 months	6% CAGR 180 months
No Sleeve	44	75	90	91	93
Sleeve	44	84	95	96	96

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Positive Returns plus a 20% Sleeve

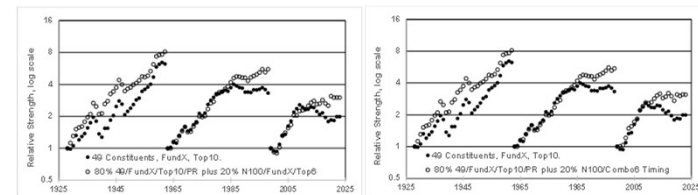


1928 - 2023	DD	WIN36	4% CAGR 90 months	5% CAGR 120 months	6% CAGR 180 months
No Sleeve	44	75	90	91	93
Sleeve	44	84	95	96	96
PR/Sleeve	33	89	96	95	99

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Substitute N100 with Comb6 Timing. DD shifts from Feb 2009 to May 1940. Feb 2009 DD is reduced 33 to 25%.



1928 - 2023	DD	WIN36	4% CAGR 90 months	5% CAGR 120 months	6% CAGR 180 months
No Sleeve	44	75	90	91	93
Sleeve	44	84	95	96	96
PR/Sleeve	33	89	96	95	99
S011	27	87	96	94	99

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Periods of Underperformance Are Not Randomly Distributed

49 Constituents/FundX/Top10



49 Constituents/FundX/Top10/RP with N100 Sleeve



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Periods of Underperformance Are Not Randomly Distributed II.

49 Constituents/FundX/Top10



49 Constituents/FundX/Top10/RP with N100 Sleeve



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Periods of Underperformance Are Not Randomly Distributed III.

49 Constituents/FundX/Top10



49 Constituents/FundX/Top10/RP with N100 Sleeve



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Julex Dynamic Sectors Strategy

- Combines “whipsaw mitigation” and allocation among ten US sectors and six US equity styles.
- Constituents must have positive returns.
- The portfolio could hold as many as ten equity constituents plus four fixed income constituents.
- The strategy has been live since Nov 2012 and there are backtested returns from 2000.
- Management fee is a modest 50 bps.
- For more information, see Julexcapital.com: Dynamic Sector Review Q32023.

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2000 - Nov 2023 Performance. Net of expenses.

	DD	WIN36	4% Real	5% Real	6% Real
60:40 Benchmark	30	reference	52	35	3
Julex Dynamic Sect	20	72	83	89	98
Julex Multi-Asset	18	64	71	76	95
80% 49/Top10 20% N100/Top6	30	89	100	100	100
80% 49/Top10/PR 20% N100/Top6	33	88	99	99	99

	CAGR (real)	CAGR	mSD	Sharpe	UPI
60:40 Benchmark	2.6	5.3	2.6	0.44	0.42
Julex Dynamic Sect	6.0	8.7	2.9	0.72	1.12
Julex Multi-Asset	7.1	9.8	2.9	0.81	1.10
80% 49/Top10 20% N100/Top6	8.0	10.7	4.1	0.68	0.72
80% 49/Top10/PR 20% N100/Top6	7.5	10.2	3.8	0.69	0.71

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Lessons

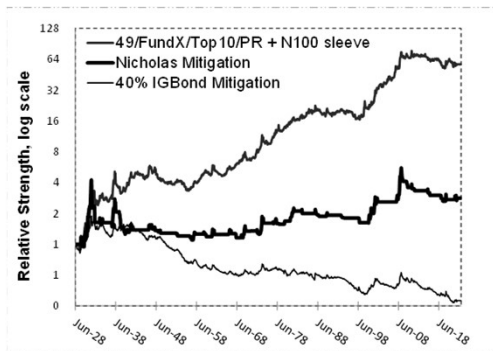
A hundred year history provides the opportunity to observe phenomena which have not been seen in shorter simulations.

- Lower volatility constituents are chosen less frequently than they should be.
- There could be decades of underperformance.
- Effect of requiring a positive 1m-return.

These observations should influence our understanding of short history strategies.

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	CAGR	Sharpe	UPI	DD	WIN36	4% real	5% real	6% real
LrgCapUS	9.4	0.40	0.29	84	70	64	65	56
60:40	8.0	0.45	0.41	63	reference	57	51	38
Timing	10.6	0.60	0.48	48	75	78	74	69
TAA	14.2	0.88	1.16	33	89	96	95	94

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Conclusion

- There has been progress towards the development of a pure TAA strategy. Sleeve strategies and requiring a positive return are worthy of further exploration.

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49 Constituent Universe

- 17 US equities
- 16 foreign equities
- 13 US bonds
- 2 foreign bonds
- 1 commodity blend

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Allocation	November	December
0.080	XLC	EWZ
0.080	XLK	XLK
0.080	DBA	XLF
0.080	DBO	QQQ
0.080	EWT	XLC
0.080	MM Fund	MTUM
0.080	Mm Fund	XLY
0.080	SHV	EWT
0.080	EWJ	VOO
0.080	GDX	VTI
0.034	META	META
0.034	NVDA	NVDA
0.033	PDD	PDD
0.033	AVGO	CRWD
0.033	ADBE	ADBE
0.033	CEG (SNPS)	ZS

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Acknowledgements

- Al Zymkowski, John Nicholas, Don Maurer and Scott Juds for profound impacts on my understanding of TAA strategies.
- Rob Brown for his thoughtful webinars advocating for tactical allocation, and for access to his datasets.
- Jeff Megar for sharing the Julex strategies.
- Errors are my responsibility.

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Thank you for your attention

- Questions or comments?
- The slides and description of the investable universe is posted at www.lingane.com/qi.

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