



DUAL MOMENTUM SYSTEMS

**Evidence based
Rules based
Objective
Simple
Better Risk Adjusted Performance**

Disclosure

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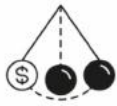
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What is Dual Momentum Investing?



- Dual Momentum strategies are evidence based, rules based, objective, tactical investment methodologies with the goal of maximizing participation in upside market momentum and sidestepping long market downturns by going into Treasuries until the markets are again in an upward trending.



- Dual Momentum investing has two primary components. The first is absolute momentum: is there positive return over your look back period? The second momentum is relative momentum: which investment option has the highest return over the look back period. If there is positive momentum then we invest in the highest relative momentum option, otherwise we stay out of harm's way in Treasuries which tend to perform well when the markets are underperforming.



- Smart Leverage is now a part of these strategies in order to take advantage after outsized losses in the markets. These strategies are in leveraged equities about 10% to 15% of the time on average which is about 4 months every 3 years.



- Why use Dual Momentum Strategies? Most professional managers fail to beat the market indices over time and retail investors do even worse. Buy and Hold investors can match the indices performance but have to suffer tremendous drawdowns along the way. For these reasons I use these Dual Momentum strategies for my investing. You will rarely get out of equities at the very top, and back in at the very bottom, but there are incredible improvements, as the pages that follow will illustrate.



- Is Dual Momentum easy to invest in? Investing in Dual Momentum strategies can takes some getting used to, you will experience whipsaw in choppy markets, there may be a change of investment at the end of any given month, the strategy may dictate you be fully invested at a time when you may otherwise not be, it can be hard to reconcile when your investments are performing different than the overall market, there will be periods of a year or longer when you underperform the overall market. However, you are paid off with less drawdowns and far better overall returns over the long run.

Dual Momentum Investment Strategies

Global Navigator (Mostly Conservative)

This is a Tactical Asset Allocation strategy which invests in the USA when it's outperforming the foreign markets, and it invests in the Foreign markets when they outperform the USA. The strategy will go out of all equities when they are in a downward trend, it goes into Long Term Treasuries. Smart Leverage is incorporated into Global Navigator for US Market investments only, when an outsized drawdown is sustained in the markets, the strategy will issue a Leverage Trigger and if confirmed will go into Leveraged Equities if the US Markets are the entry. This strategy requires a larger market drawdown than The Russell to set the Leverage Trigger. When the leverage Trigger is set, a 2X version of the normally selected ETF is used, this 2X fund is used until there is a change of investments, then it goes back to non-leveraged ETF's.

4.25 : Average months between trades.

Monthly : How often this strategy needs to be checked for possible change of investment.

65% : Percent of all months invested in the unleveraged equities.

4% : Percent of all months invested in 2X leveraged equities.

30% : Percent of all months invested in Treasuries.

18.49 : Average Duration of the government Treasuries held in the strategy.

Whale : This strategy is appropriate for the largest of portfolios.

The Russell OG (Very Conservative)

This is a Tactical Asset Allocation strategy which invests in the USA only, and selects the best performing sub-market between: Russell 1000, Russell Mid-Cap Growth, or Russell MidCap Value. The strategy will go out of all equities when they are in a downward trend, it goes into Long Term Treasuries for all of the months it is in Treasuries. This strategy is never in leveraged ETF's.

4.05 : Average months between trades.

Monthly : How often this strategy needs to be checked for possible change of investment.

70% : Percent of all months invested in the unleveraged equities.

0% : Percent of all months invested in 2X leveraged equities.

30% : Percent of all months invested in Treasuries.

18.49 : Average Duration of the government Treasuries held in the strategy.

Whale : This strategy is appropriate for the largest of portfolios.

The Russell (Often Moderately, at times Aggressive)

This is a Tactical Asset Allocation strategy which invests in the USA only, and selects the best performing sub-market between: Russell 1000, Russell Mid-Cap Growth, or Russell 2000. The strategy will go out of all equities when they are in a downward trend, it goes into Long Term Treasuries for all of the months it is in Treasuries. Smart Leverage is incorporated into The Russell, when an outsized drawdown is sustained in the markets, the strategy will issue a Leverage Trigger and if confirmed will go into 2X Leveraged Equities. The Russell has a lower threshold for market drawdown to set a Leverage Trigger than the Global Navigator strategy. When the leverage Trigger is set, a 2X version of the normally selected ETF is used, this 2X fund is used until there is a change of investments, then it goes back to non-leveraged ETF's.

3.11 : Average months between trades.

Monthly : How often this strategy needs to be checked for possible change of investment.

63% : Percent of all months invested in the unleveraged equities.

6% : Percent of all months invested in 2X leveraged equities.

31% : Percent of all months invested in Treasuries.

18.49 : Average Duration of the government Treasuries held in the strategy.

Whale : This strategy is appropriate for the largest of portfolios.

The Russell XXL (Often Moderate, at times Very Aggressive)

This is a Tactical Asset Allocation strategy which invests in the USA only, and selects the best performing sub-market between: Russell 1000, Russell Mid-Cap Growth, or Russell 2000. The strategy will go out of all equities when they are in a downward trend, it into aggressive Treasury funds. Smart Leverage is incorporated into The Russell, when an outsized drawdown is sustained in the markets, the strategy will issue a Leverage Trigger and if confirmed will go into 3X Leveraged Equities. The Russell has a lower threshold for market drawdown to set a Leverage Trigger than the Global Navigator strategy. When the leverage Trigger is set, a 3X version of the normally selected ETF is used, this 3X fund is used until there is a change of investments, then it goes back to non-leveraged ETF's. This strategy waits patiently in unleveraged funds but goes big when odds are in it's favor for outsized returns with lower risk of drawdowns.

2.71 : Average months between trades.

Monthly : How often this strategy needs to be checked for possible change of investment.

62% : Percent of all months invested in the unleveraged equities.

8% : Percent of all months invested in 3X leveraged equities.

6% : Percent of all months invested in 3X Long Duration Treasuries.

24% : Percent of all months invested in Extended Duration Treasuries.

31.19 : Average Duration of the government Treasuries held in the strategy.

Big Fish : This strategy is appropriate for large portfolios, and can be Whale ready by using TLT when it goes into Treasuries.

MAX PAIN (Extremely Aggressive)

This is a 3X Leveraged Tactical Asset Allocation strategy which invests in the USA only, and invests in the 3X version of the best performing sub-market between: Russell 2000, MidCap 400, or S&P 500. The strategy will go out of all equities when they are in a downward trend, into 3X Intermediate Treasuries. This is a highly leveraged Dual Momentum strategy that does not have low drawdowns, however, it has very attractive drawdown characteristics given it's past performance (risk adjusted performance.)

2.83 : Average months between trades.

Monthly : How often this strategy needs to be checked for possible change of investment.

0% : Percent of all months invested in the unleveraged equities.

70% : Percent of all months invested in 3X Leveraged equities.

30% : Percent of all months invested in 3X Leveraged Intermediate Treasuries.

31.53 : Average Duration of the government Treasuries held in the strategy.

Small Fry : This strategy is appropriate for the [extremely risk tolerant] small fry.

Investment Strategies

Next months Investments

For April 2021

Strategy Components Invested:

Month	Global Navigator	The Russell OG	The Russell	The Russell XXL	MAX PAIN
May 2020	[TLT] Long Term Treasuries	[TLT] Long Term Treasuries	[TLT] Long Term Treasuries	[EDV] Extended Duration Treasuries	[EDV] Extended Duration Treasuries
Jun 2020	[SSO] 2X S&P 500	[IWP] Russell Mid-Cap Growth	[QLD] 2X QQQ	[TQQQ] 3X QQQ	[UPRO] 3X S&P 500
Jul 2020	[SSO] 2X S&P 500	[IWP] Russell Mid-Cap Growth	[QLD] 2X QQQ	[TQQQ] 3X QQQ	[UPRO] 3X S&P 500
Aug 2020	[SSO] 2X S&P 500	[IWP] Russell Mid-Cap Growth	[QLD] 2X QQQ	[TQQQ] 3X QQQ	[UPRO] 3X S&P 500
Sep 2020	[SSO] 2X S&P 500	[IWB] Russell 1000	[IWB] Russell 1000	[IWB] Russell 1000	[UPRO] 3X S&P 500
Oct 2020	[SSO] 2X S&P 500	[IWP] Russell Mid-Cap Growth	[IWP] Russell Mid-Cap Growth	[IWP] Russell Mid-Cap Growth	[UPRO] 3X S&P 500
Nov 2020	[SSO] 2X S&P 500	[IWP] Russell Mid-Cap Growth	[IWP] Russell Mid-Cap Growth	[IWP] Russell Mid-Cap Growth	[URTY] 3X Russell 2000
Dec 2020	[VXUS] All Country World ex-US	[IWP] Russell Mid-Cap Growth	[IWM] Russell 2000	[IWM] Russell 2000	[URTY] 3X Russell 2000
Jan 2021	[VXUS] All Country World ex-US	[IWP] Russell Mid-Cap Growth	[IWM] Russell 2000	[IWM] Russell 2000	[URTY] 3X Russell 2000
Feb 2021	[VXUS] All Country World ex-US	[IWS] Russell Mid-Cap Value	[IWM] Russell 2000	[IWM] Russell 2000	[URTY] 3X Russell 2000
Mar 2021	[VXUS] All Country World ex-US	[IWS] Russell Mid-Cap Value	[IWM] Russell 2000	[IWM] Russell 2000	[URTY] 3X Russell 2000
Apr 2021	[VTI] Total US Market	[IWS] Russell Mid-Cap Value	[IWM] Russell 2000	[IWM] Russell 2000	[URTY] 3X Russell 2000

For April, here are the investments by strategy:

Global Navigator

Invests in US or Foreign, with limited Smart Leverage in USA only, Long Term Treasuries when markets are going down

For the month of April 2021 invest in: [VTI] Total US Market

The Russell OG

Goes into either Russell: 1000, MidCap Growth, or Russell MidCap Value, Long Term Treasuries when markets are going down

For the month of April 2021 invest In: [IWS] Russell Mid-Cap Value

The Russell

Goes into either Russell: 1000, MidCap Growth, or 2000, with Smart Leverage into 2X ETF's, Long Term Treasuries when markets are going down

For the month of April 2021 invest In: [IWM] Russell 2000

The Russell XXL

Goes into either Russell: 1000, MidCap Growth, or 2000, with Smart Leverage into 3X ETF's, aggressive Treasuries when markets are going down

For the month of April 2021 invest In: [IWM] Russell 2000

MAX PAIN

Invests in 3X leveraged versions of Russell 2000, S&P MidCap 400, or S&P 500, 3X Intermediate Treasuries when markets are going down

For the month of April 2021 invest In: [URTY] 3X Russell 2000

Investment Strategies

Rolling 12 Month Returns Through March 2021

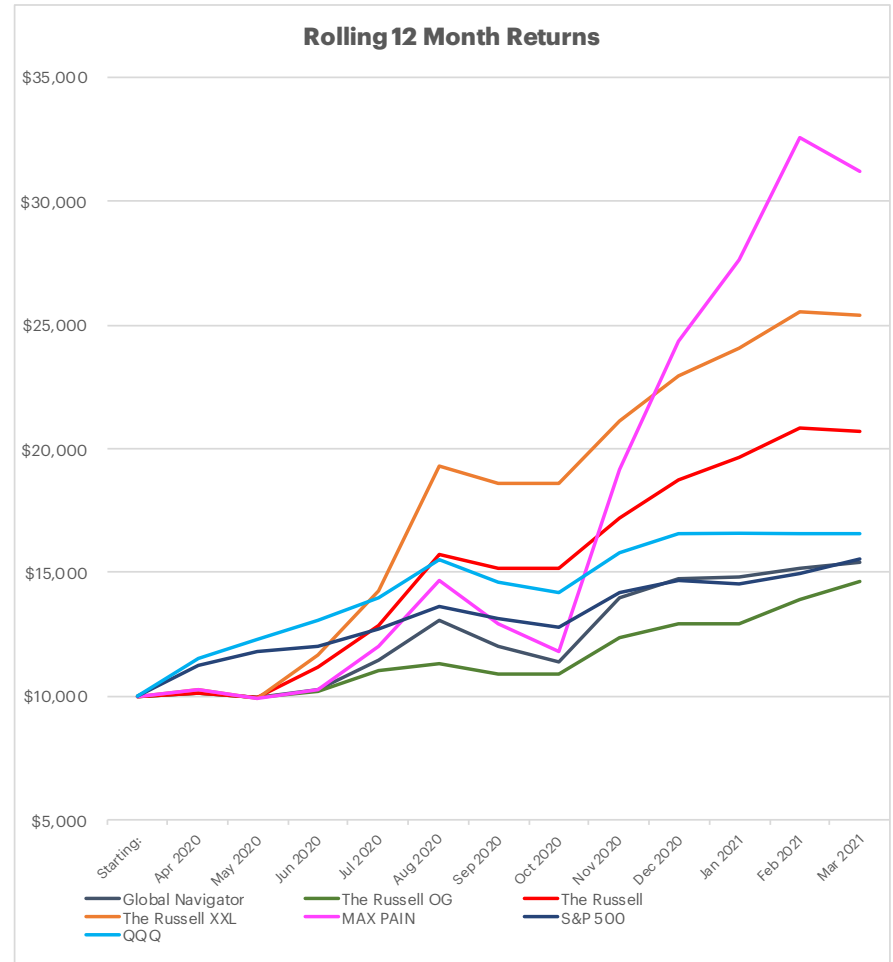
Rolling 12 month returns and Maximum Drawdown:

Month	US Market S&P 500	Nasdaq 100 QQQ	Global Navigator	The Russell OG	The Russell	The Russell XXL	MAX PAIN
Apr 2020	12.70%	14.97%	1.22%	1.22%	1.22%	2.35%	2.35%
May 2020	4.76%	6.60%	-1.76%	-1.76%	-1.76%	-3.23%	-3.23%
Jun 2020	1.78%	6.28%	2.95%	2.40%	12.34%	17.98%	3.23%
Jul 2020	5.89%	7.35%	11.69%	8.08%	14.89%	22.25%	17.70%
Aug 2020	6.98%	10.94%	14.29%	2.73%	22.77%	35.17%	22.05%
Sep 2020	-3.74%	-5.78%	-7.97%	-3.69%	-3.69%	-3.69%	-12.26%
Oct 2020	-2.49%	-3.04%	-5.38%	0.12%	0.12%	0.12%	-8.48%
Nov 2020	10.88%	11.23%	22.51%	13.33%	13.33%	13.33%	62.37%
Dec 2020	3.71%	4.90%	5.86%	4.75%	8.65%	8.65%	27.14%
Jan 2021	-1.02%	0.26%	0.25%	-0.38%	4.85%	4.85%	13.49%
Feb 2021	2.77%	-0.13%	2.30%	7.66%	6.20%	6.20%	17.86%
Mar 2021	3.97%	-0.12%	1.78%	5.41%	-0.52%	-0.52%	-4.29%
12 Mo Rtrn:	55.39%	65.37%	54.05%	46.31%	107.23%	153.95%	211.70%
Max DD:	-6.14%	-8.64%	-12.92%	-3.69%	-3.69%	-3.69%	-19.70%

b/(w) S&P 500: 0.0% 10.0% -1.3% -9.1% 51.8% 98.6% 156.3%

\$10,000 turns into:

Month	US Market S&P 500	Nasdaq 100 QQQ	Global Navigator	The Russell OG	The Russell	The Russell XXL	MAX PAIN
Starting:	\$ 10,000	\$ 10,000	\$10,000	\$ 10,000	\$ 10,000	\$ 10,000	\$ 10,000
Apr 2020	\$ 11,270	\$ 11,497	\$ 10,122	\$ 10,122	\$ 10,122	\$ 10,235	\$ 10,235
May 2020	\$ 11,806	\$ 12,256	\$ 9,944	\$ 9,944	\$ 9,944	\$ 9,904	\$ 9,904
Jun 2020	\$ 12,017	\$ 13,025	\$10,238	\$ 10,183	\$ 11,171	\$ 11,685	\$ 10,225
Jul 2020	\$ 12,724	\$ 13,983	\$ 11,434	\$ 11,005	\$ 12,834	\$ 14,285	\$ 12,034
Aug 2020	\$ 13,613	\$ 15,513	\$13,068	\$ 11,306	\$ 15,756	\$ 19,309	\$ 14,687
Sep 2020	\$ 13,103	\$ 14,616	\$ 12,027	\$ 10,889	\$ 15,175	\$ 18,596	\$ 12,887
Oct 2020	\$ 12,777	\$ 14,172	\$ 11,380	\$ 10,902	\$ 15,193	\$ 18,618	\$ 11,794
Nov 2020	\$ 14,167	\$ 15,763	\$ 13,941	\$ 12,355	\$ 17,219	\$ 21,100	\$ 19,150
Dec 2020	\$ 14,693	\$ 16,535	\$ 14,758	\$ 12,942	\$ 18,708	\$ 22,925	\$ 24,348
Jan 2021	\$ 14,543	\$ 16,578	\$ 14,795	\$ 12,892	\$ 19,615	\$ 24,037	\$ 27,632
Feb 2021	\$ 14,946	\$ 16,557	\$ 15,136	\$ 13,880	\$ 20,831	\$ 25,528	\$ 32,567
Mar 2021	\$ 15,539	\$ 16,537	\$ 15,405	\$ 14,631	\$ 20,723	\$ 25,395	\$ 31,170



Investment Strategies

2000 through March 2021

Annual returns:

Year End	Benchmark		Dual Momentum				
	US Market S&P 500	Nasdaq 100 QQQ	Global Navigator	The Russell OG	The Russell	The Russell XXL	MAX PAIN
2000	-9.74%	-36.11%	-1.07%	9.41%	18.73%	26.34%	10.09%
2001	-11.75%	-33.34%	4.30%	4.30%	4.30%	7.19%	7.19%
2002	-21.59%	-37.38%	0.79%	7.18%	15.35%	18.57%	0.17%
2003	28.16%	49.67%	69.56%	43.24%	69.25%	97.06%	228.73%
2004	10.71%	10.54%	20.48%	23.22%	28.90%	51.26%	37.70%
2005	4.83%	1.56%	6.16%	5.95%	-7.92%	-16.71%	-14.43%
2006	15.84%	7.14%	28.82%	22.86%	20.60%	21.24%	53.88%
2007	5.14%	19.01%	20.42%	9.31%	9.85%	11.47%	4.33%
2008	-36.81%	-41.73%	33.93%	33.93%	33.93%	58.56%	58.56%
2009	26.38%	54.70%	16.94%	8.12%	19.01%	13.63%	22.94%
2010	15.06%	20.14%	5.80%	16.24%	11.55%	14.51%	33.27%
2011	1.88%	3.48%	30.76%	32.68%	27.67%	62.79%	54.64%
2012	16.00%	18.13%	22.10%	19.12%	28.81%	43.99%	46.05%
2013	32.31%	36.63%	22.16%	35.27%	35.09%	35.09%	150.36%
2014	13.48%	19.18%	9.32%	10.30%	13.10%	13.10%	27.14%
2015	1.26%	9.46%	-7.95%	-1.46%	-4.21%	-1.27%	-17.50%
2016	12.00%	7.09%	8.82%	12.30%	16.19%	22.39%	54.11%
2017	21.71%	32.68%	19.39%	21.78%	10.70%	10.70%	22.85%
2018	-4.56%	-0.10%	10.21%	13.33%	11.99%	17.68%	7.26%
2019	31.23%	38.95%	9.90%	12.26%	12.26%	14.71%	26.58%
2020	18.39%	48.39%	44.35%	26.71%	83.17%	136.11%	107.76%
2021	5.76%	0.01%	4.38%	13.05%	10.77%	10.77%	28.02%
2022							
2023							
2024							
2025							
2024							
2027							
2028							
2029							

YTD b/(w) S&P 500: 0.0% -5.8% -1.4% 7.3% 5.0% 5.0% 22.3%

Compound Annual Growth Rate, CAGR:

Period	US Market		Dual Momentum				
	S&P 500	Nasdaq 100 QQQ	Global Navigator	The Russell OG	The Russell	The Russell XXL	MAX PAIN
2000's	-1.01%	-6.42%	18.54%	16.09%	19.74%	25.52%	30.50%
2010's	13.44%	17.84%	12.57%	16.74%	15.82%	22.17%	35.14%
2020's	19.70%	37.14%	38.82%	33.32%	76.13%	115.79%	118.72%
2000 - Now	6.73%	6.67%	16.77%	17.35%	20.58%	27.94%	36.76%
Past 36 Mo's	16.88%	26.00%	21.82%	20.66%	34.56%	49.52%	55.08%

\$10,000 turns into:

Period	US Market		Dual Momentum				
	S&P 500	Nasdaq 100 QQQ	Global Navigator	The Russell OG	The Russell	The Russell XXL	MAX PAIN
2000's	\$ 9,037	\$ 5,150	\$ 54,795	\$ 44,475	\$ 60,599	\$ 97,057	\$ 143,278
2010's	\$ 35,298	\$ 51,625	\$ 32,677	\$ 46,994	\$ 43,417	\$ 74,063	\$ 203,142
2020's	\$ 12,521	\$ 14,840	\$ 15,068	\$ 14,325	\$ 20,290	\$ 26,154	\$ 26,598
2000 - Now	\$ 39,938	\$ 39,457	\$ 269,793	\$ 299,413	\$ 533,841	\$ 1,880,036	\$ 7,741,590
Past 36 Mo's	\$ 15,839	\$ 20,004	\$ 18,380	\$ 17,844	\$ 24,974	\$ 34,566	\$ 38,689

Maximum Month End Drawdown & Best/Worst Months:

Period	US Market		Dual Momentum				
	S&P 500	Nasdaq 100 QQQ	Global Navigator	The Russell OG	The Russell	The Russell XXL	MAX PAIN
2000's	-50.79%	-81.08%	-19.20%	-19.41%	-17.14%	-28.54%	-36.79%
2010's	-16.22%	-16.96%	-15.62%	-10.99%	-19.84%	-30.79%	-35.57%
2020's	-19.43%	-12.91%	-12.92%	-8.07%	-8.07%	-8.07%	-23.74%
2000 - Now	-50.79%	-81.08%	-19.20%	-19.41%	-19.84%	-30.79%	-36.79%
Past 36 Mo's	-19.43%	-16.96%	-12.92%	-8.07%	-9.25%	-9.25%	-26.57%
Worst Month	-16.52%	-26.21%	-13.07%	-13.07%	-15.14%	-22.19%	-24.15%
Next Worst	-12.46%	-22.91%	-11.99%	-9.71%	-13.07%	-21.47%	-23.04%
Best Month	12.70%	19.02%	22.51%	21.02%	22.77%	35.17%	62.37%

Global Navigator

Ratings compared to the S&P 500

Drawdowns: Far more shallow drawdowns

Leverage: Conservative, very infrequent use of 2X S&P 500

Volatility: Not volatile

Returns: Much better long term results



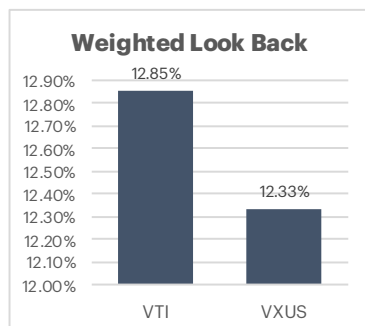
Dual Momentum Strategies

Rule based strategies to capture upside while minimizing downside.

Global Navigator (Pretty Conservative)

Global Momentum Rotational Strategy

Investment selection for April 2021



Investment selection flow:

The lookback for VTI is positive so Global Navigator strategy invests in equities. VTI, Total US Market, is the highest rated over the lookback period.

There is no confirmed Leverage Trigger, no leveraged equity this month.

The Investment for April 2021 is: VTI, Total US Market

Portfolio size appropriateness:

Whale, Global Navigator can be used for any sized portfolio.

Recent investments, and performance vs the S&P 500:

S&P 500

Gain(Loss)	\$10,000
12.70%	\$11,270
4.76%	\$11,806
1.78%	\$12,017
5.89%	\$12,724
6.98%	\$13,613
-3.74%	\$13,103
-2.49%	\$12,777
10.88%	\$14,167
3.71%	\$14,693
-1.02%	\$14,543
2.77%	\$14,946
3.97%	\$15,539

Global Navigator

Month	ETF	Index	Gain(Loss)	\$10,000
Apr 2020	TLT	Long Term Treasuries	1.22%	\$10,122
May 2020	TLT	Long Term Treasuries	-1.76%	\$9,944
Jun 2020	SSO	2X S&P 500	2.95%	\$10,238
Jul 2020	SSO	2X S&P 500	11.69%	\$11,434
Aug 2020	SSO	2X S&P 500	14.29%	\$13,068
Sep 2020	SSO	2X S&P 500	-7.97%	\$12,027
Oct 2020	SSO	2X S&P 500	-5.38%	\$11,380
Nov 2020	SSO	2X S&P 500	22.51%	\$13,941
Dec 2020	VXUS	All Country World ex-US	5.86%	\$14,758
Jan 2021	VXUS	All Country World ex-US	0.25%	\$14,795
Feb 2021	VXUS	All Country World ex-US	2.30%	\$15,136
Mar 2021	VXUS	All Country World ex-US	1.78%	\$15,405

55.39% : 12 Month Total Return

-6.14% : 12 Month Max Drawdown

12 Month Total Return:

12 Month Max Drawdown:

54.05%

-12.92%

58.39% : 36 Month Total Return

-19.43% : 36 Month Max Drawdown

36 Month Total Return:

36 Month Max Drawdown:

83.80%

-12.92%

Global Navigator

This is a tactical rules based objective strategy. Because it is not a market index, there are times when it will under or over perform the market.

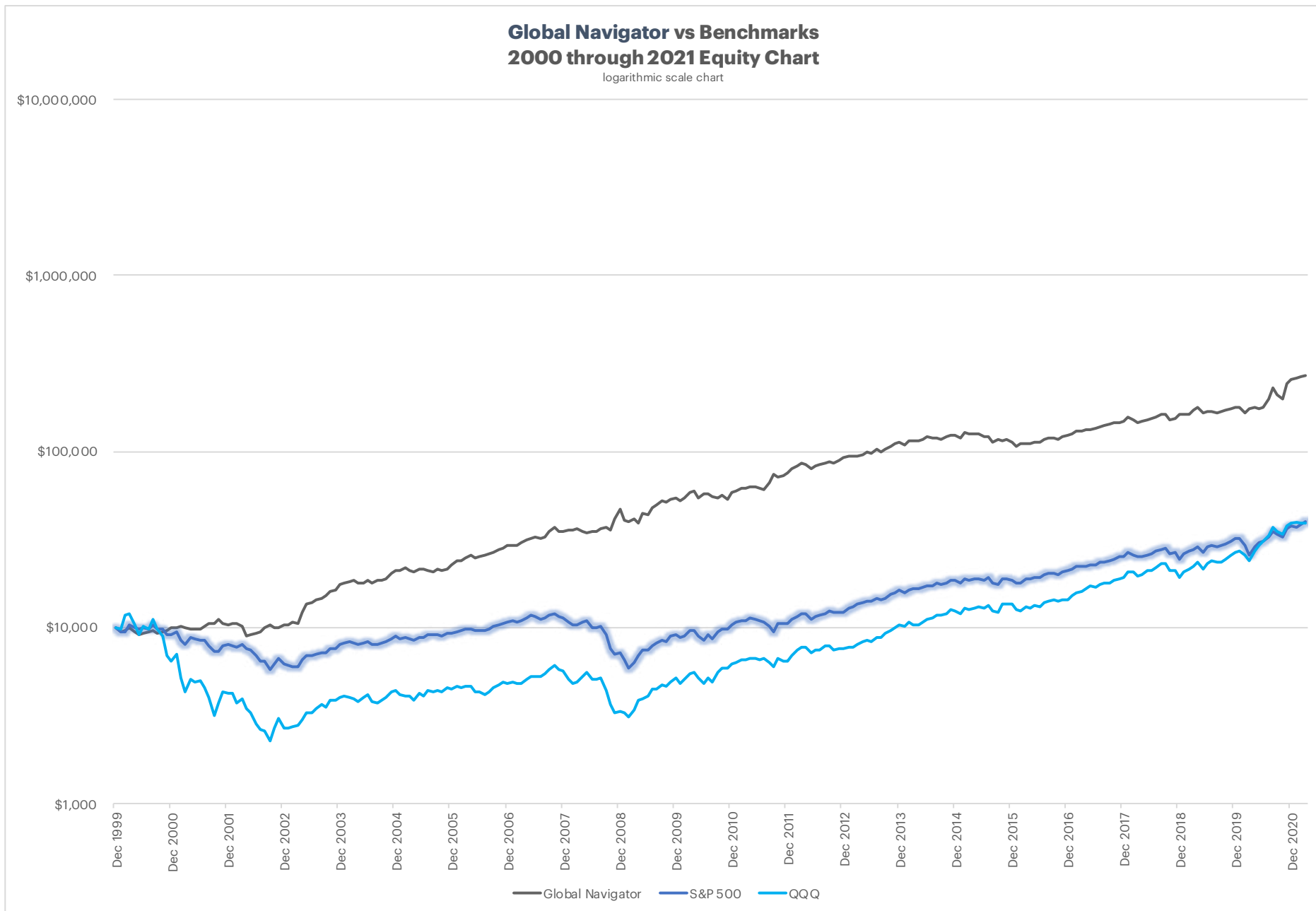
The goal is to avoid prolonged downtrends in the market, and to participate in the upward trends in the best performing component.

Global Navigator is a global strategy, it invests in the USA when it is outperforming, and in the Foreign markets when they outperform.

At the end of the month it looks at the US and Foreign markets, and if the US Markets are negative over the look back period then we park ourselves in Treasuries. If the US Markets are positive then the strategy invests in either the US Markets or Foreign markets, whichever has the highest return over the lookback period.

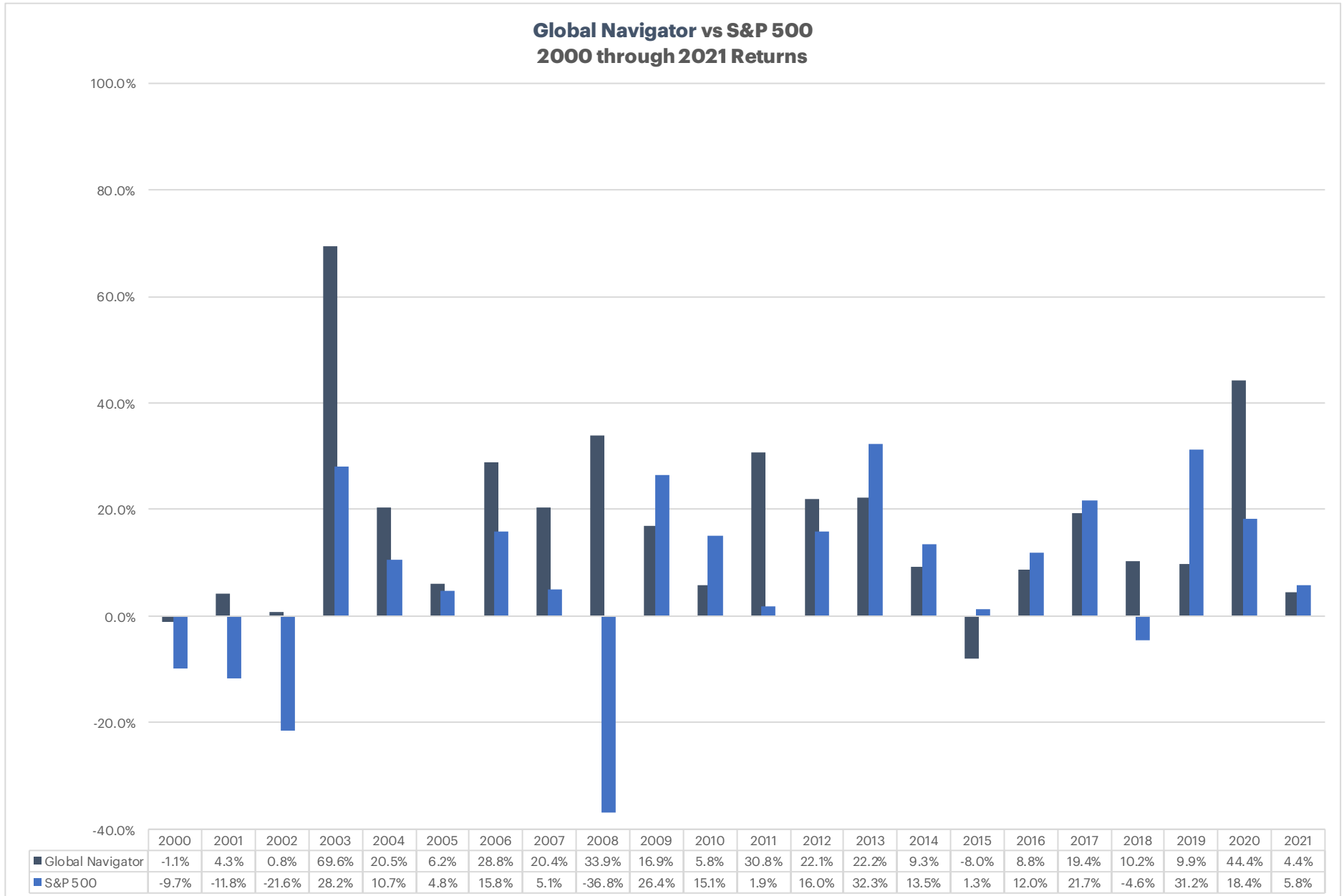
This strategy, after an outsized drawdown in the markets, could go into 2X Leveraged equities if the USA Markets are the investment, not if going into Foreign Markets.

The original Global Navigator strategy was finalized in May 2017. The implementation of Smart Leverage was in October 2020, they have been out of sample since those dates.



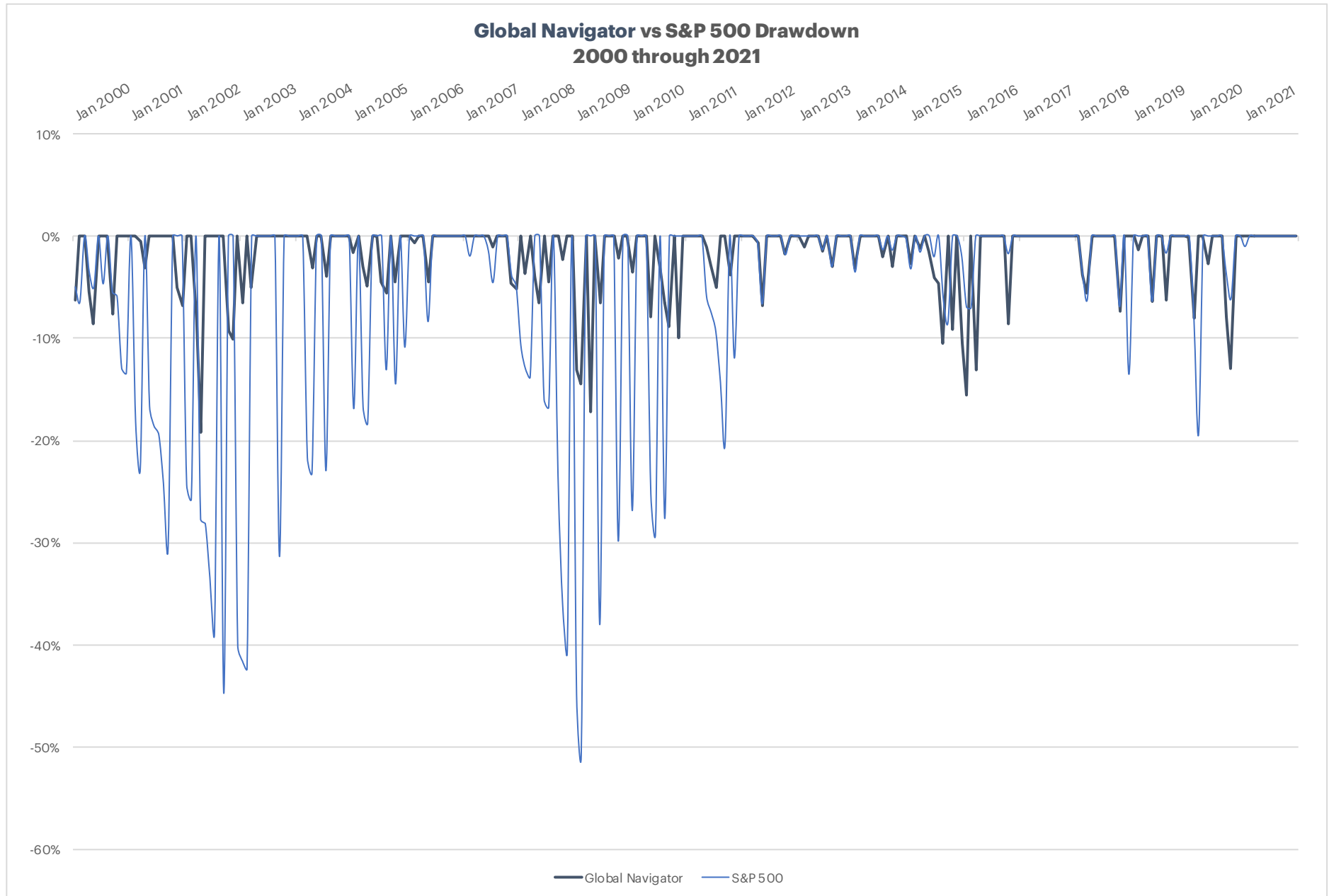
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Dual Momentum Systems:Global Navigator



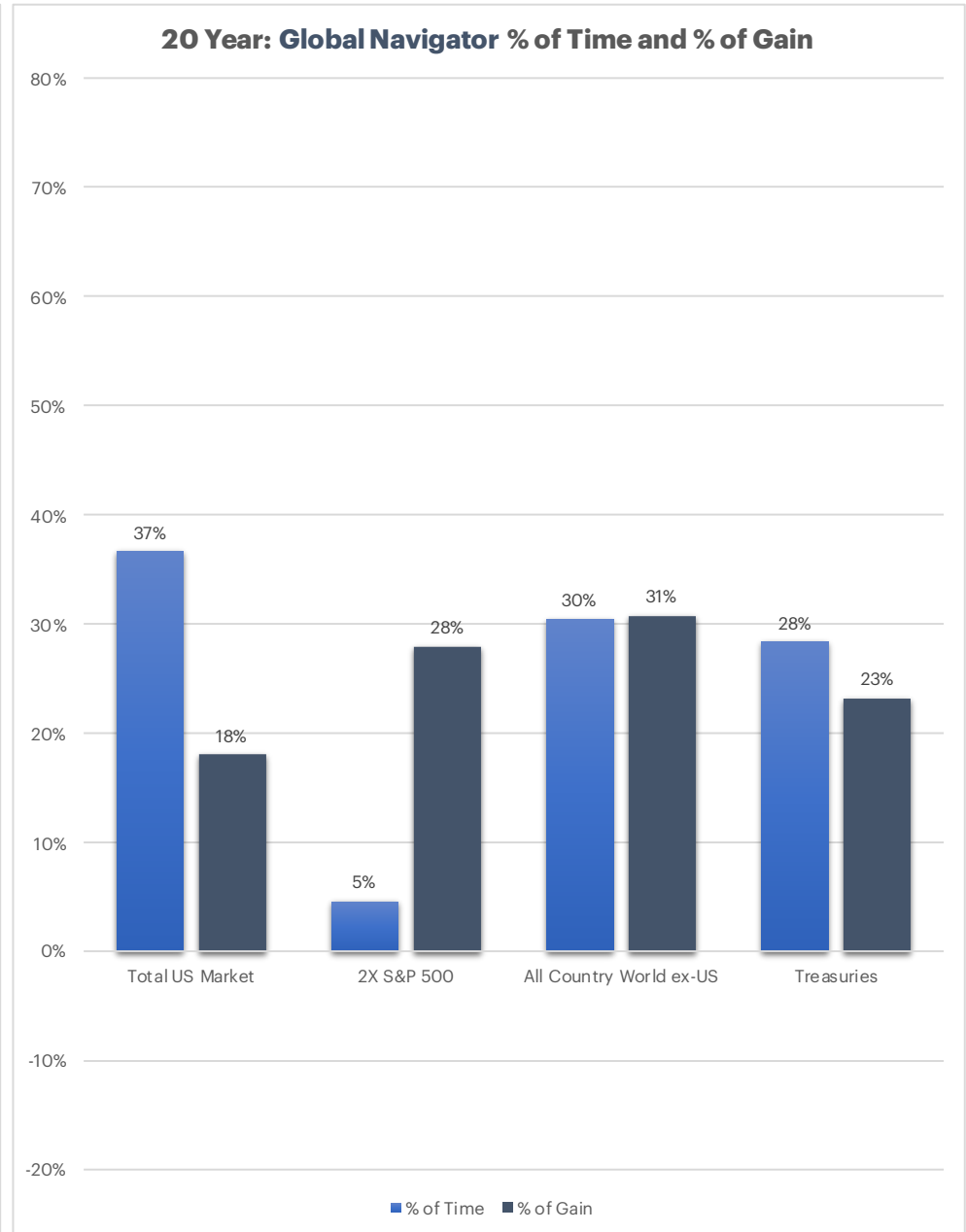
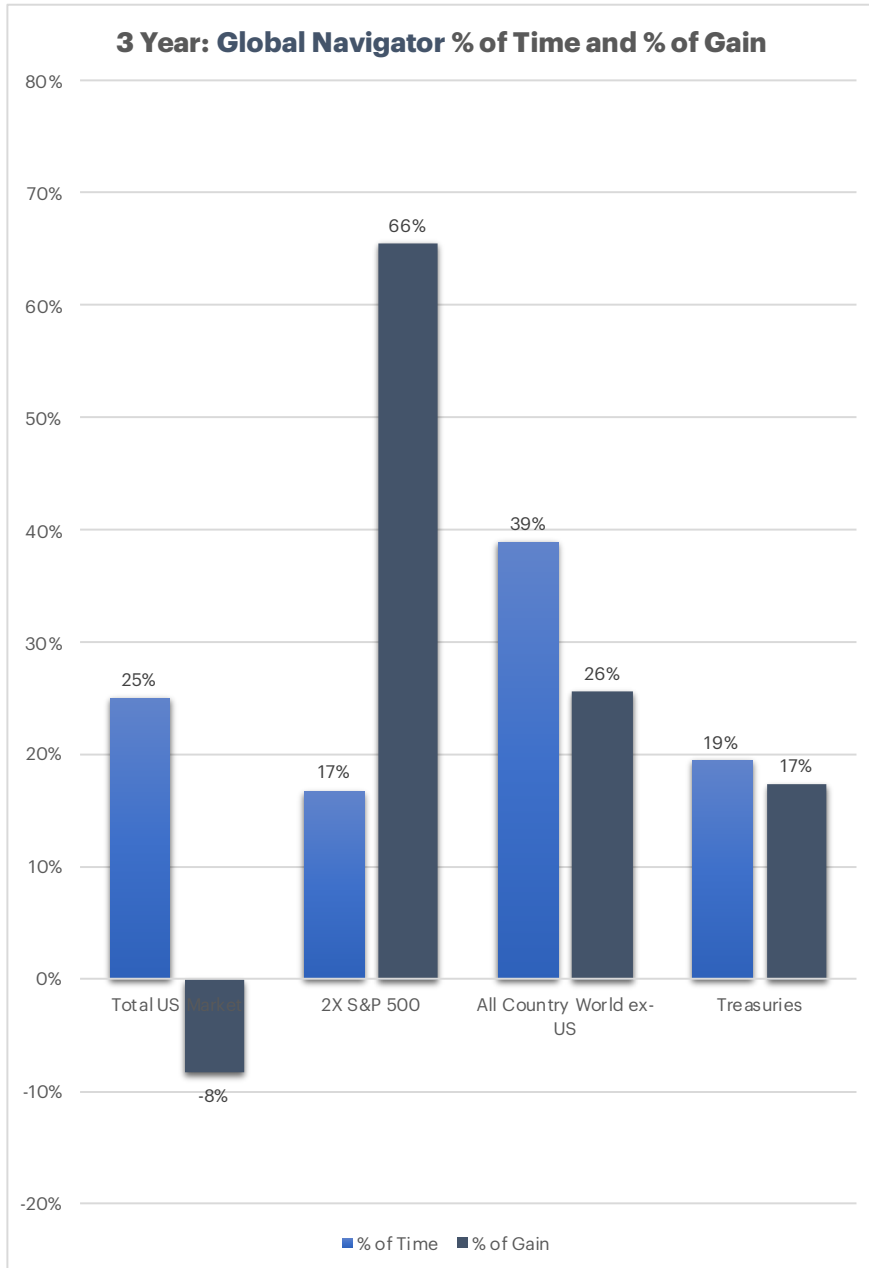
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Dual Momentum Systems:Global Navigator



The original Global Navigator strategy was finalized in May 2017. The implementation of Smart Leverage was in October 2020, they have been out of sample since those dates.

Dual Momentum Systems:Global Navigator



The original Global Navigator strategy was finalized in May 2017. The implementation of Smart Leverage was in October 2020, they have been out of sample since those dates.

The Russell OG

Ratings compared to the S&P 500

Drawdowns: Far more shallow drawdowns

Leverage: Conservative, no use of leveraged ETF's

Volatility: Far less volatile

Returns: Very good long term results



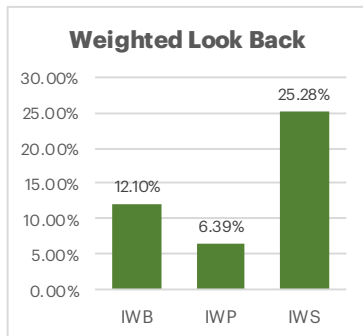
Dual Momentum Strategies

Rule based strategies to capture upside while minimizing downside.

The Russell OG (Very Conservative)

USA Momentum Rotational

Investment selection for April 2021



Investment selection flow:

The lookback for IWB is positive so The Russell strategy invests in equities. IWM, Russell 2000, is the highest rated over the lookback period.

The Investment for April 2021 is: IWM, Russell 2000

Portfolio size appropriateness:

Whale, The Russell OG can be used for any sized portfolio.

Recent investments, and performance vs the S&P 500:

S&P 500

Gain(Loss)	\$10,000
12.70%	\$11,270
4.76%	\$11,806
1.78%	\$12,017
5.89%	\$12,724
6.98%	\$13,613
-3.74%	\$13,103
-2.49%	\$12,777
10.88%	\$14,167
3.71%	\$14,693
-1.02%	\$14,543
2.77%	\$14,946
3.97%	\$15,539

The Russell OG

Month	ETF	Index	Gain(Loss)	\$10,000
Apr 2020	TLT	Long Term Treasuries	1.22%	\$10,122
May 2020	TLT	Long Term Treasuries	-1.76%	\$9,944
Jun 2020	IWP	Russell Mid-Cap Growth	2.40%	\$10,183
Jul 2020	IWP	Russell Mid-Cap Growth	8.08%	\$11,005
Aug 2020	IWP	Russell Mid-Cap Growth	2.73%	\$11,306
Sep 2020	IWB	Russell 1000	-3.69%	\$10,889
Oct 2020	IWP	Russell Mid-Cap Growth	0.12%	\$10,902
Nov 2020	IWP	Russell Mid-Cap Growth	13.33%	\$12,355
Dec 2020	IWP	Russell Mid-Cap Growth	4.75%	\$12,942
Jan 2021	IWP	Russell Mid-Cap Growth	-0.38%	\$12,892
Feb 2021	IWS	Russell Mid-Cap Value	7.66%	\$13,880
Mar 2021	IWS	Russell Mid-Cap Value	5.41%	\$14,631

55.39% : 12 Month Total Return

-6.14% : 12 Month Max Drawdown

12 Month Total Return:

12 Month Max Drawdown:

46.31%

-3.69%

58.39% : 36 Month Total Return

-19.43% : 36 Month Max Drawdown

36 Month Total Return:

36 Month Max Drawdown:

78.44%

-8.07%

The Russell OG

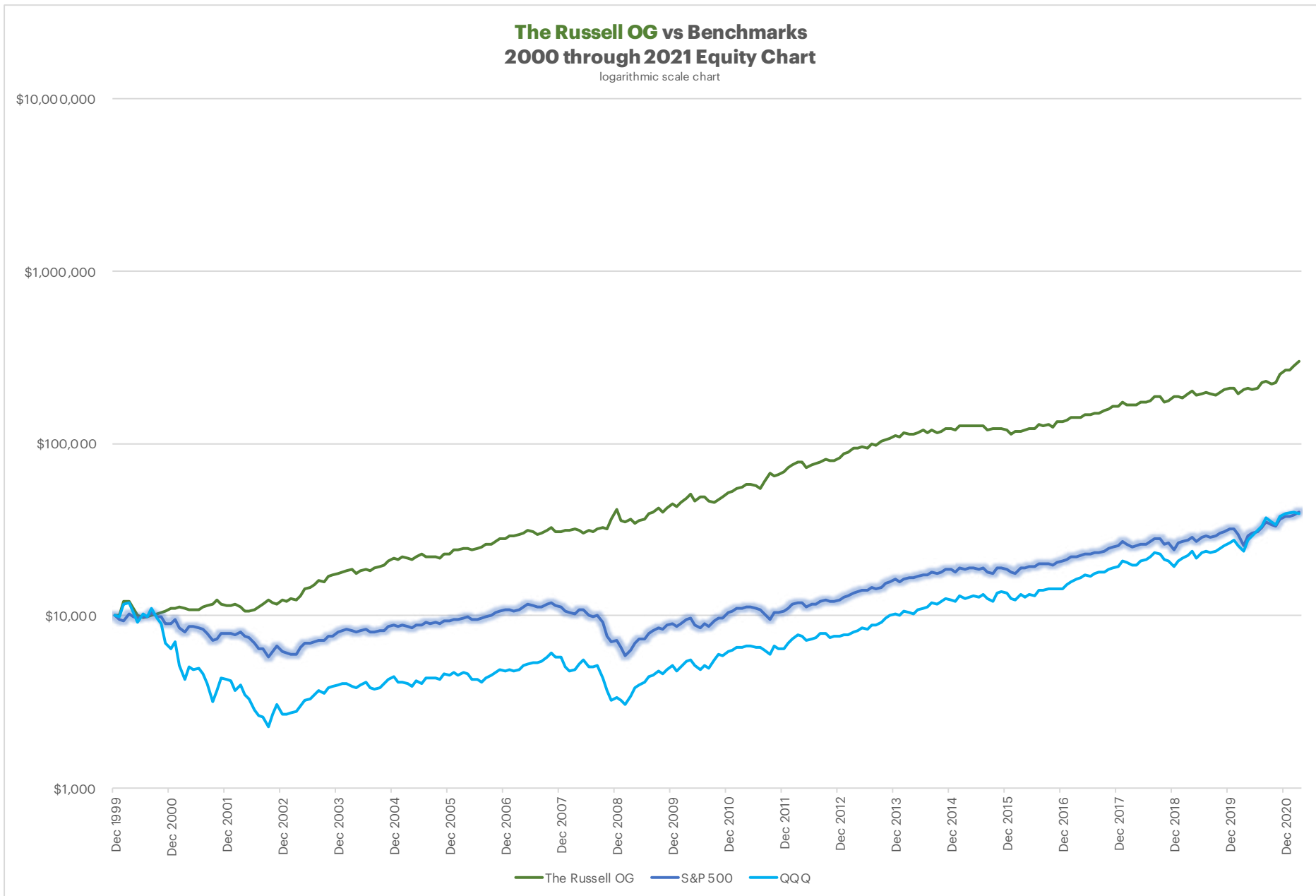
This is a tactical rules based objective strategy. It does not track the S&P 500, there are times when it will under or over perform the "market".

The goal is to avoid prolonged downturns in the market, and to participate in the upward trends in the best performing component.

At the end of the month it looks at all of the IWB, IWP, and IWS. If the IWB is negative over the look back period then we park ourselves in Treasuries. If IWB is positive then the strategy invests in the Russell fund with the highest return over the lookback period.

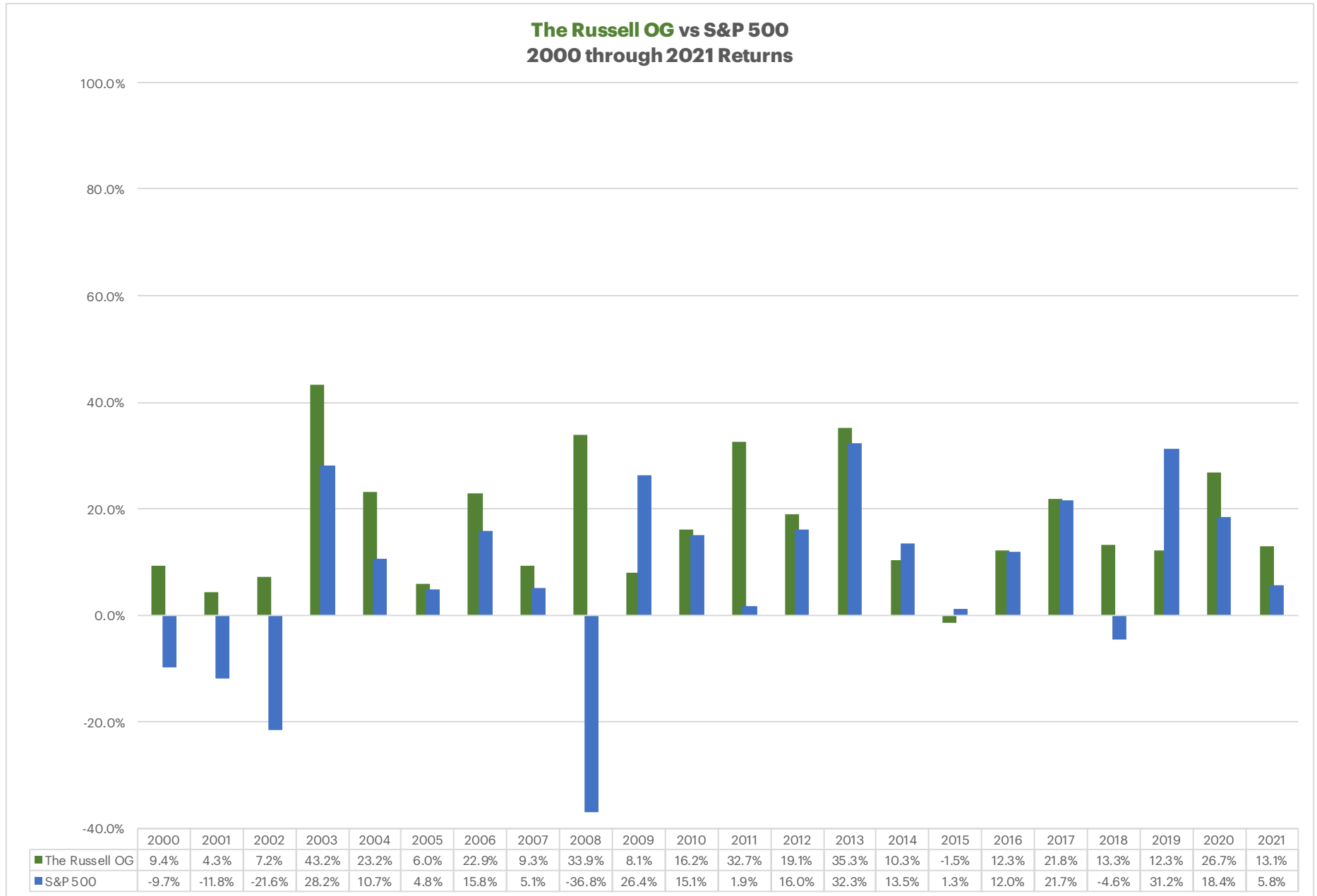
The Dual Momentum nature of this strategy has managed to keep drawdowns to reasonable levels, there is always risk of large drawdowns when using leveraged funds.

The original The Russell OG strategy was finalized in May 2017 and has been out of sample since those dates.



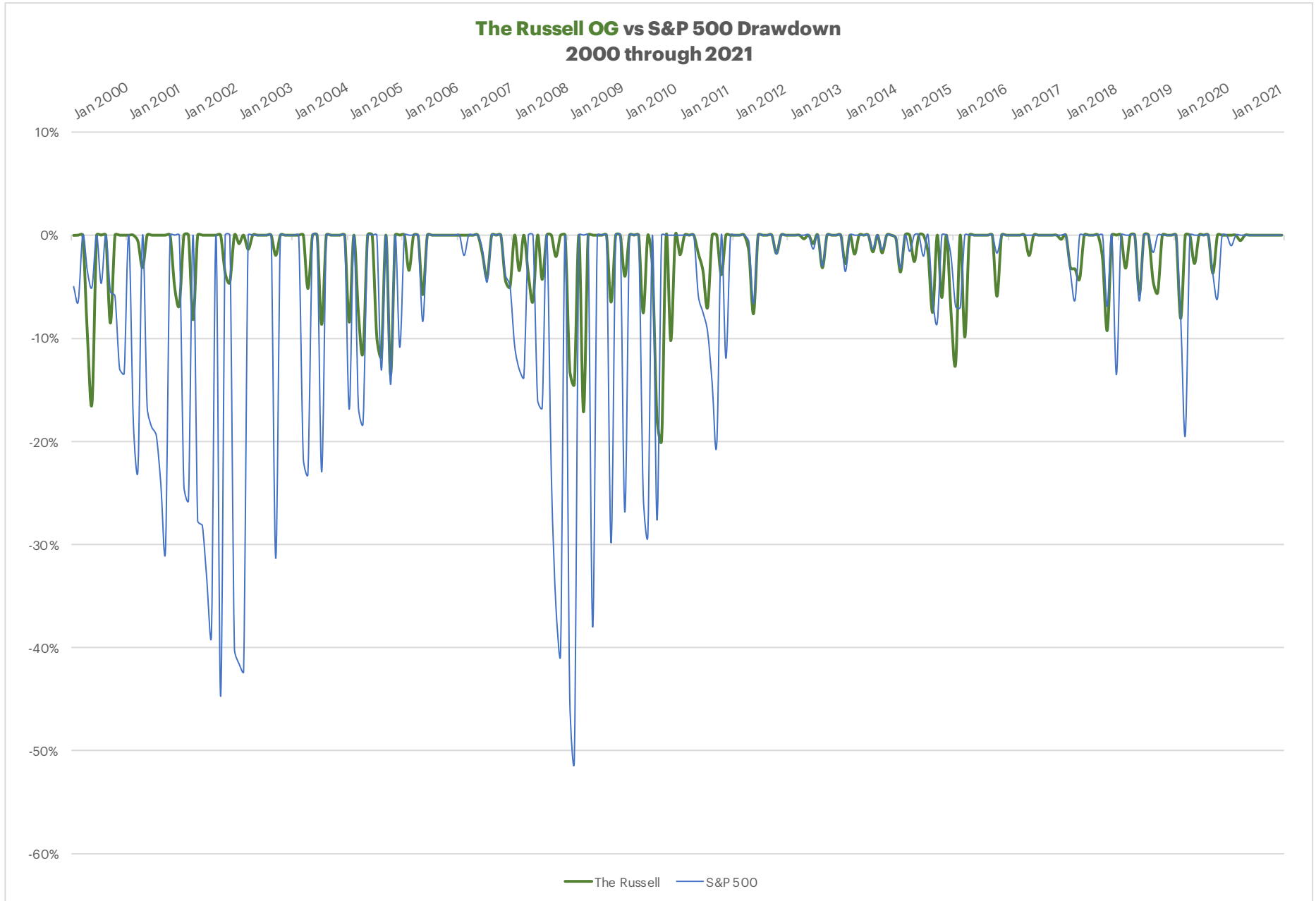
The original The Russell strategy was finalized in May 2017. The implementation of Smart Leverage was in October 2020, they have been out of sample since those dates.

Dual Momentum Systems: The Russell OG



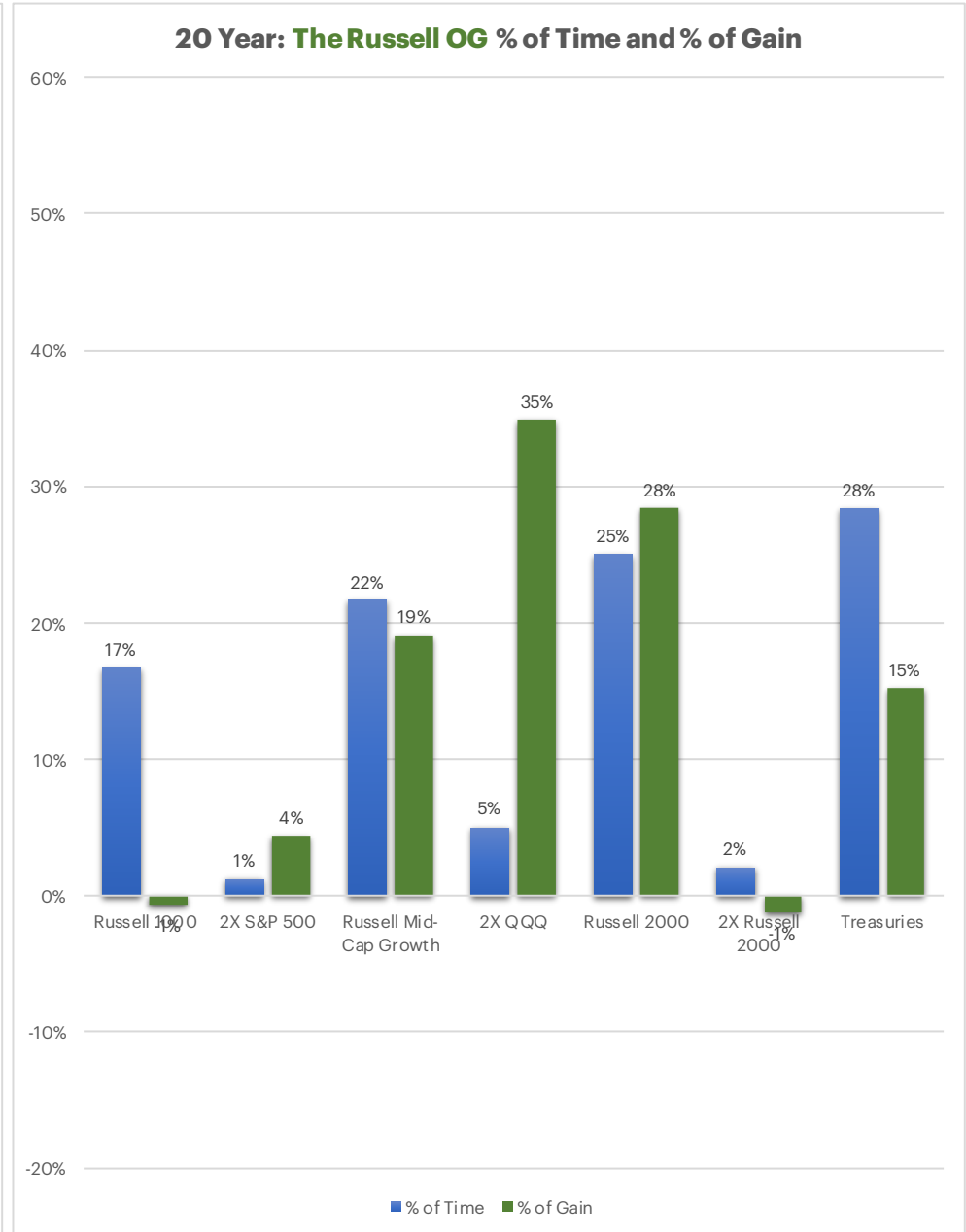
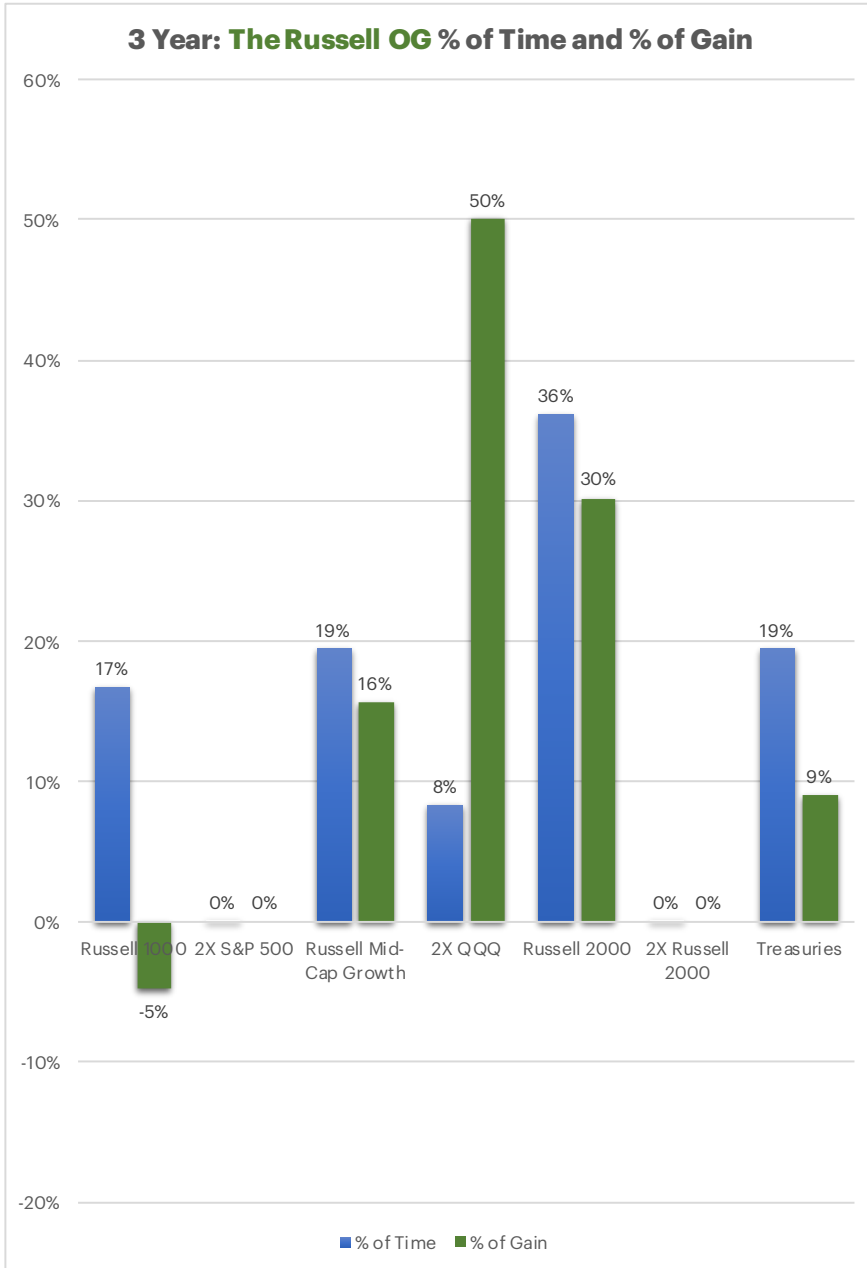
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Dual Momentum Systems: The Russell OG



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Dual Momentum Systems: The Russell OG



The original The Russell strategy was finalized in May 2017. The implementation of Smart Leverage was in October 2020, they have been out of sample since those dates.

The Russell

Ratings compared to the S&P 500

Drawdowns: Far more shallow drawdowns

Leverage: Moderately aggressive, occasional use of 2X ETF's

Volatility: Less volatile

Returns: Great long term results



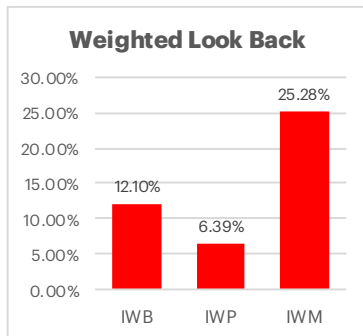
Dual Momentum Strategies

Rule based strategies to capture upside while minimizing downside.

The Russell (Moderately Aggressive)

USA Momentum Rotational Strategy with Smart Leverage

Investment selection for April 2021



Investment selection flow:

The lookback for IWB is positive so The Russell strategy invests in equities. IWM, Russell 2000, is the highest rated over the lookback period.

There is no confirmed Leverage Trigger, no leveraged equity this month.

The Investment for April 2021 is: IWM, Russell 2000

Portfolio size appropriateness:

Whale, The Russell can be used for any sized portfolio.

Recent investments, and performance vs the S&P 500:

S&P 500

Gain(Loss)	\$10,000
12.70%	\$11,270
4.76%	\$11,806
1.78%	\$12,017
5.89%	\$12,724
6.98%	\$13,613
-3.74%	\$13,103
-2.49%	\$12,777
10.88%	\$14,167
3.71%	\$14,693
-1.02%	\$14,543
2.77%	\$14,946
3.97%	\$15,539

The Russell

Month	ETF	Index	Gain(Loss)	\$10,000
Apr 2020	TLT	Long Term Treasuries	1.22%	\$10,122
May 2020	TLT	Long Term Treasuries	-1.76%	\$9,944
Jun 2020	QLD	2X QQQ	12.34%	\$11,171
Jul 2020	QLD	2X QQQ	14.89%	\$12,834
Aug 2020	QLD	2X QQQ	22.77%	\$15,756
Sep 2020	IWB	Russell 1000	-3.69%	\$15,175
Oct 2020	IWP	Russell Mid-Cap Growth	0.12%	\$15,193
Nov 2020	IWP	Russell Mid-Cap Growth	13.33%	\$17,219
Dec 2020	IWM	Russell 2000	8.65%	\$18,708
Jan 2021	IWM	Russell 2000	4.85%	\$19,615
Feb 2021	IWM	Russell 2000	6.20%	\$20,831
Mar 2021	IWM	Russell 2000	-0.52%	\$20,723

55.39% : 12 Month Total Return

-6.14% : 12 Month Max Drawdown

12 Month Total Return:

12 Month Max Drawdown:

107.23%

-3.69%

58.39% : 36 Month Total Return

-19.43% : 36 Month Max Drawdown

36 Month Total Return:

36 Month Max Drawdown:

149.74%

-9.25%

The Russell

This is a tactical rules based objective strategy. It does not track the S&P 500, there are times when it will under or over perform the "market".

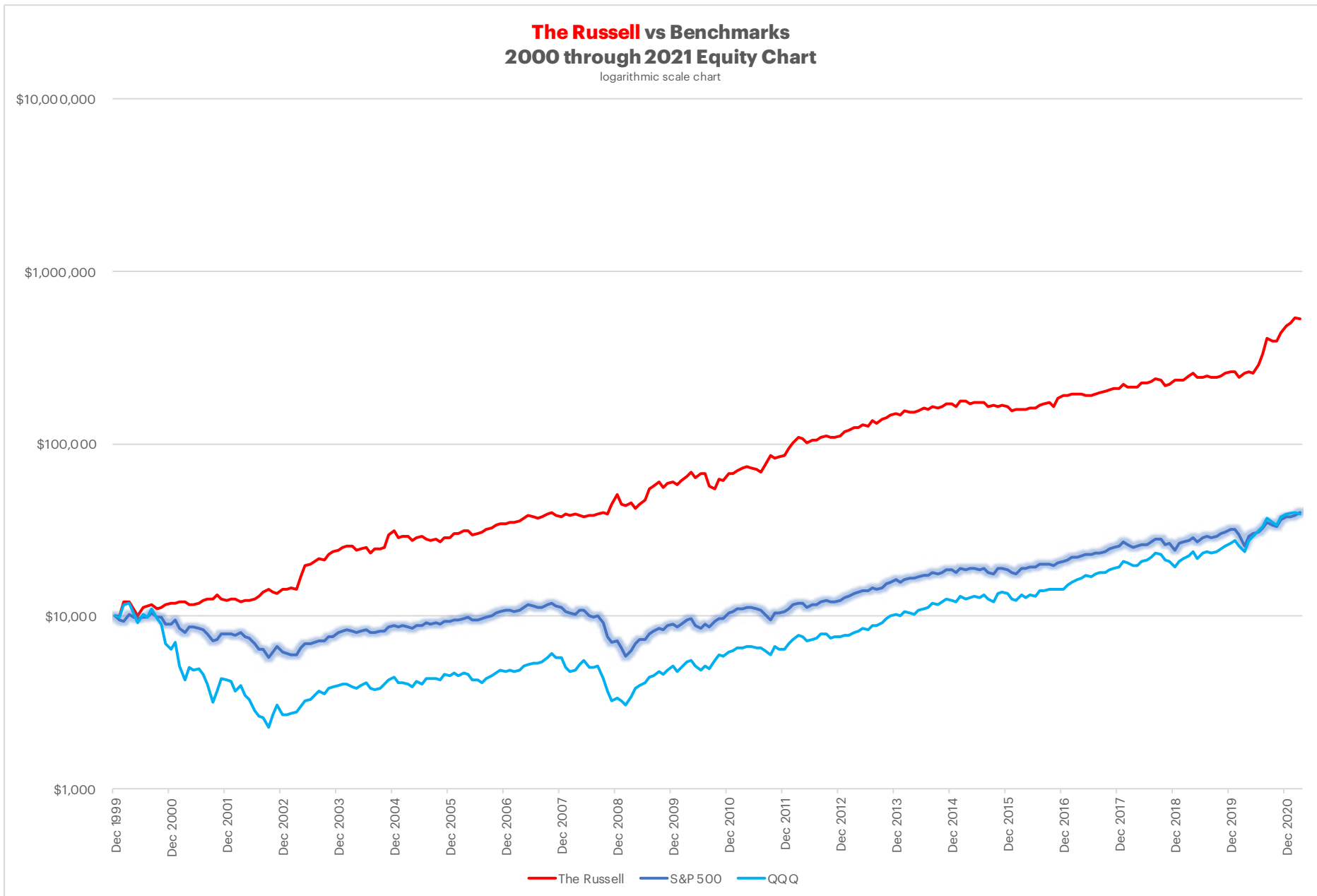
The goal is to avoid prolonged downturns in the market, and to participate in the upward trends in the best performing component.

At the end of the month it looks at all of the IWB, IWP, and IWM. If the IWB is negative over the look back period then we park ourselves in Treasuries. If IWB is positive then the strategy invests in the Russell fund with the highest return over the lookback period.

Smart Leverage is incorporated into The Russell, when an outsized drawdown is sustained in the markets, the strategy will issue a Leverage Trigger and if confirmed will go into Leveraged Equities. When the leverage Trigger is set, a 2X version of the normally selected ETF is used, this 2X fund is used until there is a change of investments, then it goes back to non-leveraged ETF's.

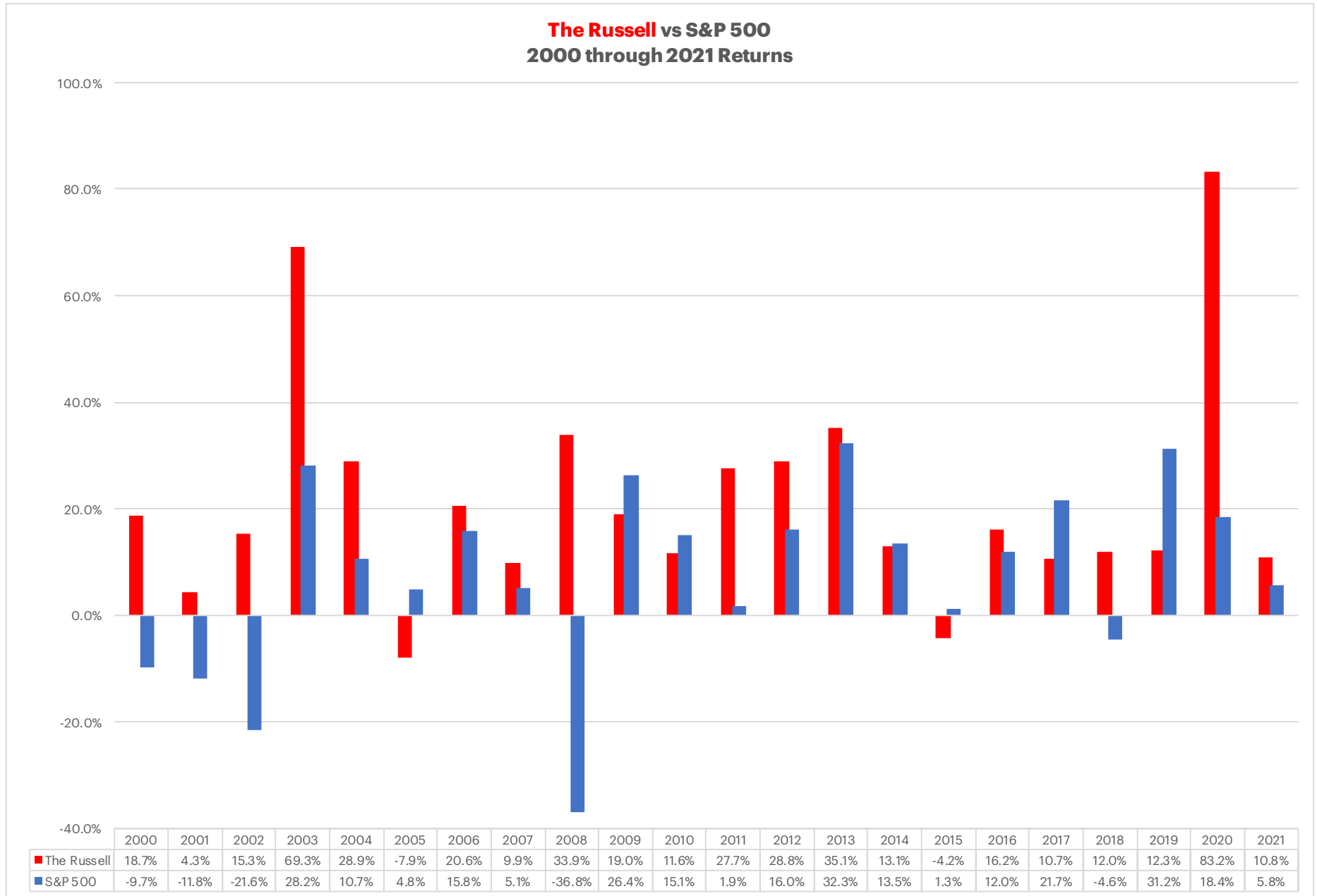
The Dual Momentum nature of this strategy has managed to keep drawdowns to reasonable levels, there is always risk of large drawdowns when using leveraged funds.

The original The Russell strategy was finalized in May 2017. The implementation of Smart Leverage was in October 2020, they have been out of sample since those dates.



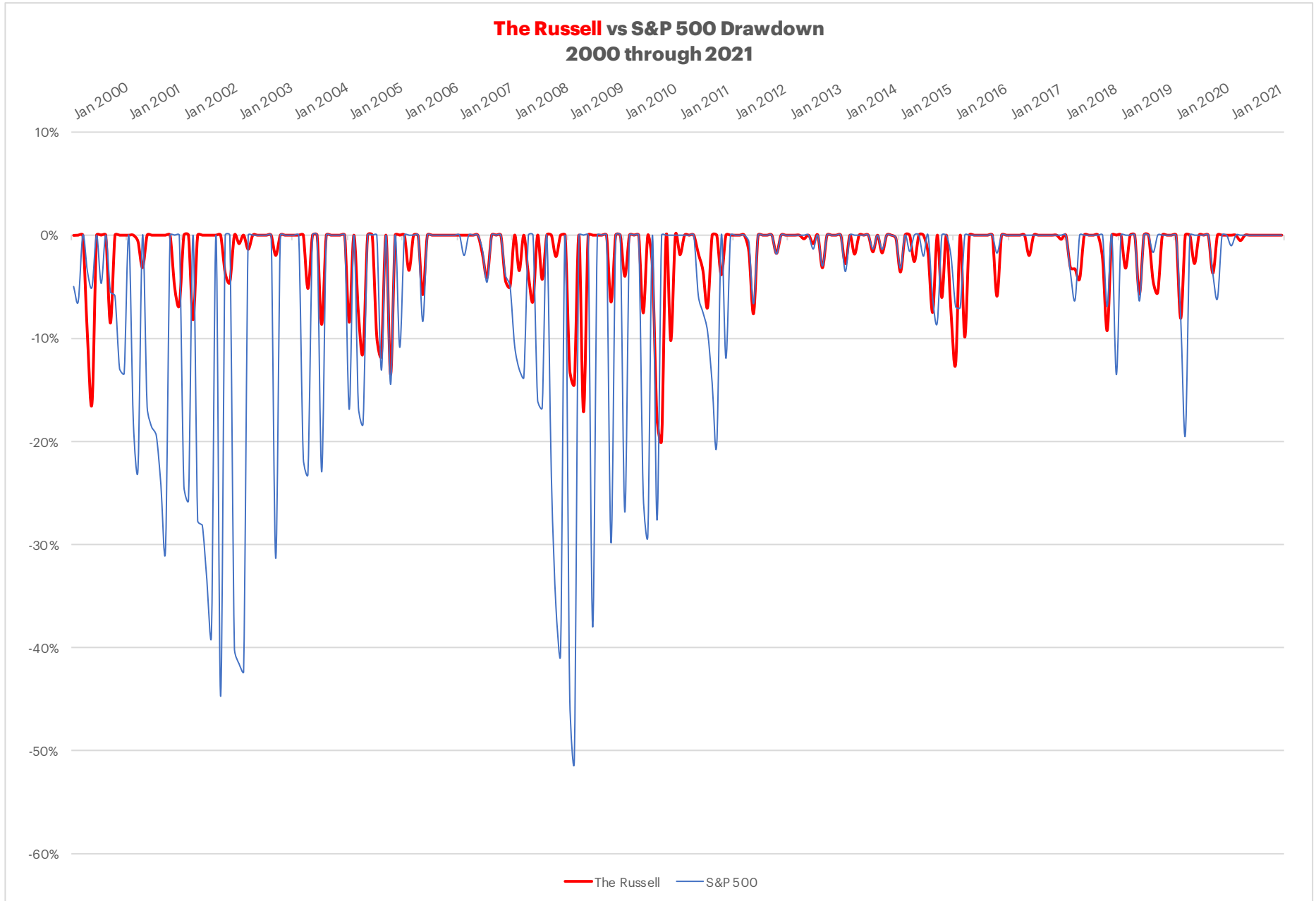
The original The Russell strategy was finalized in May 2017. The implementation of Smart Leverage was in October 2020, they have been out of sample since those dates.

Dual Momentum Systems: **The Russell**



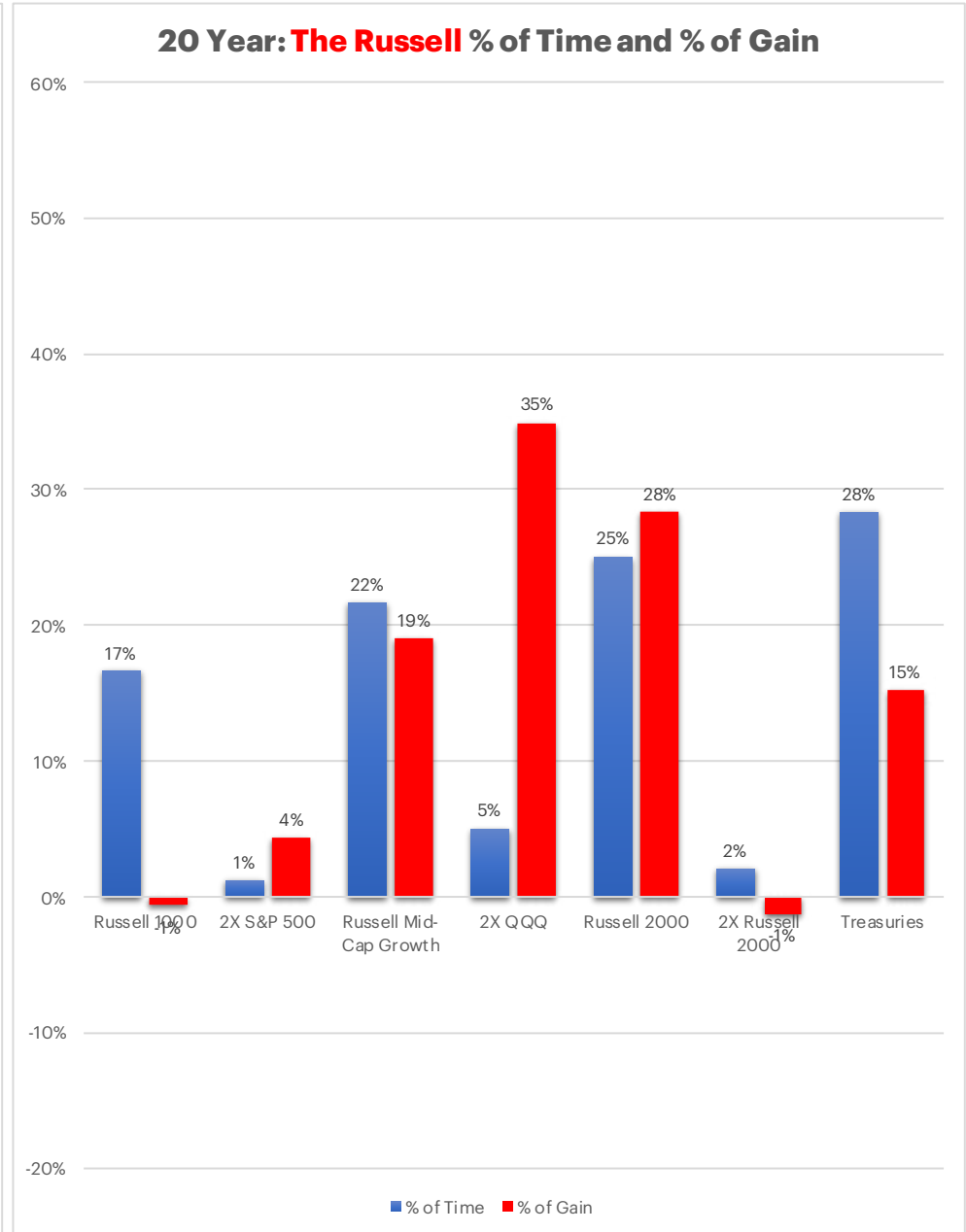
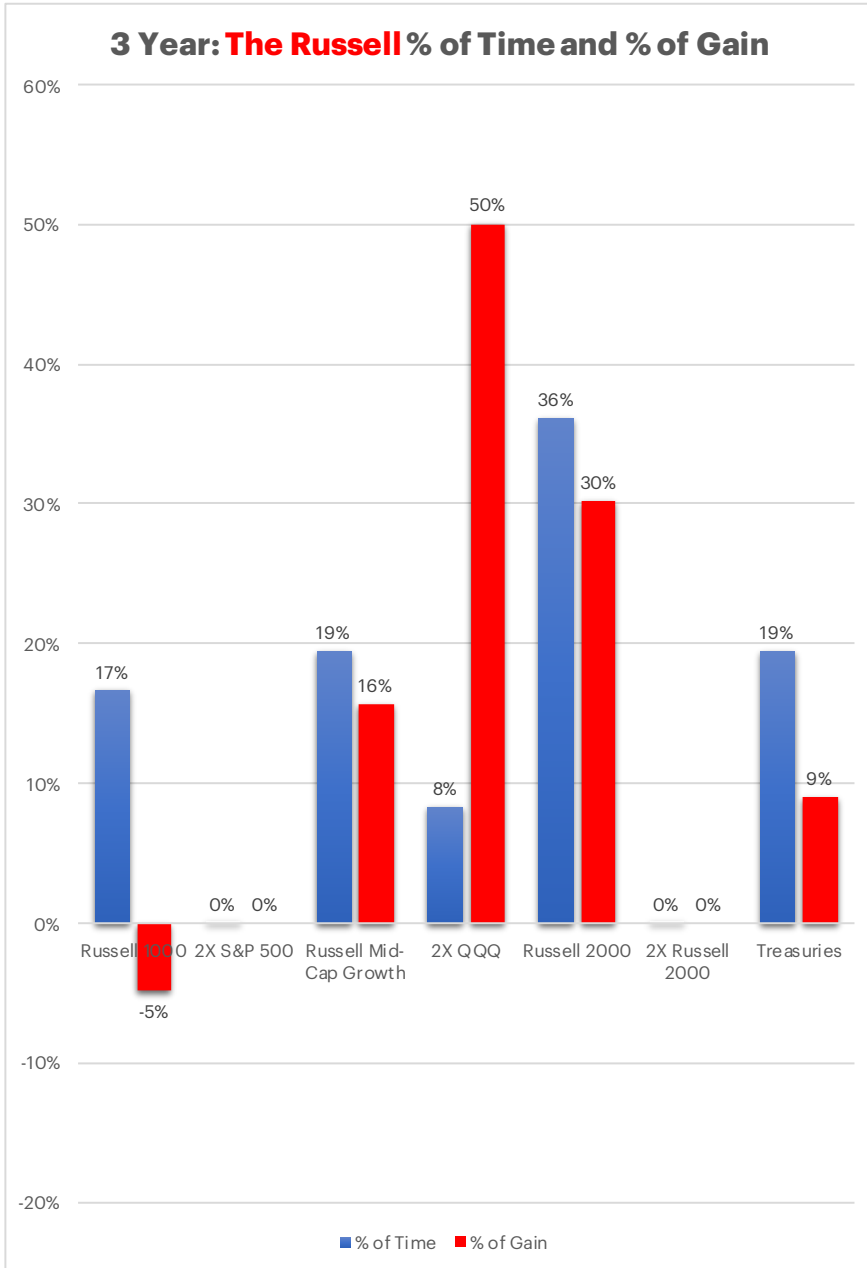
The original The Russell strategy was finalized in May 2017. The implementation of Smart Leverage was in October 2020, they have been out of sample since those dates.

Dual Momentum Systems: **The Russell**



The original The Russell strategy was finalized in May 2017. The implementation of Smart Leverage was in October 2020, they have been out of sample since those dates.

Dual Momentum Systems: **The Russell**



The original The Russell strategy was finalized in May 2017. The implementation of Smart Leverage was in October 2020, they have been out of sample since those dates.

The Russell XXL

Ratings compared to the S&P 500

Drawdowns: **Less drawdowns than the S&P**

Leverage: **Aggressive with 3X Smart Leverage and aggressive Treasury holdings**

Volatility: **Volatility, less volatile than the S&P overall, but at times more volatile**

Returns: **Superior long term results**



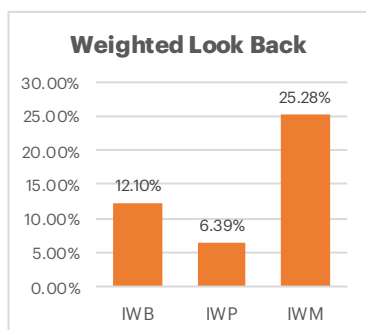
Dual Momentum Strategies

Rule based strategies to capture upside while minimizing downside.

The Russell XXL (Often Moderate, at times Very Aggressive)

USA Momentum Rotational Strategy with 2X Leverage

Investment selection for April 2021



Investment selection flow:

The lookback for VTI is positive so the The Russell XXL strategy invests in equities. IWM, Russell 2000, is the highest rated over the lookback period.

The Investment for April 2021 is: IWM, Russell 2000

Portfolio size appropriateness:

Big Fish, The Russell XXL can be used for pretty large allocations.

Recent investments, and performance vs the S&P 500:

S&P 500

Gain(Loss)	\$10,000
12.70%	\$11,270
4.76%	\$11,806
1.78%	\$12,017
5.89%	\$12,724
6.98%	\$13,613
-3.74%	\$13,103
-2.49%	\$12,777
10.88%	\$14,167
3.71%	\$14,693
-1.02%	\$14,543
2.77%	\$14,946
3.97%	\$15,539

55.39% : 12 Month Total Return

-6.14% : 12 Month Max Drawdown

58.39% : 36 Month Total Return

-19.43% : 36 Month Max Drawdown

The Russell XXL

Month	ETF	Index	Gain(Loss)	\$10,000
Apr 2020	EDV	Extended Duration Treasuries	2.35%	\$10,235
May 2020	EDV	Extended Duration Treasuries	-3.23%	\$9,904
Jun 2020	TQQQ	3X QQQ	17.98%	\$11,685
Jul 2020	TQQQ	3X QQQ	22.25%	\$14,285
Aug 2020	TQQQ	3X QQQ	35.17%	\$19,309
Sep 2020	IWB	Russell 1000	-3.69%	\$18,596
Oct 2020	IWP	Russell Mid-Cap Growth	0.12%	\$18,618
Nov 2020	IWP	Russell Mid-Cap Growth	13.33%	\$21,100
Dec 2020	IWM	Russell 2000	8.65%	\$22,925
Jan 2021	IWM	Russell 2000	4.85%	\$24,037
Feb 2021	IWM	Russell 2000	6.20%	\$25,528
Mar 2021	IWM	Russell 2000	-0.52%	\$25,395

12 Month Total Return: 153.95%

12 Month Max Drawdown: -3.69%

36 Month Total Return: 245.66%

36 Month Max Drawdown: -9.25%

The Russell XXL

This is a tactical rules based objective strategy. It does not track the S&P 500, there are times when it will under or over perform the "market".

The goal is to avoid prolonged downtrends in the market, and to participate in the upward trends in the best performing component.

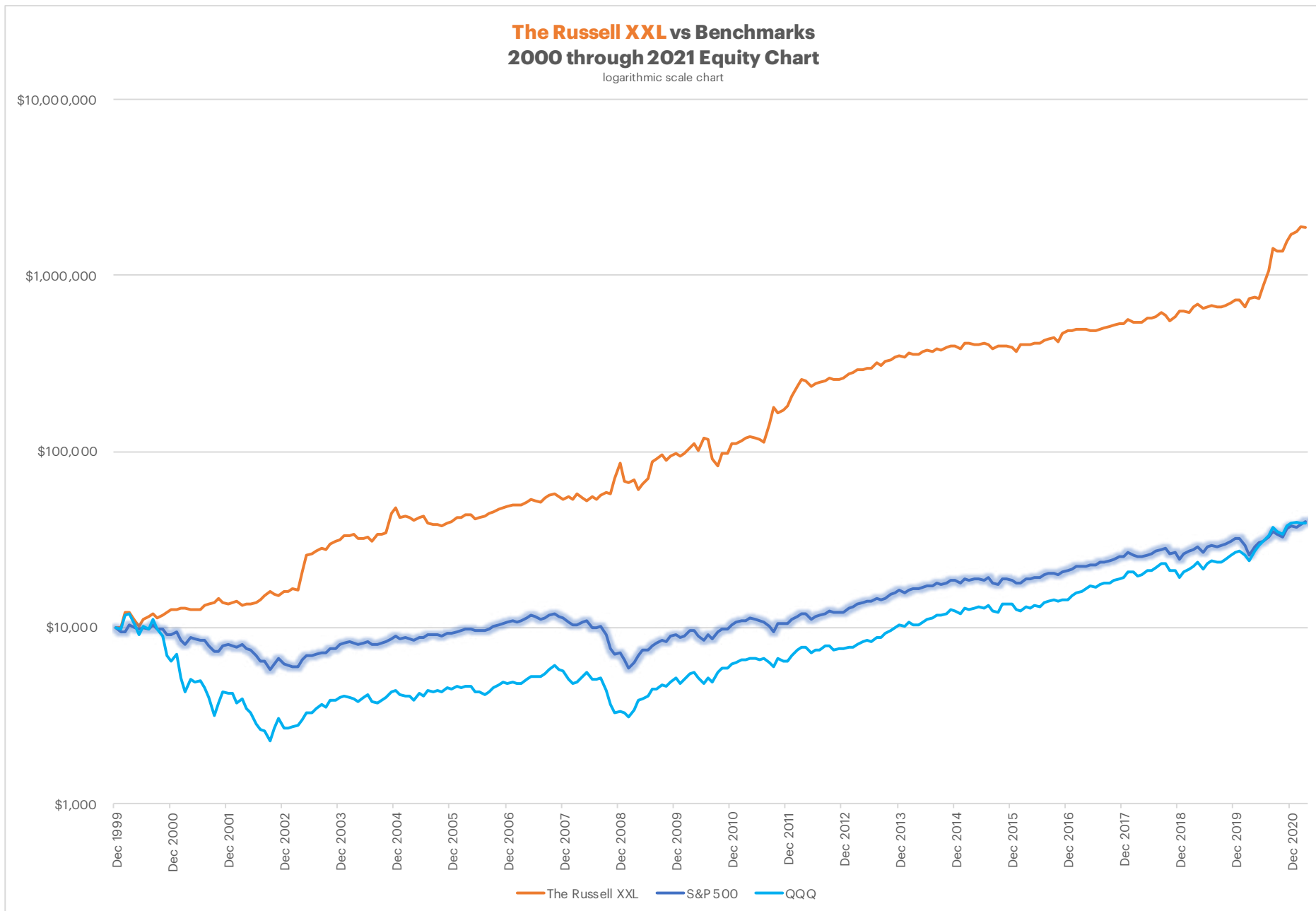
USA S-M-L invests only in the USA. At the end of the month it looks at the Russell 1000, Russell MidCap Growth, and the Russell 2000, and if the US Markets are negative over the look back period then we park ourselves in Treasuries. If the US Markets are positive then the strategy invests in whichever of the three lookback items has the highest return over the lookback period.

This is a strategy that is usually in unleveraged equities and utilizes 3X Leverage with Smart Leverage. The first month out of equities it holds very aggressive 3X Long Term Treasuries, and then holds Extended Duration Equities in subsequent months.

The Dual Momentum nature of this strategy has managed to keep drawdowns to reasonable levels, there is always risk of large drawdowns when using leveraged funds.

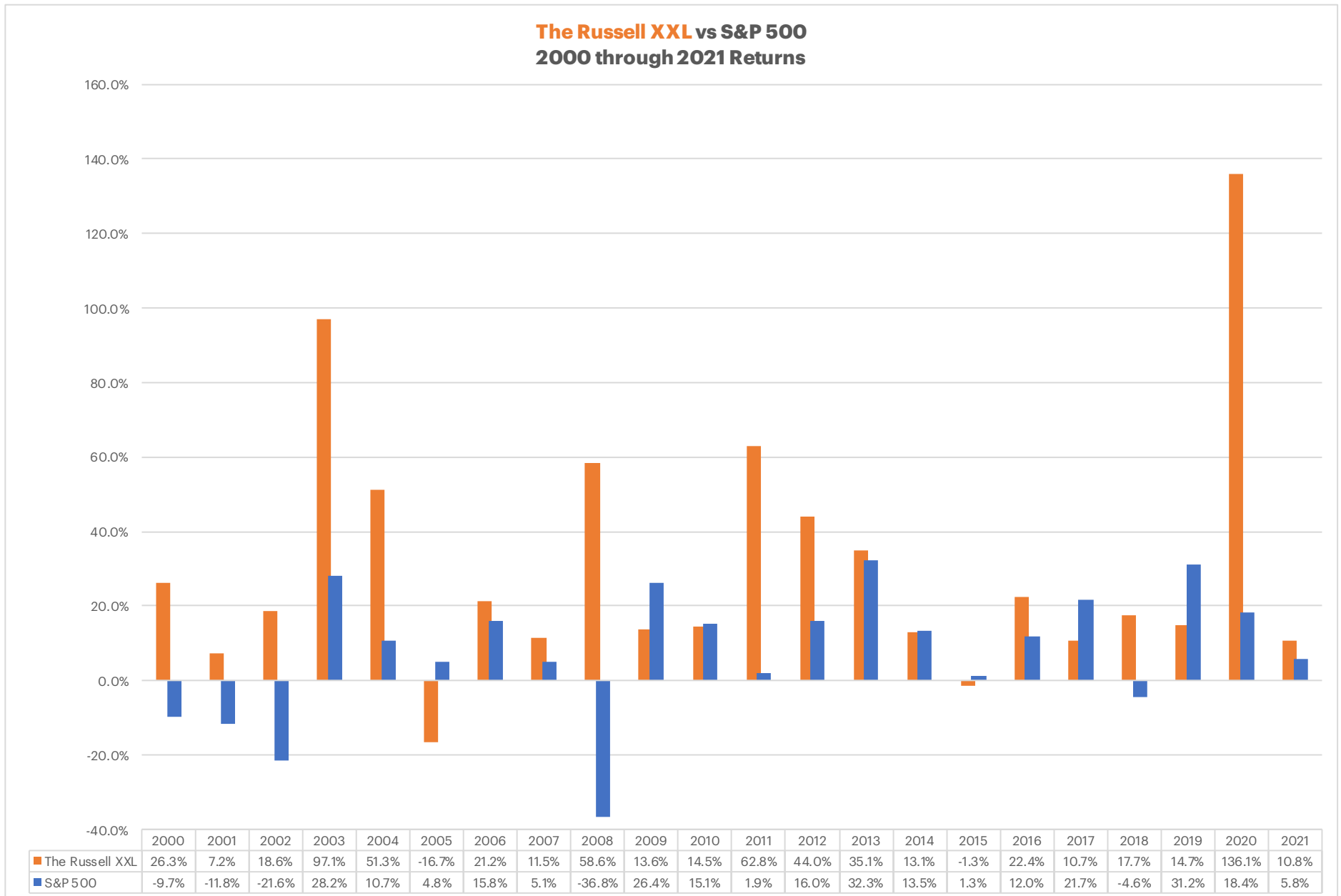
The The Russell XXL was finalized in March 2021.

Dual Momentum Systems: The Russell XXL



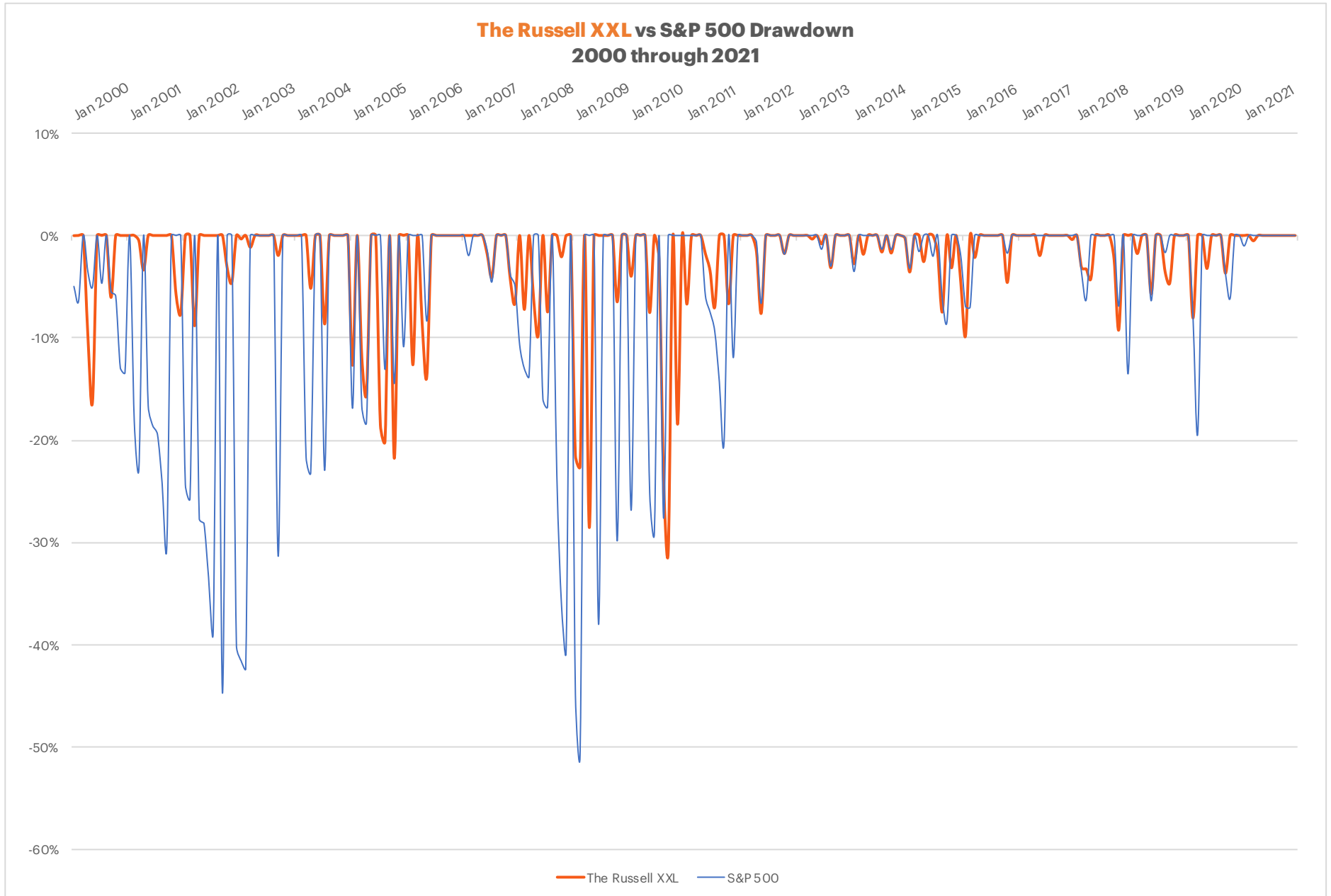
The The Russell XXL was finalized in January 2021.

Dual Momentum Systems: The Russell XXL



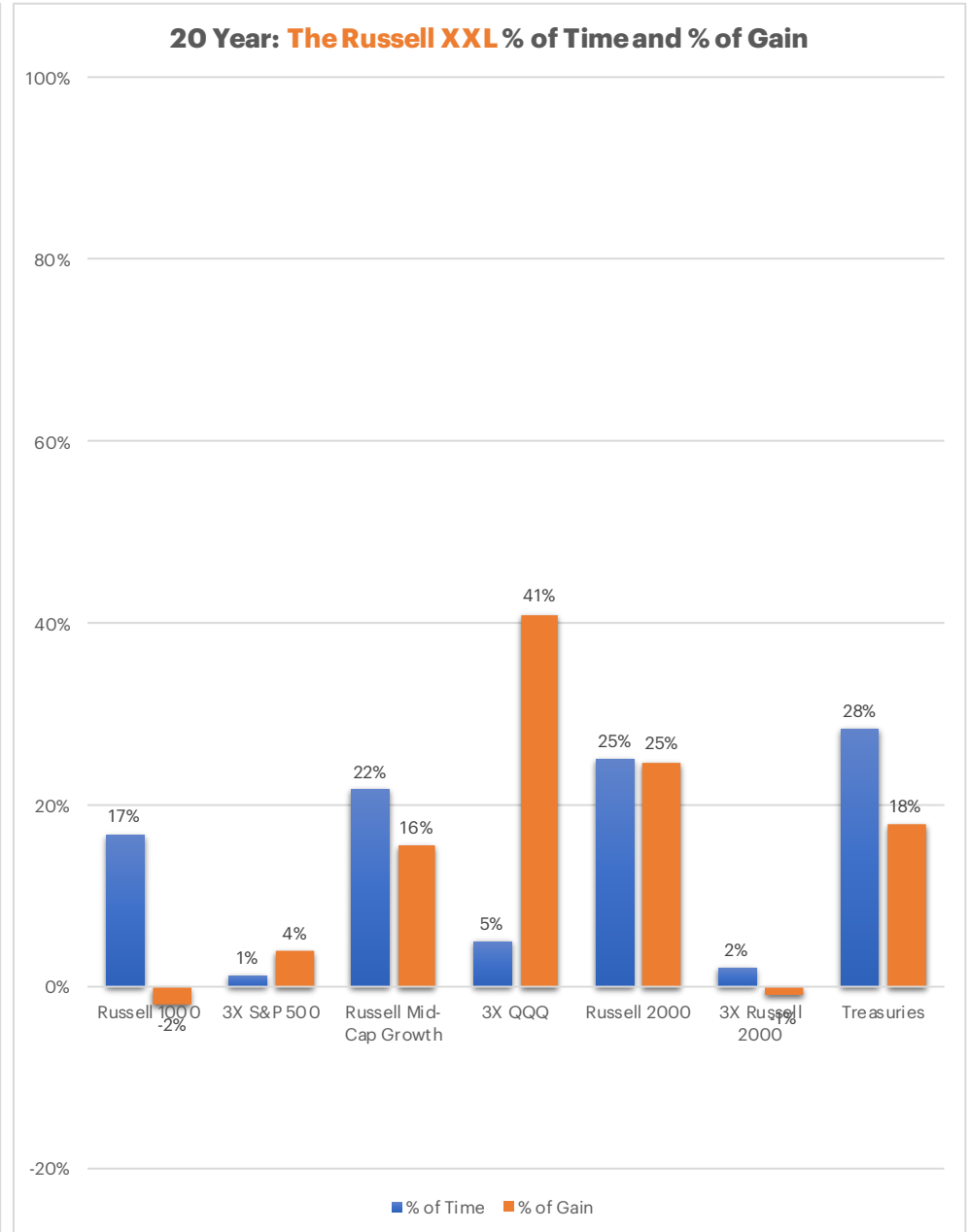
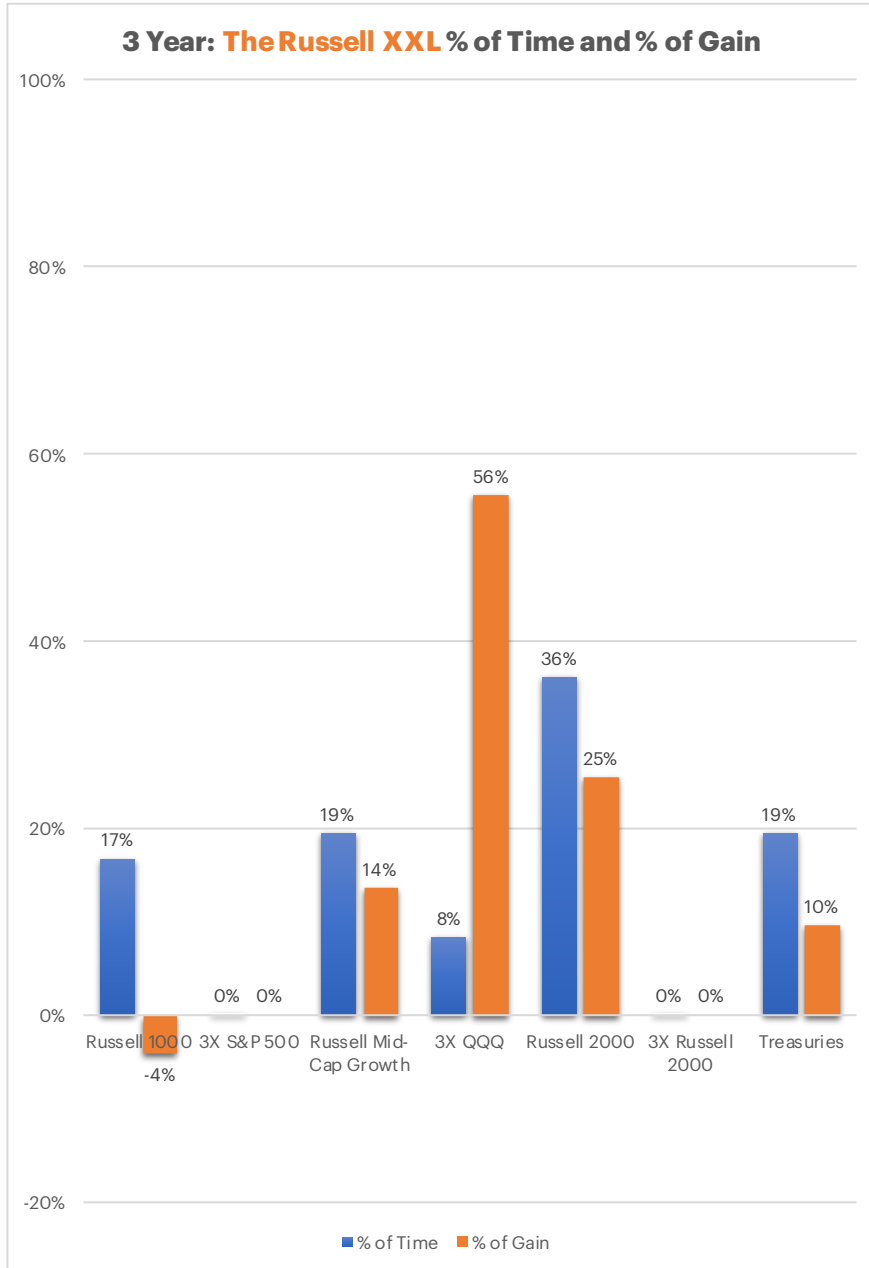
The The Russell XXL was finalized in January 2021.

Dual Momentum Systems: The Russell XXL



The The Russell XXL was finalized in January 2021.

Dual Momentum Systems: The Russell XXL



The Russell XXL was finalized in January 2021.

MAX PAIN

Ratings compared to the S&P 500

Drawdowns: Highest drawdown DMS strategy, not as of of MaxDD but more large drawdowns

Leverage: Very aggressive, always in 3X ETF's

Volatility: Extremely volatile, there's a reason it's called MAX PAIN

Returns: Incredible long term results



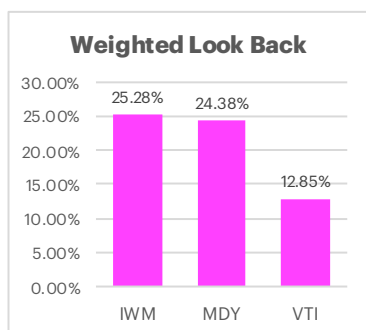
Dual Momentum Strategies

Rule based strategies to capture upside while minimizing downside.

MAX PAIN (Extremely Aggressive)

USA Momentum Rotational Strategy with 3X Leverage

Investment selection for April 2021



Investment selection flow:

The lookback for VTI is positive so the MAX PAIN strategy invests in equities. IWM, Russell 2000, is the highest rated over the lookback period.

The Investment for April 2021 is: URTY, 3X Russell 2000

Portfolio size appropriateness:

Small Fry, MAX PAIN uses funds which are not suited for large allocations.

Recent investments, and performance vs the S&P 500:

S&P 500

Gain(Loss)	\$10,000
12.70%	\$11,270
4.76%	\$11,806
1.78%	\$12,017
5.89%	\$12,724
6.98%	\$13,613
-3.74%	\$13,103
-2.49%	\$12,777
10.88%	\$14,167
3.71%	\$14,693
-1.02%	\$14,543
2.77%	\$14,946
3.97%	\$15,539

MAX PAIN

Month	ETF	Index	Gain(Loss)	\$10,000
Apr 2020	EDV	Extended Duration Treasuries	2.35%	\$10,235
May 2020	EDV	Extended Duration Treasuries	-3.23%	\$9,904
Jun 2020	UPRO	3X S&P 500	3.23%	\$10,225
Jul 2020	UPRO	3X S&P 500	17.70%	\$12,034
Aug 2020	UPRO	3X S&P 500	22.05%	\$14,687
Sep 2020	UPRO	3X S&P 500	-12.26%	\$12,887
Oct 2020	UPRO	3X S&P 500	-8.48%	\$11,794
Nov 2020	URTY	3X Russell 2000	62.37%	\$19,150
Dec 2020	URTY	3X Russell 2000	27.14%	\$24,348
Jan 2021	URTY	3X Russell 2000	13.49%	\$27,632
Feb 2021	URTY	3X Russell 2000	17.86%	\$32,567
Mar 2021	URTY	3X Russell 2000	-4.29%	\$31,170

55.39% : 12 Month Total Return

-6.14% : 12 Month Max Drawdown

12 Month Total Return: 211.70%

12 Month Max Drawdown: -19.70%

58.39% : 36 Month Total Return

-19.43% : 36 Month Max Drawdown

36 Month Total Return: 286.89%

36 Month Max Drawdown: -26.57%

MAX PAIN

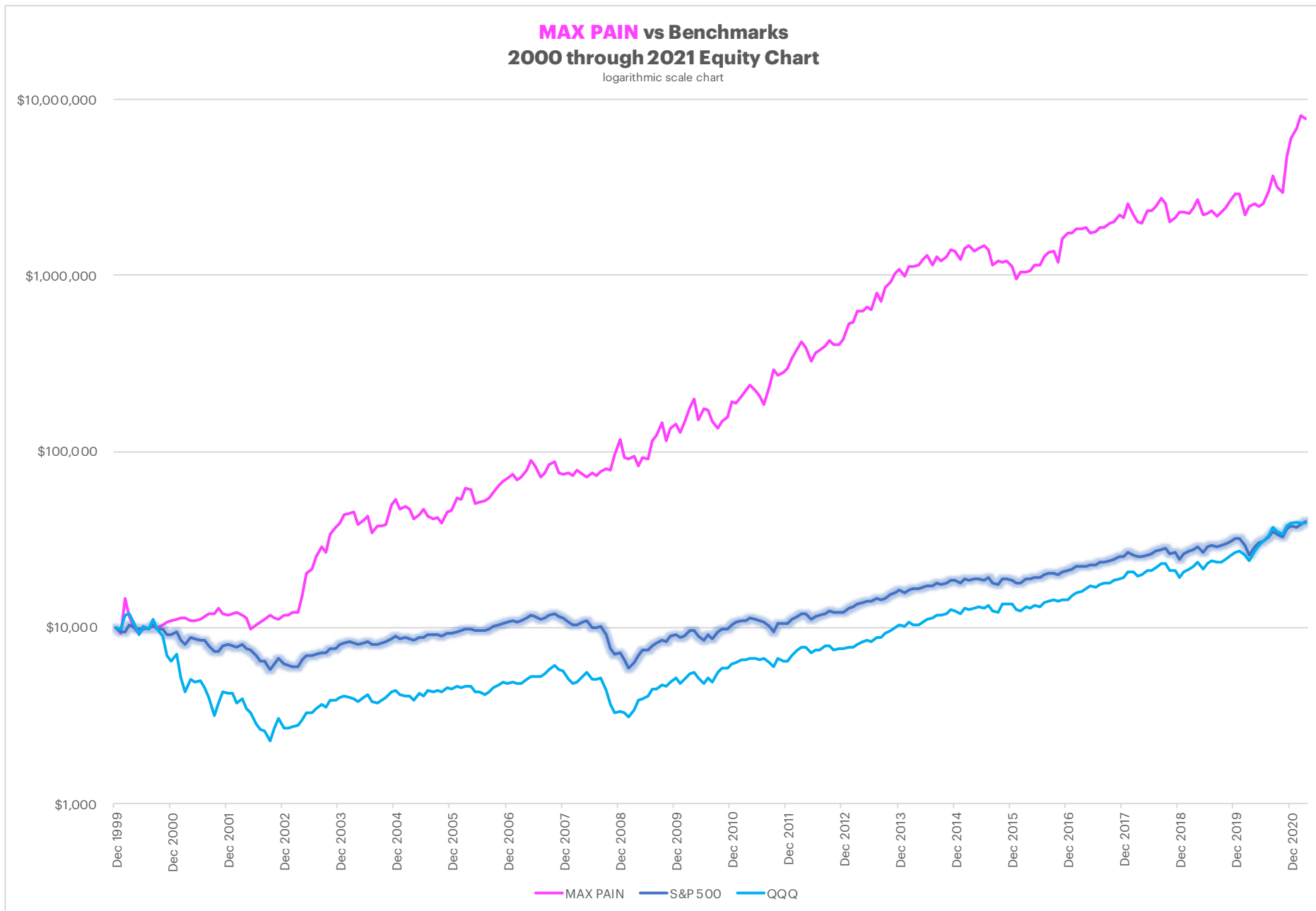
This is a tactical rules based objective strategy. Because it is not a market index, there are times when it will under or over perform the market.

The goal is to avoid prolonged downtrends in the market, and to participate in the upward trends in the best performing component.

MAX PAIN invests only in the USA. At the end of the month it looks at the Russell 2000, MidCap 400, and the S&P 500, and if the US Markets are negative over the look back period then we park ourselves in 3X leveraged Treasuries. If the US Markets are positive then the strategy invests the 3X leveraged version in whichever of the three lookback items has the highest return over the lookback period.

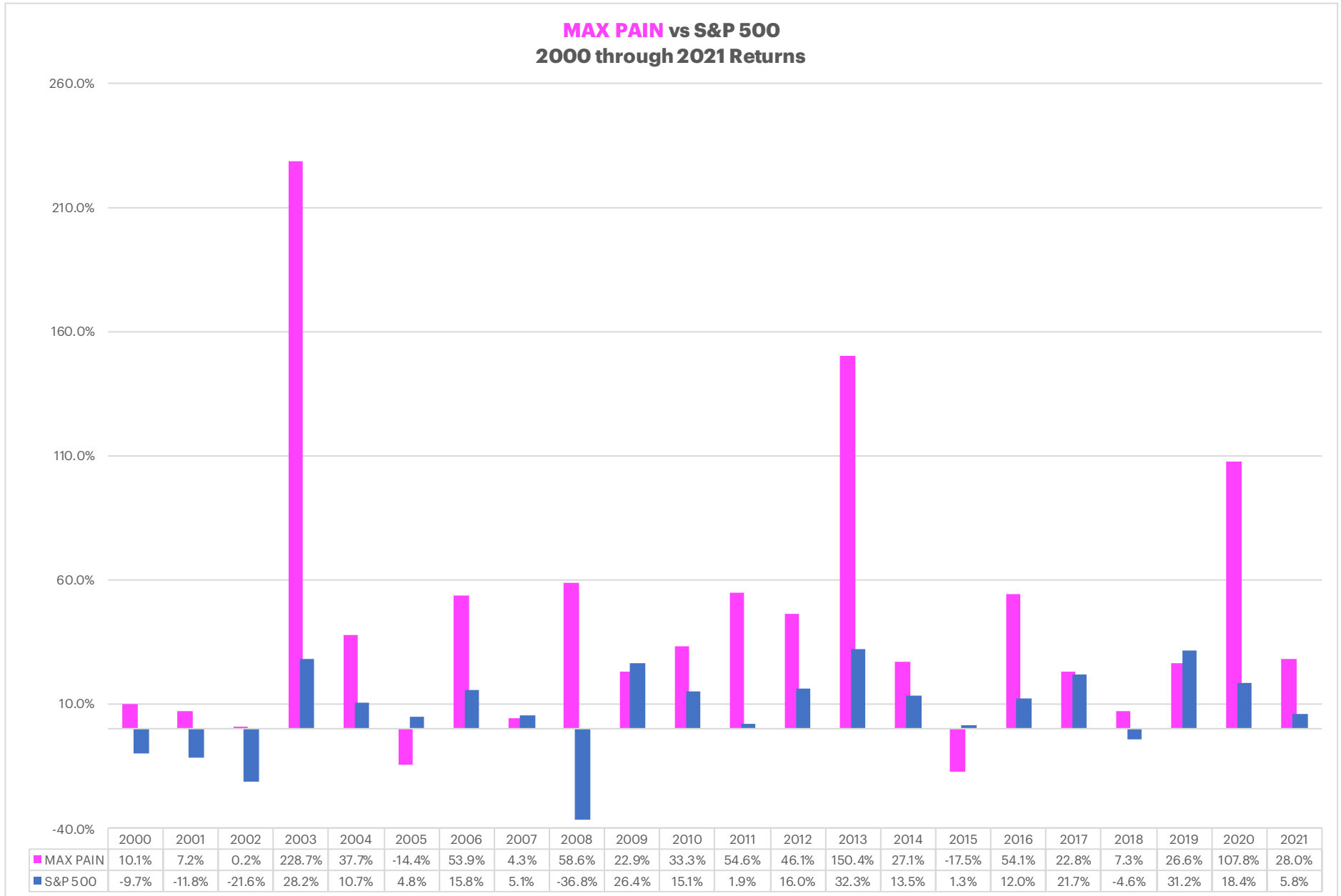
This is an extremely aggressive strategy and utilizes 3X Leverage whenever it is invested in equities. The first month out of equities it holds very aggressive 3X Long Term Treasuries, and then holds Extended Duration Equities in subsequent months.

The MAX PAIN was finalized in January 2021.



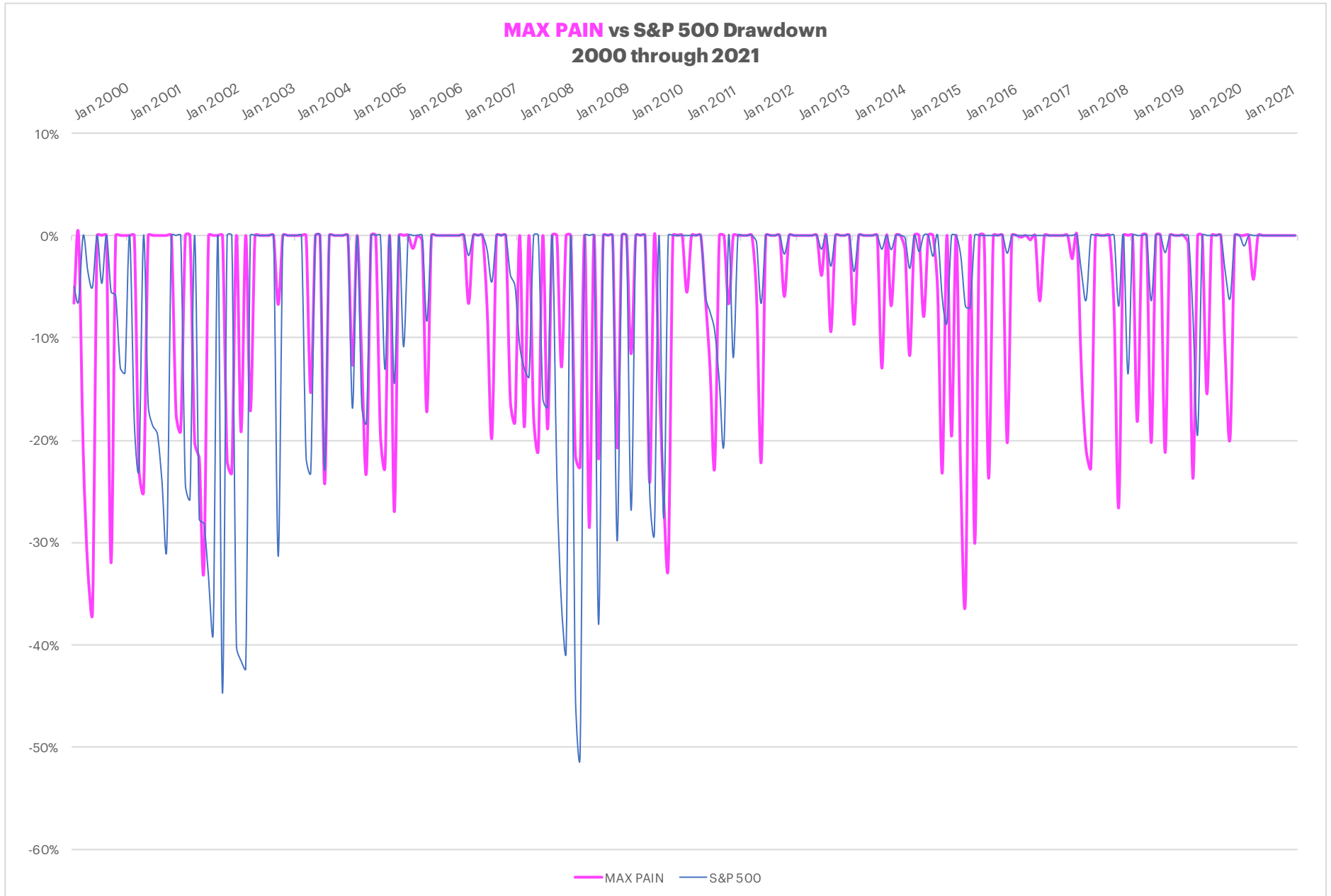
The MAX PAIN was finalized in January 2021.

Dual Momentum Systems: MAX PAIN



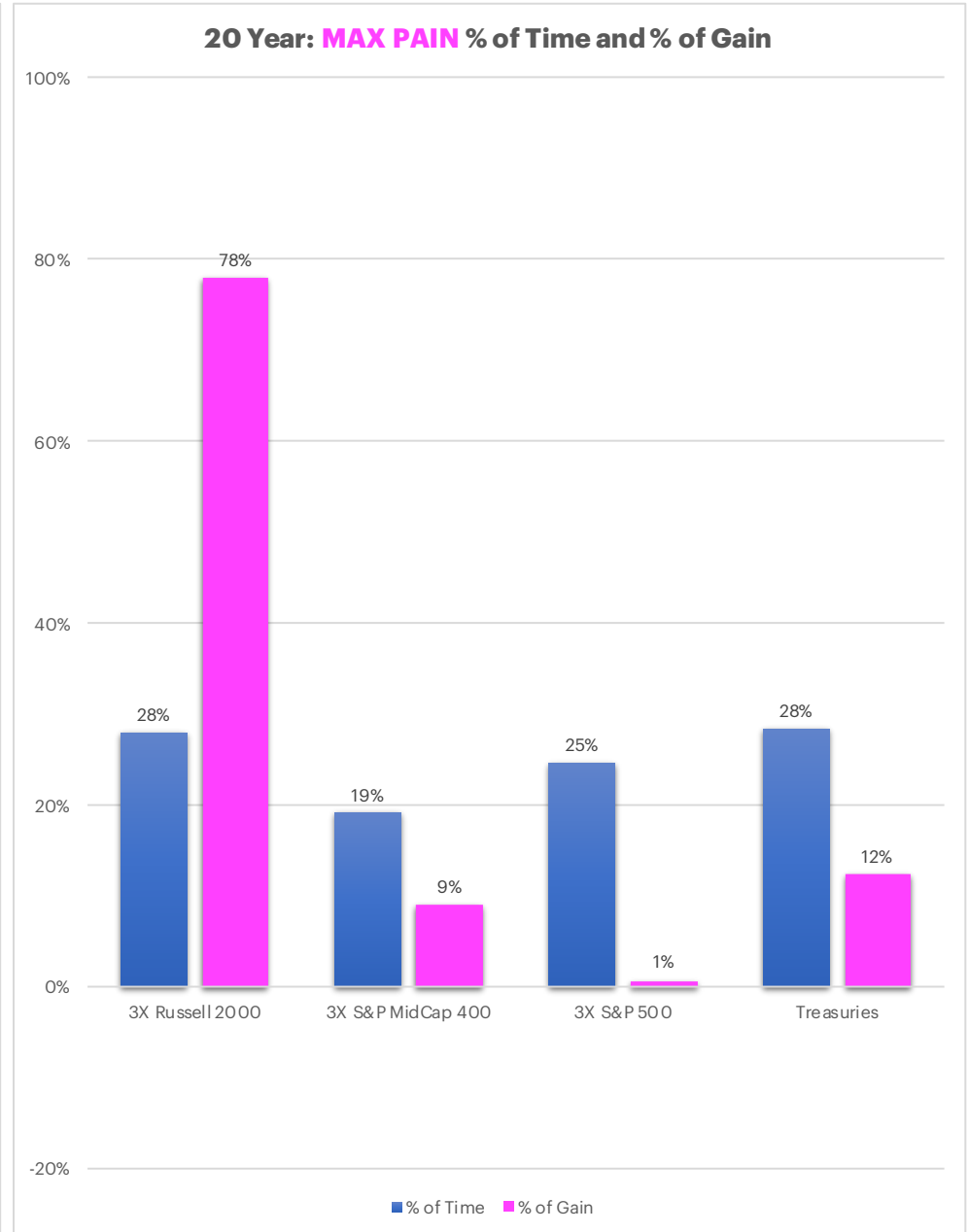
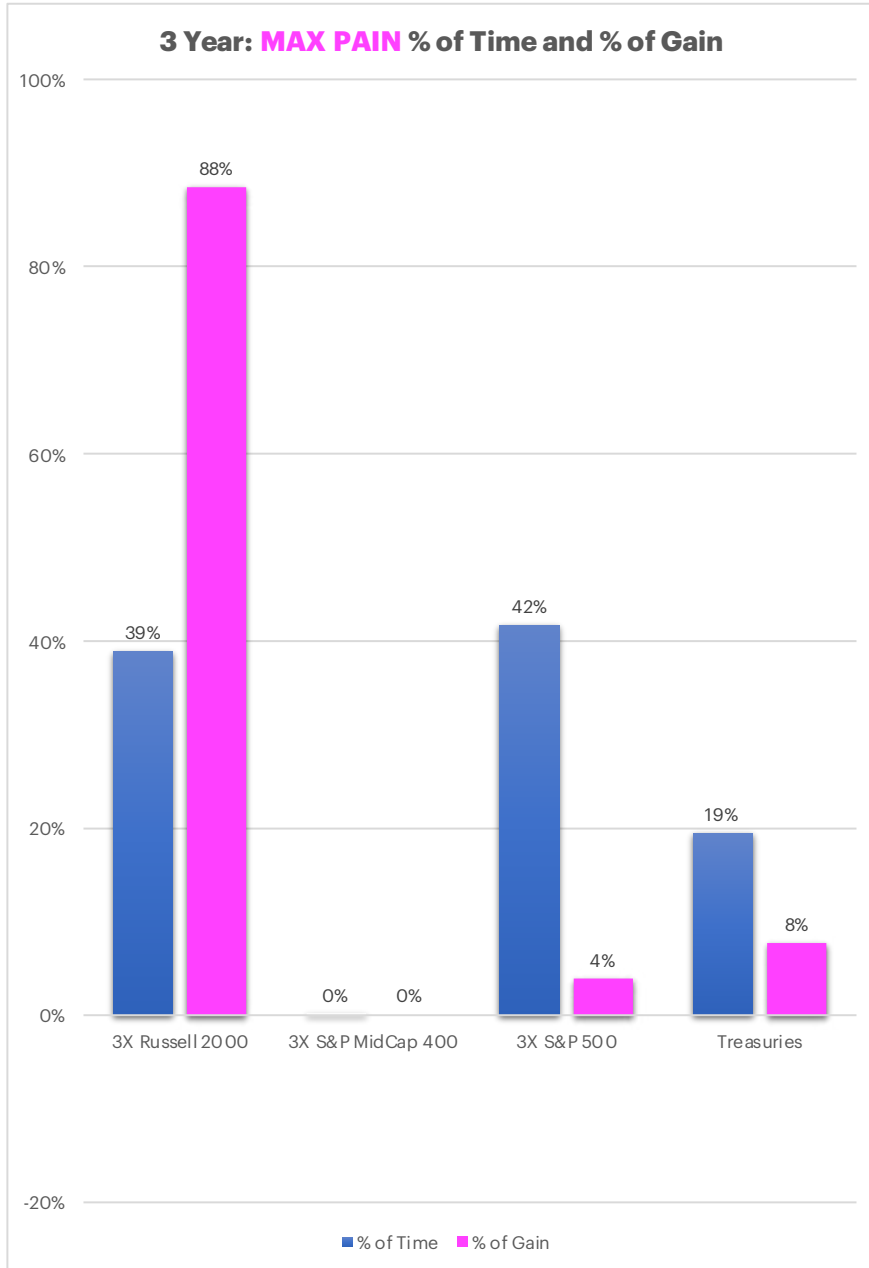
The MAX PAIN was finalized in January 2021.

Dual Momentum Systems: MAX PAIN



The MAX PAIN was finalized in January 2021.

Dual Momentum Systems: **MAX PAIN**



The MAX PAIN was finalized in January 2021.

Metrics from 2000 to Current and the past 120 months

CAGR: Compound Annual Growth Rate, on average how much the strategy has returned per year

Ulcer Performance Index: A risk adjusted performance ratio which using the Ulcer Index in it's calculations

Sortino Ratio: A risk adjusted performance ratio commonly used

Gain to Pain: Used by the famous Jack Schwager, simply the total net gain divided by net loses along the way

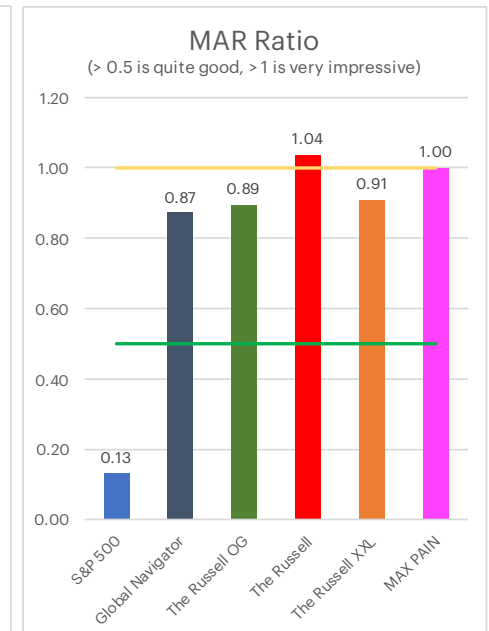
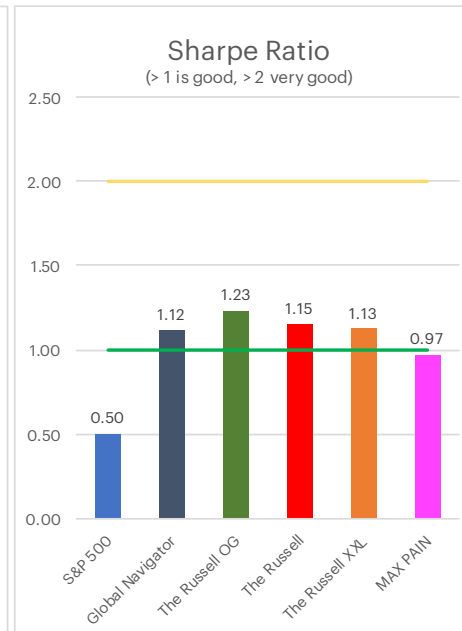
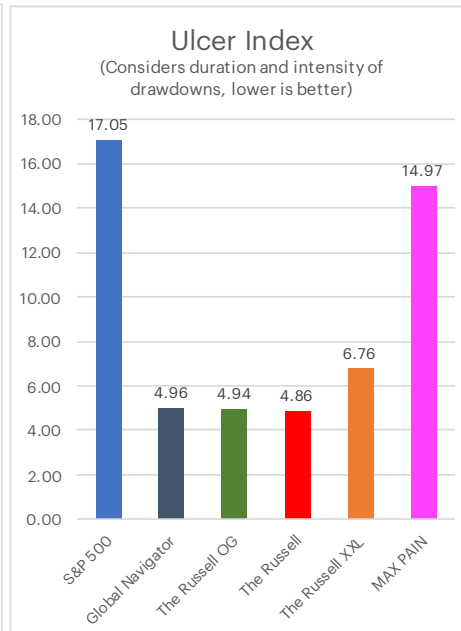
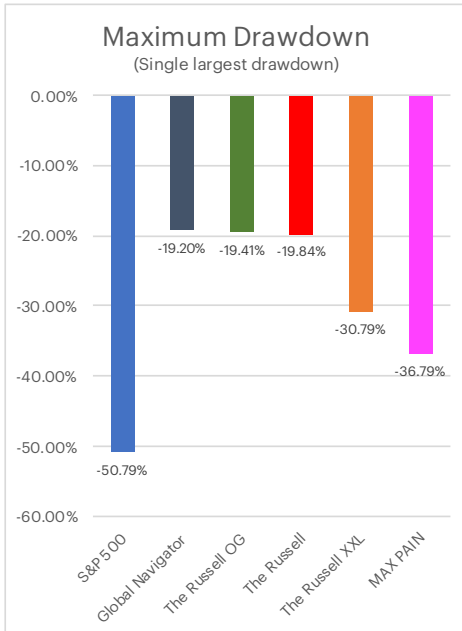
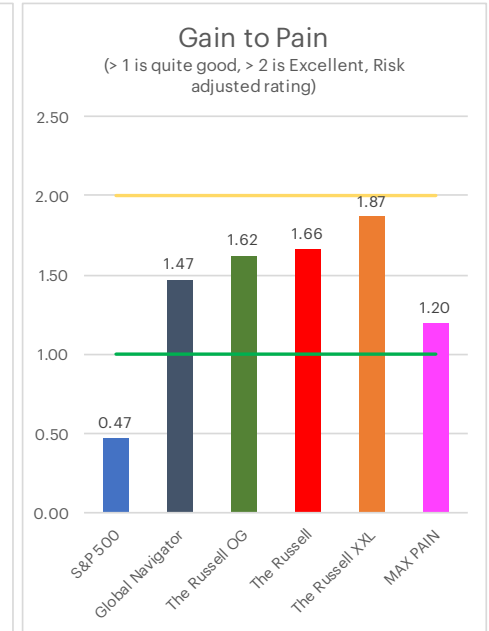
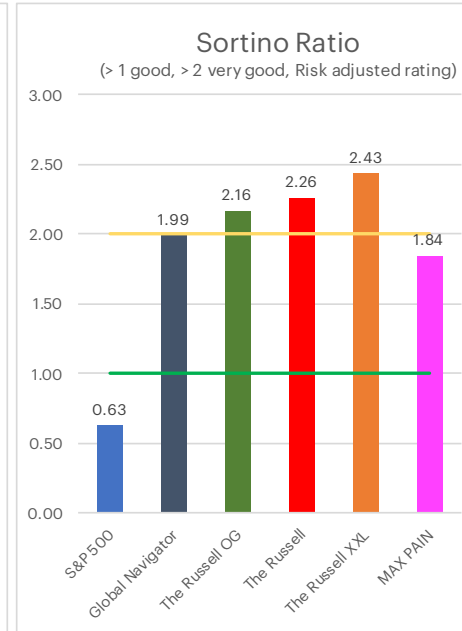
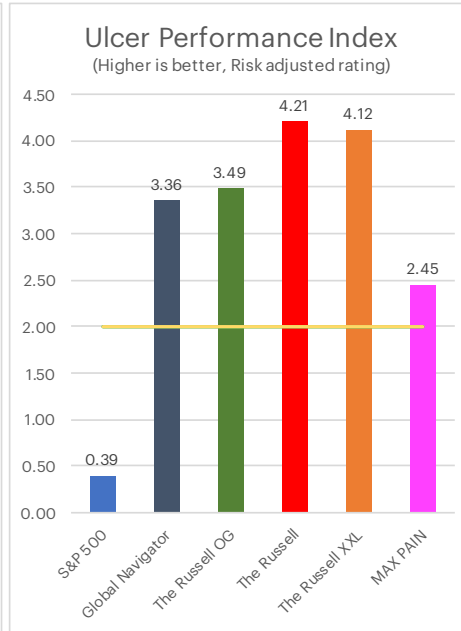
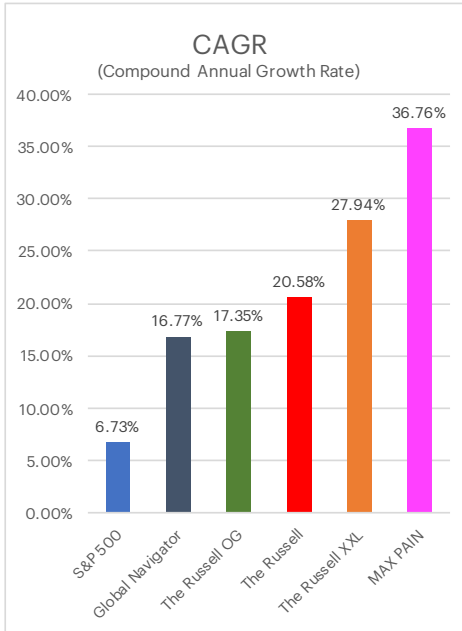
Maximum Drawdown: The largest negative drawdown for the strategy, on a month end basis

Ulcer Index: Measures how bad drawdowns are for an investment, not related to gains, just drawdowns

Sharpe Ratio: A commonly used risk adjusted performance measure, however, it penalizes for upside volatility

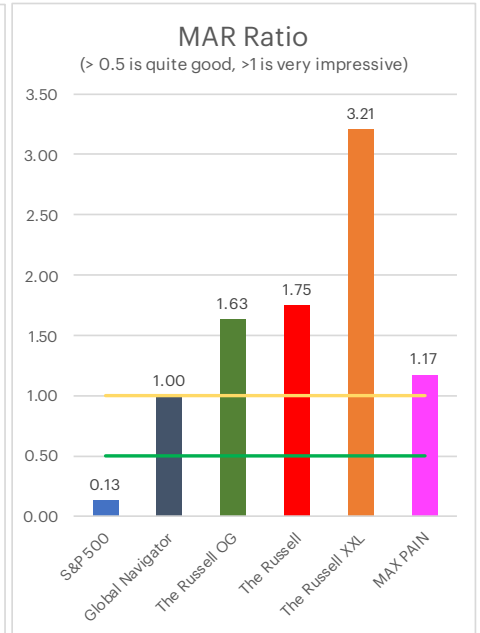
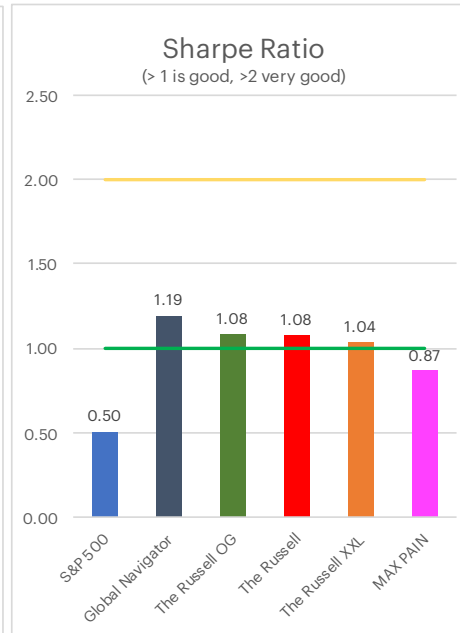
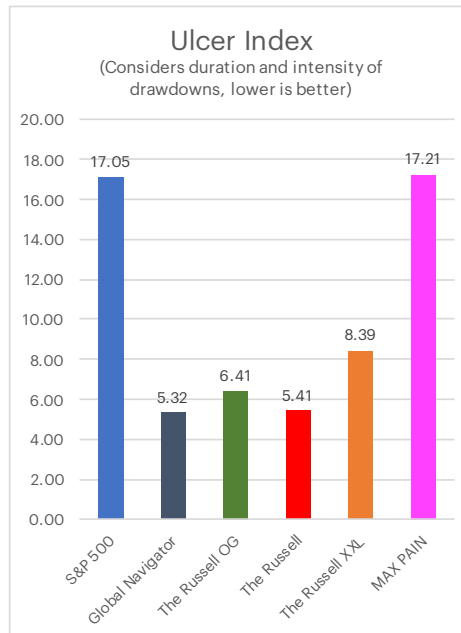
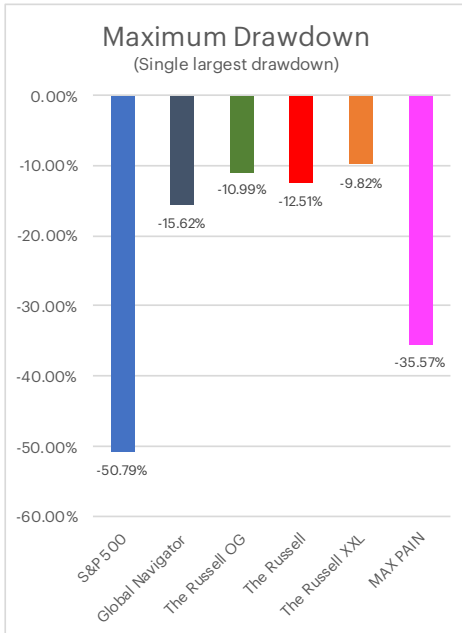
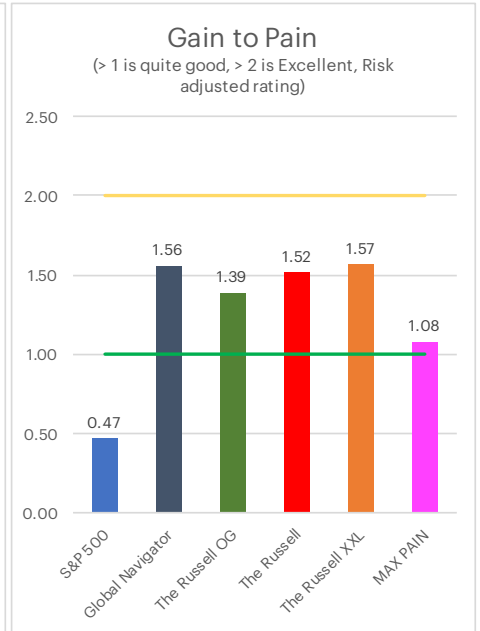
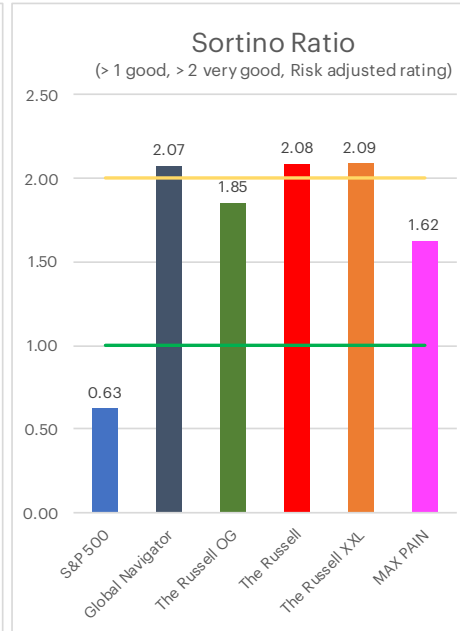
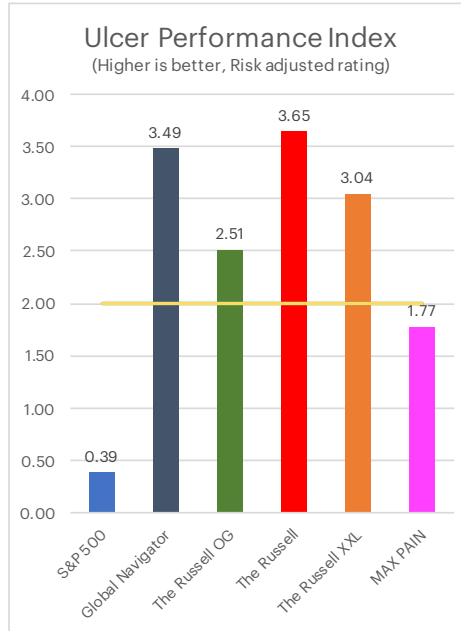
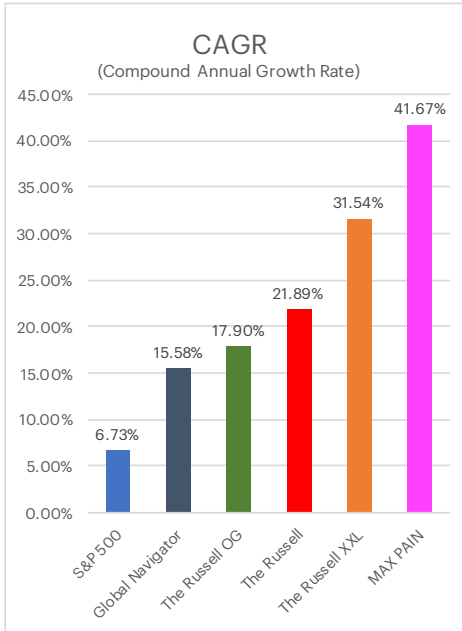
MAR Ratio: A risk adjusted performance ratio, uses maximum drawdown in it's calculations

Metrics Comparisons: Strategies vs S&P 500 2000 to current



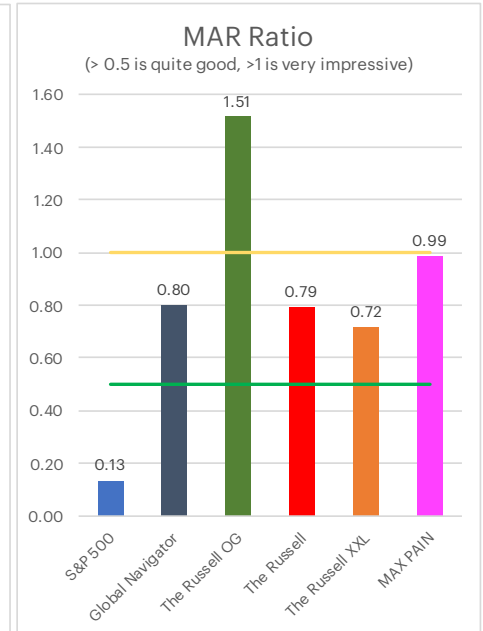
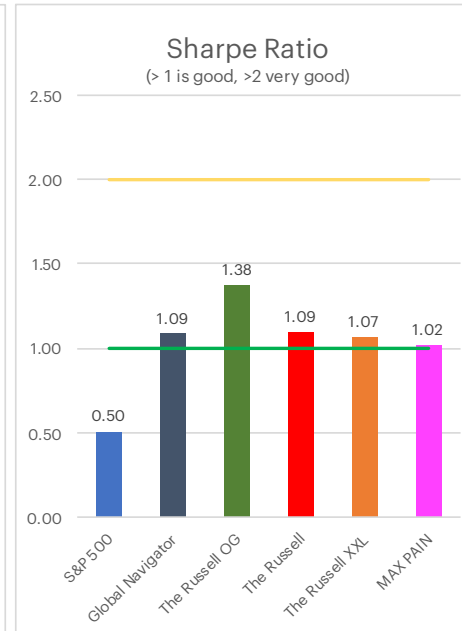
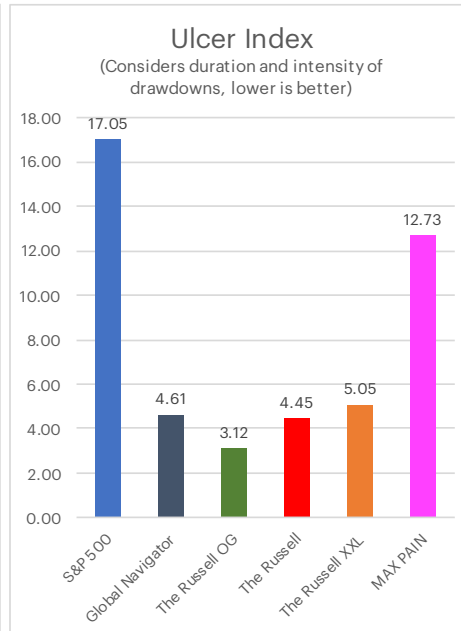
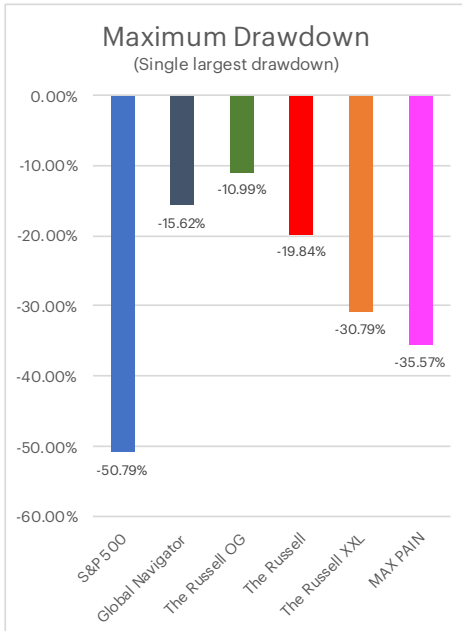
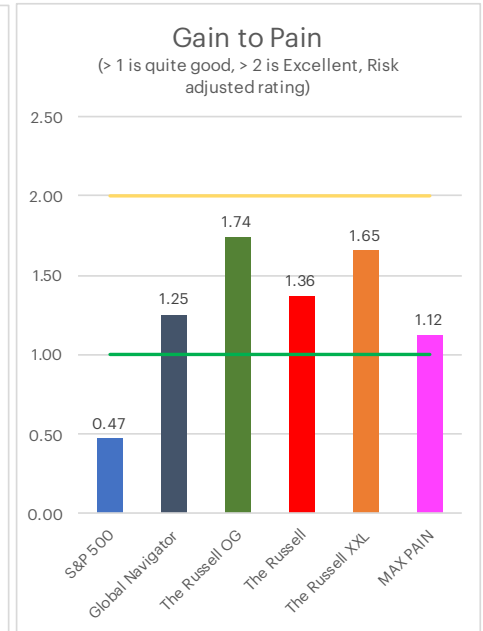
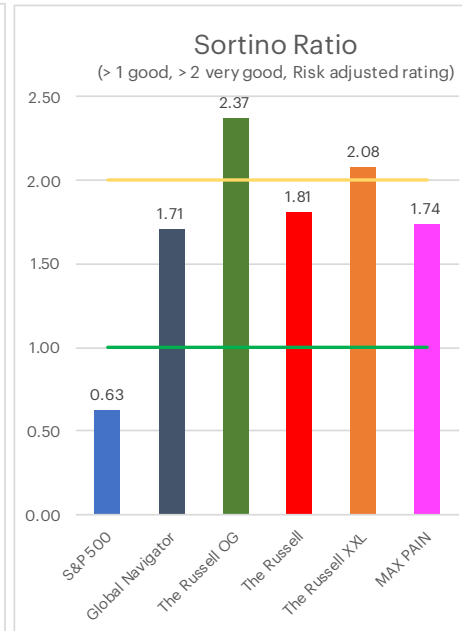
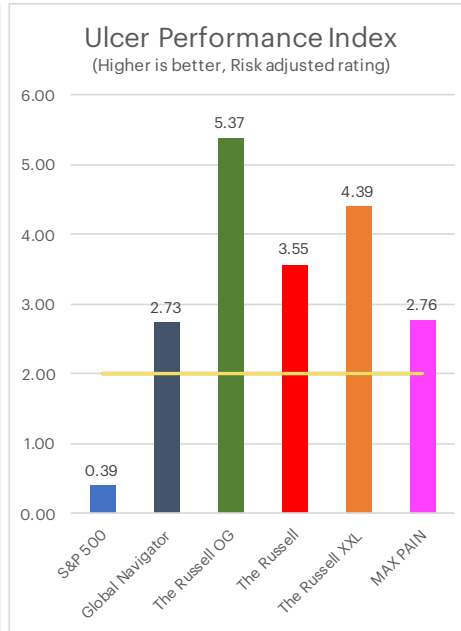
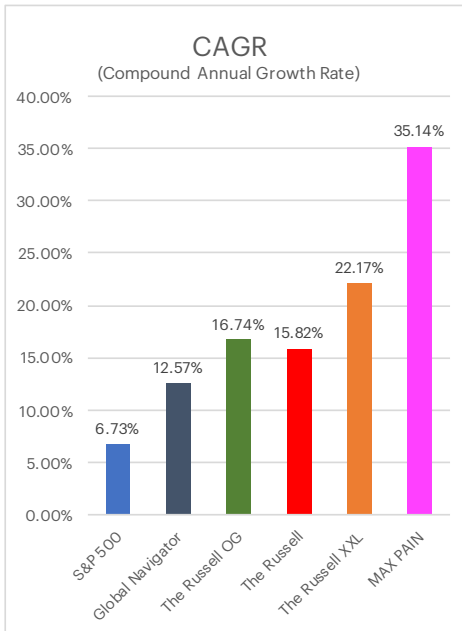
All Metrics are calculated from Monthly returns

Metrics Comparisons: Strategies vs S&P 500 2000's Decade: From 2000 through 2009



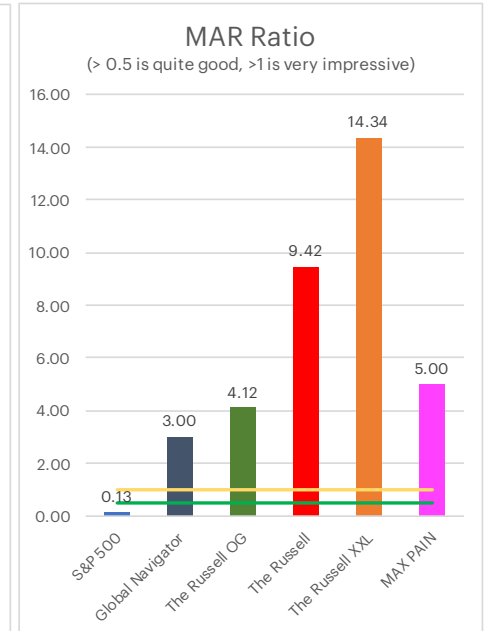
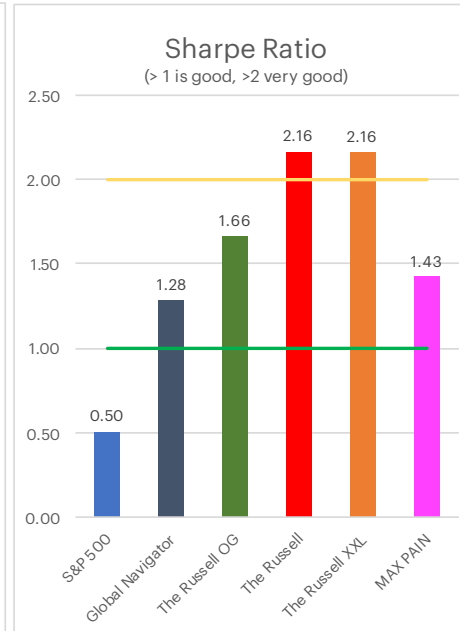
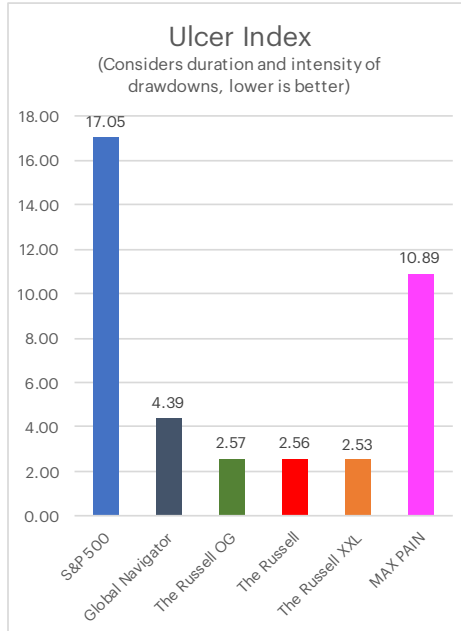
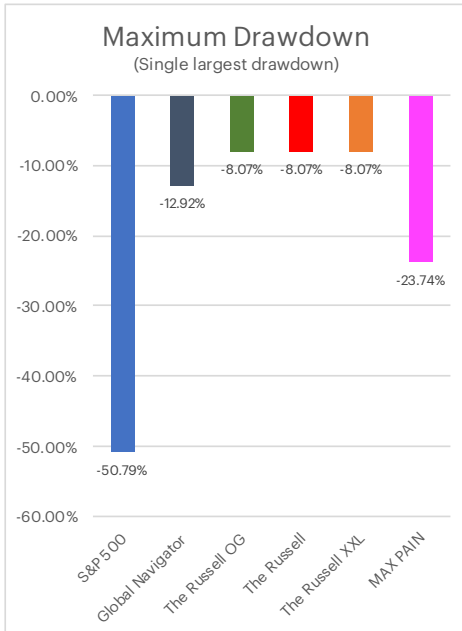
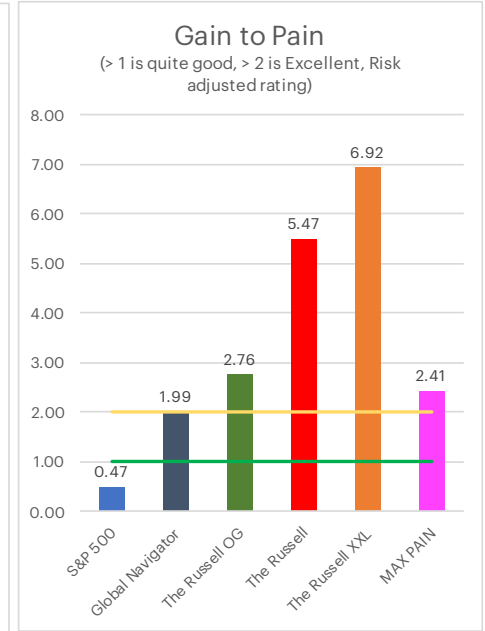
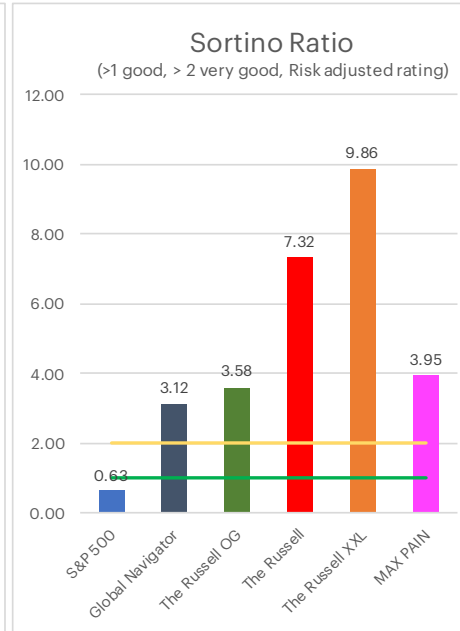
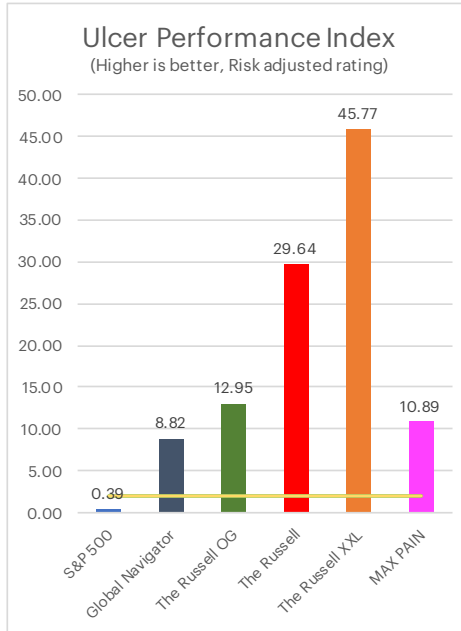
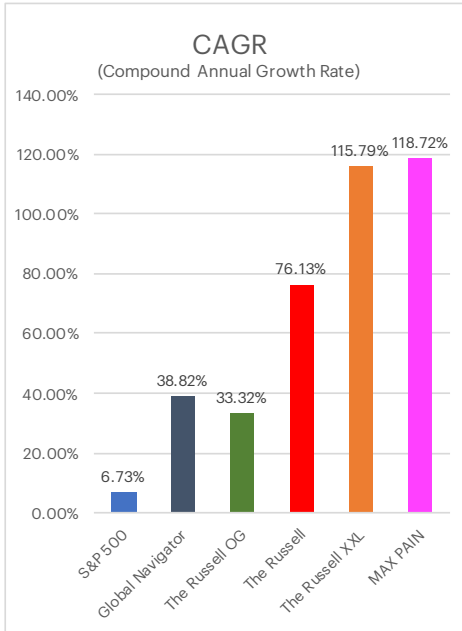
All Metrics are calculated from Monthly returns

Metrics Comparisons: Strategies vs S&P 500 2010's Decade: From 2010 through 2019



All Metrics are calculated from Monthly returns

Metrics Comparisons: Strategies vs S&P 500 2020's Decade: From 2020 to date

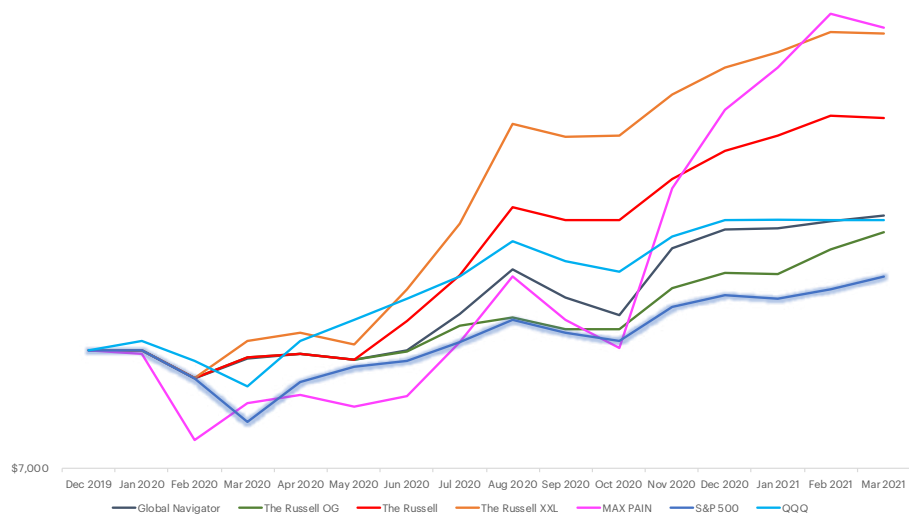


All Metrics are calculated from Monthly returns

Equity Charts & Correlations

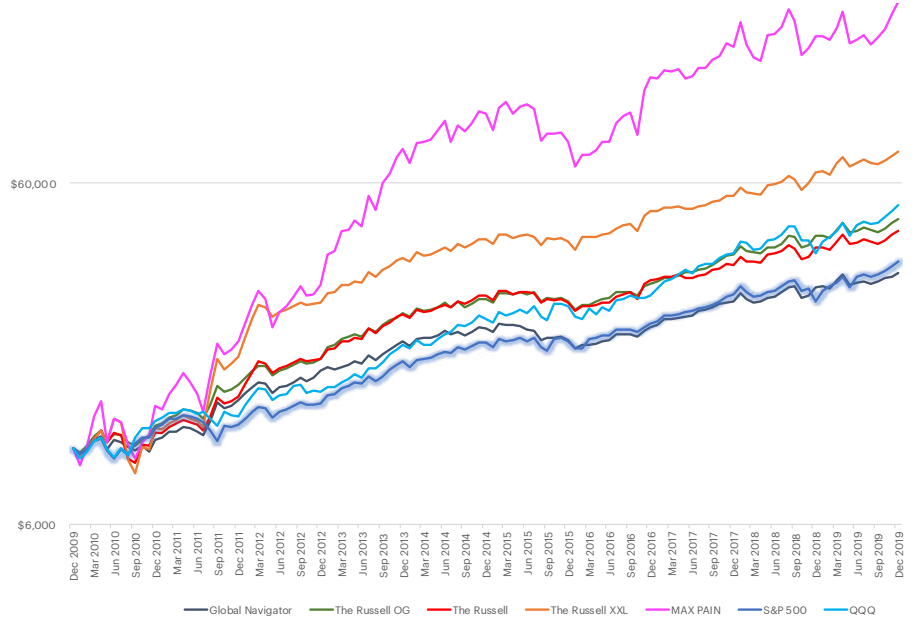
2020 - 2029 Return Equity Chart

logarithmic scale chart



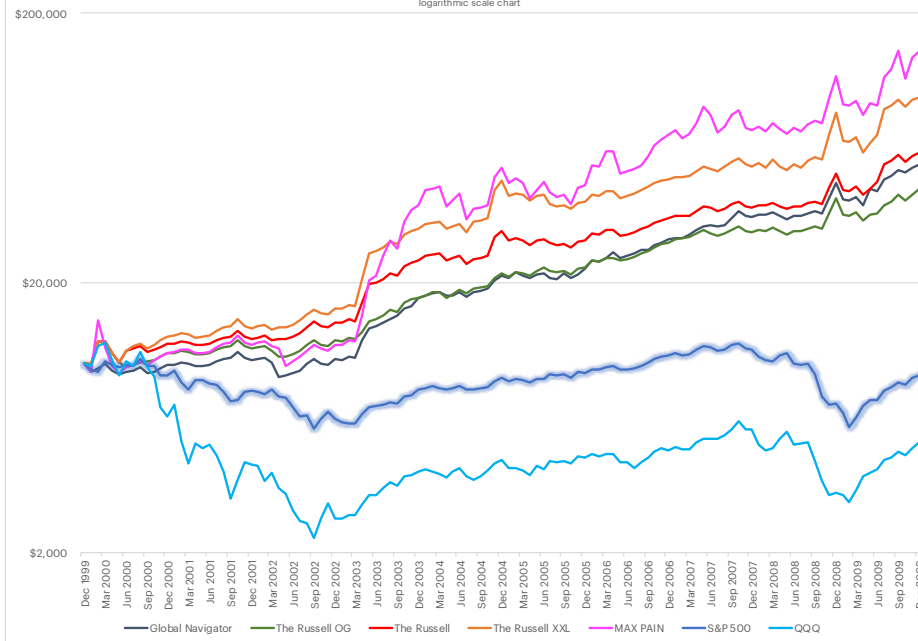
2010 - 2019 Return Equity Chart

logarithmic scale chart

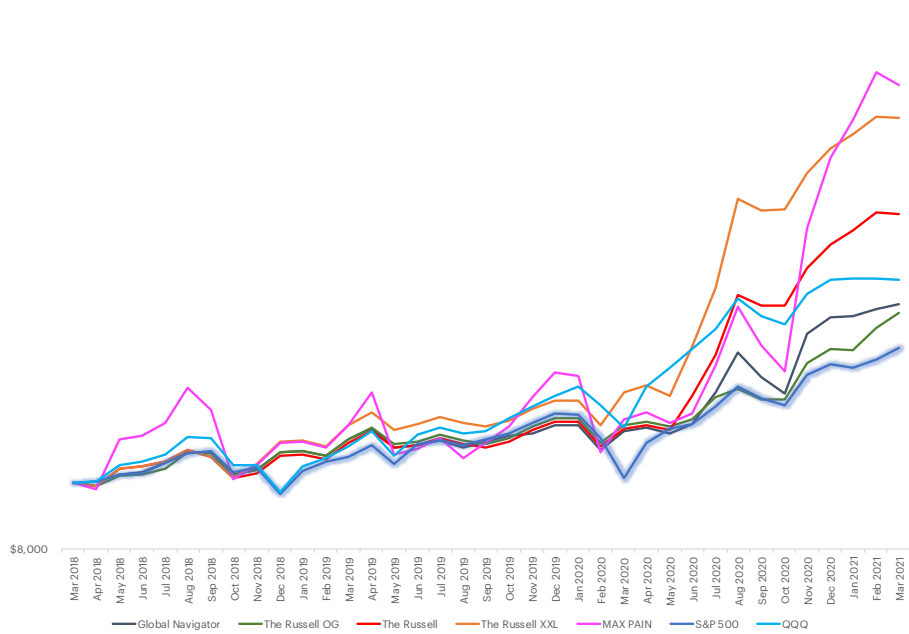


2000 - 2009 Return Equity Chart

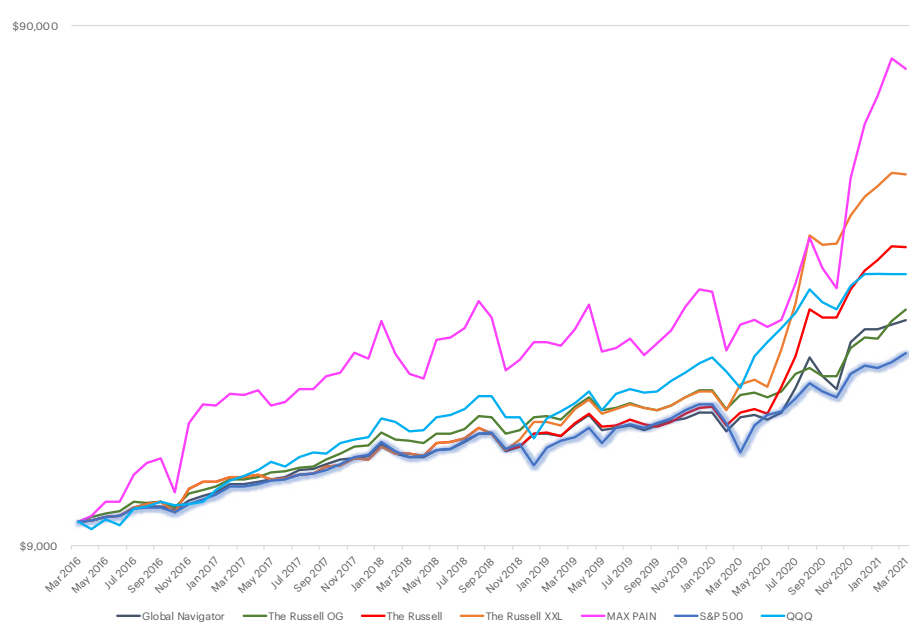
logarithmic scale chart



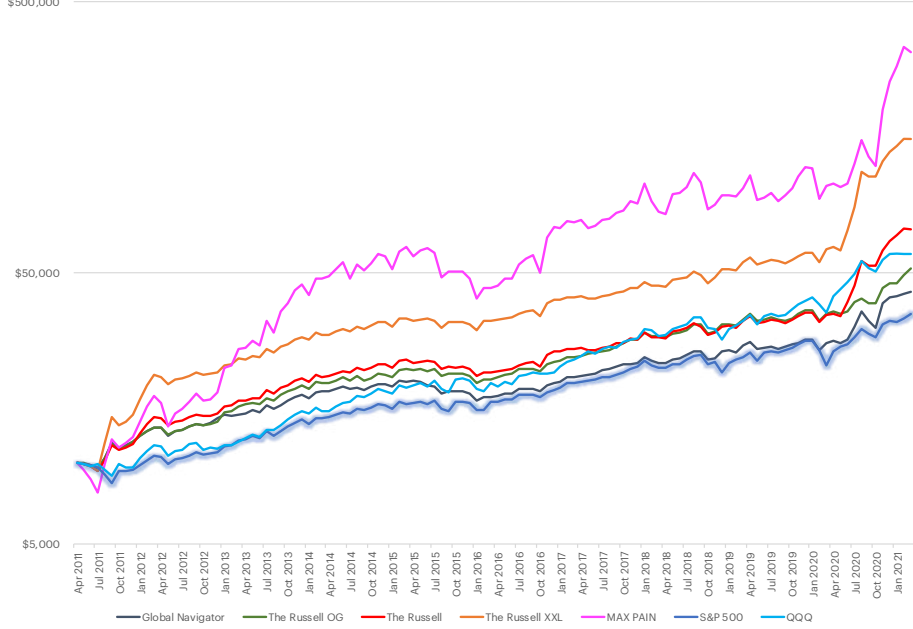
Rolling 36 month Equity Chart
logarithmic scale chart



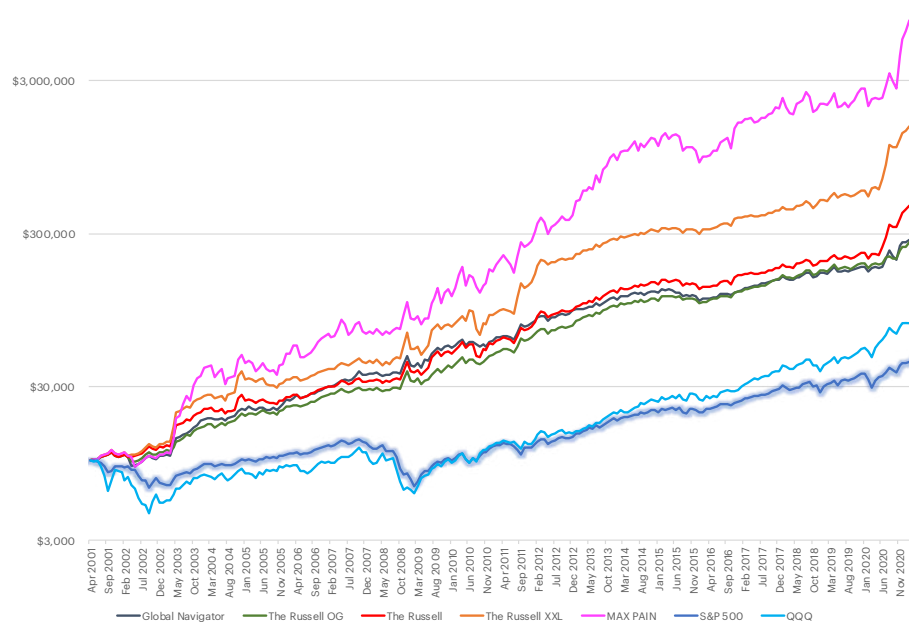
Rolling 60 month Equity Chart
logarithmic scale chart



Rolling 120 month Equity Chart
logarithmic scale chart



Rolling 240 month Equity Chart
logarithmic scale chart



36 Month Strategy Return Correlations

	S&P 500	QQQ	Global Navigator	The Russell OG	The Russell	The Russell XXL	MAX PAIN
S&P 500	1.00						
QQQ	0.93	1.00					
Global Navigator	0.56	0.56	1.00				
The Russell OG	0.45	0.45	0.85	1.00			
The Russell	0.54	0.54	0.86	0.74	1.00		
The Russell XXL	0.46	0.46	0.80	0.64	0.98	1.00	
MAX PAIN	0.56	0.56	0.91	0.86	0.79	0.67	1.00

DUAL MOMENTUM SYSTEMS

Thank you for your time, my hope is that these strategies may help you grow your investments more than a market index fund, with less drawdowns along the way.

Countless hours of thought, development, and modeling have gone into these strategies which were inspired from the work of Gary Antonocci. I have entrusted my invested net worth into these strategies, I am not looking to gain from anybody else who chooses to use them, I simply want to share what I think are fantastic ways to invest money for the long run. Receive the strategy information free by emailing me and getting on the distribution list, your information is kept private.

A handwritten signature in black ink that reads "Randy Harris". The letters are cursive and somewhat stylized, with a prominent "R" and "H".

DUAL MOMENTUM SYSTEMS

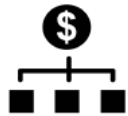
Appendix:

How to invest in Dual Momentum and How it works

How would a person invest in these Strategies?



- At the end of the month notice of which investments the strategies should be invested in for the next month are distributed. You can make any necessary trades the first day or two of the month. This is a free service, these models are run for my own investment portfolio, I like to share with interested people who want more than a buy and hold strategy.



- Determine your allocation, you'll need to decide if you want to go with Global Navigator, The Russell, or some combination of both. In the reporting you'll see a "30/70 Model Portfolio", that is because this is what I do personally: 30% Global Navigator and 70% The Russell.



- Place your trade at your brokerage company so that you are in the investment that the ETF which the strategy indicates for the next month. There is no need to scale in when you start the strategies, every month is a new investment decision to be fully in equities or in Treasuries. You only need to make sure that you are holding the investment for the month that the models tell

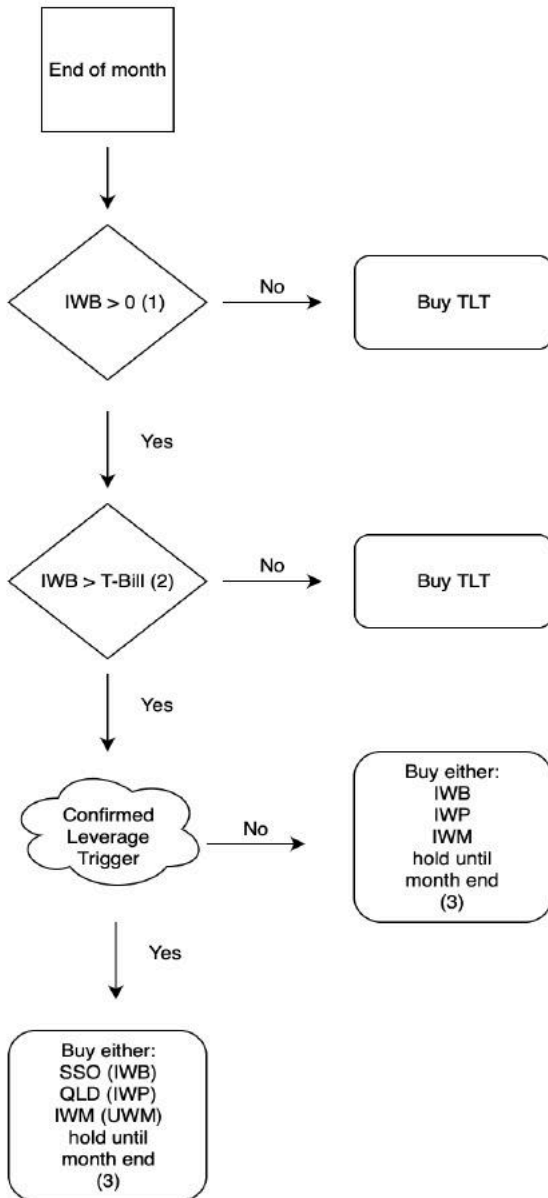


- When the models are in Risk OFF mode they are out of equities and in Treasuries. When in Risk OFF mode the models set to go into UST which is a 2X Intermediate Treasuries ETF. For most of us, this is a great choice. If you are a whale investor then you should probably be considering going into either ZROZ or EDV instead for maximum gain prospects, a whale could instead buy VGLT if they want less volatility when are out of equities.



- These strategies move differently than a market index fund, and on any given day, week, month, or year could underperform the market index, however, this does not mean that the strategies are no longer working - they are best evaluated over a longer time period. Please look closely at the annual performance compared to the S&P on the Bar Chart, it shows very clearly on an annual basis how great these strategies perform to the market, but not every year. Also look closely at the Maximum Drawdown chart, yes, there are some big dips on the dual momentum strategies, but the drawdowns are both more shallow and fewer in number than the market.

How do the strategies select where to invest?



This example to the left shows the decision process for The Russell.

Decision 1) When the month is over the full month results are used to calculate the weighted returns: 25% of the 1 month return plus 25% of the 3 month return plus 50% of the 6 month return. If the weighted return for the Russell 1000 is less than zero, then the strategy goes into Treasuries for the next month.

Decision 2) If the Russell 1000 weighted return was positive, check to see if the weighted return is greater than the 90 day T-Bill weighted return, if not the strategy goes into Treasuries for the next month.

Decision 3 No) If the Russell 1000 weighted return was higher than the 90 day T-Bill weighted return, do we have a confirmed Leverage Trigger (which can happen after an outsized drawdown in the Russell 1000), if not we invest in either the Russell 1000, Russell Mid-Cap Growth, or Russell 2000, the one of those three selected is the one with the highest relative strength determined by comparing their weighed returns.

Decision 3 Yes) If there was a confirmed Leverage Trigger, then we invest in SSO instead of Russell 1000, and QLD instead of Russell Mid-Cap Growth, and UWM instead of Russell 2000.

The investment is held until the end of the month, and the process is done again. On average, investments are held about 4 months before changing.

Contact randyharris@me.com