First Trust

Empirical Study of Catholic Screening on Index Performance

Dennis Hammond, JD LLM
Lilly Nikkel

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Synopsis

Is equity investment performance harmed by adherence to the Catholic faith?

We conducted an empirical study on the application of the 2021 United States Conference of Catholic Bishops (USCCB) Guidelines[1] over the last 120 months across three global equity indexes: the S&P 500 Index ("S&P 500"), the MSCI World Index ("MSCI World"), and MSCI ACWI ex-US Index ("MSCI ACWI ex-US").

This study found:

1. Portfolios comprised entirely of companies that violated the USCCB-screens ("violators") performed materially worse than their respective unscreened indices over the period.
2. Portfolios comprised of companies that survived USCCB screening ("survivors") performed within a range of ±67 basis points ("bps") relative to the unscreened indices.
3. In creating screened portfolios of the USCCB survivors, investors comfortable with higher tracking errors to the unscreened indices may wish to market-cap weight survivors, while investors seeking lower tracking errors may wish to optimize survivors.
4. Historical analysis of the USCCB guidelines' impact on the broad-based indices' performance show the screened and market-cap weighted portfolios modestly outperformed the unscreened indices, while the screened and optimized portfolios modestly underperformed the unscreened indices.
5. Regardless of approach, Catholic investors may follow the USCCB screen guidelines and still earn returns not materially different from the unscreened benchmarks.

The **S&P 500® Index** is an unmanaged index of 500 companies used to measure large-cap U.S. stock market performance.
The **MSCI World Index** is a free float-adjusted market capitalization-weighted index that is designed to measure the equity market performance of 23 developed markets around the world.
The **MSCI ACWI ex-US Index** captures large and mid and cap representation across 22 of 23 Developed Markets countries, excluding the United States, and 24 Emerging Markets countries.

Methodology

Review Period and Indexes

The impact of the USCCB guidelines on index constituents and index performance was reviewed over a 120-month period beginning September 30, 2015 and ending September 30, 2025.

In all, twenty-two USCCB screens were applied to screen each index. The following table lists the applicable screens mandated by the USCCB guidelines (with reference to their appearance in the USCCB Guidance)[2]:

Table 1: USCCB Policies and Applied Screens

Policy I: Protect Human Life	Policy II: Promote Human Dignity	Policy III: Enhance the Common Good	Policy IV: Pursue Economic Justice	Policy V: Save Our Global Common Home
Abortion, Euthanasia, and Assisted Suicide[3]	Human Rights[4]	Biochemical weapons[5]	N/A*	Environmental controversy[6]
Fetal tissue[7]	Pornography[8]	Cluster munitions[5]		Environmental land use[9]
Fetal tissue cell lines[7]	Contraceptives[10]	Landmines[5]		Environmental water[11]
Embryonic stem cells[7]	Labor rights core compliance[12]	Depleted uranium[5]		
Embryonic stem cell research[7]	Labor rights broad compliance[12]	Civilian weapons[5]		
Embryonic stem cell enabling tech[7]		Gambling > 50% revenues[13]		
		Tobacco > 50% revenues[13]		
		Recreational cannabis[13]		

*The USCCB does not provide any exclusion screens in Policy IV: Pursue Economic Justice.

As of 9/30/2025, the USCCB screens exclude 48 securities from the S&P 500 (10.12% of the index by weight), 135 securities from the MSCI World (11.79% of the index by weight), and 160 securities from the MSCI ACWI ex-US (12.69% of the index by weight). On average over the period and across all three indexes, 11.53% of the index constituents (by weight in the index) were excluded.

Empirical Study

Using the screens, we examined their impact on index performance over a 120-month period (9/30/2015 - 9/30/2025). This period represents the longest monthly period for which screening data following the USCCB guidance was available. We applied the screens to each index at the end of each month and removed in the following month all index constituents which failed any one or more of the screens.

We examined the returns of a hypothetical portfolio comprised only of the USCCB screen violators ("SVB"), or fails, from each index each month in the 120-month period and market-cap weighted the portfolio. We then measured its performance in comparison to the performance of each unscreened index.

We then looked at two approaches for creating hypothetical portfolios screening out the USCCB violators: screened but not optimized ("SNO") and screened and optimized ("S&O"). For the SNO, we grossed the weighting of all index survivors back to 100% using their relative market capitalizations. The SNO portfolio performance and metrics were then measured in comparison to each unscreened index during the review period.

For the S&O approach, after removing the screened index constituents, we used an optimizer to identify index constituents and their relative weighting which would produce the lowest estimated tracking error between the screened portfolio and unscreened index. The S&O portfolio performance and metrics were then compared to each unscreened index during the review period.

Findings

Over the 120-month period, the average annualized reduction in returns for the SVB portfolio to the unscreened indices ranged from -111 bps (MSCI ACWI ex-US) to -459 bps (S&P 500). The average annualized difference in return for the SNO portfolio to the unscreened indices ranged from 15 bps (MSCI ACWI ex-US) to 67 bps (S&P 500), and those for the S&O portfolio from -22 bps (S&P 500) to -59 bps (MSCI ACWI ex-US). Modern Portfolio Theory (MPT) metrics used to compare the similarity of the screened portfolios and unscreened indices indicate the two were highly analogous: Beta for the SNO and S&O portfolios remained near 1.0 across all three indexes, while Correlation and R-Squared hovered at or near 1.0.

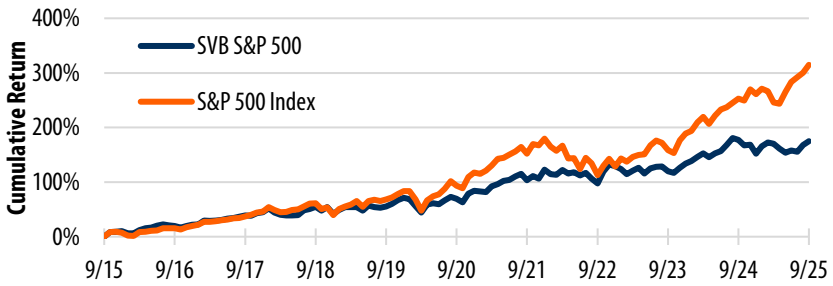
Our research reveals that the portfolio comprised only of companies that failed the USCCB screening significantly underperformed the unscreened index on average over the period. Depending on whether one employs optimization to minimize tracking error or market-cap weighting, the screened portfolios that had eliminated the USCCB violators performed close to, or in excess of, the unscreened indices consistently and over the entire period. Charts 1-9, show the comparative data for each. We review below the backtested results of all nine portfolios, beginning with the three SVB results.

Screened Violators Basket (SVB) Results

The Screen Violators Basket Comparison to the S&P 500 Index

On a calendar year basis, the violators removed from the S&P 500 Index as required by the USCCB guidance (the "SVB S&P 500") ranged from a low of 35 index constituents in 2015, to a high of 55 index constituents in 2021. On average over the period tested on a calendar year basis, the USCCB screens excluded 14.85% of the S&P 500's market capitalization by weight.

Chart 1: Comparison of the S&P 500 Index vs. the S&P 500 Index Screened Violators Basket



Data from 9/30/2015 – 9/30/2025. Source for Index data: Bloomberg. Indexes are unmanaged and investors cannot invest directly in an index. The chart is for illustrative purposes only and not indicative of any investment. **Past performance is no guarantee of future results.**

Of the nine full calendar years in this study, the SVB S&P 500 portfolio outperformed the unscreened S&P 500 Index in only two calendar years: by 218 bps in 2018 and 2,117 bps in 2022. In contrast, the SVB S&P 500 portfolio underperformed the unscreened index in seven calendar years, with underperformance ranging from 136 bps (2016) to 2,444 bps (2023).

On a cumulative basis over the entire 10-year period, the SVB S&P 500 portfolio returned 176.3%, while the unscreened S&P 500 Index returned 314.7%.

On an annualized basis, the SVB S&P 500 portfolio's return was 10.7% compared to the unscreened S&P 500 Index's return of 15.3%, resulting in 459 bps of underperformance over the period. As might be expected from a portfolio not meant to track the index, the SVB S&P 500 portfolio's tracking error to the S&P 500 Index was considerable over the period, at 9.13%.

We conclude that, in most calendar years over the observation period, the SVB S&P 500 portfolio substantially underperformed the unscreened S&P 500 Index. Holding a portfolio of only USCCB violators showed a reduction, not an enhancement, of potential returns.

	Violators Index Weight	Violators # Names	Total Names in Index
12/31/2015	13.01%	35	504
12/30/2016	16.74%	42	506
12/29/2017	16.87%	41	505
12/31/2018	18.57%	46	505
12/31/2019	16.34%	45	505
12/31/2020	13.45%	49	505
12/31/2021	13.10%	55	505
12/30/2022	16.24%	53	503
12/29/2023	13.10%	53	503
12/31/2024	11.08%	52	503

Calendar Year Returns

	SVB S&P 500 Portfolio	S&P 500 Index	Difference
2016	10.59%	11.95%	-1.36%
2017	18.69%	21.82%	-3.14%
2018	-2.21%	-4.39%	2.18%
2019	21.03%	31.48%	-10.45%
2020	7.41%	18.39%	-10.98%
2021	20.97%	28.68%	-7.71%
2022	3.05%	-18.12%	21.17%
2023	1.82%	26.26%	-24.44%
2024	7.94%	25.00%	-17.06%

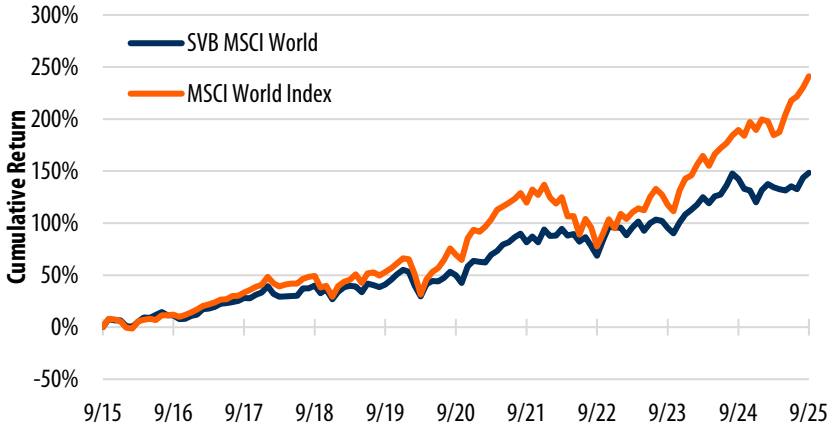
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The Screen Violators Comparison to the MSCI World Index

On a calendar year basis, the USCCB violators excluded from the MSCI World Index (the "SVB MSCI World") ranged from a low of 102 index constituents, representing 13.8% of the index by weight in 2015, to a high of 150 index constituents, representing 13.7% of the index in 2021. As with the S&P 500 Index, a similar overall weighting of ineligible securities is juxtaposed with a considerable increase in number of exclusions from 2015 to 2021. On average over the entire period on a calendar year basis, the USCCB screens eliminated 14.9% of the MSCI World's market capitalization by weight.

Chart 2: Comparison of the MSCI World Index vs. the MSCI World Index Screened Violators Basket



Data from 9/30/2015 – 9/30/2025. Source for Index data: Bloomberg. Indexes are unmanaged and investors cannot invest directly in an index. The chart is for illustrative purposes only and not indicative of any investment. **Past performance is no guarantee of future results.**

Of the nine calendar years in this study, the SVB MSCI World portfolio outperformed the unscreened MSCI World Index in only two calendar years: by 322 bps in 2018 and 1,858 bps in 2022. In contrast, the SVB MSCI World portfolio underperformed the unscreened index in seven years, with underperformance ranging from 287 bps (2017) to 1,801 bps (2023).

On a cumulative basis over the entire 10-year period, the SVB MSCI World portfolio returned 148.4%, while the unscreened MSCI World Index returned 241.1%.

On an annualized basis, the SVB MSCI World portfolio's return was 9.52% compared to the unscreened MSCI World Index's return of 13.0%, resulting in 353 bps of underperformance over the period. The SVB MSCI World portfolio's tracking error to the MSCI World Index was significant over the period, at 7.66%.

Again, in most calendar years over the observation period, the SVB MSCI World portfolio substantially underperformed the unscreened MSCI World Index.

	Violators Index Weight	Violators # Names	Total Names in Index
12/31/2015	13.83%	102	1,653
12/30/2016	15.22%	120	1,654
12/29/2017	15.32%	123	1,653
12/31/2018	17.19%	139	1,633
12/31/2019	16.00%	142	1,646
12/31/2020	14.21%	148	1,585
12/31/2021	13.73%	150	1,545
12/30/2022	16.49%	141	1,508
12/29/2023	14.30%	146	1,480
12/31/2024	12.41%	142	1,395

Calendar Year Returns

	SVB MSCI World Portfolio	MSCI World Index	Difference
2016	4.02%	8.21%	-4.19%
2017	20.27%	23.14%	-2.87%
2018	-4.93%	-8.16%	3.22%
2019	22.42%	28.47%	-6.04%
2020	5.45%	16.54%	-11.09%
2021	18.53%	22.40%	-3.87%
2022	0.88%	-17.70%	18.58%
2023	6.46%	24.47%	-18.01%
2024	5.57%	19.23%	-13.66%

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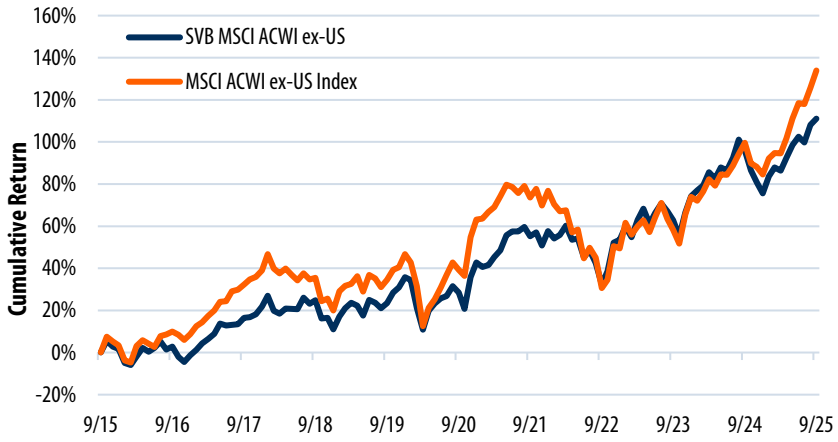
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The Screen Violators Comparison to the MSCI ACWI ex-US Index

On a calendar year basis, the USCCB violators excluded from the MSCI ACWI ex-US Index (the "SVB MSCI ACWI ex-US") ranged from 107 index constituents, representing 13.5% of the index by weight in 2015, to 167 index constituents, representing 14.5% of the index in 2023. On average over the entire period on a calendar year basis, the USCCB screens eliminated 13.6% of the MSCI ACWI ex-US Index by capitalization weight.

Chart 3: Comparison of the MSCI ACWI ex-US Index vs. the MSCI ACWI ex-US Screened Violators Basket



Data from 9/30/2015 – 9/30/2025. Source for Index data: Bloomberg. Indexes are unmanaged and investors cannot invest directly in an index. The chart is for illustrative purposes only and not indicative of any investment. **Past performance is no guarantee of future results.**

	Violators Index Weight	Violators # of Names	Total Names in Index
12/31/2015	13.45%	107	1,857
12/30/2016	12.55%	128	1,856
12/29/2017	12.42%	132	1,861
12/31/2018	14.13%	166	2,132
12/31/2019	14.21%	167	2,409
12/31/2020	13.43%	166	2,358
12/31/2021	13.57%	163	2,335
12/30/2022	14.99%	164	2,259
12/29/2023	14.45%	167	2,311
12/31/2024	12.97%	163	2,058

Of the nine calendar years in this study, the SVB MSCI ACWI ex-US portfolio outperformed the unscreened MSCI ACWI ex-US Index in four calendar years, ranging from 21 bps in 2019 to 1,295 bps in 2022. In contrast, the SVB MSCI ACWI ex-US portfolio underperformed the unscreened index in five years, with underperformance ranging from 293 bps (2023) to 817 bps (2016).

On a cumulative basis over the entire 10-year period, the SVB MSCI ACWI ex-US portfolio returned 111.1%, while the unscreened MSCI ACWI ex-US Index returned 133.9%.

On an annualized basis, the SVB MSCI ACWI ex-US portfolio's return was 7.8% compared to the unscreened MSCI ACWI ex-US Index's return of 8.9%, resulting in 111 bps of underperformance over the period. The SVB MSCI ACWI ex-US portfolio's tracking error to the MSCI ACWI ex-US Index was significant over the period, at 6.17%.

Again, in the majority of calendar years over the observation period, the SVB MSCI ACWI ex-US portfolio substantially underperformed the unscreened market-cap weighted MSCI ACWI ex-US Index.

Calendar Year Returns

	SVB MSCI ACWI ex-US Portfolio	MSCI ACWI ex-US Index	Difference
2016	-3.01%	5.16%	-8.17%
2017	23.51%	27.92%	-4.41%
2018	-8.93%	-13.68%	4.75%
2019	22.45%	22.24%	0.21%
2020	5.11%	11.26%	-6.15%
2021	10.37%	8.38%	1.99%
2022	-2.54%	-15.49%	12.95%
2023	13.39%	16.31%	-2.93%
2024	0.81%	6.18%	-5.37%

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Screened Non-Optimized Backtested (SNO) Results

To determine how a portfolio comprised exclusively of the survivors of the USCCB screens would have performed over the backtested period, we created three hypothetical portfolios, each of which were screened but not optimized (SNO). For these purposes, we grossed the weighting of the survivors from the screening of each index back to 100% using their relative market capitalizations. Each SNO portfolio's performance and metrics were then measured in comparison to the unscreened indices during the review period.*

The Screened Non-Optimized (SNO) Weighting Approach Application to the S&P 500 Index

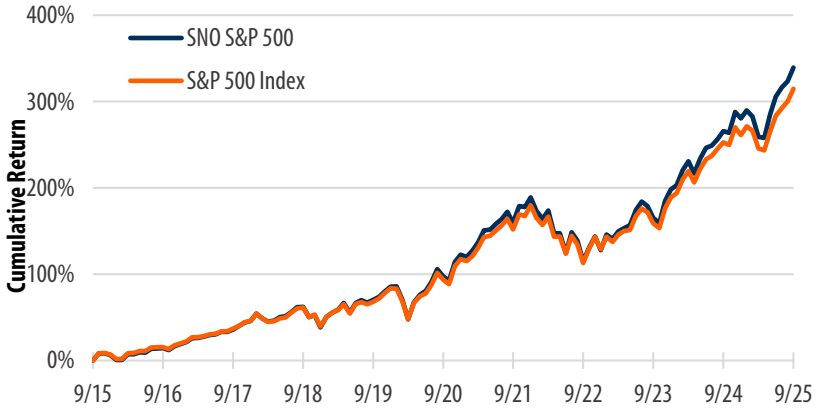
Of the nine calendar years in this study, the SNO S&P 500 portfolio underperformed the unscreened S&P 500 Index in two years: by 52 bps in 2018, and 306 bps in 2022. In contrast, the SNO S&P 500 portfolio outperformed the unscreened index in seven periods, with outperformance ranging from 24 bps (2016) to 472 bps (2023).

On a cumulative basis over the entire 10-year period, the SNO S&P 500 portfolio returned 339.3%, while the index returned 314.7%. Note that a significant portion of the weighting of the excluded index constituents was reallocated by the capitalization weighting process to the so-called Magnificent Seven ("Mag Seven"), which enjoyed outsized returns over this period.

On an annualized basis, the SNO S&P 500 portfolio's return was 15.9% compared to the index's 15.3%, for an average annualized difference of 0.67% over the period.

Chart 4, below, illustrates the cumulative differences through time.

Chart 4: Comparison of the S&P 500 Index vs. Screened, Non-Optimized S&P 500 Portfolio



Data from 9/30/2015 – 9/30/2025. Source for Index data: Bloomberg. Indexes are unmanaged and investors cannot invest directly in an index. The chart is for illustrative purposes only and not indicative of any investment. **Past performance is no guarantee of future results.**

Geometric Average Annualized Return (AAR)

Time Period	SNO S&P 500	S&P 500 Index	Difference
9/30/2015 - 9/30/2025	15.94%	15.27%	0.67%

Cumulative Return

Time Period	SNO S&P 500	S&P 500 Index	Difference
9/30/2015 - 9/30/2025	339.33%	314.73%	24.60%

	Excluded Names Index Weight	# of Names Excluded
12/31/2015	13.01%	35
12/30/2016	16.74%	42
12/29/2017	16.87%	41
12/31/2018	18.57%	46
12/31/2019	16.34%	45
12/31/2020	13.45%	49
12/31/2021	13.10%	55
12/30/2022	16.24%	53
12/29/2023	13.10%	53
12/31/2024	11.08%	52

Calendar Year Returns

	SNO S&P 500 Portfolio	S&P 500 Index	Difference
2016	12.19%	11.95%	0.24%
2017	22.42%	21.82%	0.60%
2018	-4.91%	-4.39%	-0.52%
2019	33.85%	31.48%	2.37%
2020	20.04%	18.39%	1.65%
2021	29.84%	28.68%	1.16%
2022	-21.19%	-18.12%	-3.06%
2023	30.98%	26.26%	4.72%
2024	27.57%	25.00%	2.58%

*Attribution provided herein was calculated using the Brinson and Fachler Total Return Attribution Model, which looks at the weighting difference of each security held in the screened and unscreened index. The weighting difference is then multiplied by the difference between return of a constituent held in the screened index and the return of the unscreened index.

Attribution is performed using First Trust's BOLT system. Daily returns are calculated based upon the previous day's holdings and do not include any constituent weighting increase or decrease on that day. In addition, performance calculation and attribution are calculated gross of any fees or trading expenses.

References to specific securities should not be construed as a recommendation to buy or sell and should not be assumed to be profitable.

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Over the 10-year period, the SNO S&P 500 portfolio had an alpha of 0.02 and a beta of 1.05 relative to the unscreened index. The Sharpe ratio for SNO S&P 500 portfolio was 0.87, versus 0.88 for the index. The R-Squared of the SNO S&P 500 portfolio relative to the unscreened index was 0.99. Up Capture and Down Capture ratios were 105 and 103, respectively. The tracking error of the SNO S&P 500 portfolio compared to the unscreened index was 1.5% over the period, a notable improvement over the SVB S&P 500 portfolio's tracking error of 9.13%.

As one might expect from the low beta, monthly and quarterly performance, measured at the extremes of best and worst months, remained similar. The worst monthly return for the SNO S&P 500 portfolio was -13.3% vs. -12.4% for the index; the worst quarter return for the SNO S&P 500 portfolio was -20.3% vs. -19.6% for the index. The best monthly return for the SNO S&P 500 portfolio was 13.3%, vs. 12.8 % for the index; the best quarter return for the SNO S&P 500 portfolio was 22.3% vs. 20.5% for the index.

The Screened Non-Optimized (SNO) Weighting Approach Application to the MSCI World Index

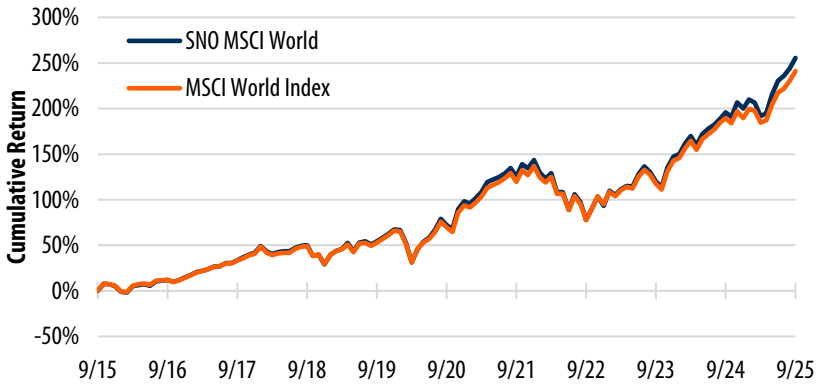
Of the nine calendar years in the back test, the SNO MSCI World portfolio underperformed the MSCI World Index in two years, by 70 bps (2018) and 286 bps (2022). The SNO MSCI World portfolio outperformed the index in seven periods, ranging from 46 bps (2017) to 336 bps (2023).

On a cumulative basis over the entire 10-year period, the SNO MSCI World portfolio returned 255.4%, while the index returned 241.1%. As with the S&P 500 Index, the USCCB screens did not detract from the MSCI World Index performance. Rather, excluding the USCCB violators added over 14% to the cumulative performance of the SNO MSCI World portfolio relative to the unscreened index during the period.

On an annualized basis, the SNO MSCI World portfolio's return was 13.5%, compared to the index's 13.0%, with an average annualized difference of 0.47% over the period.

Chart 5, below, illustrates the cumulative difference through time.

Chart 5: Comparison of the MSCI World Index vs. Screened, Non-Optimized MSCI World Portfolio



Data from 9/30/2015 – 9/30/2025. Source for Index data: Bloomberg. Indexes are unmanaged and investors cannot invest directly in an index. The chart is for illustrative purposes only and not indicative of any investment. **Past performance is no guarantee of future results.**

Geometric Average Annualized Return (AAR)

Time Period	SNO MSCI World	MSCI World Index	Difference
9/30/2015 - 9/30/2025	13.51%	13.04%	0.47%

Cumulative Return

Time Period	SNO MSCI World	MSCI World Index	Difference
9/30/2015 - 9/30/2025	255.44%	241.08%	14.36%

	Excluded Names Index Weight	# of Names Excluded
12/31/2015	13.83%	102
12/30/2016	15.22%	120
12/29/2017	15.32%	123
12/31/2018	17.19%	139
12/31/2019	16.00%	142
12/31/2020	14.21%	148
12/31/2021	13.73%	150
12/30/2022	16.49%	141
12/29/2023	14.30%	146
12/31/2024	12.41%	142

Calendar Year Returns

	SNO MSCI World Portfolio	MSCI World Index	Difference
2016	8.77%	8.21%	0.56%
2017	23.60%	23.14%	0.46%
2018	-8.86%	-8.16%	-0.70%
2019	29.70%	28.47%	1.23%
2020	18.36%	16.54%	1.82%
2021	22.95%	22.40%	0.54%
2022	-20.55%	-17.70%	-2.86%
2023	27.82%	24.47%	3.36%
2024	21.29%	19.23%	2.05%

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Over the 10-year period, the SNO MSCI World portfolio had an alpha of 0.0 and a beta of 1.0 relative to the unscreened index. Sharpe ratios for both were identical at 0.76. The R-Squared of the SNO MSCI World portfolio compared to the index was 0.99. Up Capture and Down Capture ratios were 105 and 103, respectively. The tracking error of the SNO MSCI World portfolio compared to the unscreened index was 1.3% over the period, a notable improvement over the SVB MSCI World portfolio's tracking error of 7.66%.

As the low beta suggests, monthly and quarterly performance extremes remained in sync. The worst monthly return for the SNO MSCI World portfolio was -14.1%, vs. -13.2% for the index; the worst quarter return for the SNO MSCI World portfolio was -21.7% vs -20.9% for the index. The best monthly return for the SNO MSCI World portfolio was 13.0%, vs 12.8% for the index; the best quarter return for the SNO MSCI World portfolio was 21.1% vs. 19.6% for the index.

The Screened Non-Optimized (SNO) Weighting Approach Application to the MSCI ACWI ex-US Index

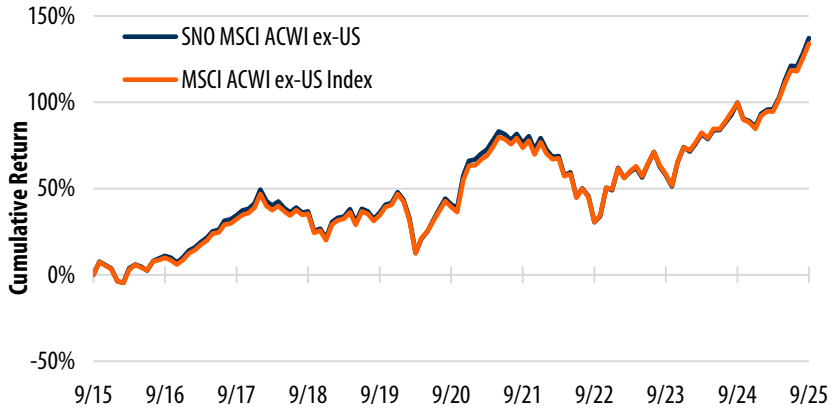
Of the nine calendar years in the back test, the SNO MSCI ACWI ex-US portfolio underperformed the index in four years: 2018 (65bps), 2019 (9 bps), 2021 (44 bps) and 2022 (139 bps). The SNO MSCI ACWI ex-US portfolio outperformed the index in five calendar years, ranging from 43 bps (2023) to 105 bps (2016).

On a cumulative basis over the entire 10-year period, the SNO MSCI ACWI ex-US portfolio returned 137.1%, while the index returned 133.9%. Excluding the USCCB violators added a margin of 319 bps to the cumulative performance of the SNO MSCI ACWI ex-US portfolio relative to that of the index over the period.

On an annualized basis, the SNO MSCI ACWI ex-US portfolio's return was 9.0%, compared to the index's 8.9%, for an average annualized difference of 15 bps over the period.

Chart 6, below, illustrates the cumulative difference through time.

Chart 6: Comparison of the MSCI ACWI ex-US Index vs. Screened, Non-Optimized MSCI ACWI ex-US Portfolio



Data from 9/30/2015 – 9/30/2025. Source for Index data: Bloomberg. Indexes are unmanaged and investors cannot invest directly in an index. The chart is for illustrative purposes only and not indicative of any investment. **Past performance is no guarantee of future results.**

	Excluded Names Index Weight	# of Names Excluded
12/31/2015	13.45%	107
12/30/2016	12.55%	128
12/29/2017	12.42%	132
12/31/2018	14.13%	166
12/31/2019	14.21%	167
12/31/2020	13.43%	166
12/31/2021	13.57%	163
12/30/2022	14.99%	164
12/29/2023	14.45%	167
12/31/2024	12.97%	163

Geometric Average Annualized Return (AAR)

Time Period	SNO MSCI ACWI ex-US	MSCI ACWI ex-US Index	Difference
9/30/2015 - 9/30/2025	9.01%	8.86%	0.15%

Cumulative Return

Time Period	SNO MSCI ACWI ex-US	MSCI ACWI ex-US Index	Difference
9/30/2015 - 9/30/2025	137.11%	133.93%	3.19%

Calendar Year Returns

	SNO MSCI ACWI ex-US Portfolio	MSCI ACWI ex-US Index	Difference
2016	6.21%	5.16%	1.05%
2017	28.42%	27.92%	0.50%
2018	-14.34%	-13.68%	-0.65%
2019	22.15%	22.24%	-0.09%
2020	12.25%	11.26%	0.99%
2021	7.94%	8.38%	-0.44%
2022	-16.89%	-15.49%	-1.39%
2023	16.75%	16.31%	0.43%
2024	6.84%	6.18%	0.66%

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Over the 10-year period, the monthly and quarterly performance for the SNO MSCI ACWI ex-US portfolio remained within reasonable bounds relative to the unscreened index, despite the lack of optimization. Over the period, the SNO MSCI ACWI ex-US portfolio had an alpha of 0.01 and a beta of 1.03 relative to the index. Sharpe ratios for both were identical 0.51. The R-Squared of the SNO MSCI ACWI ex-US portfolio relative to the index was 1.0. Up Capture and Down Capture ratios were 103 and 102, respectively. The tracking error of the SNO MSCI ACWI ex-US portfolio compared to the unscreened index was 1.0%, a notable improvement over the SVB MSCI ACWI ex-US portfolio's tracking error of 6.17%.

The best and worst monthly performance as well as the best and worst quarter performance were close matches. The worst monthly return for the SNO MSCI ACWI ex-US portfolio was -15.1%, vs. -14.4% for the index; the worst quarter return for the SNO MSCI ACWI ex-US portfolio was -23.8% vs -23.3% for the index. The best monthly return for the SNO MSCI ACWI ex-US portfolio was 13.4%, vs 13.5% for the index; the best quarter return was 18.0% for the SNO MSCI ACWI ex-US portfolio vs 17.1%, for the index.

Screened & Optimized Back Test (S&O) Results

We performed a third series of back tests on the USCCB screens, the Screened & Optimized (S&O) portfolios. In these back tests, instead of applying market cap weighting to the screen survivors, the screened portfolios were optimized to determine the constituent weightings that would constitute the lowest tracking error between the screened portfolios and the unscreened indexes. Our objective was to see whether we could use this approach to reduce the periodic performance differences between the S&O portfolios and the unscreened indexes. Our findings showed that optimization can potentially reduce the tracking error of the survivor portfolios to their respective benchmarks, albeit with a cost in performance.

The Screened & Optimized (S&O) Weighting Approach Application to the S&P 500 Index

Of the nine calendar years in the study, the S&O S&P 500 portfolio underperformed the unscreened S&P 500 index in three years, ranging from 28 bps in 2020 to 99 bps in 2022. Note that the S&O S&P 500 portfolio, unlike the SNO S&P 500 portfolio, did not underperform in 2018 but, like the SNO S&P 500 portfolio, did underperform in 2022; however, the amount of the S&O S&P 500 portfolio's underperformance in 2022 was about two-thirds less (-99 bps vs -306 bps). This demonstrates the potential benefit of a closer tracking error.

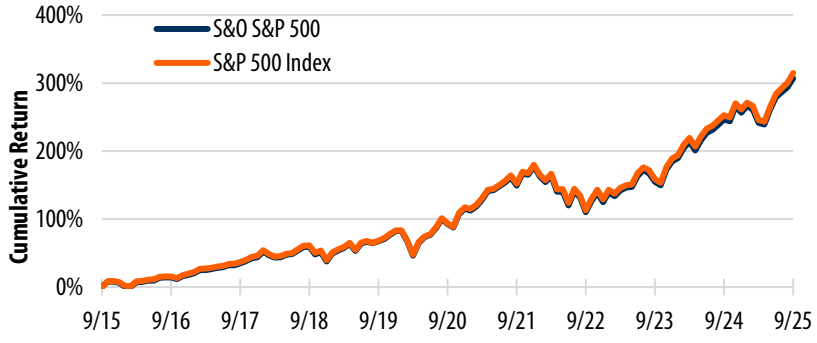
The S&O S&P 500 portfolio's return equaled or exceeded that of the index in six calendar years; however, due to the performance of the optimizer, its outperformance was muted. Excess annual returns ranged from 1 bp in 2017, a small fraction of the 60 bps of outperformance by the SNO S&P 500 portfolio that year, to 68 bps in 2023, or 14% of the SNO S&P 500 portfolio's 472 bps of outperformance that year.

On a cumulative basis over the entire 10-year period, the S&O S&P 500 portfolio returned 306.9%, while the unscreened index returned 314.7%. Recall the screened but market-cap weighted portfolio outperformed the index by 2,460 bps cumulatively, a wide performance disparity. Optimizing the portfolio reduced the cumulative performance difference to the index by two-thirds, with a cumulative difference of -783 bps.

On an annualized basis, the S&O S&P 500 portfolio's return was 15.1% compared to the index's 15.3%, for an average annualized difference of -22 bps. The optimizer may be thought of as minimizing the monthly differences between the screened portfolio and the index: in this period, the optimizer incurred a modest cost differential to the index of 22 bps.

Chart 7, below, illustrates the cumulative difference through time.

Chart 7: Comparison of the S&P 500 Index vs. Screened & Optimized S&P 500 Portfolio



Calendar Year Returns

	S&O S&P 500 Portfolio	S&P 500 Index	Difference
2016	11.35%	11.95%	-0.60%
2017	21.83%	21.82%	0.01%
2018	-4.16%	-4.39%	0.24%
2019	32.15%	31.48%	0.67%
2020	18.11%	18.39%	-0.28%
2021	29.02%	28.68%	0.34%
2022	-19.11%	-18.12%	-0.99%
2023	26.94%	26.26%	0.68%
2024	25.15%	25.00%	0.15%

Data from 9/30/2015 – 9/30/2025. Source for Index data: Bloomberg. The chart is for illustrative purposes only and not indicative of any investment. Indexes are unmanaged and investors cannot invest directly in an index. **Past performance is no guarantee of future results.**

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Geometric Average Annualized Return (AAR)

Time Period	S&O S&P 500	S&P 500 Index	Difference
9/30/2015 - 9/30/2025	15.05%	15.27%	-0.22%

Cumulative Return

Time Period	S&O S&P 500	S&P 500 Index	Difference
9/30/2015 - 9/30/2025	306.91%	314.73%	-7.83%

Over the 10-year period, the S&O S&P 500 portfolio performed well at minimizing performance differences across a variety of MPT metrics. The S&O S&P 500 portfolio had an alpha of -0.24 and a beta of 1 relative to the index. The Sharpe ratio for the S&O S&P 500 portfolio was 0.86 compared to 0.88 for the index. The R-Squared of the S&O S&P 500 portfolio relative to the index was 1.0. Up Capture and Down Capture ratios were 100 and 101, respectively. The worst monthly return for the S&O S&P 500 portfolio was -12.7%, vs. -12.4% for the index; the worst quarter return for the S&O S&P 500 portfolio was -19.7% vs -19.6% for the index. The best monthly return for the S&O S&P 500 portfolio was 12.7%, vs. 12.8% for the index; the best quarter return for the S&O S&P 500 portfolio was 20.9% vs 20.5% for the index.

The Screened & Optimized (S&O) Weighting Approach Application to the MSCI World Index

Of the nine calendar years in the study, the optimized S&O MSCI World portfolio underperformed the MSCI World Index in five years, ranging from 1 bp (2018) to 136 bps in 2022. Recall the SNO MSCI World portfolio underperformed in 2018 by 70 bps, while the S&O MSCI World portfolio underperformed that year by 1 bp. Both iterations of the MSCI World screened survivors portfolios underperformed the index in 2022, but the optimizer reduced the underperformance from 286 bps to 136 bps.

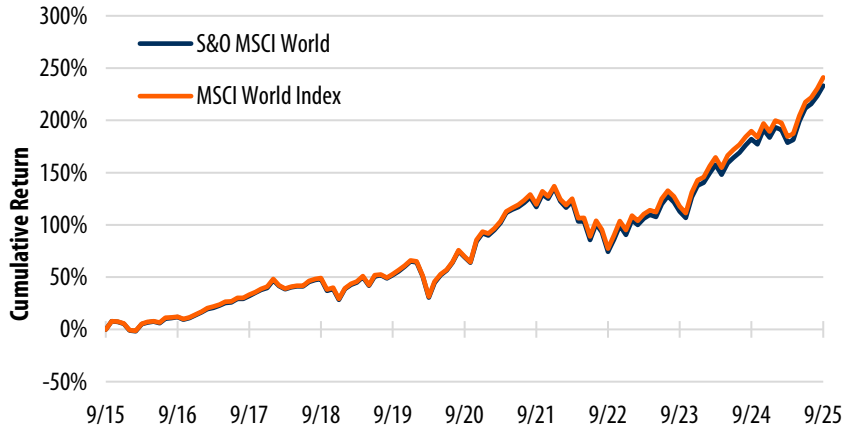
The S&O MSCI World portfolio outperformed the index in four calendar years, with outperformance ranging from 13 bps (2024) to 18 bps (2023). This is considerably less than the SNO MSCI World portfolio's range of outperformance, which extended from a low of 46 bps to a high of 336 bps. Again, the optimizer reduced performance differences.

On a cumulative basis over the 10-year period, the S&O MSCI World portfolio returned 233.2%, while the index returned 241.1%. As with the S&O S&P 500 portfolio, the monthly performance differences in the S&O MSCI World portfolio were significantly dampened relative to the SNO MSCI World portfolio, to the point of detracting slightly from overall performance.

On an annualized basis, the S&O MSCI World portfolio returned 12.8%, compared to 13.0% for the index, for an average annualized difference of -26 bps.

Chart 8, below, illustrates the cumulative difference through time.

Chart 8: Comparison of the MSCI World Index vs. Screened & Optimized MSCI World Portfolio



Calendar Year Returns

	S&O MSCI World Portfolio	MSCI World Index	Difference
2016	7.84%	8.21%	-0.37%
2017	22.99%	23.14%	-0.15%
2018	-8.16%	-8.16%	-0.01%
2019	28.62%	28.47%	0.16%
2020	16.41%	16.54%	-0.13%
2021	22.57%	22.40%	0.17%
2022	-19.06%	-17.70%	-1.36%
2023	24.64%	24.47%	0.18%
2024	19.36%	19.23%	0.13%

Data from 9/30/2015 – 9/30/2025. Source for Index data: Bloomberg. The chart is for illustrative purposes only and not indicative of any investment. Indexes are unmanaged and investors cannot invest directly in an index. **Past performance is no guarantee of future results.**

Geometric Average Annualized Return (AAR)

Time Period	S&O MSCI World	MSCI World Index	Difference
9/30/2015 - 9/30/2025	12.78%	13.04%	-0.26%

Cumulative Return

Time Period	S&O MSCI World	MSCI World Index	Difference
9/30/2015 - 9/30/2025	233.17%	241.08%	-7.91%

Over the 10-year period, due to the optimization technique, MPT metrics were closely aligned. The S&O MSCI World portfolio had an alpha of -0.25 and a beta of 1.0 relative to the index. The Sharpe ratio for the S&O MSCI World portfolio and the index were 0.75 and 0.76, respectively. The R-Squared of the S&O MSCI World portfolio compared to the index was 1.0. Up Capture and Down Capture ratios were 100 and 101, respectively. The tracking error of the S&O MSCI World portfolio compared to the index was 0.59% over the period. It is important to note the tracking error of the S&O MSCI World portfolio was less than half (44.7%) that of the SNO MSCI World portfolio (1.32%) and less than 8% of that of the SVB MSCI World portfolio (7.66%).

As the low beta suggests, the worst monthly return for the S&O MSCI World portfolio was -13.37%, vs. -13.17% for the index; the worst quarterly return for the S&O MSCI World portfolio was -20.90% in-line with the index's -20.94%. The best monthly return for the S&O MSCI World portfolio was 12.39%, vs. 12.83% for the index; the best quarterly return for the S&O MSCI World portfolio was 19.62% vs 19.57% for the index.

The Screened & Optimized (S&O) Weighting Approach Application to the MSCI ACWI ex-US Index

Of the nine calendar years in the back test, the S&O MSCI ACWI ex-US portfolio underperformed the MSCI ACWI es-US Index in six annual periods, ranging from 42 bps (2018) to 210 bps (2017). In contrast, the SNO MSCI ACWI ex-US portfolio underperformed the index in four calendar years, ranging from 9 bps (2019) to 139 bps (2022).

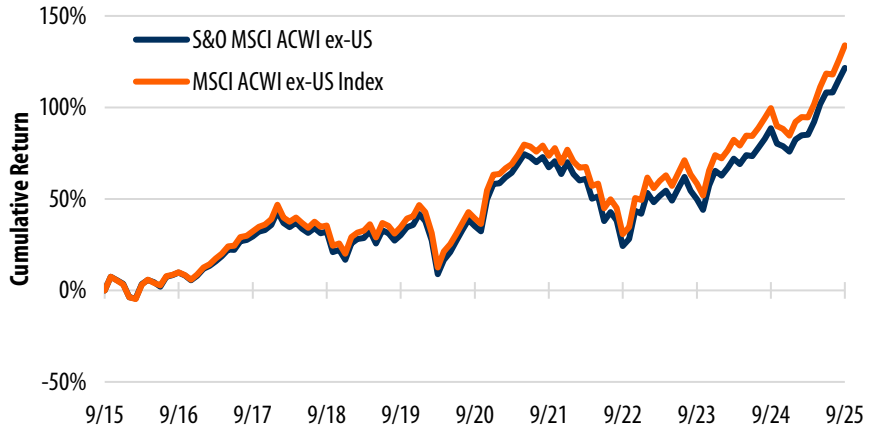
The S&O MSCI ACWI ex-US portfolio outperformed the index in three calendar years, with relative performance ranging from a low of 14 bps (2024) to a high of 40 bps (2020). Recall the SNO MSCI ACWI ex-US portfolio outperformed the unscreened index in five calendar years, ranging from a low of 43 bps (2023) to a high of 105 bps (2016).

On a cumulative basis over the entire 10-year period, the S&O MSCI ACWI ex-US portfolio returned 121.6%, while the index returned 133.9%.

On an annualized basis, the S&O MSCI ACWI ex-US portfolio returned 8.3%, compared to 8.9% for the index, with an average annualized difference of -0.59%. The tracking error of the S&O MSCI ACWI ex-US portfolio compared to the index was 0.79%, measurably less than the 1.04% tracking error of the SNO MSCI ACWI ex-US portfolio.

Chart 9, below, illustrates the cumulative difference through time.

Chart 9: Comparison of the MSCI ACWI ex-US Index vs Screened & Optimized MSCI ACWI ex-US Portfolio



Calendar Year Returns

	S&O MSCI ACWI ex-US Portfolio	MSCI ACWI ex-US Index	Difference
2016	4.15%	5.16%	-1.01%
2017	25.82%	27.92%	-2.10%
2018	-14.10%	-13.68%	-0.42%
2019	21.42%	22.24%	-0.83%
2020	11.66%	11.26%	0.40%
2021	7.54%	8.38%	-0.84%
2022	-16.64%	-15.49%	-1.14%
2023	16.54%	16.31%	0.23%
2024	6.32%	6.18%	0.14%

Data from 9/30/2015 – 9/30/2025. Source for Index data: Bloomberg. The chart is for illustrative purposes only and not indicative of any investment. Indexes are unmanaged and investors cannot invest directly in an index. **Past performance is no guarantee of future results.**

Geometric Average Annualized Return (AAR)

Time Period	S&O MSCI ACWI ex-US	MSCI ACWI ex-US Index	Difference
9/30/2015 - 9/30/2025	8.27%	8.86%	-0.59%

Cumulative Return

Time Period	S&O MSCI ACWI ex-US	MSCI ACWI ex-US Index	Difference
9/30/2015 - 9/30/2025	121.59%	133.93%	-12.34%

Over the 10-year period, the S&O MSCI ACWI ex-US portfolio demonstrated a negative alpha (-0.53) and a beta of 1.0 relative to the MSCI ACWI ex-US Index. Sharpe ratios for the S&O MSCI ACWI ex-US portfolio and the index were 0.48 and 0.51, respectively. The R-Squared of the S&O MSCI ACWI ex-US portfolio compared to the index was 1.0. Up Capture and Down Capture ratios were 99 and 101, respectively. The tracking error of the S&O MSCI ACWI ex-US portfolio compared to the index was 0.79% over the period, representing a reduction in tracking error over the SNO MSCI ACWI ex-US portfolio of 24% (from 1.04%) and less than 13% of that of the SVB MSCI ACWI ex-US portfolio (6.17%).

Again, the S&O MSCI ACWI ex-US portfolio did not show material periodic differences compared to the MSCI ACWI ex-US Index. The worst monthly return for the S&O MSCI ACWI ex-US portfolio was within 6 bps of the index at -14.46% vs -14.40%, respectively; the worst quarterly return for the S&O MSCI ACWI ex-US portfolio was -23.13% vs -23.27% for the index. The best monthly return for the S&O MSCI ACWI ex-US portfolio was 13.15%, vs. 13.47% for the index, a difference of only 32 bps; the best quarterly return for the S&O MSCI ACWI ex-US portfolio was 17.16% vs 17.13% for the index, or 3 bps.

Analysis

Performance of the six hypothetic screened survivor portfolios over the 10-year period demonstrated Catholics may remove the USCCB violators and still see that average annualized performance may not be materially different than their respective indices. The USCCB Screened Violators Basket (SVB) of stocks materially underperformed their respective indices, with average annualized underperformance ranging from -111 bps (SVB MSCI ACWI ex-US) to -459 bps (SVB S&P 500) over the period. Given the weightings of the violators in their relative indices, the impact of their underperformance on the indices ranged from -15 bps (SVB MSCI ACWI ex-US) to -69 bps (SVB S&P 500).

Table 1: SVB Portfolio Average Annualized Return Difference to Index and Impact of Exclusion by Weight in Index

Portfolio	S&P 500	MSCI World	MSCI ACWI ex-US
SVB Return vs Index	-459 bps	-353 bps	-111 bps
Avg Weight in Index	14.9%	14.9%	13.6%
Weighted Impact	-68 bps	-53 bps	-15 bps

MPT statistics for both the Screened and Non-Optimized (SNO) and the Screened & Optimized (S&O) portfolios indicated close correlations to their respective indices, indicated by the high beta and R-Squared coefficients and the close matching of monthly and quarterly tails (best & worst) performance. Clearly, eliminating the USCCB screen violators from portfolios did not impair the performance of the screened portfolios.

Tracking errors of the SNO portfolios relative to their respective indices were between 125% and 250% higher than those for the S&O portfolios, demonstrating higher tracking error without optimizations. The table below displays a comparison of tracking errors across all six screened survivor portfolios.

Table 2: Screened Survivor Portfolios' Tracking Error Compared to Indices

Portfolio	S&P 500	MSCI World	MSCI ACWI ex-US
SNO	1.5%	1.3%	1.0%
S&O	0.6%	0.6%	0.8%
SNO / S&O	250%	217%	125%

Data from 9/30/2015 – 9/30/2025. Source for Index data: Bloomberg. The tables are for illustrative purposes only and not indicative of any investment. Indexes are unmanaged and investors cannot invest directly in an index. **Past performance is no guarantee of future results.**

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Over the 10-year period, the average annualized returns of the SNO portfolios exceeded those of their respective indices by between 15 bps (MSCI ACWI ex-US) and 67 bps (S&P 500). While the S&O portfolios' lower tracking errors reduced their range of performance disparity, it cost the portfolios between 22 bps (S&P 500) and 59 bps (MSCI ACWI ex-US) in performance relative to their respective indices. Note that this underperformance is not due to eliminating the USCCB violators, but rather, to the optimization process over this period. Given the resulting tracking errors, the amount of performance disparity in the future could just as easily be positive as negative. The table below displays a comparison of return differences to indices across all six screened survivor portfolios.

Table 3: Screened Survivor Portfolios' Annualized Return Differences to Indices

Portfolio	S&P 500	MSCI World	MSCI ACWI ex-US
SNO	67 bps	47 bps	15 bps
S&O	-22 bps	-26 bps	-59 bps

Data from 9/30/2015 – 9/30/2025. Source for Index data: Bloomberg. The tables are for illustrative purposes only and not indicative of any investment. Indexes are unmanaged and investors cannot invest directly in an index. **Past performance is no guarantee of future results.**

An obvious benefit to the SNO portfolios in this period was the boost provided by re-weighting the surviving index constituents based on market cap, including the Mag Seven. Over the 10-year period, the extra average allocation from removing the violators (14.9% in both the SNO S&P 500 and SNO MSCI World) was a strategy that paid off.

One drawback to the market-cap-weighting approach is it may create unintentional, and sometimes unwanted, concentrations. For instance, with the SNO S&P 500 portfolio, the Mag Seven, already at 33.5% weighting in the S&P 500 Index as of 12/31/2024, received an additional 4.2% weight through the market-cap weighting process. Similarly, in the SNO MSCI World portfolio, the Mag Seven, already at a 23.9% weight in the MSCI World Index as of 12/31/2024, received an additional 3.4% weight through the market-cap weighting process. The increased allocation to the Mag Seven stocks over this period, was favorable. However, re-allocations made based on market-cap weights are not systematic and are not a guarantee of additional performance.

An additional drawback with market-cap weighing is the logistical problem of holding and rebalancing large numbers of market-cap weighted stocks, such as presented in the S&P 500, the MSCI World and the MSCI ACWI ex-US indices. These indices contained 503, 1,320 and 1,965 stocks, respectively, as of 9/30/25: after removing the USCCB screen violators (48, 135, and 160 violators, respectively) they held 455, 1,185 and 1,805 stocks, respectively. The table below shows the largest and smallest percentage allocation to any constituent stock in each of the screened portfolios as of 9/30/25.

% Allocation in Index	SNO S&P 500	SNO MSCI World	SNO MSCI ACWI ex-US
Number of Post-Screen Constituents	455	1,185	1,805
Largest Allocation	8.88% (NVIDIA Corporation)	6.41% (NVIDIA Corporation)	3.79% (Taiwan Semiconductor Manufacturing Company Limited)
Smallest Allocation	0.0084% (News Corporation)	0.0025% (BCE Inc.)	0.0006% (Hangzhou Tigermed Consulting Co., Ltd.)

Screened and market-cap weighted portfolios with allocations of this extraordinarily small size to their smallest constituent require significant assets under management to ensure effective trading and rebalancing.

The S&O portfolios benefited from close correlations and reasonably tight tracking errors to the respective indices. One drawback of the optimization technique is that it works by replacing violators with stocks that have similar performance and other characteristics, in an attempt to restore the closest possible alignment with the index before exclusions. Thus, if the SVB portfolio underperforms its respective index, as it did in this period, the optimizer will tend to replace the exclusions with stocks that performed similarly. This can create underperformance, as witnessed here. However, the opposite effect may be anticipated if the SVB portfolio outperforms its respective index. Another potential benefit of the screened and optimized portfolios is their ease of implementation: a strategic sampling of 350-500 securities is typically employed to avoid the logistical problems of holding and rebalancing large numbers of stocks with small allocations.

References to specific securities should not be construed as a recommendation to buy or sell and should not be assumed to be profitable.

Conclusions

We find portfolios comprised entirely of USCCB screened violators performed materially worse than their respective unscreened indices over the period. In creating screened portfolios of USCCB survivors, investors comfortable with higher tracking errors to the unscreened indices may wish to market-cap weight survivors, while investors seeking lower tracking errors may wish to optimize survivors. Our 10-year analysis of the USCCB screen guideline's impact on broad-based indexes showed that the screened and market-cap weighted portfolios modestly outperformed the unscreened indices, while the screened and optimized portfolios modestly underperformed the unscreened indices.

Regardless of approach, Catholic investors may follow the USCCB screen guidelines and potentially earn returns not materially different from the respective unscreened index. The specific magnitude of out- or underperformance shown here is a function of this decade's market leadership and should not be viewed as a permanent feature of faith-based screening.

Important Disclosure

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[1] Socially Responsible Investment Guidelines for the United States Conference of Catholic Bishops, (USCCB 2021), developed by the Committee on Budget and Finance of the United States Conference of Catholic Bishops (USCCB), and approved by the full body of the USCCB at its November 2021 General Meeting.

[2] Note that the USCCB's Guidance recommends two additional screens not provided by the database used in this backtest. These are screens to exclude companies utilizing in vitro fertilization (IVF) for assisting conception or research (USCCB Policy I.3), and screens to exclude companies that directly participate in the performance of surgeries or in the administration of drugs or hormones, for the purposes of delaying normal puberty or modifying the body's appearance and/or functions, to express an identity incongruent with one's biological sex (USCCB Policy II.8). The database employed for this study identified no publicly held company in any of the three benchmarks which violate the IVF exclusion policy (USCCB Policy I.3). Examining two competing databases, however, we find four securities which violate this policy in one or more of the three benchmarks; however, each is excluded by a separate screen. In addition, the database employed for this study identified no publicly held company violating the gender reassignment surgery and drugs exclusion policy (USCCB Policy II.8) which is not excluded by a separate screen. Examining two competing databases, however, we find one publicly held company not excluded by the database, Ipsen SA, which violates this policy and is held at 0.006% of the ACWI ex-US index. For purposes of this backtest, we determined the absence of these two screens present no material issues impacting the outcome of our study.

[3] USCCB (2021), Policy I. 1.

[4] USCCB (2021), Policy II.1b

[5] USCCB (2021), Policy III.1

[6] USCCB (2021), Policy V.9

[7] USCCB (2021), Policy I.4

[8] USCCB (2021), Policy II.5

[9] USCCB (2021), Policy V.5b

[10] USCCB (2021), Policy II.11

[11] USCCB (2021), Policy V.5a

[12] USCCB (2021), Policy II.1

[13] USCCB (2021), Policy III.3

Definitions

Beta: a measure of a portfolio's volatility (systematic risk) compared to an appropriate benchmark index.

Alpha: a measure of performance of a portfolio after adjusting for risk

Sharpe Ratio: quantifies risk-adjusted performance by measuring the excess return per unit of risk. A higher Sharpe Ratio suggests better risk-adjusted performance.

Upside Capture Ratio: indicates a portfolio's performance in up-markets. For example, a ratio of 120 indicates that a portfolio performed 20% better than the benchmark in up-markets for a specified period.

Downside Capture Ratio: indicates a portfolio's performance in down-markets. For example, a ratio of 80 indicates that a portfolio declined only 80% as much as the benchmark in down-markets for a specified period.

Tracking Error ("TE"): A statistical measure used to determine how a portfolio's returns correlate with its benchmark returns based on the portfolio's current factor exposures and security concentrations relative to the benchmark. TE is calculated using a risk model that applies statistical techniques to model risk factor returns. A lower TE signifies closer alignment with the benchmark. TE does not predict or project the portfolio's future absolute returns. The reliability of the measure depends on the accuracy and completeness of the input data and is subject to limitations in the risk model's methodology or assumptions, which may impact the precision of its predictions.

R-Squared: indicates whether the comparison index is an appropriate benchmark based on correlation. Generally, an R-Squared above 70 is desirable.

Magnificent Seven ("Mag Seven"): refers to a group of seven major tech companies that have influenced the stock market. The companies are Alphabet (Google), Amazon, Apple, Meta Platforms (Facebook), Microsoft, Nvidia, and Tesla.