



CRSP[®] MARKET INDEXES

US MARKET UPDATE

DECEMBER 2022

CRSP[®] | **CENTER FOR RESEARCH
IN SECURITY PRICES, LLC**
An Affiliate of the University of Chicago Booth School of Business

ABOUT CRSP



Dean Lorie and Professor Lawrence Fisher
Established CRSP in 1960

As an affiliate of The University of Chicago Booth School of Business, the Center for Research in Security Prices LLC (CRSP) has been driving financial innovation since its founding in 1960.

For over 60 years, CRSP has been the premier provider of the world's first and most comprehensive resource for historical security prices and returns information, offering scholars and market participants data of the highest integrity and transparency to ensure the strongest foundation for economic forecasting, stock market research and financial analysis conducted by academic organizations, investment banks, brokerage firms, corporations and government agencies.

CRSP data has led to the transformation of the world of finance, illuminating the benefits of investments in equities, providing understanding of factors such as value, size and momentum, exploring the benefits of passive investing vs. active management, and contributing to the ongoing improvement of investor outcomes and the development of the modern financial ecosystem and investment industry.

Today, more than 500 leading academic institutions in 35 countries rely on CRSP data for academic research and to support classroom instructions.

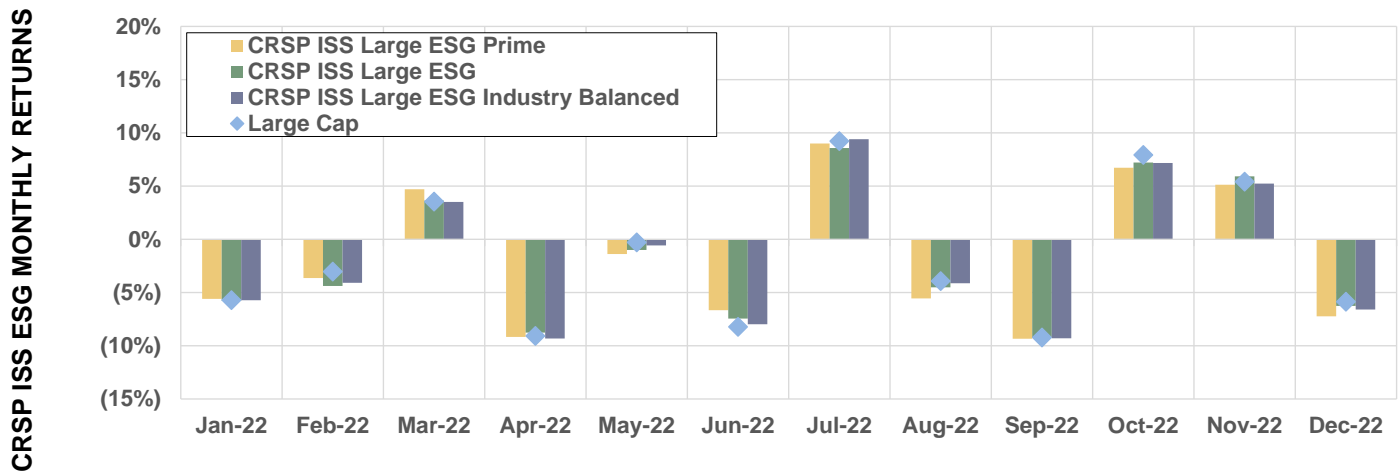
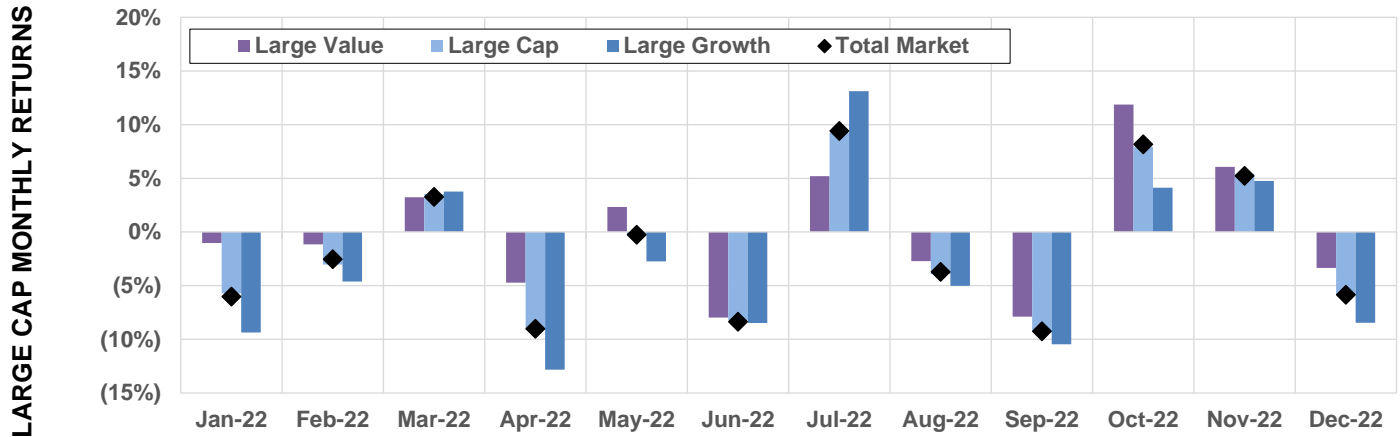
CRSP[®]
LLC
**RESEARCH
PRODUCTS**

CRSP[®]
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**MARKET
INDEXES**

CRSP has been producing indexes since 1966, helping academics and practitioners understand and research the trends in the financial markets. Drawing on this expertise, in 2011 CRSP designed and launched the CRSP Market Indexes (CRSPMI) product line to provide a comprehensive suite of efficient, transparent and representative benchmarks covering the entire U.S. equity marketplace.

The CRSPMI products are anchored by the flagship CRSP Total Market Index (CRSPTM1), which provides investors with a consistently holistic and representative benchmark for the entire qualifying U.S. equity market. Building from this, the CRSPMI suite further expands to offer investors a wide selection of market capitalization indexes (Micro, Small, Mid, Large, Mega) supplemented with a broad offering of Value and Growth styles, Sectors, and ESG benchmarks.

U.S. MARKET FOR THE PAST 12 MONTHS



SECTOR INDEXES MONTHLY RETURNS

	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22
Technology	(8.57%)	(4.75%)	2.81%	(12.93%)	(2.09%)	(9.23%)	11.49%	(5.66%)	(12.18%)	4.61%	5.74%	(8.34%)
Telecom	(6.67%)	(1.65%)	(0.21%)	(11.82%)	4.77%	(6.48%)	3.33%	(2.19%)	(13.71%)	11.54%	4.14%	(5.91%)
Health Care	(8.41%)	(0.93%)	5.14%	(6.18%)	0.61%	(2.08%)	3.91%	(5.41%)	(3.08%)	8.82%	4.44%	(1.86%)
Financials	(0.88%)	(1.53%)	(0.21%)	(10.38%)	3.31%	(10.51%)	7.52%	(2.03%)	(7.68%)	11.95%	6.19%	(5.70%)
Real Estate	(8.29%)	(3.86%)	6.45%	(4.24%)	(4.57%)	(7.38%)	8.81%	(5.94%)	(12.62%)	3.82%	6.06%	(5.10%)
Consumer Discretionary	(10.05%)	(2.75%)	2.94%	(12.60%)	(5.29%)	(10.68%)	16.64%	(3.44%)	(8.48%)	3.58%	2.19%	(10.46%)
Consumer Staples	0.38%	(1.00%)	0.41%	2.88%	(1.80%)	(3.40%)	2.03%	(0.89%)	(8.17%)	9.73%	5.62%	(2.16%)
Industrials	(5.31%)	(3.21%)	1.93%	(7.63%)	(0.47%)	(8.88%)	11.09%	(3.89%)	(10.56%)	12.67%	6.65%	(3.97%)
Basic Materials	(7.13%)	2.13%	8.61%	(5.27%)	1.40%	(14.83%)	6.51%	(2.88%)	(9.94%)	10.25%	10.79%	(5.36%)
Energy	15.24%	7.78%	10.26%	(2.46%)	14.80%	(16.76%)	11.42%	3.65%	(9.43%)	23.07%	1.57%	(4.47%)
Utilities	(4.06%)	(1.91%)	9.89%	(3.82%)	3.44%	(5.05%)	6.09%	0.66%	(10.42%)	2.33%	7.06%	(1.64%)

Note: Data as of 12/30/2022; monthly total returns are used; CRSP US Sector Indexes monthly total returns are for constrained indexes, meaning that securities' weights within sector indexes are adjusted to comply with IRS Regulated Investment Company rules; CRSP U.S. Sector Indexes based on Enhanced FTSE ICB® (EICB) methodology are used for returns after 6/7/2020; CRSP U.S. Sector Indexes based on FTSE ICB® methodology are used for returns prior to 6/5/2020. For more details on pairing between EICB-based and ICB-based CRSP U.S. Sector Indexes refer to our [white paper](#) and [public announcement](#); Prior to 9/7/2021 the CRSP ISS ESG Indexes return series is based on a backtest

CRSP U.S. CAP AND STYLE INDEXES PERFORMANCE

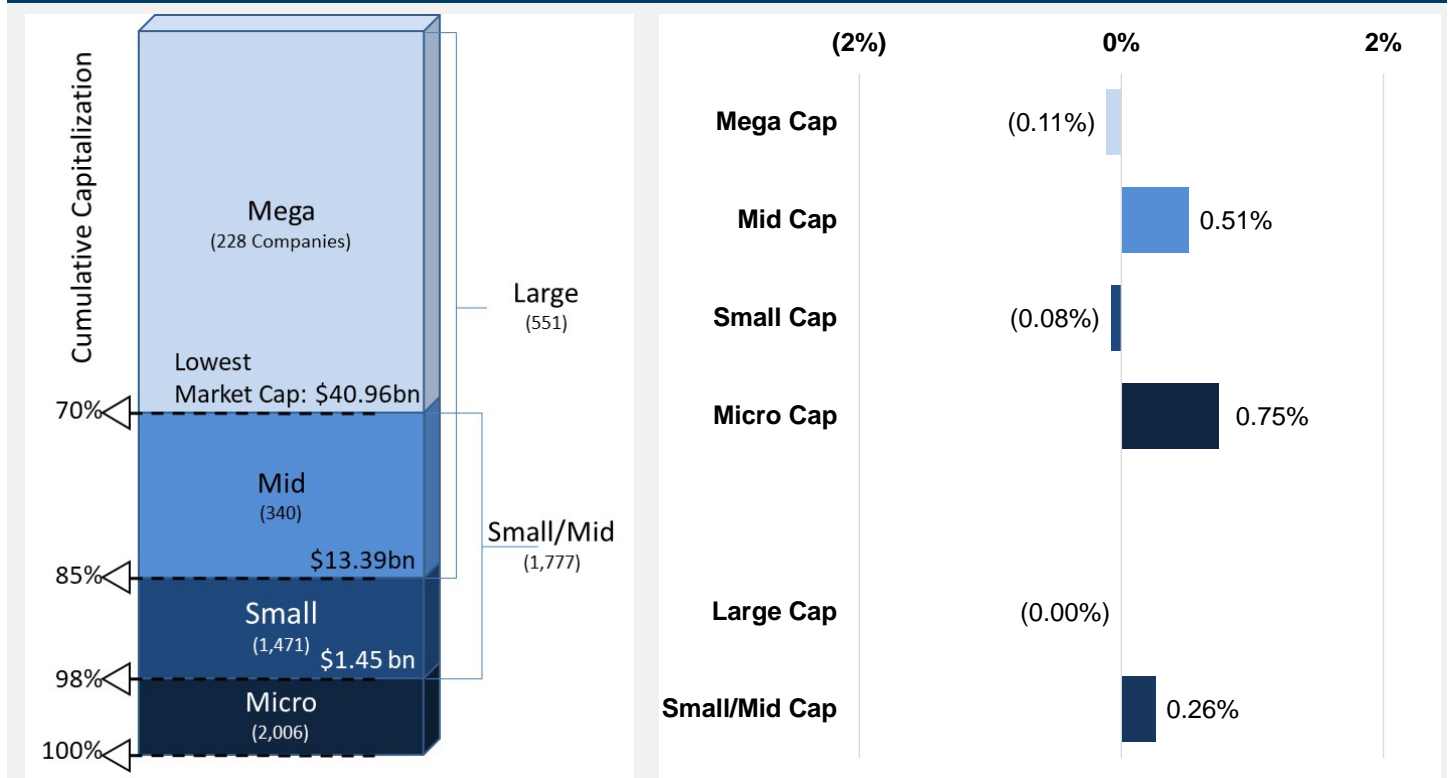
CRSP U.S. Cap and Style Indexes Performance

Category	Index Name	Count	Float-Adjusted Market Cap (\$M)	Return for					
				1 Month	3 Months	YTD	1 Year	3 Years	5 Years
Total Market	CRSP U.S. Total Market	3,929	\$37,655,781	(5.87%)	7.15%	(19.49%)	(19.49%)	6.99%	8.73%
Cap	CRSP U.S. Mega Cap	228	\$26,942,701	(5.98%)	6.67%	(19.88%)	(19.88%)	7.51%	9.55%
	CRSP U.S. Mid Cap	340	\$5,836,903	(5.35%)	9.03%	(18.68%)	(18.68%)	6.19%	7.34%
	CRSP U.S. Small Cap	1,471	\$4,343,037	(5.95%)	7.95%	(17.64%)	(17.64%)	4.90%	5.92%
	CRSP U.S. Micro Cap	2,006	\$533,140	(5.12%)	4.52%	(23.75%)	(23.75%)	2.53%	3.39%
	CRSP U.S. Large Cap	551	\$32,779,604	(5.87%)	7.08%	(19.67%)	(19.67%)	7.32%	9.20%
	CRSP U.S. Small Mid Cap	1,777	\$10,179,940	(5.61%)	8.57%	(18.24%)	(18.24%)	5.62%	6.72%
Value	CRSP U.S. Mega Value	143	\$14,009,074	(3.10%)	15.30%	(1.15%)	(1.15%)	8.48%	9.02%
	CRSP U.S. Mid Value	190	\$3,128,637	(4.49%)	12.12%	(7.84%)	(7.84%)	6.76%	6.42%
	CRSP U.S. Small Value	849	\$2,561,334	(5.68%)	11.62%	(9.27%)	(9.27%)	7.13%	5.78%
	CRSP U.S. Large Value	337	\$17,123,568	(3.36%)	14.68%	(2.01%)	(2.01%)	8.23%	8.58%
	CRSP U.S. Small Mid Value	1057	\$5,841,931	(5.16%)	11.65%	(8.07%)	(8.07%)	7.12%	6.07%
	CRSP U.S. Total Value	2,477	\$25,542,644	(4.41%)	13.72%	(6.33%)	(6.33%)	7.61%	7.17%
Growth	CRSP U.S. Mega Growth	94	\$12,933,627	(8.83%)	(0.99%)	(33.52%)	(33.52%)	6.44%	10.03%
	CRSP U.S. Mid Growth	163	\$2,708,266	(6.33%)	5.70%	(28.83%)	(28.83%)	4.89%	7.86%
	CRSP U.S. Small Growth	692	\$1,781,703	(6.31%)	3.00%	(28.44%)	(28.44%)	0.79%	5.09%
	CRSP U.S. Large Growth	241	\$15,656,036	(8.47%)	(0.15%)	(33.13%)	(33.13%)	6.09%	9.65%
	CRSP U.S. Small Mid Growth	818	\$4,338,009	(6.20%)	4.73%	(29.14%)	(29.14%)	2.98%	6.76%
	CRSP U.S. Total Growth	1,908	\$20,861,646	(7.47%)	1.57%	(30.83%)	(30.83%)	5.11%	8.86%

Note: Data as of 12/30/2022; returns computation is based on total returns; data for 1-, 3-, and 5-years is annualized; counts may not add up due to banding and migration, see appendix

CRSP Breakpoints (December 2022 Ranking)

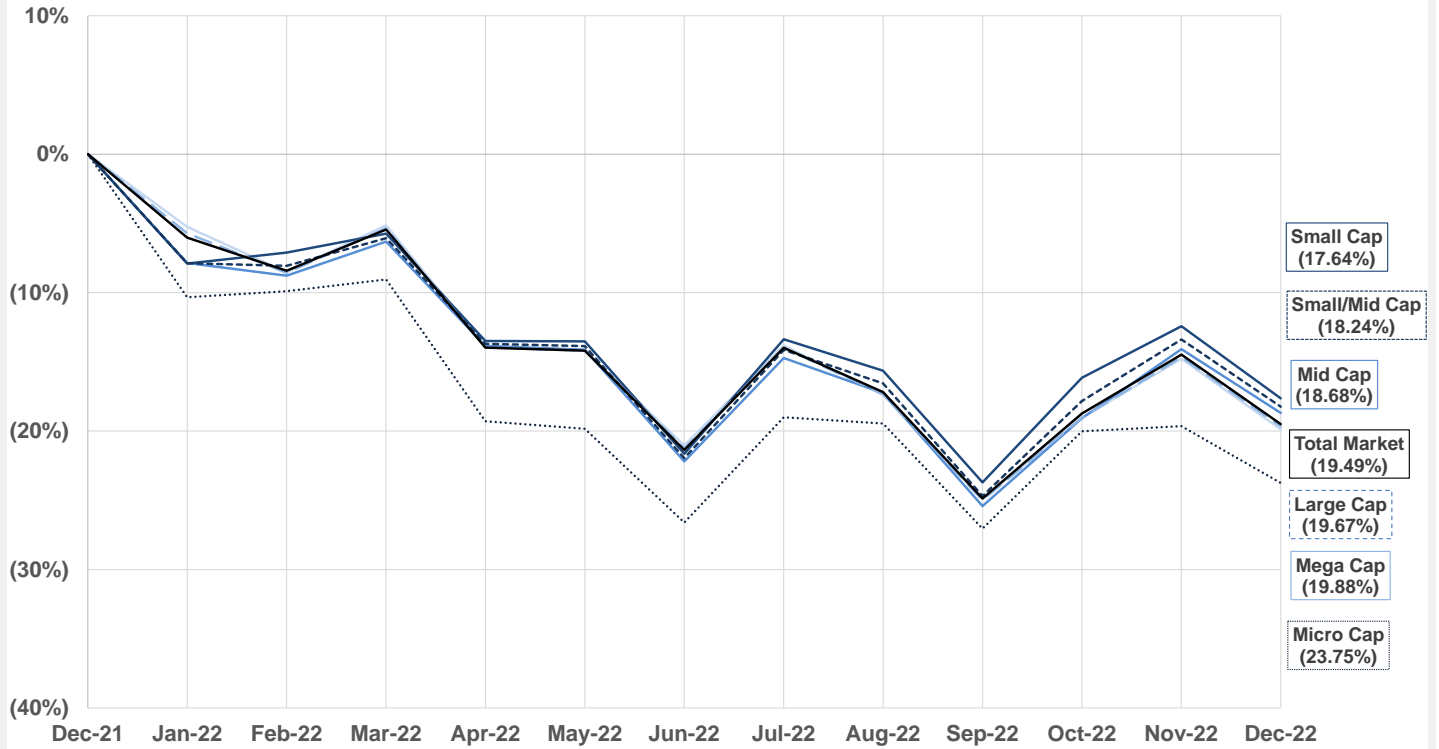
December 2022: Performance Relative to Total Market



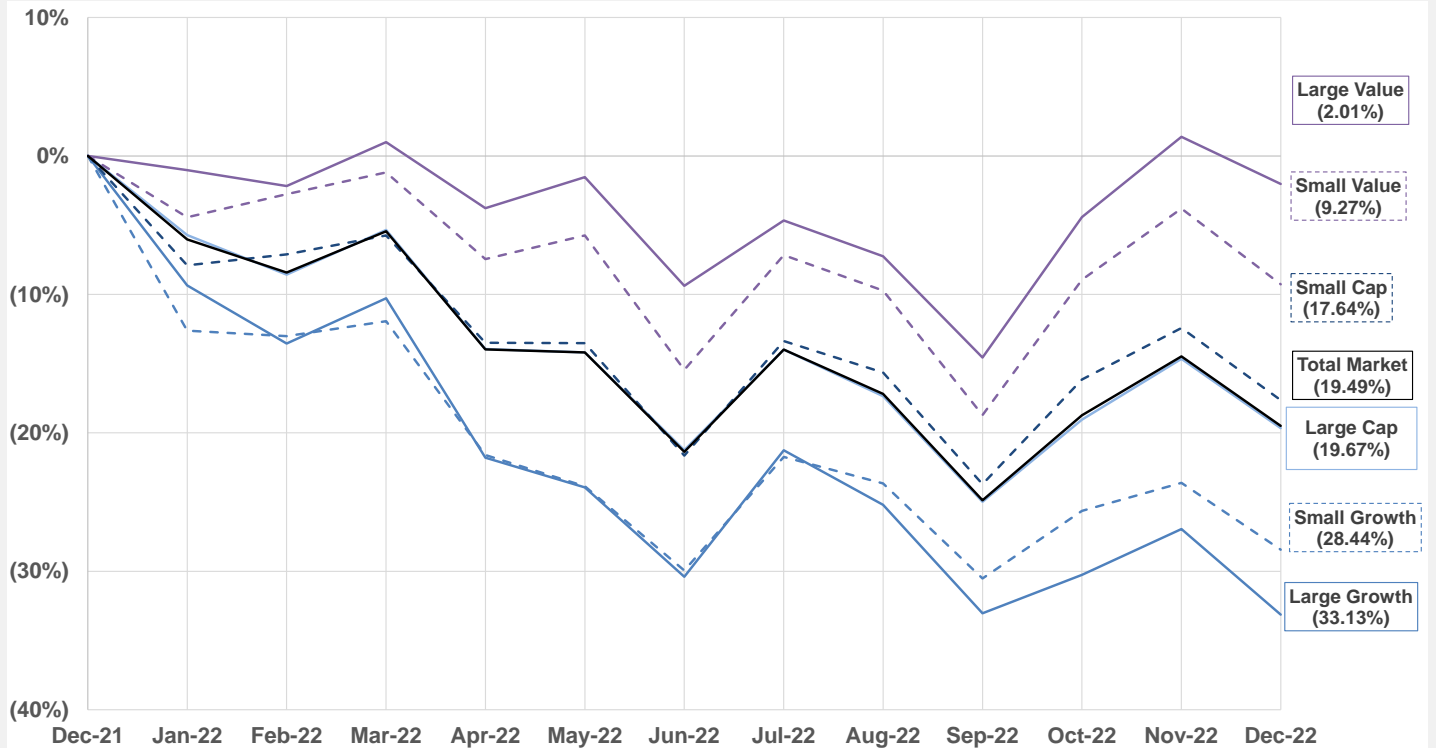
Note: Data for lowest market capitalization is based on 12/01/2022 [random price date](#); company counts as of 12/30/2022; counts may not add up due to banding and migration, see appendix

Note: Data as of 12/30/2022; returns computation is based on total returns

Cumulative Performance By Capitalization – Past 12 Months

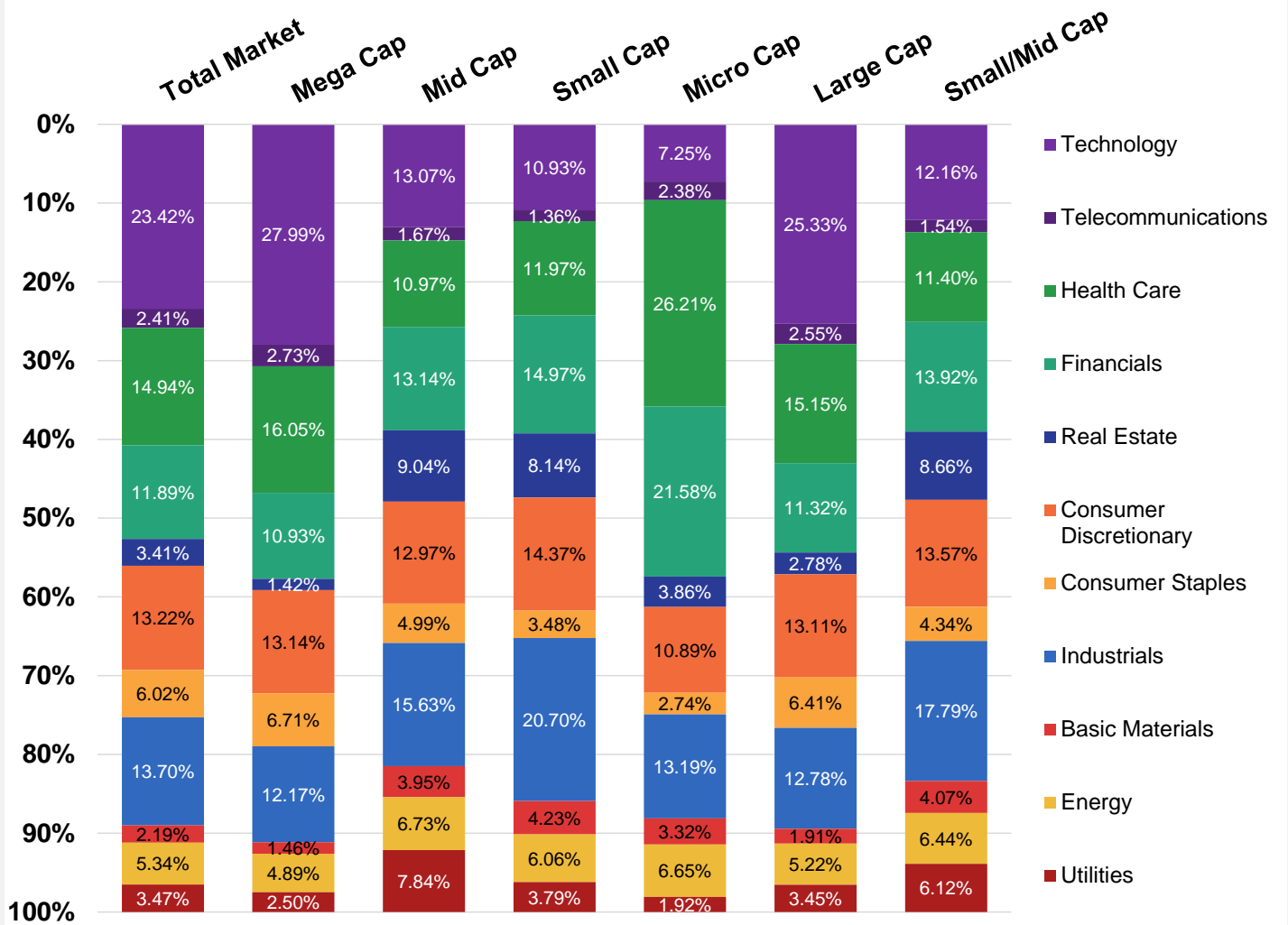


Cumulative Performance By Style – Past 12 Months



Note: Data as of 12/30/2022; returns computation is based on total returns

CRSP Market Cap Indexes Sector Allocation



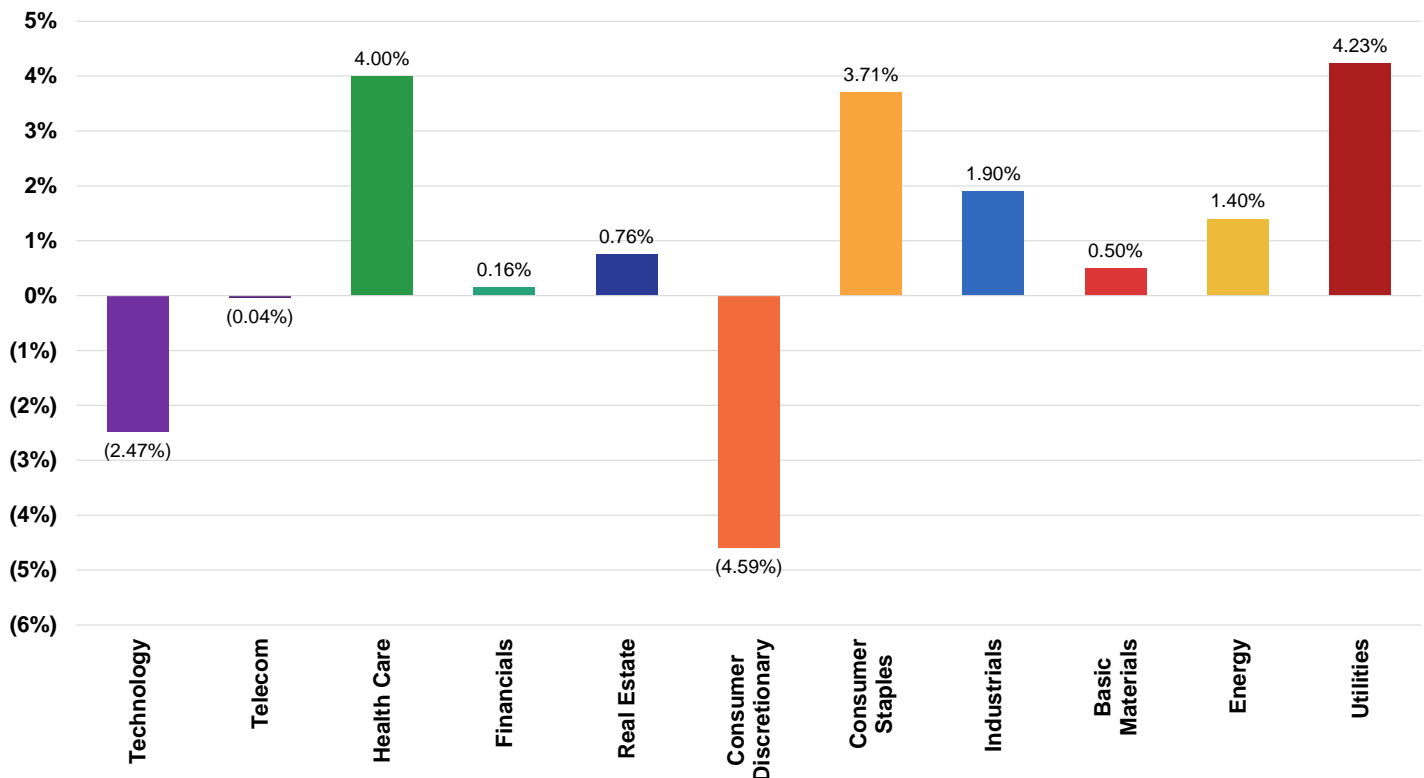
Note: Data as of 12/30/2022; Sector weights are computed using company's assignment to the industry as defined by Enhanced FTSE ICB®; sector weights are based on float-adjusted market cap weights

CRSP U.S. SECTOR INDEXES PERFORMANCE

CRSP U.S. Sector Indexes Performance

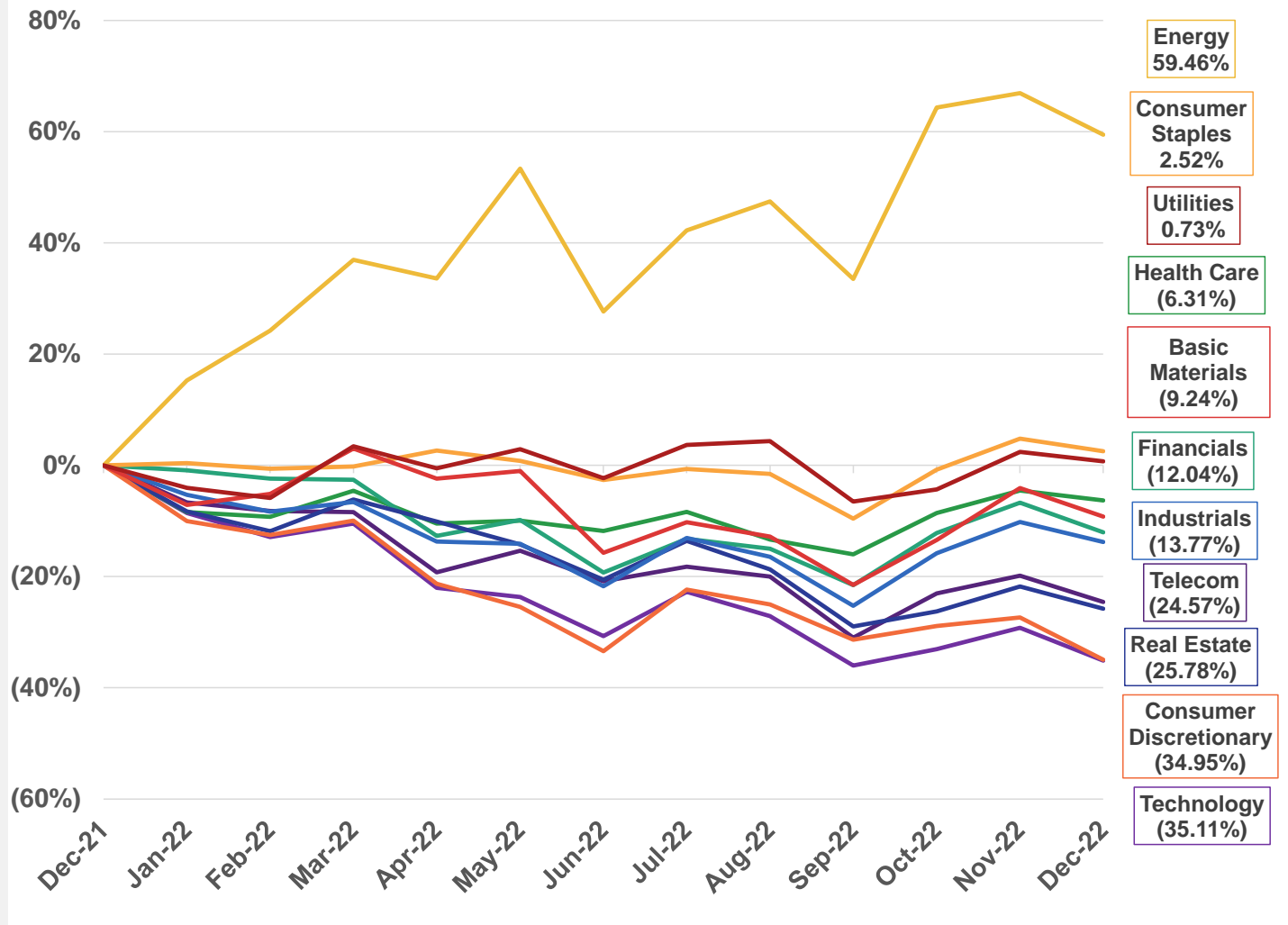
Category	Index Name	Count	Float-Adjusted Market Cap (\$M)	Return for					
				1 Month	3 Months	YTD	1 Year	3 Years	5 Years
Total Market	CRSP U.S. Total Market	3,929	\$37,655,781	(5.87%)	7.15%	(19.49%)	(19.49%)	6.99%	8.73%
Sector Indexes	CRSP U.S. Technology	445	\$884,648	(8.34%)	1.39%	(35.11%)	(35.11%)	9.48%	13.88%
	CRSP U.S. Technology Unconstrained		\$8,822,479						
	CRSP U.S. Telecommunications	81	\$90,234	(5.91%)	9.30%	(24.57%)	(24.57%)	2.48%	2.17%
	CRSP U.S. Telecommunications Unconstrained		\$905,925						
	CRSP U.S. Health Care	893	\$5,620,185	(1.86%)	11.53%	(6.31%)	(6.31%)	9.50%	11.15%
	CRSP U.S. Health Care Unconstrained		\$5,620,185						
	CRSP U.S. Financials	620	\$4,475,980	(5.70%)	12.09%	(12.04%)	(12.04%)	7.07%	8.07%
	CRSP U.S. Financials Unconstrained		\$4,475,980						
	CRSP U.S. Real Estate	202	\$1,284,892	(5.10%)	4.49%	(25.78%)	(25.78%)	(0.10%)	4.39%
	CRSP U.S. Real Estate Unconstrained		\$1,284,892						
	CRSP U.S. Consumer Discretionary	573	\$4,978,236	(10.46%)	(5.22%)	(34.95%)	(34.95%)	2.59%	6.68%
	CRSP U.S. Consumer Discretionary Unconstrained		\$4,978,236						
	CRSP U.S. Consumer Staples	151	\$226,590	(2.16%)	13.39%	2.52%	2.52%	10.63%	8.56%
	CRSP U.S. Consumer Staples Unconstrained		\$2,265,679						
	CRSP U.S. Industrials	570	\$5,159,960	(3.97%)	15.39%	(13.77%)	(13.77%)	5.85%	7.21%
	CRSP U.S. Industrials Unconstrained		\$5,159,960						
	CRSP U.S. Basic Materials	122	\$825,750	(5.36%)	15.60%	(9.24%)	(9.24%)	11.23%	6.25%
	CRSP U.S. Basic Materials Unconstrained		\$825,750						
	CRSP U.S. Energy	183	\$2,009,573	(4.47%)	19.42%	59.46%	59.46%	19.03%	8.20%
	CRSP U.S. Energy Unconstrained		\$2,009,573						
CRSP U.S. Utilities	89	\$1,307,123	(1.64%)	7.77%	0.73%	0.73%	6.36%	9.69%	
CRSP U.S. Utilities Unconstrained		\$1,307,123							

December 2022: Sector Performance Relative to Total Market



Note: Data as of 12/30/2022; returns computation is based on total returns; data for 1-, 3-, and 5-years is annualized. CRSP US Sector Indexes total returns are for constrained indexes, meaning that securities' weights within sector indexes are adjusted to comply with IRS Regulated Investment Company rules. Unconstrained Sector indexes are not constrained to comply with IRS RIC rules. CRSP U.S. Sector Indexes based on Enhanced FTSE ICB® (EICB) methodology are used for returns after 6/7/2020; CRSP U.S. Sector Indexes based on FTSE ICB® methodology are used for returns prior to 6/5/2020. For more details on pairing between EICB-based and ICB-based CRSP U.S. Sector Indexes refer to our [white paper](#) and [public announcement](#)

Cumulative Performance By Sector – Past 12 Months



Note: Data as of 12/30/2022; returns computation is based on total returns; CRSP US Sector Indexes total returns are for constrained indexes, meaning that securities' weights within sector indexes are adjusted to comply with IRS Regulated Investment Company rules. CRSP U.S. Sector Indexes based on Enhanced FTSE ICB® (EICB) methodology are used for returns after 6/7/2020; CRSP U.S. Sector Indexes based on FTSE ICB® methodology are used for returns prior to 6/5/2020. For more details on pairing between EICB-based and ICB-based CRSP U.S. Sector Indexes refer to our [white paper](#) and [public announcement](#)

CRSP ISS U.S. LARGE CAP ESG INDEXES PERFORMANCE

To learn more about CRSP ISS ESG Indexes Suite visit our webpage: <https://www.crsp.org/crsp-iss-esg-indexes>

CRSP ISS U.S. Large Cap ESG Indexes Performance

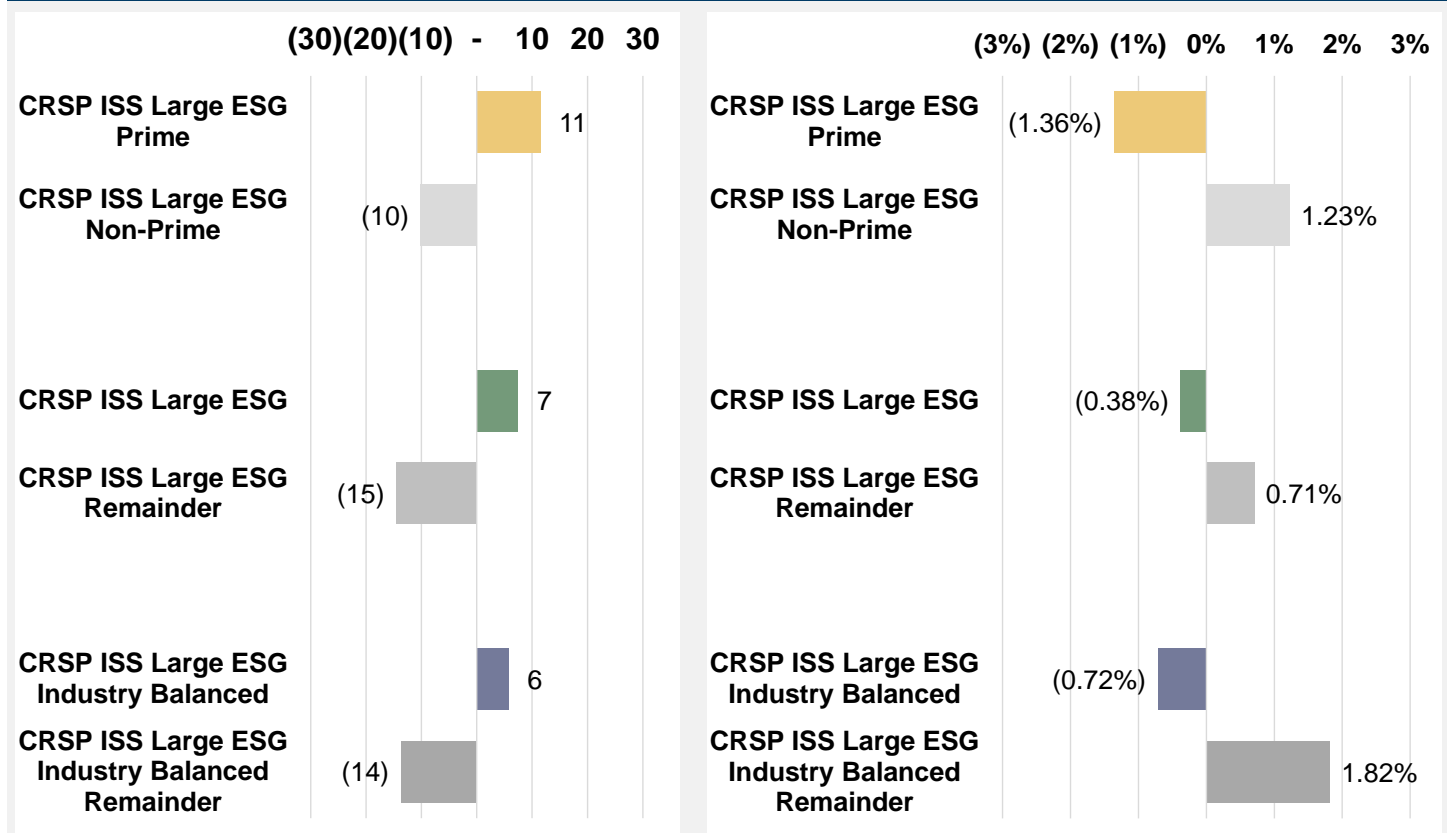
Category	Index Name	Count	Float-Adjusted Market Cap (\$M)	Return for					
				1 Month	3 Months	YTD	1 Year	3 Years	5 Years
	CRSP U.S. Large Cap	551	\$32,779,604	(5.87%)	7.08%	(19.67%)	(19.67%)	7.32%	9.20%
Prime	CRSP ISS Large ESG Prime	144	\$15,408,173	(7.23%)	4.12%	(22.58%)	(22.58%)	11.36%	13.80%
	CRSP ISS Large ESG Non-Prime	407	\$17,371,431	(4.64%)	9.78%	(16.99%)	(16.99%)	5.24%	7.10%
ESG	CRSP ISS Large ESG	276	\$21,643,528	(6.25%)	6.46%	(21.80%)	(21.80%)	7.12%	9.38%
	CRSP ISS Large ESG Remainder	275	\$11,136,077	(5.16%)	8.31%	(14.61%)	(14.61%)	7.61%	8.60%
ESG Industry Balanced	CRSP ISS Large ESG Industry Balanced	278	\$23,079,789	(6.58%)	5.37%	(22.14%)	(22.14%)	6.34%	8.78%
	CRSP ISS Large ESG Industry Balanced Remainder	273	\$9,699,815	(4.05%)	11.84%	(12.23%)	(12.23%)	9.97%	10.33%

Note: Data as of 12/30/2022; returns computation is based on total returns; data for 1-, 3-, and 5-years is annualized; Prior to 9/7/2021 the CRSP ISS ESG Indexes return series is based on a backtest

For definitions of ISS Prime Indicator, ISS ESG Performance Score see Appendix. For more information on ISS ESG Methodology please visit <https://www.issgovernance.com/esg/ratings/>.

Portfolio ISS ESG Performance Score relative to CRSP US Large Cap

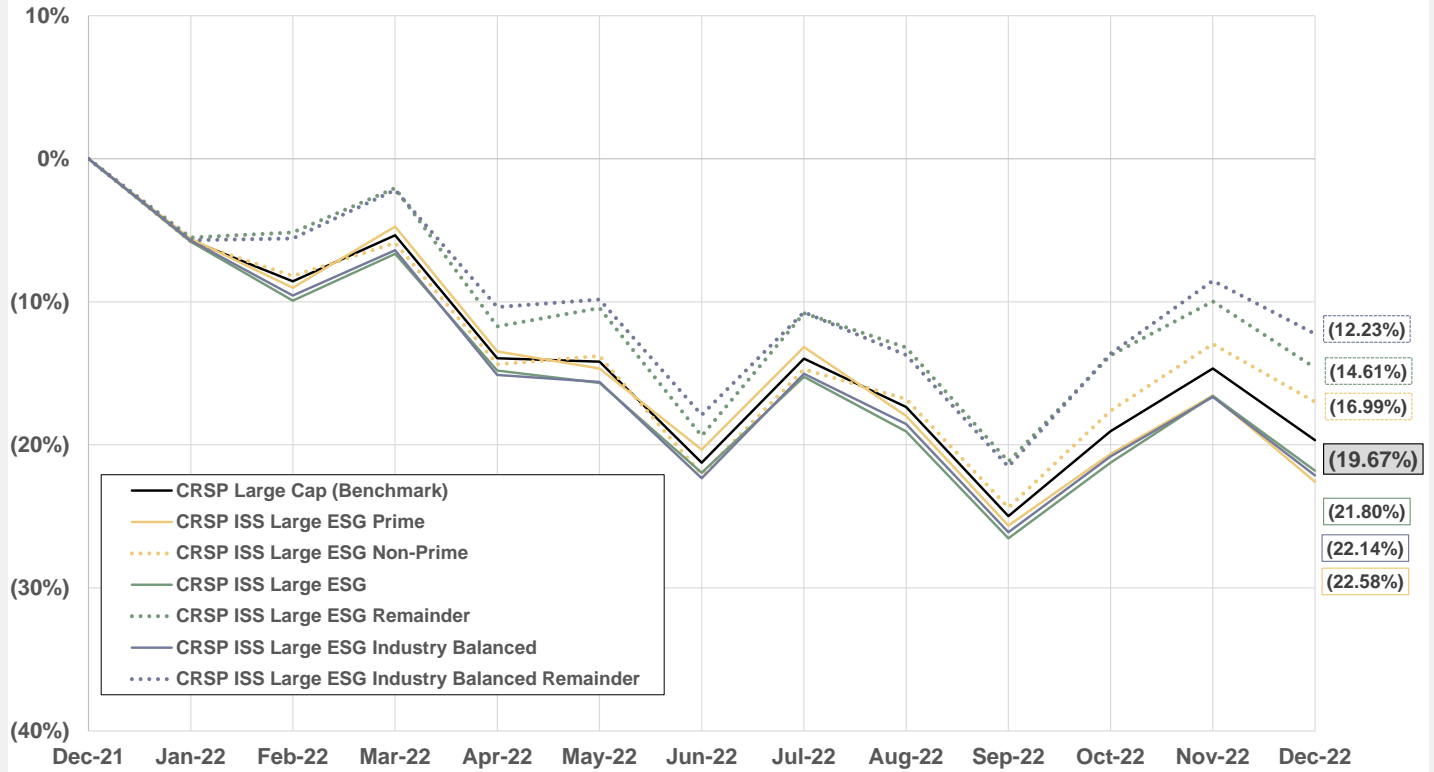
December 2022: Performance Relative to CRSP US Large Cap



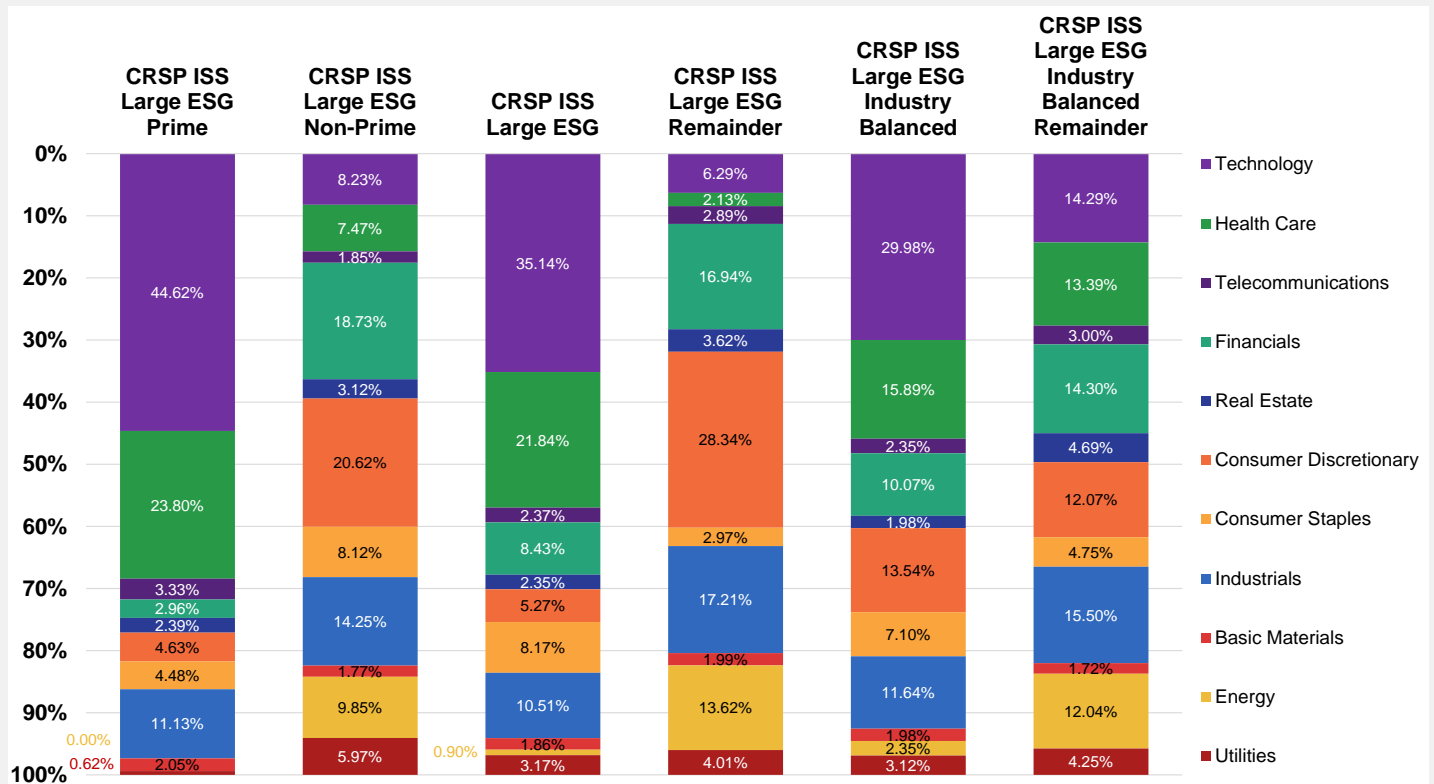
Note: Data as of 12/30/2022. Portfolio ISS ESG Performance Score is computed by weighting securities' ISS ESG Performance Score by the corresponding weight in the index

Note: Data as of 12/30/2022; returns computation is based on total returns

Cumulative Performance For CRSP ISS ESG Indexes – Past 12 Months



CRSP ISS ESG Indexes Sector Allocation



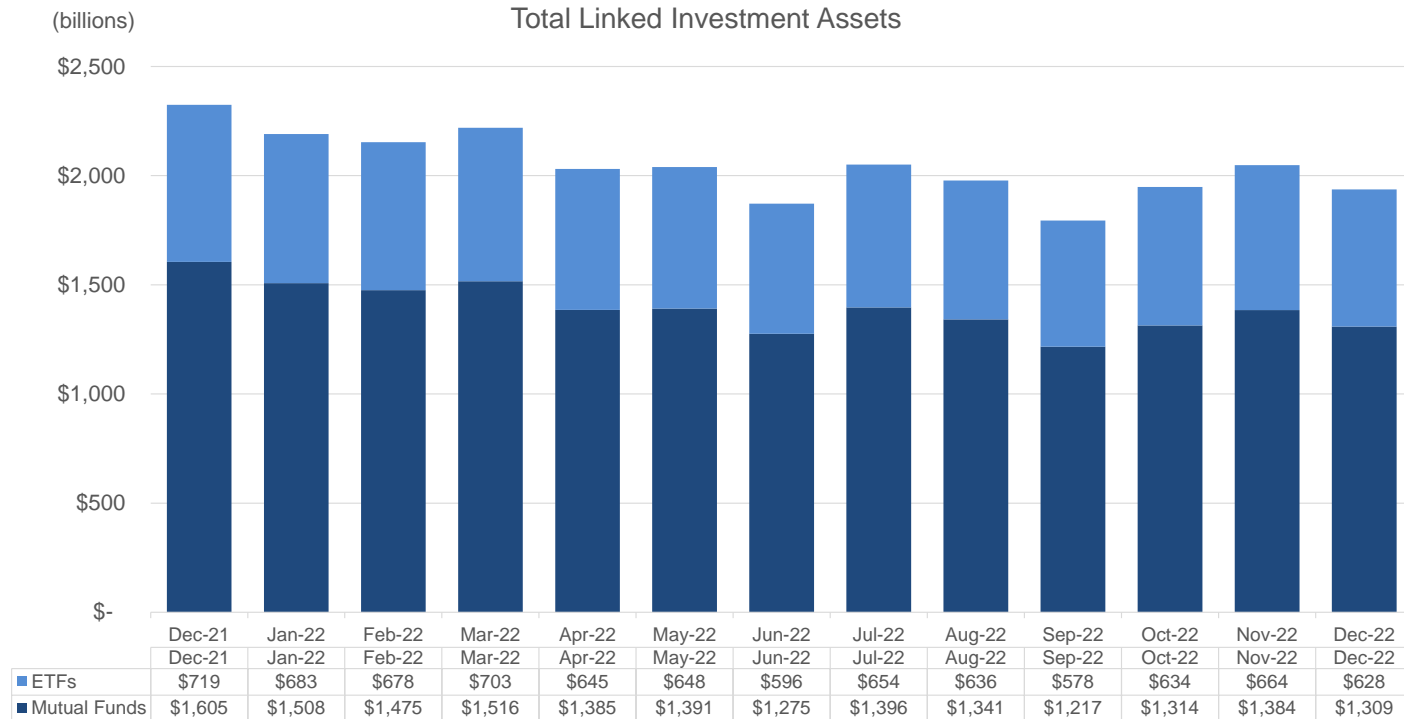
Note: Data as of 12/30/2022; returns computation is based on total returns; prior to 9/7/2021 the CRSP ISS ESG Indexes return series is based on a backtest. Sector weights are computed using company's assignment to the industry as defined by Enhanced FTSE ICB®; sector weights are based on float-adjusted market cap weights.

CRSP U.S. INDEXES LINKED ASSETS

Linked Assets as of 12/30/2022

Index	Index Name (TR - Total Return, PR - Price Only Return)	Index Identifier	NASDAQ GIDS Post Date	Linked Assets (\$B) as of 12/30/22		
				ETF	Mutual Fund	Total
Total Market	CRSP US Total Market Index (TR)	CRSPTMT	12/31/2012	\$261.09		\$1,226.26
	CRSP US Total Market Index (PR)	CRSPTM1	1/18/2011		\$965.17	
CRSP Canadian Hedged	CRSP US Total Market Index (CAD-hedged) (TR)	CRSPTCHT	12/31/2012	\$0.56		\$0.56
	CRSP US Total Market Index (CAD-hedged) (PR)	CRSPTCH1	12/31/2012			
CRSP Canadian Non-Hedged	CRSP US Total Market Total Return Index CAD (TR)	CRSPTMCT	4/15/2013	\$3.90		\$3.90
	CRSP US Total Market Total Return Index CAD (PR)	CRSPTMC1	4/15/2013			
Mega Cap	CRSP US Mega Cap Index (TR)	CRSPMET	12/31/2012	\$3.50		\$3.67
	CRSP US Mega Cap Index (PR)	CRSPME1	8/15/2011		\$0.17	
Mega Cap Growth	CRSP US Mega Cap Growth Index (TR)	CRSPMEGT	12/31/2012	\$9.49		\$9.51
	CRSP US Mega Cap Growth Index (PR)	CRSPMEG1	10/1/2012		\$0.02	
Mega Cap Value	CRSP US Mega Cap Value Index (TR)	CRSPMEVT	12/31/2012	\$5.99		\$6.11
	CRSP US Mega Cap Value Index (PR)	CRSPMEV1	10/1/2012		\$0.12	
Large Cap	CRSP US Large Cap Index (TR)	CRSPLCT	12/31/2012	\$24.14		\$35.81
	CRSP US Large Cap Index (PR)	CRSPLC1	8/15/2011		\$11.67	
Large Cap Growth	CRSP US Large Cap Growth Index (TR)	CRSPLCGT	12/31/2012	\$68.14		\$132.25
	CRSP US Large Cap Growth Index (PR)	CRSPLCG1	10/1/2012		\$64.11	
Large Cap Value	CRSP US Large Cap Value Index (TR)	CRSPLCVT	12/31/2012	\$99.34		\$148.09
	CRSP US Large Cap Value Index (PR)	CRSPLCV1	10/1/2012		\$48.76	
Mid Cap	CRSP US Mid Cap Index (TR)	CRSPMIT	12/31/2012	\$49.86		\$139.00
	CRSP US Mid Cap Index (PR)	CRSPM1	8/15/2011		\$89.14	
Mid Cap Growth	CRSP US Mid Cap Growth Index (TR)	CRSPMIGT	12/31/2012	\$9.32		\$18.49
	CRSP US Mid Cap Growth Index (PR)	CRSPMIG1	10/1/2012		\$9.17	
Mid Cap Value	CRSP US Mid Cap Value Index (TR)	CRSPMIVT	12/31/2012	\$15.99		\$27.78
	CRSP US Mid Cap Value Index (PR)	CRSPMIV1	10/1/2012		\$11.78	
Small Cap	CRSP US Small Cap Index (TR)	CRSPSCT	12/31/2012	\$40.58		\$112.46
	CRSP US Small Cap Index (PR)	CRSPSC1	8/15/2011		\$71.88	
Small Cap Growth	CRSP US Small Cap Growth Index (TR)	CRSPSCGT	12/31/2012	\$12.04		\$26.53
	CRSP US Small Cap Growth Index (PR)	CRSPSCG1	10/1/2012		\$14.50	
Small Cap Value	CRSP US Small Cap Value Index (TR)	CRSPSCVT	12/31/2012	\$23.84		\$46.30
	CRSP US Small Cap Value Index (PR)	CRSPSCV1	10/1/2012		\$22.45	
Total Linked Assets				\$628	\$1,309	\$1,937

CRSP Indexes
Total Linked Investment Assets



Note: Data as of 12/30/2022

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CRSP MARKET INDEXES (CRSPMI)

Since 2011, CRSP LLC has maintained, disseminated and expanded its' CRSPMI proprietary investable index product line. Currently comprising over 78 capitalization-based, industry sector, value and growth style, and ESG indexes, the CRSPMI suite blends ongoing advancements in academic research with the most efficient and productive industry practices. CRSPMI continues to dedicate resources and personnel to expand its capabilities and services for providing a broad, efficient and low-cost set of performing index products and benchmarks for the entire investment community.

CRSPMI offers indexes covering the entire U.S. equities marketplace, from its flagship CRSP Total Market Index (CRSPTM1) to a broad set of different cap segments (Mega, Large, Mid, Small, Micro) with Value and Growth versions of each, 11 Sector Indexes and 6 ESG Indexes. A [quick reference guide](#) provides an overview of the CRSPMI index offerings.

CRSPMI distributes its investable indexes and related constituents, corporate actions and rebalancing information to a broad community of licensed clients over multiple delivery channels, including [direct client feed](#), secure website and approved third-party redistributors.

APPENDIX – CRSP U.S. INDEXES DESCRIPTIVE INFORMATION

CRSP U.S. Indexes Descriptive Statistics

Category	Index Name	Count	Float-Adjusted Market Cap (\$M)	Largest Company (\$M)	Smallest Company (\$M)	Median Company (\$M)	Average Company (\$M)	Largest Company Weight (%)
Total Market	CRSP U.S. Total Market	3,929	\$37,655,781	\$1,963,595	\$1	\$672	\$9,584	5.21%
Cap	CRSP U.S. Mega Cap	228	\$26,942,701	\$1,963,595	\$8,265	\$61,515	\$118,170	7.29%
	CRSP U.S. Mid Cap	340	\$5,836,903	\$46,439	\$254	\$16,053	\$17,167	0.80%
	CRSP U.S. Small Cap	1,471	\$4,343,037	\$17,221	\$18	\$2,168	\$2,952	0.40%
	CRSP U.S. Micro Cap	2,006	\$533,140	\$3,835	\$1	\$113	\$266	0.72%
	CRSP U.S. Large Cap	551	\$32,779,604	\$1,963,595	\$254	\$26,473	\$59,491	5.99%
	CRSP U.S. Small Mid Cap	1,777	\$10,179,940	\$46,439	\$18	\$2,844	\$5,729	0.46%
Value	CRSP U.S. Mega Value	143	\$14,009,074	\$535,929	\$9,901	\$62,419	\$97,966	3.83%
	CRSP U.S. Mid Value	190	\$3,128,637	\$46,439	\$810	\$15,770	\$16,467	1.48%
	CRSP U.S. Small Value	849	\$2,561,334	\$17,221	\$14	\$2,261	\$3,017	0.67%
	CRSP U.S. Large Value	337	\$17,123,568	\$535,929	\$810	\$24,634	\$50,812	3.13%
	CRSP U.S. Small Mid Value	1,057	\$5,841,931	\$46,439	\$14	\$2,871	\$5,527	0.79%
Growth	CRSP U.S. Mega Growth	94	\$12,933,627	\$1,963,595	\$8,265	\$56,434	\$137,592	15.18%
	CRSP U.S. Mid Growth	163	\$2,708,266	\$45,310	\$254	\$14,415	\$16,615	1.67%
	CRSP U.S. Small Growth	692	\$1,781,703	\$16,639	\$14	\$1,804	\$2,575	0.93%
	CRSP U.S. Large Growth	241	\$15,656,036	\$1,963,595	\$254	\$25,234	\$64,963	12.54%
	CRSP U.S. Small Mid Growth	818	\$4,338,009	\$45,310	\$14	\$2,404	\$5,303	1.04%
Prime	CRSP ISS Large ESG Prime	144	\$15,408,173	\$1,963,595	\$1,850	\$40,107	\$107,001	12.74%
	CRSP ISS Large ESG Non-Prime	407	\$17,371,431	\$728,398	\$254	\$23,694	\$42,682	4.19%
ESG	CRSP ISS Large ESG	276	\$21,643,528	\$1,963,595	\$1,850	\$33,124	\$78,419	9.07%
	CRSP ISS Large ESG Remainder	275	\$11,136,077	\$728,398	\$254	\$21,629	\$40,495	6.54%
ESG Industry Balanced	CRSP ISS Large ESG Industry Balanced	278	\$23,079,789	\$1,963,595	\$1,850	\$35,398	\$83,021	8.51%
	CRSP ISS Large ESG Industry Balanced Remainder	273	\$9,699,815	\$535,929	\$254	\$20,363	\$35,530	5.53%
Sector Indexes	CRSP U.S. Technology	445	\$884,648	\$169,478	\$3	\$357	\$1,988	19.16%
	CRSP U.S. Technology Unconstrained		\$8,822,479	\$1,963,595	\$3	\$986	\$19,826	22.26%
	CRSP U.S. Telecommunications	81	\$90,234	\$15,556	\$3	\$414	\$1,114	17.24%
	CRSP U.S. Telecommunications Unconstrained		\$905,925	\$176,139	\$3	\$479	\$11,184	19.44%
	CRSP U.S. Health Care	893	\$5,620,185	\$495,373	\$2	\$190	\$6,294	8.81%
	CRSP U.S. Health Care Unconstrained		\$5,620,185	\$495,373	\$2	\$190	\$6,294	8.81%
	CRSP U.S. Financials	620	\$4,475,980	\$535,929	\$5	\$676	\$7,219	11.97%
	CRSP U.S. Financials Unconstrained		\$4,475,980	\$535,929	\$5	\$676	\$7,219	11.97%
	CRSP U.S. Real Estate	202	\$1,284,892	\$104,059	\$6	\$1,508	\$6,361	8.10%
	CRSP U.S. Real Estate Unconstrained		\$1,284,892	\$104,059	\$6	\$1,508	\$6,361	8.10%
	CRSP U.S. Consumer Discretionary	573	\$4,978,236	\$728,398	\$1	\$704	\$8,688	14.63%
	CRSP U.S. Consumer Discretionary Unconstrained		\$4,978,236	\$728,398	\$1	\$704	\$8,688	14.63%
	CRSP U.S. Consumer Staples	151	\$226,590	\$35,929	\$4	\$119	\$1,501	15.86%
	CRSP U.S. Consumer Staples Unconstrained		\$2,265,679	\$359,151	\$4	\$1,055	\$15,004	15.85%
	CRSP U.S. Industrials	570	\$5,159,960	\$338,268	\$4	\$1,101	\$9,053	6.56%
	CRSP U.S. Industrials Unconstrained		\$5,159,960	\$338,268	\$4	\$1,101	\$9,053	6.56%
	CRSP U.S. Basic Materials	122	\$825,750	\$161,103	\$6	\$1,306	\$6,768	19.51%
	CRSP U.S. Basic Materials Unconstrained		\$825,750	\$161,103	\$6	\$1,306	\$6,768	19.51%
	CRSP U.S. Energy	183	\$2,009,573	\$454,248	\$6	\$968	\$10,981	22.60%
	CRSP U.S. Energy Unconstrained		\$2,009,573	\$454,248	\$6	\$968	\$10,981	22.60%
CRSP U.S. Utilities	89	\$1,307,123	\$166,127	\$6	\$4,581	\$14,687	12.71%	
CRSP U.S. Utilities Unconstrained		\$1,307,123	\$166,127	\$6	\$4,581	\$14,687	12.71%	

Note: Data as of 12/30/2022; counts may not add up due to banding and migration, see appendix; CRSP U.S. Sector Indexes are constrained indexes, meaning that securities' weights within sector indexes are adjusted to comply with IRS Regulated Investment Company (RIC) rules. Sector indexes with "U" at the end of the name are not constrained to comply with IRS RIC rules. CRSP U.S. Sector Indexes based on Enhanced FTSE ICB® (EICB) methodology are used after 6/7/2020; CRSP U.S. Sector Indexes based on FTSE ICB® methodology are used prior to 6/5/2020. For more details on pairing between EICB-based and ICB-based CRSP U.S. Sector Indexes refer to our [white paper](#) and [public announcement](#)

APPENDIX – INDEX REFERENCE GUIDE

Index	Index Name (TR - Total Return, PR - Price Only Return)	Index Identifier	CUSIP	NASDAQ GIDS Post Date	Inception Date Open Val = 1000	Bloomberg Ticker
Total Market Index	CRSP US Total Market Index (TR)	CRSPTMT	12628H109	12/31/2012	4/1/2011	BBG003PZ7F43
	CRSP US Total Market Index (PR)	CRSPTM1	12628G101	1/18/2011	4/1/2011	BBG001DQ7123
CRSP Australian Hedged Index	CRSP US Total Market Index (AUD-hedged) (TR)	CRSPTAHT	12633D200	7/1/2015		BBG009J9GN20
	CRSP US Total Market Index (AUD-hedged) (PR)	CRSPTAH1	12633D101	7/1/2015		BBG009J9GN11
CRSP Australian Non-Hedged Index	CRSP US Total Market Total Return Index AUD (TR)	CRSPTMAT	12633D408	7/1/2015		BBG009J9GN48
	CRSP US Total Market Index AUD (PR)	CRSPTMA1	12633D309	7/1/2015		BBG009J9GN39
CRSP Canadian Hedged Index	CRSP US Total Market Index (CAD-hedged) (TR)	CRSPTCHT	12630Y108	12/31/2012		BBG003PZ7F52
	CRSP US Total Market Index (CAD-hedged) (PR)	CRSPTCH1	12628G200	12/31/2012		BBG003PZ7F34
CRSP Canadian Non-Hedged Index	CRSP US Total Market Total Return Index CAD (TR)	CRSPTMCT	12632P204	4/15/2013		BBG004MFW5W1
	CRSP US Total Market Index CAD (PR)	CRSPTMC1	12632M201	4/15/2013		BBG004MFW5V2
Mega Cap	CRSP US Mega Cap Index (TR)	CRSPMET	12631H104	12/31/2012	4/1/2011	BBG003PZ7F61
	CRSP US Mega Cap Index (PR)	CRSPME1	12627R108	8/15/2011	4/1/2011	BBG001YCYN69
Mega Cap Growth	CRSP US Mega Cap Growth Index (TR)	CRSPMEGT	12631K107	12/31/2012	9/10/2012	BBG003PZ7F70
	CRSP US Mega Cap Growth Index (PR)	CRSPMEG1	12630R103	10/1/2012	9/10/2012	BBG003PZ7DH4
Mega Cap Value	CRSP US Mega Cap Value Index (TR)	CRSPMEVT	12631L105	12/31/2012	9/10/2012	BBG003PZ7F89
	CRSP US Mega Cap Value Index (PR)	CRSPMEV1	12630T109	10/1/2012	9/10/2012	BBG003PZ7DJ2
Large Cap (Mega + Mid) Cap	CRSP US Large Cap Index (TR)	CRSPLCT	12631M103	12/31/2012	4/1/2011	BBG003PZ7F98
	CRSP US Large Cap Index (PR)	CRSPLC1	12627P102	8/15/2011	4/1/2011	BBG001YCYN50
Large Cap Growth	CRSP US Large Cap Growth Index (TR)	CRSPLCGT	12631P106	12/31/2012	9/10/2012	BBG003PZ7FB5
	CRSP US Large Cap Growth Index (PR)	CRSPLCG1	12630W102	10/1/2012	9/10/2012	BBG003PZ7DK0
Large Cap Value	CRSP US Large Cap Value Index (TR)	CRSPLCVT	12631R102	12/31/2012	9/10/2012	BBG003PZ7FC4
	CRSP US Large Cap Value Index (PR)	CRSPLCV1	12630X100	10/1/2012	9/10/2012	BBG003PZ7DL9
Mid Cap	CRSP US Mid Cap Index (TR)	CRSPMIT	12631T108	12/31/2012	4/1/2011	BBG003PZ7FD3
	CRSP US Mid Cap Index (PR)	CRSPMI1	12627W107	8/15/2011	4/1/2011	BBG001YCYN87
Mid Cap Growth	CRSP US Mid Cap Growth Index (TR)	CRSPMIGT	12628N106	12/31/2012	9/10/2012	BBG003PZ7FF1
	CRSP US Mid Cap Growth Index (PR)	CRSPMIG1	12631A109	10/1/2012	9/10/2012	BBG003PZ7DM8
Mid Cap Value	CRSP US Mid Cap Value Index (TR)	CRSPMIVT	12629L109	12/31/2012	9/10/2012	BBG003PZ7FG0
	CRSP US Mid Cap Value Index (PR)	CRSPMIV1	12631C105	10/1/2012	9/10/2012	BBG003PZ7DN7
Small-Mid Cap	CRSP US Small-Mid Cap Index (TR)	CRSPSMT	12591C103	3/10/2014	4/1/2011	BBG0069LWSJ3
	CRSP US Small-Mid Cap Index (PR)	CRSPSM1	12632T107	3/10/2014	4/1/2011	BBG0069LWSH5
Small-Mid Cap Growth	CRSP US Small-Mid Cap Growth Index (TR)	CRSPSMGT	12591P104	3/10/2014	9/10/2012	BBG0069LWSF7
	CRSP US Small-Mid Cap Growth Index (PR)	CRSPSMG1	12591M101	3/10/2014	9/10/2012	BBG0069LWSC0
Small-Mid Cap Value	CRSP US Small-Mid Cap Value Index (TR)	CRSPSMVT	12591L103	3/10/2014	9/10/2012	BBG0069LWSG6
	CRSP US Small-Mid Cap Value Index (PR)	CRSPSMV1	12591E109	3/10/2014	9/10/2012	BBG0069LWS9
Small Cap	CRSP US Small Cap Index (TR)	CRSPSCT	12630N102	12/31/2012	4/1/2011	BBG003PZ7FH9
	CRSP US Small Cap Index (PR)	CRSPSC1	12628A104	8/15/2011	4/1/2011	BBG001YCYNB3
Small Cap Growth	CRSP US Small Cap Growth Index (TR)	CRSPSCGT	12630V104	12/31/2012	9/10/2012	BBG003PZ7FJ7
	CRSP US Small Cap Growth Index (PR)	CRSPSCG1	12631E101	10/1/2012	9/10/2012	BBG003PZ7DP5
Small Cap Value	CRSP US Small Cap Value Index (TR)	CRSPSCVT	12631N101	12/31/2012	9/10/2012	BBG003PZ7FK5
	CRSP US Small Cap Value Index (PR)	CRSPSCV1	12631F108	10/1/2012	9/10/2012	BBG003PZ7DQ4
Micro Cap Index	CRSP US Micro Cap Index (TR)	CRSPMCT	12631V103	12/31/2012	4/1/2011	BBG003PZ7FL4
	CRSP US Micro Cap Index (PR)	CRSPMC1	12627T104	8/15/2011	4/1/2011	BBG001YCYN78
CRSP ISS ESG Prime	CRSP ISS US Large Cap ESG Prime Index (TR)	CLESGPT	12657Y205	9/7/2021	9/7/2021	BBG012CHZKD6
	CRSP ISS US Large Cap ESG Prime Index (PR)	CLESGP	12657Y106	9/7/2021	9/7/2021	BBG012CHZK64
CRSP ISS ESG Non-Prime	CRSP ISS US Large Cap ESG Non-Prime Index (TR)	CLESGNPT	12658A206	9/7/2021	9/7/2021	BBG012CHZKF4
	CRSP ISS US Large Cap ESG Non-Prime Index (PR)	CLESGNP	12658A107	9/7/2021	9/7/2021	BBG012CHZK73
CRSP ISS ESG	CRSP ISS US Large Cap ESG Index (TR)	CLESGT	12658D200	9/7/2021	9/7/2021	BBG012CHZKG3
	CRSP ISS US Large Cap ESG Index (PR)	CLESG	12658D101	9/7/2021	9/7/2021	BBG012CHZK82
CRSP ISS ESG Remainder	CRSP ISS US Large Cap ESG Remainder Index (TR)	CLESGRT	12658E208	9/7/2021	9/7/2021	BBG012CHZKH2
	CRSP ISS US Large Cap ESG Remainder Index (PR)	CLESGR	12658E109	9/7/2021	9/7/2021	BBG012CHZK91
CRSP ISS ESG Industry Balanced	CRSP ISS US Large Cap ESG Industry Balanced Index (TR)	CLESGBT	12658F205	9/7/2021	9/7/2021	BBG012CHZKJ0
	CRSP ISS US Large Cap ESG Industry Balanced Index (PR)	CLESGB	12658F106	9/7/2021	9/7/2021	BBG012CHZKB8
CRSP ISS ESG Industry Balanced Remainder	CRSP ISS US Large Cap ESG Industry Balanced Remainder Index (TR)	CLESGBRT	12658K204	9/7/2021	9/7/2021	BBG012CHZKK8
	CRSP ISS US Large Cap ESG Industry Balanced Remainder Index (PR)	CLESGBR	12658K105	9/7/2021	9/7/2021	BBG012CHZKC7

Index	Index Name (TR - Total Return, PR - Price Only Return)	Index Identifier	CUSIP	NASDAQ GIDS Post Date	Inception Date	
					Open Val = 1000	Bloomberg Ticker
Consumer Staples	CRSP US Consumer Staples Index (TR)	CRSPCST	12631W101	12/31/2012	2/1/2012	BBG003PZ7FM3
	CRSP US Consumer Staples Index (PR)	CRSPCS1	12630G107	7/16/2012	2/1/2012	BBG003PZ7DR3
Consumer Discretionary	CRSP US Consumer Discretionary Index (TR)	CRSPCDT	12631X109	12/31/2012	2/1/2012	BBG00VC1QCP3
	CRSP US Consumer Discretionary Index (PR)	CRSPCD1	12630J101	7/16/2012	2/1/2012	BBG00VC1Q658
Energy	CRSP US Energy Index (TR)	CRSPENT	12631Y107	12/31/2012	2/1/2012	BBG003PZ7FP0
	CRSP US Energy Index (PR)	CRSPEN1	12630A100	7/16/2012	2/1/2012	BBG003PZ7DT1
Financials	CRSP US Financials Index (TR)	CRSPFNT	12632A108	12/31/2012	2/1/2012	BBG003PZ7FQ9
	CRSP US Financials Index (PR)	CRSPFN1	12630M104	7/16/2012	2/1/2012	BBG003PZ7DV8
Health Care	CRSP US Health Care Index (TR)	CRSPHCT	12632C104	12/31/2012	2/1/2012	BBG003PZ7FR8
	CRSP US Health Care Index (PR)	CRSPHC1	12630H105	7/16/2012	2/1/2012	BBG003PZ7DW7
Industrials	CRSP US Industrials Index (TR)	CRSPIDT	12632E100	12/31/2012	2/1/2012	BBG003PZ7FS7
	CRSP US Industrials Index (PR)	CRSPID1	12630F109	7/16/2012	2/1/2012	BBG003PZ7DX6
Technology	CRSP US Technology Index (TR)	CRSPITT	12632F107	12/31/2012	2/1/2012	BBG003PZ7FT6
	CRSP US Technology Index (PR)	CRSPIT1	12630P107	7/16/2012	2/1/2012	BBG003PZ7DY5
Basic Materials	CRSP US Basic Materials Index (TR)	CRSPMTT	12632G105	12/31/2012	2/1/2012	BBG003PZ7FV3
	CRSP US Basic Materials Index (PR)	CRSPMT1	12630E102	7/16/2012	2/1/2012	BBG003PZ7DZ4
Telecommunications	CRSP US Telecommunications Index (TR)	CRSPTET	12632H103	12/31/2012	2/1/2012	BBG003PZ7FW2
	CRSP US Telecommunications Index (PR)	CRSPTE1	12630K108	7/16/2012	2/1/2012	BBG003PZ7F07
Utilities	CRSP US Utilities Index (TR)	CRSPUTT	12632J109	12/31/2012	2/1/2012	BBG003PZ7FX1
	CRSP US Utilities Index (PR)	CRSPUT1	12630L106	7/16/2012	2/1/2012	BBG003PZ7F16
Real Estate	CRSP US Real Estate Index (TR)	CRSPRET	12632K106	12/31/2012	4/1/2011	BBG003PZ7FY0
	CRSP US Real Estate Index (PR)	CRSPRE1	12627X105	8/15/2011	4/1/2011	BBG001YCYN96
Small Cap ex-Real Estate	CRSP US Small Cap ex-Real Estate Index (TR)	CRSPSXT	12632L104	12/31/2012	2/1/2012	BBG003PZ7FZ9
	CRSP US Small Cap ex-Real Estate Index (PR)	CRSPSX1	12631G106	10/1/2012	9/10/2012	BBG003PZ7F25

APPENDIX – LIST OF ETFS/MUTUAL FUNDS USING CRSP INDEXES

ETFS

Index Information		Fund Information	
Name	Ticker	Ticker	URL
Mega Cap	CRSPMET	MGC	https://investor.vanguard.com/investment-products/etfs/profile/mgc
Mega Cap Growth	CRSPMEGT	MGK	https://investor.vanguard.com/investment-products/etfs/profile/mgk
Mega Cap Value	CRSPMEVT	MGV	https://investor.vanguard.com/investment-products/etfs/profile/mgv
Large Cap	CRSPLCT	VV	https://investor.vanguard.com/investment-products/etfs/profile/vv
Large Cap Growth	CRSPLCGT	VUG	https://investor.vanguard.com/investment-products/etfs/profile/vug
Large Cap Value	CRSPLCVT	VTV	https://investor.vanguard.com/investment-products/etfs/profile/vtv
Mid Cap	CRSPMIT	VO	https://investor.vanguard.com/investment-products/etfs/profile/vo
Mid Cap Growth	CRSPMIGT	VOT	https://investor.vanguard.com/investment-products/etfs/profile/vot
Mid Cap Value	CRSPMIVT	VOE	https://investor.vanguard.com/investment-products/etfs/profile/voe
Small Cap	CRSPSCT	VB	https://investor.vanguard.com/investment-products/etfs/profile/vb
Small Cap Growth	CRSPSCGT	VBK	https://investor.vanguard.com/investment-products/etfs/profile/vbk
Small Cap Value	CRSPSCVT	VBR	https://investor.vanguard.com/investment-products/etfs/profile/vbr
Total Market	CRSPTMT	VTI	https://investor.vanguard.com/investment-products/etfs/profile/vti
Canadian Hedged*	CRSPTCHT	VUS	https://www.vanguard.ca/en/advisor/products/products-group/etfs/VUS
Canadian Non-Hedged*	CRSPTMCT	VUN	https://www.vanguard.ca/en/advisor/products/products-group/etfs/VUN

MUTUAL FUNDS

Index Information		Fund Information	
Name	Ticker	Ticker	URL
Mega Cap	CRSPME1	VMCTX	https://investor.vanguard.com/investment-products/mutual-funds/profile/vmctx
Mega Cap Growth	CRSPMEG1	VMGAX	https://investor.vanguard.com/investment-products/mutual-funds/profile/vmgax
Mega Cap Value	CRSPMEV1	VMVLX	https://investor.vanguard.com/investment-products/mutual-funds/profile/vmvlx
Large Cap	CRSPLC1	VLCAX	https://investor.vanguard.com/investment-products/mutual-funds/profile/vlcax
Large Cap Growth	CRSPLCG1	VIGAX	https://investor.vanguard.com/investment-products/mutual-funds/profile/vigax
Large Cap Value	CRSPLCV1	VIVIX	https://investor.vanguard.com/investment-products/mutual-funds/profile/vivix
Mid Cap	CRSPMI1	VVAMCIV	https://advisors.vanguard.com/investments/products/0288/vanguard-variable-insurance-fund-mid-cap-index-portfolio
Mid Cap	CRSPMI1	VIMAX	https://investor.vanguard.com/investment-products/mutual-funds/profile/vimax
Mid Cap Growth	CRSPMIG1	VMGMX	https://investor.vanguard.com/investment-products/mutual-funds/profile/vmgmx
Mid Cap Value	CRSPMIV1	VMVAX	https://investor.vanguard.com/investment-products/mutual-funds/profile/vmvax
Small Cap	CRSPSC1	VSMAX	https://investor.vanguard.com/investment-products/mutual-funds/profile/vsmax
Small Cap Growth	CRSPSCG1	VSGAX	https://investor.vanguard.com/investment-products/mutual-funds/profile/vsgax
Small Cap Value	CRSPSCV1	VSIAX	https://investor.vanguard.com/investment-products/mutual-funds/profile/vsiax
Total Market	CRSPTM1	VBIAX	https://investor.vanguard.com/investment-products/mutual-funds/profile/vbiax
Total Market	CRSPTM1	VITPX	https://investor.vanguard.com/investment-products/mutual-funds/profile/vitpx
Total Market	CRSPTM1	VTSMX	https://institutional.vanguard.com/investments/product-details/fund/0585

APPENDIX – DEFINITIONS

Count: Number of companies contained within the index. A single company may have multiple securities associated with it. Counts for individual cap indexes may not add up to counts for the combined cap index due to banding and migration. For example, number of companies in Mega Cap Index plus number of companies in Mid Cap Index may not add up to number of companies in Large Cap. For more information regarding banding and migration please refer to the [CRSP Methodology](#).

Float-Adjusted Market Cap: represents the float-adjusted market capitalization of a company as described in the [CRSP Methodology](#). For sector indexes that had to be constrained to comply with IRS Regulated Investment Company rules, it means that the company's float adjusted market cap may have been adjusted further per our methodology.

Median Company: Median float-adjusted market capitalization of a company included in the index

Average Company: Average float-adjusted market capitalization of a company included in the index

Returns: total index returns are used in computations, with 1-, 3- and 5-year returns annualized

ISS ESG Performance Score: An ESG metric assigned by ISS based on its ISS ESG Corporate Rating, allowing direct comparisons of companies in different industries. ISS Performance Score is a numeric value between 0 and 100. See <https://www.issgovernance.com/esg/ratings/> for ISS definitions.

ISS Prime Indicator: A flag set by ISS for a company based on whether its ISS ESG Performance Score is at least 50. If a company meets the minimum threshold it is designated as Prime, and if not it is designated as Non-Prime. See <https://www.issgovernance.com/esg/ratings/> for ISS definitions.

Portfolio ISS ESG Performance Score: Portfolio ISS ESG Performance Score is computed by weighting securities' ISS ESG Performance Score by the corresponding weight in the index

Citing CRSP

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