

Exchange-traded funds

Managing equity downside | 21 May 2018

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- The length of the bull market and elevated volatility has led to increased concerns over equities. Importantly, as we discuss in our report *Global financial markets: Volatility is back. Are you prepared?*, we don't believe a pickup in volatility means the end of the bull market and recommend investors remain invested. Furthermore, we remain overweight global equities and within US equities, we prefer cyclical over defensive sectors.
- In this report, we discuss select equity strategies that attempt to outperform in weaker markets and show risk-return stats for select ETFs following each strategy. If used properly, we believe these strategies may be helpful in managing equity downside risks.
- There are risks to focusing on any one sector or strategy to protect portfolios, which is why proper portfolio diversification is paramount. US government and municipal bonds remain a portfolio's main ballast against bear markets, because they tend to do well during a "growth scare" environment.

The length of the bull market and elevated volatility has led to increased concerns over equities. As discussed in the report, *Global financial markets: Volatility is back. Are you prepared?*, we recommend investors remain invested as we do not believe the pickup in volatility means the end of the bull market. Furthermore, we remain overweight global equities and within US equities, we prefer cyclical over defensive sectors. However, we do believe that investors need to carefully manage risks.

During the recent bout of choppiness, investors were likely disappointed by the performance of "defensive" sectors and fixed income. While investors with properly diversified portfolios are well-prepared for the return of volatility, many others are not. Therefore, we wanted to review select equity strategies within the ETF market that attempt to outperform during weaker equity environments. If used properly, these strategies may be helpful in managing equity downside risks. In this report, we provide a brief overview of these strategies. We also include examples of ETFs in each category to show how some of the potential implementation options have performed. This is far from a comprehensive list of ETFs within each segment. For some clients, hedging strategies involving options or shorting stocks may make sense. There are options on many ETFs as well as ETFs providing short equity exposure but these are not discussed in this report.

Additional research

Global financial markets: Volatility is back. Are you prepared?, Mark Haefele, 10 May 2018

Investment strategy insights: Liquidity. Longevity. Legacy: A purposeful driven approach to wealth management. Michael Crook, 13 September 2017.

A simple way to prepare for late cycle, Michael Crook, 9 May 2018

Portfolio strategies: Creating alpha with smart beta, Ronald Sutedja, 17 November 2017

ETF Universe, David Perlman, 25 April 2018

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1Q18 returns did not follow the plan...

While it's nice to have a traditional playbook to follow to position more aggressively or defensively, in any one given period of weakness, anything can happen. During the recent period of market weakness in the first quarter, certain strategies in the traditional playbook to manage equity downside let investors down (Fig. 1). Within US equities, in the first quarter, the S&P 500 Index returned -0.8% and during the quarter, experienced a drawdown of 10%. The defensive sectors — consumer staples, healthcare, telecom, and utilities — returned between -8% and -1%. High quality fixed income also struggled with the Bloomberg Barclays US Aggregate Bond Index returning -1.5%.

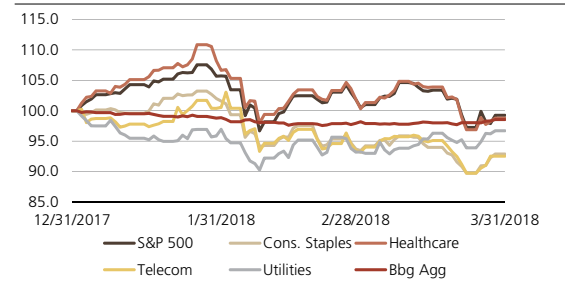
There are other strategies though within equities that can be used to try to outperform in weaker environments. Two of the strategies shown in Fig. 2 are a low volatility and a covered call strategy. During the first quarter, the S&P 500 Low Volatility Index returned -0.9% while the CBOE S&P 500 BuyWrite Index returned -1.6%. So while the returns were generally an improvement over the traditional defensive sectors, these strategies still failed to outperform. It's important to note that in 1Q18, equity market weakness was accompanied by higher interest rates. This typically acts as a headwind for low volatility and the traditional defensive sectors. If there is a growth scare or recession, we'd expect interest rates to move lower and better relative performance out of these strategies.

Longer-term, each of the above strategies has generally exhibited more defensive attributes (Fig. 3), but it's important to note that these risk-return statistics are an average experience over time. While these are certainly useful data points, they're also incomplete. For instance, the S&P 500 Low Volatility Index has captured just 41% of the downside of the S&P 500 since 2000. However, looking at three-year rolling returns over that time period, the downside capture has been as low as 7% and as high as 81%. And even if a strategy tends to hold up during S&P 500 drawdowns, that doesn't mean that it doesn't have its own risks. For example, the S&P 500 utilities sector has captured just 38% of the downside of the S&P 500 since 2000 — the lowest of the strategies analyzed over this period — but its max drawdown was 55%, which exceeds that of the S&P 500.

There are risks to focusing on any one sector or strategy to protect portfolios, which is why proper portfolio diversification is paramount. US government and municipal bonds remain a portfolio's main ballast against bear markets, because they tend to do well during a "growth scare" environment.

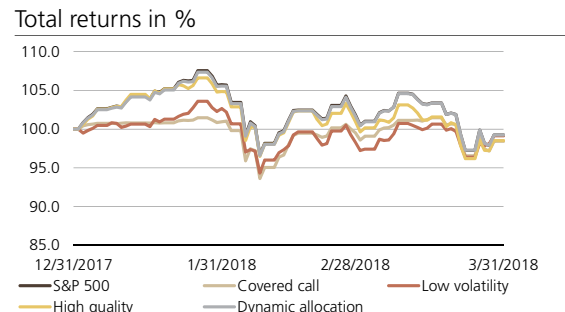
It's also important to think about equity risk in the context of meeting your financial goals. If you align your portfolio with your financial plan, using a goals-based wealth management approach, you may not want to sacrifice upside in order to protect against downside risks because your short-term spending needs are already invested in assets that aren't usually impacted by equity market volatility. This approach can improve portfolio robustness and enable investors to meet their financial goals, even during choppy markets. To read more about

Fig. 1: Traditional defensive plays lagged in Q1
Total returns in %



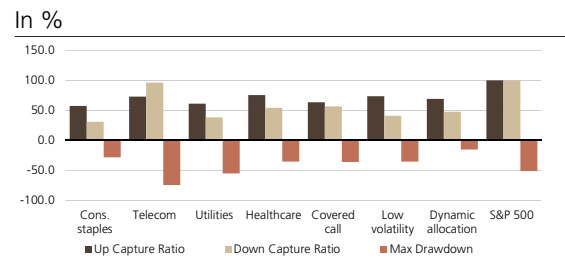
Source: Morningstar Direct, UBS. Consumer staples, healthcare, telecom, and utilities are the S&P 500 sectors. Bbg Agg is the Bloomberg Barclays US Aggregate Bond Index

Fig. 2: So did other strategies seeking to outperform in weaker markets
Total returns in %



Source: Morningstar Direct, UBS. Covered call is the CBOE S&P 500 BuyWrite Index. Low volatility is the S&P 500 Low Volatility Index. High quality is the S&P 500 Quality Index. Dynamic allocation is the Pacer Trendpilot US Large Cap Index

Fig. 3: These strategies can be helpful in managing equity downside, though not without their own risks
In %



Source: Morningstar Direct, UBS, monthly total return data from Jan 2000 through April 2018. Includes back-tested performance for some indices.

this approach, see the report *Investment strategy insights: Liquidity, Longevity, Legacy: A purposeful driven approach to wealth management* published by Michael Crook on 13 September 2017.

Low volatility and quality ETFs

Factors are common characteristics that explain and influence their risk-return. The quality factor is generally targeted using metrics around profitability and/or balance sheet strength. The low volatility factor is generally targeted using trailing volatilities. The approaches between ETFs targeting factors varies. For instance, some low volatility ETFs only include the least volatile stocks while other approaches seek to construct the least volatile portfolio. Some strategies constrain sectors to match the cap-weighted benchmark, others do not. Over time, the low volatility and quality factors tend to have lower volatilities, drawdowns, and capture less than 100% of the downside of traditional cap-weighted benchmarks. In general, between the two factors, low volatility tends to be the more defensive. While these strategies may outperform in weaker equity environments, there's still the risk for significant drawdowns given they remain 100% equities.

Fig. 4 shows risk-return statistics for some of the largest low volatility ETFs focusing on both the US and international markets. For the US, the iShares Edge MSCI Min Vol USA ETF (USMV) and the PowerShares S&P 500 Low Volatility Portfolio (SPLV) have captured less than 55% of the downside of the S&P 500 and with a lower max drawdown. Importantly, the upside capture has been over 70% so the upside-to-downside capture ratio has been favorable. For international developed and emerging markets, it's largely the same story.

Fig. 5 shows the risk-return stats for two largest quality ETFs: the iShares Edge MSCI USA Quality Factor ETF (QUAL) and the PowerShares S&P 500 Quality Portfolio (SPHQ). While QUAL has delivered

Fig. 4: Low volatility ETFs risk-return statistics

	Return	Standard deviation	Up Capture Ratio	Down Capture Ratio	Overall Capture Ratio	Max Drawdown	Sharpe ratio	Tracking error
USMV	13.6	8.1	78.8	54.0	1.46	-5.3	1.63	5.5
SPLV	12.8	8.8	74.4	50.6	1.47	-5.4	1.42	7.0
S&P 500	14.6	9.7	-	-	-	-8.4	1.46	-
EFAV	9.3	9.9	76.1	55.4	1.37	-8.5	0.91	6.8
IDLV	7.5	10.8	75.6	66.8	1.13	-13.6	0.67	6.4
MSCI EAFE	8.2	12.5	-	-	-	-18.0	0.63	-
EEMV	4.6	12.4	79.6	75.3	1.06	-22.7	0.34	5.8
EELV	2.7	12.7	76.0	81.3	0.94	-28.7	0.18	5.9
MSCI EM	4.6	14.9	-	-	-	-29.8	0.29	-

Source: Morningstar Direct, UBS. EFAV is the iShares Edge MSCI Min Vol EAFE ETF. IDLV is the PowerShares S&P International Developed Low Volatility Portfolio. EEMV is the iShares Edge MSCI Min Vol EM ETF. EELV is the PowerShares S&P Emerging Markets Low Volatility Portfolio. Monthly market price total return data through April 2018. USMV and SPLV data starts November 2011. EFAV, IDLV, EEMV, and EELV data starts February 2012.

on the more defensive exposure thus far, SPHQ has not. This serves as an example of how differences in the index methodologies can lead to large differences in exposures and performance, even for ETFs with similar objectives. One major difference between QUAL and SPHQ is that QUAL is sector neutral, meaning its sector weights are made to match those of the traditional, cap-weighted benchmark. It seeks the highest quality stocks within each sector. SPHQ does not have this same constraint and therefore it will have sector tilts relative to the benchmark that may help or hurt performance. Note, the time frame for the risk-return stats is since April 2016 as SPHQ had changed indices in March 2016. This is a short time frame to draw any firm conclusions.

Finally, low volatility and quality ETFs may not always outperform during weaker markets, especially when dealing with shorter term time periods. For instance, interest rates moving higher are typically a headwind for low volatility ETFs. If rising rates coincide with equity market weakness, low volatility strategies may not provide the expected outperformance. We saw that earlier this year. YTD through April, the S&P 500 had returned -0.4% and 10-year US Treasury yields had increased from 2.40% to 2.95%. Both USMV and SPLV have lagged returning -1.0% and -1.7%, respectively.

Fig. 5: Quality ETF risk-return statistics

	Return	Standard deviation	Up Capture Ratio	Down Capture Ratio	Overall Capture Ratio	Max Drawdown	Sharpe ratio	Tracking error
QUAL	13.1	6.7	85.3	77.5	1.10	-5.4	1.81	2.4
SPHQ	11.1	7.0	79.5	97.1	0.82	-7.1	1.44	2.0
S&P 500	15.1	7.2	-	-	-	-6.1	1.97	-

Source: Morningstar Direct, UBS. Monthly market price total return data from April 2016 to April 2018.

Dynamic allocation ETFs

There are a number of ETFs that will try to time when to be long equities versus cash or in some cases, also timing VIX futures allocations. These strategies seek to avoid large drawdowns by reducing, or potentially eliminating equity risk. For these strategies, a main risk is that of "whip-sawing," which involves selling out of equities late and reinvesting back into equities late. For ETFs timing VIX futures, it's being late to increase the VIX futures allocation. This is more likely to occur with sharp price movements that quickly reverse over a short period of time. The trigger that determines the allocations is paramount as it dictates the shift between assets. The trigger has to balance responsiveness to the market trend with minimizing the "whip-saw" risk as well as potential tax consequences and costs from turnover.

The two largest ETFs for shifting between large-cap US equities and cash are the VictoryShares US 500 Enhanced Volatility Wtd ETF (CFO) and the Pacer Trendpilot US Large Cap ETF (PTLC). CFO only seeks to protect against sharp declines in equities and therefore does not have a sensitive trigger. CFO was launched in July 2014 and has not yet

shifted to cash. Over the common inception period between the two ETFs, PTLC has shifted to cash two times.

Fig. 6 shows the risk-return stats for these ETFs since their common inception. Importantly, since CFO hasn't shifted to cash, the risk-return stats to this point are simply based on the equity strategy alone. The strategy seeks to outperform traditional cap-weighted strategies by weighting 500 of the largest US stocks that have been profitable in each of the past 4 quarters to evenly distribute risk among all constituents. For PTLC, the two times it shifted to cash were short-term, sharp corrections that were quickly reversed where the shifts out-of and back into equities were late. That's why despite following the S&P 500 for the equity component of the strategy, it's had a higher drawdown and lagged on both an absolute and risk-adjusted basis. We'd expect the strategy to perform better during a more protracted downturn.

The PowerShares S&P 500 Downside Hedged Portfolio (PHDG) is an actively managed ETF that times exposure to equities and VIX futures. The benefit of VIX futures is that they are negatively correlated with equities. Therefore, when equities decline, VIX futures tend to post positive returns. It's even possible that the positive return from the VIX futures could outweigh the decline in equities. While a long VIX futures allocation can add positive returns to the portfolio when volatility increases, it generally detracts from returns in more normal environments. The VIX futures curve is typically upward sloping so there is a cost to rolling VIX futures. The impact on the cost of the VIX futures strategy is evident in the upside capture statistics (Fig. 3). Since its inception, PHDG has captured 47% of the upside of the S&P 500 versus 74% of the downside. Given that equity returns tend to be positive more often than negative, this is not a favorable trade-off.

Fig. 6: Dynamic allocation ETF risk-return statistics

	Return	Standard deviation	Up Capture Ratio	Down Capture Ratio	Overall Capture Ratio	Max Drawdown	Sharpe ratio	Tracking error
CFO	11.9	10.3	97.3	89.7	1.08	-9.2	1.08	2.8
PTLC	6.3	8.5	71.9	93.0	0.77	-12.9	0.66	6.5
S&P 500	11.5	10.4	-	-	-	-8.4	1.03	-
PHDG	4.4	7.8	46.7	74.2	0.63	-16.0	0.52	6.4
S&P 500	14.7	9.8	-	-	-	-8.4	1.45	-

Source: Morningstar Direct, UBS. Monthly market price total return data through April 2018. For CFO and PTLC, data starts July 2015. For CFO, risk-return stats based solely on equity strategy as it has yet to shift to cash. For PHDG, data starts Jan 2013.

Covered call ETFs

There are a number of ETFs that employ a covered call strategy, which involves selling call options over the portfolio of stocks. These strategies can differ in both terms of the underlying equity exposure and the options overlay strategy (index vs. single stock options, percent of portfolio covered, and option strike prices and maturities). These strategies tend to work best in sideways or gently rising equity mar-

kets. While covered call strategies would likely outperform on a relative basis in down markets, there's still equity market risk and there can be significant drawdowns. Therefore, these strategies are not ideal for investors looking to protect against large market drawdowns.

The two largest covered call ETFs focusing on US stocks are the PowerShares S&P 500 BuyWrite Portfolio (PBP) and the Horizons Nasdaq 100 Covered Call ETF (QYLD). Fig. 7 shows risk-return stats for these ETFs. The defensive nature is evident in the standard deviations and down capture ratios. What are also evident is the potential drawdown risk and the effect of capping the upside in strong equity markets. Relative to low volatility ETFs over the longest common inception period, PBP has exhibited lower volatility and downside capture but has sacrificed a lot more of the upside capture (Fig. 8).

Fig. 7: Covered call ETF risk-return statistics

	Return	Standard deviation	Up Capture Ratio	Down Capture Ratio	Overall Capture Ratio	Max Drawdown	Sharpe ratio	Tracking error
PBP	3.7	11.6	57.3	63.5	0.90	-39.8	0.29	7.5
S&P 500	8.2	15.0	-	-	-	-48.5	0.52	-
QYLD	8.3	7.9	45.7	37.8	1.21	-6.8	1.00	8.6
Nasdaq 100	16.5	13.0	-	-	-	-9.6	1.23	-

Source: Morningstar Direct, UBS. Monthly market price total return data through April 2018. For PBP, data starts January 2008. For QYLD, data starts January 2014.

Fig. 8: Low volatility vs. covered call ETF risk-return statistics

	Return	Standard deviation	Up Capture Ratio	Down Capture Ratio	Overall Capture Ratio	Max Drawdown	Sharpe ratio	Tracking error
USMV	13.7	8.1	78.5	51.7	1.52	-5.3	1.64	5.5
SPLV	12.8	8.7	74.2	49.9	1.49	-5.3	1.43	6.9
PBP	7.5	5.9	48.8	41.9	1.16	-5.8	1.22	6.2
S&P 500	14.6	9.7	-	-	-	-8.4	1.46	-

Source: Morningstar Direct, UBS. Monthly market price total return data from November 2011 through April 2018.

Convertible ETFs

Convertible securities are another investment that provides more defensive equity exposure. Convertible securities include both convertible bonds and preferreds. Convertible bonds allow investors to convert the debt into preferreds or stock while convertible preferreds can be converted to stock. As a result, convertible securities exhibit the behavior of both bonds and stocks. The bond aspect can help in weaker environments while the option to convert to equities provides upside potential when the underlying equities rise in price. Whether a specific convertible security behaves more like a bond or stock depends on where the stock price is trading relative to the conversion price. Notably, many convertible securities are rated below investment

grade or not rated and there is credit risk involved. Therefore, the "bond like floor" could be the recovery rate in the event of a default.

The largest convertibles ETF is the SPDR Bloomberg Barclays Convertible Securities ETF (CWB), which tracks an index of convertible securities. Risk-return statistics are shown in Fig. 9. Since its inception in 2009, CWB has captured roughly 75% of the upside and 73% of the downside of the S&P 500. Its beta has been 0.69. Similar to other strategies discussed, there is still drawdown risk. The max drawdown of CWB is comparable to that of the S&P 500 over the period analyzed.

Fig. 9: Convertibles ETF risk-return statistics

	Return	Standard deviation	Up Capture Ratio	Down Capture Ratio	Overall Capture Ratio	Max Drawdown	Sharpe ratio	Tracking error
CWB	11.6	9.3	74.5	73.4	1.02	-15.6	1.21	5.7
S&P 500	15.5	12.0	-	-	-	-16.3	1.26	-

Source: Morningstar Direct, UBS. Monthly market price total return data from May 2009 through April 2018.

Conclusion

As we discuss in our report, *Global financial markets: Volatility is back. Are you prepared?*, we don't believe a pickup in volatility means the end of the bull market. We also remain overweight global equities and within US equities prefer cyclical over defensive sectors. We recommend that investors remain invested, but carefully manage risks.

There are ways to manage equity downside risk beyond the classic equity indices and bond indices. Low volatility, quality, covered call, and convertible ETFs help investors to position more defensively without the market timing risks or taking on the risks of any one specific sector. While low volatility, quality, and covered call ETFs would likely outperform traditional benchmarks during periods of equity weakness, they do not shift out of equities and there can be sizable drawdowns. Market timing strategies are better suited to protect against large, protracted market downturns but can be whip-sawed by sharp, quick downturns that quickly reverse. The summary table on p. 8 provides a quick overview of the different strategies. Importantly, investors must understand how the ETFs are constructed as even ETFs with similar objectives can perform very differently.

While each strategy discussed has generally exhibited defensive attributes over the long-term, this may not be the case during any specific period of weakness. There are risks to focusing on any one sector or strategy to protect portfolios, which is why proper portfolio diversification is paramount. US government and municipal bonds remain a portfolio's main ballast against bear markets, because they tend to do well during a "growth scare" environment. Additionally, our Liquidity. Longevity. Legacy (3L) wealth management approach can improve portfolio robustness, enabling investors to meet their financial goals even during choppy markets.

Summary table of defensive strategies

	Advantage	Disadvantage	Best suited to
Low volatility and quality ETFs	<ul style="list-style-type: none"> - Higher upside potential in positive equity markets than some other more defensive strategies - More diversification than focusing just on defensive sectors 	<ul style="list-style-type: none"> - Still have equity market risk and can experience large drawdowns - May not outperform in weaker markets when yields are moving higher 	<ul style="list-style-type: none"> - Position portfolios more defensively while maintaining 100% long equity exposure
Dynamic allocation (market timing) ETFs	<ul style="list-style-type: none"> - Lowering equity risk by shifting to cash & cash equivalents or VIX futures can help to avoid large drawdowns 	<ul style="list-style-type: none"> - Market timing risk: Selling stocks too late and/or buying back stocks too late - For strategies using VIX futures, cost of rolling VIX futures typically detracts from returns 	<ul style="list-style-type: none"> - Try to outperform during large, protracted equity market declines
Covered call ETFs	<ul style="list-style-type: none"> - Premium generated from selling call options provides a partial offset to losses on equities 	<ul style="list-style-type: none"> - Capping upside potential on portion of portfolio covered - Still have equity market risk and can experience large drawdowns 	<ul style="list-style-type: none"> - Position portfolios more defensively while maintaining 100% long equity exposure and to generate income - Tend to work best in sideways or modestly positive/negative markets
Convertible securities	<ul style="list-style-type: none"> - "Bond-like" characteristics can help in weaker equity markets while option to convert to equities helps when equities are rising 	<ul style="list-style-type: none"> - Still have equity market risk and can experience large drawdowns; "bond-like" floor may be based on expected recovery rates in the event of a default 	<ul style="list-style-type: none"> - Position more defensively within equities

Source: UBS

Morningstar definitions

Downside capture ratio - Measures the performance in down markets relative to the benchmark itself. It is calculated by taking the security's downside capture return and dividing it by the benchmark's downside capture return. For example, a down capture ratio of 110% indicates the investment captured 110% of the down-market and therefore underperformed on the downside.

Maximum drawdown - The peak to trough decline during a specific record period of an investment or fund. It is usually quoted as the percentage between the peak to the trough.

Overall capture ratio – The ratio between upside and downside capture ratios. An overall capture ratio greater than 100% means that the investment went up more than the benchmark when the market had positive returns than it went down when the market had negative returns.

Sharpe ratio - A risk-adjusted measure developed by Nobel Laureate William Sharpe. It is calculated by using standard deviation and excess return to determine reward per unit of risk. The higher the Sharpe Ratio, the better the portfolio's historical risk-adjusted performance. The Sharpe Ratio can be used to compare two portfolios directly with regard to how much excess return each portfolio achieved for a certain level of risk. Morningstar first calculates a monthly Sharpe Ratio and then annualizes it to put the number in a more useful one-year context.

Tracking error – Average deviation of returns from the benchmark index

Upside capture ratio - Measures the performance in up markets relative to the benchmark itself. It is calculated by taking the security's upside capture return and dividing it by the benchmark's upside capture return. For example, an up capture ratio of 110% indicates the investment captured 110% of the up-market and therefore outperformed on the upside.

Volatility (standard deviation) - The statistical measurement of dispersion about an average, which depicts how widely a stock or portfolio's returns varied over a certain period of time. Investors use the standard deviation of historical performance to try to predict the range of returns that is most likely for a given investment. When a stock or portfolio has a high standard deviation, the predicted range of performance is wide, implying greater volatility.

Standardized performance & prospectus links

ETF market price and NAV total returns in % as of 31 March 2018

	1-year		3-year		5-year		10-year		Since inception	
	Price	NAV	Price	NAV	Price	NAV	Price	NAV	Price	NAV
USMV	10.89	10.98	10.21	10.23	11.98	11.98	-	-	14.05	14.09
SPLV	10.37	10.32	9.73	9.69	11.15	11.16	-	-	12.52	12.52
EFAV	14.51	14.18	6.87	6.73	7.42	7.40	-	-	8.81	9.09
IDLV	11.22	11.11	5.71	5.69	4.96	5.01	-	-	7.84	8.04
EEMV	19.40	18.42	4.43	4.15	3.08	2.96	-	-	6.53	6.15
EELV	17.99	17.02	3.48	3.14	0.73	0.71	-	-	3.28	3.27
QUAL	15.77	15.73	11.23	11.26	-	-	-	-	13.15	13.20
SPHQ	11.09	11.21	10.41	10.42	13.39	13.41	8.21	8.22	6.65	6.70
CFO	16.02	15.95	10.96	10.98	-	-	-	-	10.76	10.67
PTLC	13.27	13.33	-	-	-	-	-	-	5.70	5.47
PHDG	14.29	14.45	3.50	3.63	4.02	4.12	-	-	4.77	4.85
PBP	6.30	6.15	6.37	6.39	6.67	6.60	4.20	4.16	3.89	3.79
QYLD	12.44	12.51	10.03	10.25	-	-	-	-	8.48	8.51
CWB	12.02	12.28	8.36	8.54	9.78	9.84	-	-	11.58	11.77

All performance figures were obtained from Morningstar Direct, and are current as of the most recent month end. You may obtain a prospectus and performance data for the ETFs current to the most recent month end by clicking on the links below. Performance quoted represents past performance, which is no guarantee of future results. Investment return and principal value will fluctuate, so you may have a gain or loss when shares are sold. Current performance may be higher or lower than that quoted. See appendix for definitions on select Morningstar Direct statistics.

Issuer	Web-site
BlackRock	https://www.ishares.com/us/index
Horizon	https://horizonsetfsus.com/
Invesco PowerShares	https://www.invesco.com/portal/site/us/financial-professional/etfs/
SSgA	https://www.spdrs.com/
Victory Capital	https://www.vcm.com/investment-professionals/victoryshares-etfs

Appendix

Statement of Risk

Exchange Traded Funds (ETFs) - For purposes of this report, ETFs include index-linked funds regulated under the Investment Company Act of 1940 that trade on US securities exchanges under exemptive relief from the Securities and Exchange Commission. The shares of all of the ETF issuers discussed in this Report are listed on U.S. securities exchanges. The ETFs are either open-end, registered investment companies (including UITs) operating under an exemptive order from the SEC, or collective investment vehicles, formed as grantor trusts, limited partnerships or similar structures that offer pass-through tax treatment to investors. The different structures provide different rights for investors. For example, ETFs registered under the Investment Company Act of 1940 must stand ready at all times to redeem shares (albeit only in creation unit size) whereas those ETFs that are not subject to registration under the Investment Company Act of 1940 may suspend redemptions at any time. We refer to ETFs registered with the SEC under the Investment Company Act of 1940 as "40 Act ETFs" and to nonregistered ETFs as "33 Act ETFs." Most of the ETFs discussed in this Report track an index of financial instruments or provide exposure to a single commodity type. ETFs are subject to the same risks as the underlying securities and commissions may be charged on every trade, if applicable. This definition does not imply that ETFs are endorsed by the Securities and Exchange Commission.

Any discussion contained herein regarding future performance is not intended to guarantee future performance or to suggest that past performance will reoccur. Moreover, target returns are not intended to be projections but to provide a range within which price levels may move assuming current market conditions as well as the other assumptions mentioned in the Report are met. Performance of an index is not illustrative of any particular investment. It is not possible to invest directly in an index.

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