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Spectrum Financial Alliance Ltd., L.L.C. Disclosures

Performance Disclosures

Client performance includes all client Charles Schwab accounts managed by SFA for the period (potentially excluding a small number of accounts determined by our firm to be inappropriate to include in firm-wide performance). Due to limitations in data reporting and the potential inability to utilize our firm's investment models, client performance does not include iShares 529 Plan accounts, outside managed employer sponsored retirement plans, and any other outside managed account.

All client performance data is calculated by Morningstar, Inc. and reported net of all client costs and Charles Schwab debited fees. Morningstar, Inc. is an independent company that provides investment research and data validation. Average account performance is derived from an aggregate weighting of all beginning market, ending market, and net cash flow values of all client accounts (potentially excluding a small number of accounts determined by our firm to be inappropriate to include in firm-wide performance) for the period. Individual client performance may differ from the firm's average account performance for the period.

All performance results shown are net of Spectrum's management fees, which vary from 0.9% - 1.50% per annum (as disclosed in Spectrum's Form ADV Part 2). Fees may be negotiable based on many factors including potential referrals, relationship to a current Spectrum client, future likely additions to the account, etc. The performance results also reflect the reinvestment of any dividends, capital gains, other earnings, and the subtraction of applicable fees. Spectrum does not make any representation that client accounts will or are likely to achieve returns similar to those shown above. Clients and/or prospective clients should understand that PAST PERFORMANCE MAY NOT BE INDICATIVE OF FUTURE RESULTS.

For additional information about Spectrum Financial Alliance, including fees and services, send us a request for our disclosure statement of Form ADV Part 2 or it can be found on our website free of charge at https://spectrumalliance.com/. Please read the disclosure statement carefully before you invest or send money.









2009 Performance Disclosures

Due to the movement of all client custodial assets from Fidelity to Charles Schwab in 2009, that year's performance data includes only accounts that were under our management for the entire year. The 2009 performance figure is an average of all the appropriate household level returns for the year.

The performance is calculated using a manual monthly time weighted return (utilizing aggregate monthly statement beginning market values, ending market values, and net cash flows for each household) for a partial period of 2009 (due to the change from Fidelity to Charles Schwab) combined with Morningstar's daily time weighted return (utilizing aggregate daily beginning market values, ending market values, and net cash flows for each household) for the remainder of the year.

The transition date from Fidelity to Charles Schwab varied from household to household and in some cases, from account to account within a household. For consistency and since data was limited, we use the first account's transition date from Fidelity to Charles Schwab and pro-rate the Fidelity performance appropriately. This date is applied to all accounts within any given household.

The ending value for Fidelity performance figures, the month of transition from Fidelity to Charles Schwab, is derived from the accounts "Withdrawals" section of the appropriate monthly statement.

S&P 500 Benchmark Disclosures

The S&P 500 benchmark performance is based on the price return for the applicable period. This conforms with the benchmark that is illustrated on monthly statements generated by our custodian, Charles Schwab. Indices, such as the S&P 500, are artificial and typically include dividend reinvestment into their calculated returns. The S&P 500 price return does not show the reinvestment of dividends which, therefore, does somewhat understate the total return by the amount of the reinvested dividends. The S&P 500 price return does not have any advisory fees deducted. If we used the total return instead of the price return for the S&P 500, reinvestment of dividends may show a different performance than what is depicted on our custodian, Charles Schwab, statements. While it is not statistically impossible, it is very difficult to outperform the S&P 500 Index.

Berkshire Comparison Disclosures

Berkshire Hathaway is an extremely well diversified conglomerate that consists of many companies from several different industries. Berkshire's holdings tend, like SFA's, to be concentrated. Many financial publications compare the investment selection and returns of CEO and Chairman of Berkshire Hathaway, Warren Buffett, to the equity markets, is considered to be









one of the most successful investors in the world. Due to the investment success and reputation of Mr. Buffett, we like to compare Berkshire's performance to our company's average performance, net of all costs. This is an interesting comparison for our clients, and we think it is fair because of the diversification of Berkshire, and their concentrated, predicative style, which is close to our own philosophy and investment style. Our comparisons deduct our firm's average fee from the performance calculation of Berkshire's performance well as from SFA's performance. Berkshire's, and Spectrum Financial Alliance's, performance comparison does reflect the reinvestment of dividends. **Past performance is not necessarily indicative in future results.**

Performance Requests Disclosures

Clients are encouraged to utilize their Spectrum Financial Alliance provided e-Money portal to compute their own accounts rates of returns, and index returns, at any time of the day, 365 days a year. Additionally, clients can request performance comparisons at any time from SFA and they will be provided. SFA also provides Morningstar, Inc, depicted performance on each client's account in our annual client reviews.

Advice Disclosures

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Please contact Spectrum Financial Alliance Ltd, L.L.C. for more complete information based on your personal circumstances and to obtain personal investment advice.

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Opinion Disclosures

Everything we say represents our firm's opinion and does not guarantee a definitive future outcome or result. Any opinions expressed by SFA, or its employees, on the Firm's social media accounts, letters, or any other communication device, are as of the date of publication and are subject to change.

Positive Reviews Disclosures

SFA will never request that any individual post an endorsement, testimonial, or review of our services on any of SFA's social media web pages as our direct, or indirect, request is not allowed under SEC rules and regulations.

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Referrals to Professionals Disclosures

Our firm provides estate planning facilitation to our clients. Any outside professional that we refer you to for the purpose of writing your estate plan is <u>not</u> an employee of our firm. Clients are free to use any tax planning professional, insurance professional, estate planning attorney, or other professional that they desire.









Performance Data Disclosures for SFA Investment Proposals

The results depicted for any SFA provided "Portfolio Model" are hypothetical and back tested. They do not reflect past actual returns of client accounts managed by SFA, which **are** fully reported in your SFA Introductory Packet, and are independently calculated by a reputable third party – Morningstar, Inc.

The historical returns shown for a prospective client are based on the asset weightings across the entire time period depicted from the most recent statement provided to our firm. However, these assets and weightings could have changed over time, and therefore the back tested returns depicted may be different from what is depicted.

The actual returns achieved by an account holder may have varied materially from the returns shown due to various factors including active management, rebalancing of the account, account deposits and withdrawals, and other factors.

There are limitations on hypothetical and backtested returns. These results do not represent actual trading and would not reflect the impact that material economic and market factors would have on SFA's decision-making.

The inception date of our firm's Minimum Volatility Portfolio strategy was June 8, 2018.

SFA does not make any representation that client accounts will or are likely to achieve returns similar to those shown above. Clients and/or prospective clients should understand that PAST PERFORMANCE MAY NOT BE INDICATIVE OF FUTURE RESULTS.

Current Holdings Disclosures for Investment Proposals

In comparisons of for any SFA provided "Portfolio Model" versus your current holdings, the results shown are hypothetical and backtested. They do not reflect past actual returns of client accounts managed by SFA, which **are** fully reported in your SFA Introductory Packet, and are independently calculated by a reputable third party – Morningstar, Inc.

The historical returns shown for a prospective client are based on the asset weightings across the entire time period depicted from the most recent statement provided to our firm. However, these assets and weightings could have changed over time, and therefore the back tested returns depicted may be different from what is depicted.

The actual returns achieved by an account holder may have varied materially from the returns shown due to various factors including active management, rebalancing of the account, account deposits and withdrawals, and other factors.





There are limitations on hypothetical and backtested returns. These results do not represent actual trading and would not reflect the impact that material economic and market factors would have on an adviser's decision-making.

Clients and/or prospective clients should understand that PAST PERFORMANCE MAY NOT BE INDICATIVE OF FUTURE RESULTS.

Morningstar Portfolio Snapshot Disclosure

Composition-Snapshot Report

The asset-weighted composition of all of the holdings in the portfolio for which we have composition data. Holdings without composition information are not included in the calculation.

Cash

This data point identifies the percentage of the portfolio's net assets held in cash. Cash encompasses both actual cash and cash equivalents (fixed-income securities with a maturity of one year or less) held by the portfolio plus receivables minus payables. Negative percentages of cash indicate that the portfolio is leveraged, meaning it has borrowed against its own assets to buy more securities or that it has used other techniques to gain more than 100% exposure to the market.

U.S. Stocks

The percentage listed under the heading 'U.S. Stocks' incorporates only the portfolio's common stock holdings in U.S.-based companies.

Non-U.S. Stocks

When listed, this data point reflects only the percentage of a portfolio's holdings that are held in foreign stocks, and is calculated from the fund's most recent portfolio. Non-U.S. Stocks includes foreign bonds that are convertible into equity, as well as foreign convertible preferreds.

Bonds

This data point identifies the percentage of the portfolio's' net assets held in bonds. Bonds include everything from government notes to high-yield corporate bonds.

Other

Includes preferred stocks (equity securities that pay dividends at a specific rate) as well as convertible bonds and convertible preferreds, which are corporate securities that are exchangeable for a set amount of another form of security (usually common shares) at a prestated price. Other also denotes all those not-so-neatly categorized securities, such as warrants and options.

Not Classified

Not all individual stocks or all securities in fund portfolios can be identified or classified by Morningstar. If a security cannot be identified or classified, it will be reflected in this number.

Current Investment Style-Snapshot Report

Equity Investment Style

This section displays the percentage of total stock holdings within the portfolio that fall into each of the nine areas of the Equity Style Box. This calculation excludes cash, bonds and not classified holdings. After









determining the equity style of each stock or fund, we sum the weights (%) of the holdings with the same style. This equals the total weighting for that particular investment style among the portfolio stock holdings.

The equity style box is a nine-box matrix that displays the weighted portfolio stock and mutual fund investment methodology and the size of the companies in which they invest. Combining these two variables offers a broad view of a portfolio's equity holdings and risk. For a complete explanation of how we calculate the Equity Style Box for stocks and stock funds, see the Morningstar Style Box topic.

Fixed-Income Investment Style

This section displays the percentage of total bond holdings within the portfolio that fall into each of the nine areas of the Fixed-Income Style Box. This calculation excludes cash, stocks and not classified holdings.

After determining the fixed-income style of each bond and bond fund, we sum the weights (%) of the holdings with the same style. This equals the total weighting for that particular investment style among the portfolio's bond holdings.

Domestic and international fixed-income funds feature their own style boxes, which focus on the two pillars of fixed-income performance: interest-rate sensitivity and credit quality. Morningstar splits fixed-income funds into three groups of rate sensitivity as determined by maturity (short, intermediate, and long) and three credit-quality groups (high, medium, and low). These groupings graphically display a portfolios average maturity and credit quality. Nine possible combinations exist, ranging from short maturity/high quality for the safest funds to long maturity/low quality for the more volatile.

Sector Weightings-Snapshot Report

Morningstar divides the economy into three super sectors and 11 sub-sectors. Read the <u>global equity</u> <u>classification methodology</u>.

Cyclical

The cyclical super sector includes industries significantly impacted by economic shifts. When the economy is prosperous these industries tend to expand and when the economy is in a downturn these industries tend to shrink. In general, the stocks in these industries have betas of greater than 1.

The cyclical super sector is made up of the following sectors:

- Basic Materials:
- Consumer Cyclical:
- Financial Services:
- Real Estate:

Sensitive

The sensitive super sector includes industries which ebb and flow with the overall economy, but not severely so. Sensitive industries fall between the defensive and cyclical industries as they are not immune to a poor economy but they also may not be as severely impacted by a poor economy as industries in the cyclical super sector. In general, the stocks in these industries have betas that are close to 1.

The sensitive super sector is made up of the following sectors:

- Communication Services:
- Energy:
- Industrials:









Technology:

Defensive

The defensive super sector includes industries that are relatively immune to economic cycles. These industries provide services that consumers require in both good and bad times, such as healthcare and utilities. In general, the stocks in these industries have betas of less than 1.

The defensive super sector is made up of the following sectors:

- Consumer Defensive:
- Healthcare:
- Utilities:

Not Classified

Not all individual stocks or all securities in fund portfolios can be identified or classified by Morningstar. If a security cannot be identified or classified, it will be reflected in this number.

Regional Exposure-Snapshot Report

This data set provides a broad breakdown of a fund's geographical exposure. Each region's exposure is presented as a percentage of non-cash equity assets held by the fund. Regional exposure information summarizes a portfolio's exposure to geopolitical risk. It also provides a reference point for understanding fund returns. Some fund managers follow a "top down" discipline, where they direct their investments into regions they consider good opportunities.

For stock funds, regional exposure is calculated as a percentage of stocks; for bond funds, the data is available for international bond funds only, and is culled from quarterly surveys.

Morningstar recently revised its existing region scheme to accommodate a more refined classification. The structure of Morningstar's regions is a single unified scheme with some countries at its base. These countries are classified into geographic regions. The regions are then folded into three super geographic regions of the Americas, Greater Europe and Greater Asia. They are based on the following three criteria:

- Common economic/currency denominator
- · Sufficient population of publicly traded equities
- Logistics and geography

These super regions alongside Morningstar's new Economic Spheres are meant to provide quick, easy to understand and unified portfolio construction and asset allocation tool.

Morningstar Super Regions

- **The Americas**: This super region includes North America (the U.S. and Canada) and Emerging Central & Latin America. Within this super region, we have the following economic regions:
 - North America: the U.S. and Canada
 - Emerging Central & Latin America: Mexico and all of Central and South America
- Greater Europe: This super region includes the United Kingdom, continental Europe (Western and Eastern Europe, Russia) and Africa. Within this super region, countries are classified as Euro and Non-Euro, as well as "Developed" and "Emerging". Within this super region, we have the following economic regions:

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- United Kingdom
- **Western Europe: ex U.K.**; Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain
- Emerging Europe: Russia and other Eastern European countries
- Africa
- Greater Asia: This super region includes the Middle East and all other Asian countries In addition to stand alone countries, or sub-regions such as Japan and Australasia (Australia and New Zealand).
 Within this super region, we have the following economic regions: Japan
 - Australasia: Australia and New Zealand
 - Emerging 4 Tigers: Hong Kong, Singapore, South Korea, Taiwan
 - Emerging Asia: Asia ex 4 Tigers; Near East, Middle East, Far East
- Not Classified: Not all individual stocks or all securities in fund portfolios can be identified or classified
 by Morningstar. If a security cannot be identified or classified, it will be reflected in this number.

Trailing Returns-Snapshot Report

The Trailing Returns section of the Portfolio Snapshot Report shows the approximate returns an investor would have realized over the indicated time period, as well as how those returns compare to a benchmark index. Portfolio and benchmark returns are calculated by asset-weighting the monthly returns of the underlying holdings and thus reflect the pretax results an investor would have achieved by rebalancing the portfolio on a monthly basis. These same returns are used to calculate all returns-based statistics. Returns for individual holdings are trailing total returns.

Best/Worst Time Periods-Snapshot Report

This Best/Worst Time Periods area shows the periods during the last ten years in which the portfolio has had its highest percentage gain and loss, as well as what those gains and losses were. Best and worst time periods are displayed for three-month, one-year and three-year time periods.

Investment Activity Graph-Snapshot Report

The Investment Activity graph visually displays the market value for a specific holding or portfolio, based on the allocations made into the portfolio. The historic performance data graphed is extrapolated from the ending portfolio value based on the monthly returns.

The graph dates back 10 years. The returns for this graph are calculated by asset-weighting the monthly returns of the underlying holdings and thus reflect the pretax results an investor would have achieved by re-balancing the portfolio on a monthly basis.

Total Market Value reflects the total value of the portfolio allocations made into the portfolio.









Top Holdings-Snapshot Report

The top 10 holdings of each portfolio are listed here, along with their asset types, holding values, and the percentage of assets they represent in the portfolio. The Holdings page of the Snapshot Report lists all of the holdings in the portfolio.

Market Maturity-Snapshot Report

This section shows the percentage of a portfolio's common stocks that are domiciled in developed and emerging markets. The sum of the individual market maturity percentages for each holding multiplied by the weight (%) each holding takes up in the portfolio equals the total percentage of stocks in the portfolio for each market maturity sector.

Developed Markets

Includes Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Ireland, Italy, Japan, Luxembourg, the Netherlands, New Zealand, Norway, Singapore, Spain, Sweden, Switzerland, the United Kingdom, The United States, and a handful of smaller countries and territories (such as Gibraltar). All other countries are considered emerging markets.

Emerging Markets

Includes all countries not listed under developed markets. Normally carry greater political and economic risk than developed countries, and stocks located in them are normally less liquid and more volatile.

Not Available

When Morningstar cannot determine the country in which a stock issuer is domiciled, it is categorized as "Not Available" for any fund or VA that holds it.

Type Weightings-Snapshot Report

Morningstar divides the stocks in a given portfolio into eight type designations—High Yield, Distressed, Hard Asset, Cyclical, Slow Growth, Classic Growth, Aggressive Growth, and Speculative Growth—each of which defines a broad category of investment characteristics. This section shows the percentage of a portfolio's U.S. common stocks that fall within each Type. The percentage of U.S. stocks that each Type represents in the benchmark is also listed.

High Yield

Companies that have dividend yields at least twice the average for large-cap stocks. They tend to be mature, slow-growing companies.

Distressed

Companies that have had consistently declining cash flows and earnings over the past three years, and/or very high debt.

Hard Asset

Companies that deal in assets such as oil, metals, and real estate, which tend to do well in inflationary environments.

Cyclical

Companies in the cyclicals and durables sectors, except those in the Distressed, Hard Assets, and High Yield types. The profits of cyclicals tend to rise and fall with the general economy.









Slow Growth

Companies that have shown slow revenue and earnings growth (typically less than the rate of GDP growth) over at least three years.

Classic Growth

Companies that are growing respectably faster than the general economy, and often pay a steady dividend. They tend to be mature and solidly profitable businesses.

Aggressive Growth

Companies whose revenues and earnings have both been growing significantly faster than the general economy.

Speculative Growth

Companies that have shown strong revenue growth but slower or spotty earnings growth. Very small or young companies also tend to fall into this class.

Not Available

Not all individual stocks or all securities in portfolios can be identified or classified by Morningstar. If a security cannot be identified or classified, it will be reflected in this number.

Valuation Multiples-Snapshot Report

Valuation Multiples are calculated for portfolios by taking the asset-weighted average of the price/earnings, price/book, price/sales, and price/cash flow ratios of the holdings in the portfolio.

The most-recent valuation multiples for the benchmark are also provided.

Price/Earnings Ratio

The price/earnings (P/E) ratio of a fund is the weighted average of the price/earnings ratios of the stocks in a fund's portfolio. The P/E ratio of a company, which is a comparison of the cost of the company's stock and its trailing 12-month earnings per share, is calculated by dividing these two figures.

Price/Book Ratio

Book value is the total assets of a company, less total liabilities (sometimes referred to as carrying value). The price/book (P/B) ratio of a fund is the weighted average of the price/book ratios of all the stocks in a fund's portfolio. A company's price to book value is calculated by dividing the market price by the company's book value per share. (Stocks with negative book values are excluded from this calculation.)

Price/Sales Ratio

Price/sales represents the amount an investor is willing to pay for a dollar generated from a particular company's operations. The price/sales ratio of a fund is the weighted average of the price/sales ratios of all the stocks in a fund's portfolio. A company's price/sales ratio is calculated by dividing the market price of its outstanding stock by the company's sales per share.

Price/Cash Flow

Price/cash-flow represents the amount an investor is willing to pay for a dollar generated from a particular company's operations. Price/cash-flow shows the ability of a business to generate cash and acts as a gauge of liquidity and solvency. Because accounting conventions differ among nations, reported earnings (and P/E ratios) may not be comparable across national boundaries. Price/cash-flow attempts to provide an internationally-standard measure of a firm's stock price relative to its financial performance.

The price/cash flow ratio of a fund is the weighted average of the price/cash flow ratios of all the stocks in a fund's portfolio. A company's price/sales is calculated by dividing the market price of its outstanding stock by the company's cash flow per share over the trailing 12 months.









Profitability-Snapshot Report

The asset-weighted average of the net margin, ROE, ROA, and debt/total capitalization of the holdings in the U.S. Stock portion of the portfolio.

The sum of the individual profitability measures for each holding multiplied by the weight (%) each holding takes up in the portfolio equals the average profitability measure for the portfolio. These figures are listed for the most-recent two calendar years. The most-recent calendar year figures for the benchmark are also provided.

Net Margin

Net margin for a given stock is its net income per share divided by its revenue per share and indicates the percentage profit the company earns for each dollar of revenue it receives. High profit margins are generally preferable to low margins.

ROE

Return on equity for a given stock is its net income per share divided by the per-share book value of its equity and indicates the percentage profit the company earns for each dollar of equity on the books. Stocks with high returns on equity are generally preferable to those with low returns on equity. Note, however, that return on equity figures can be misleading owing to accounting conventions. Because equity values on a company's balance sheet are based on historic cost accounting, they may bear little resemblance to current market valuations.

ROA

Return on assets for a given stock is its net income per share divided by the per-share book value of its assets and measures how efficiently a company is able to use its assets to generate profits. Stocks with high returns on assets are generally preferable to those with low returns on assets. Note, however, that return on asset figures can be misleading owing to accounting conventions. Because asset values on a company's balance sheet are based on historic cost accounting, they may bear little resemblance to their current replacement value.

Debt/Total Capitalization

Debt/total cap for a given stock is calculated by dividing long-term debt by total capitalization (the sum of common equity plus, preferred equity, and long-term debt), and is a measure of a company's financial leverage. All else being equal, stocks with high debt/total cap are generally riskier than those with low debt/total cap ratios. Note that debt/total cap figures can be misleading owing to accounting conventions. Because balance sheet are based on historic cost accounting, they may bear little resemblance to current market values.

Interest Rate Risk-Snapshot Report

The asset-weighted average of the average maturity, duration, and credit quality of the bonds in the portfolio. The sum of the maturity, duration, and average credit quality for each holding multiplied by the weight (%) each holding takes up in the portfolio equals the average maturity, duration, and average credit quality for the portfolio.

Maturity

This figure is computed by weighting the maturity of each security in the portfolio by the market value of the security, then averaging these weighted figures. We list average effective maturity for taxable fixed-income funds and average nominal maturity for municipal-bond funds.

Duration

This is the average effective duration of a fund's interest-rate sensitivity—the longer a fund's duration, the more sensitive it is to shifts in interest rates. Duration is determined by a formula that includes coupon rates and









bond maturities. Small coupons tend to increase duration, while shorter maturities and higher coupons shorten duration. The relationship between funds with different durations is straightforward: A fund with a duration of 10 years is twice as volatile as a fund with a five-year duration. Morningstar prints an average effective duration statistic that incorporates call, put, and prepayment possibilities.

Average Credit Quality

An average of all the credit quality positions for a fund's bond holdings. The credit quality levels range (from AAA (highest) to B (lowest)). Morningstar generates this information based on the portfolio data of the fund. U.S. Government bonds carry the highest credit rating, while bonds issued by speculative or bankrupt companies usually carry the lowest credit ratings. Anything at or below BB is considered a high-yield or "junk" bond.

Credit Quality-Snapshot Reports

The asset-weighted average of the credit quality of the holdings in the portfolio, as a percentage of bonds. The sum of the credit quality for each holding multiplied by the weight (%) each holding takes up in the portfolio equals the average credit quality for the portfolio.

Fund Statistics-Snapshot Report

The asset-weighted average of the potential capital gains exposure or expense ratio of the holdings in the portfolio. The sum of the potential capital gains exposure or expense ratio of each holding multiplied by the weight (%) each holding takes up in the portfolio equals the average potential capital gains exposure or expense ratio of the portfolio.

Potential Capital Gains Exposure

Morningstar calculates potential capital gains exposure to give investors an idea of the potential tax consequences of their investments. One cannot predict what a holding's taxable distributions will be, but we can offer some clues about worst-case possibilities based on a holding's liquidation liability. The figure shown reflects what percentage of the portfolio's assets would be subject to capital-gains taxation if the fund were to liquidate today. Where a negative number appears, the holding has reported losses on its books. This information (realized and unrealized appreciation and net assets) is taken from the fund's annual report.

Average Expense Ratio

The average expense ratio for all funds in a portfolio. Each holding's expense ratio is weighted based on the percent of assets it represents in the portfolio. The weighted average is adjusted upward for holding's that are missing expense ratios.

Risk/Reward Scatterplot-Snapshot Report

The Risk/Reward Scatterplot graphs up to 100 investments with at least 3 years of investment history on an x/y axis. Each point on the Risk/ Reward Scatterplot represents the standard deviation and mean return figures for a holding.

The sum of the standard deviation (and separately, the mean) of each holding multiplied by the weight (%) each holding takes up in the portfolio equals the average standard deviation (or mean) of the portfolio as a whole. The mean and standard deviation of the portfolio and the benchmark are plotted as well.

Risk and Return Statistics-Snapshot Report









The asset-weighted average of the standard deviation, mean, and Sharpe ratio figures of the holdings in the portfolio. The sum of these statistics multiplied by the weight (%) each holding takes up in the portfolio equals the average standard deviation, mean, and Sharpe ratio of the portfolio as a whole.

Standard Deviation

Standard deviation is a statistical measurement of dispersion about an average, which depicts how widely the returns varied over a certain period of time. A high standard deviation indicates that the predicted range of performance is wide, implying greater volatility.

Mean

This figure represents the annualized geometric average of the investment's monthly total returns over the trailing three, five, and ten years.

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 fund's historical risk-adjusted performance. The Sharpe ratio is calculated for the past three-, five-, and tenyear periods by dividing a fund's annualized excess returns by its annualized standard deviation.

Performance History Graph-Snapshot Report

This graph depicts the extent to which a portfolio has outperformed or underperformed its benchmark index on a quarter-by-quarter basis. This is useful in determining when a portfolio did well or poorly and how closely it has tracked its benchmark index.

MPT Statistics-Snapshot Report

Listed for three-, five-, and 10-year periods. The asset-weighted average of the alpha, beta, and R-squared figures of the holdings in the portfolio. The sum of the alpha, beta, and r-squared of each holding multiplied by the weight (%) each holding takes up in the portfolio equals the average alpha, beta, and R-squared of the portfolio as a whole.

Alpha

A measure of the difference between an investment's actual returns and its expected performance, given its level of risk as measured by beta. A positive alpha figure indicates the investment has performed better than its beta would predict. In contrast, a negative alpha indicates the investment's underperformance, given the expectations established by the fund's beta. All MPT statistics (alpha, beta, and R-squared) are based on a least-squared regression of the investment's return over Treasury bills (called excess return) and the excess returns of the investment's benchmark index.

Beta

A measure of a holding's market risk. Morningstar calculates beta using the same regression equation as the one used for alpha, which regresses excess return for the portfolio [this used to read fund or portfolio] against the benchmark index. The beta of the market is 1.00. Accordingly, a fund with a 1.10 beta is expected to perform 10% better than the market in up markets and 10% worse in down markets. Conversely, a beta of 0.85 indicates that the fund is expected to perform 15% less than the market in up markets and 15% better in down markets.

Note: A low beta does not imply a low level of volatility; rather, it means that the market-related risk is low. Beta is only a useful measure of risk when the R-squared associated with it is high (close to 100).

Returns are calculated by asset-weighting the monthly returns of the underlying holdings based on end-ofperiod market values and thus reflect the pre-tax results one would have gotten by rebalancing the portfolio on a monthly basis.









R-squared

Reflects the percentage of an investment's movements that can be explained by movements in its benchmark index. An R-squared of 100 indicates that all movements of an investment can be explained by movements in the index. Thus, index funds that invest only in S&P 500 stocks will have an R-squared very close to 100. Conversely, a low R-squared indicates that very few of the investment vehicle's movements can be explained by movements in its benchmark index. An R-squared measure of 35, for example, means that only 35% of the investment's movements can be explained by movements in the benchmark index.



