UWHCA Finance Committee

August 24, 2023, 10:00 - 11:30 AM

https://uwhealth.webex.com/uwhealth/j.php?MTID=md8616117ed0e82f6f0ea6cbe707c9eac

Meeting Number: 2624 201 3728 / Password: 082423

Join by Phone: +1-415-655-0003 US TOLL / Access code: 2624 201 3728

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<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Description</th>
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<tbody>
<tr>
<td>10:00 AM</td>
<td>I. Call to Order and Chair Announcement</td>
<td>Mr. Kenneth Mount</td>
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<td></td>
<td>UW Health Investment Sub-Committee Update</td>
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<tr>
<td>10:01 AM</td>
<td>II. Meeting Minutes - Open Session</td>
<td>Mr. Kenneth Mount</td>
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<tr>
<td>10:02 AM</td>
<td>III. UW Health Financial Report</td>
<td>Mr. Robert Flannery, Ms. Jodi Vitello, Ms. Patti DeWane (Material will be added in advance of the meeting)</td>
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<tr>
<td>10:12 AM</td>
<td>IV. Graystone Consulting Update - Market Commentary</td>
<td>Graystone Consulting: Mr. Matt Conway, Mr. Tom Parks, Ms. Kelli Schrade, Ms. Kristina VanLiew; Guest: Ms. Christine O'Connor</td>
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<tr>
<td></td>
<td>Presentation - Market Commentary - Second Quarter 2023</td>
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<tr>
<td>10:27 AM</td>
<td>V. Closed Session</td>
<td>Motion to enter into closed session pursuant to Wisconsin Statutes section 19.85(1)(e) for the discussion of the following confidential strategic matters, which for competitive reasons require a closed session: review and approval of closed session minutes; review and discussion of financial matters including UW Health Portfolio Review and SwedishAmerican Health System Corporation financial update; and pursuant to Wisconsin Statutes section 19.85(1)(g) for obtaining legal advice relating to such matters.</td>
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<tr>
<td>11:30 AM</td>
<td>VI. Adjourn</td>
<td></td>
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</table>
Finance Committee Meeting

Open Session
Market Commentary

Graystone Consulting | August 24, 2023

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Dear Valued Client,

The second quarter of 2023 brought positive returns for equity indices and negative returns for bond market indices as most developed market central banks continued their commitments to fighting inflation through rate hikes and quantitative tightening. Meanwhile, the yield curve remained inverted, reaching the lows of the first quarter as global economic growth slowed. The second quarter saw growth outperform value and large cap outperform small, led by mega-cap tech companies, as earnings came in stronger than expected. In US equities, the S&P 500 Index posted an 8.7% return while the Russell 2000 Index (small cap) gained 5.2%. The Bloomberg US Aggregate Index, a broad measure of the US bond market, declined 0.8%, gold fell 2.5%, WTI oil fell 6.6%, while natural gas rose 26.3%. The US dollar Index increased 1.29% over the same time period.

During the second quarter of 2023, many stock investors declared the bear market over. Jobs data pointed to a strong, but slowing labor market, resisting the effects of hawkish monetary policy. Consumers remained strong as income growth and spending surpassed expectations; however, signs of slowing consumptions began to appear. Despite a pause in rate hikes at the June FOMC meeting, continued hawkishness and upward revisions to growth and inflation expectations by the Fed left open the possibility of future hikes. As a result, the 2-year U.S. Treasury reached its highest level in the past 16 years, inverting the 2s10s yield curve to below -100 basis points to end the quarter. Globally, central banks continued their fight against rising prices, driven by inflationary pressures within services and wages.

Beginning in mid-May, equities and fixed income markets diverged, as stronger-than-expected earnings, the rise of artificial intelligence, and optimism around the path of inflation and interest rates, drove equity markets higher. Equity market participants bought into the notion of a decline in inflation without a sharp pullback in growth, thereby enabling a Fed pivot and possibly a "soft landing" or "no landing" at all. Strong consumer balance sheets, particularly elevated levels of excess savings, supported the narrative of a "soft landing" for the economy and allowed equity investors to look through or refute potential risks for an economic and/or profits recession and the lagged effects of central bank tightening and tighter credit availability.

Inflation remained at elevated levels in 2023 even as US Headline CPI Inflation cooled to 4.1% year-over-year in May, a decline from the June 2022 peak of 9.1%. While headline CPI continued its decline, Core PCE remained relatively flat at 4.6%, the same level seen at the end of 2022 and well above the Fed’s 2% target. Following seven rate hikes in 2022 and two hikes in Q1, the FOMC raised rates by 25 basis points only once in the second quarter (May) while suggesting additional hikes in 3Q23, and maintaining the existing Quantitative Tightening (QT) program. Together with tighter lending standards, these monetary effects continue to slow economic activity.

Market Defies the Odds in First Half

Halfway through the year, technology leads US equities while bonds were mixed

<table>
<thead>
<tr>
<th>Dates</th>
<th>Events</th>
</tr>
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<tbody>
<tr>
<td>November 3, 2021</td>
<td>The Fed announces tapering</td>
</tr>
<tr>
<td>December 31, 2021</td>
<td>S&amp;P 500 ends 2021 with nearly 27% gain</td>
</tr>
<tr>
<td>August 2021</td>
<td>China’s government steps up regulations, negatively effecting</td>
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<tr>
<td></td>
<td>education and technology industries</td>
</tr>
<tr>
<td>June 3, 2022</td>
<td>Inflation reaches 9.1%, largest increase in 40 years</td>
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<tr>
<td>Dec 14, 2022</td>
<td>The Fed announces 0.50% rate hike, its 7th hike in 12 months</td>
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<tr>
<td>March 10, 2023</td>
<td>Silicon Valley Bank collapses, seized by FDIC</td>
</tr>
<tr>
<td>June 3, 2023</td>
<td>Fed “pauses” interest rate hikes after 10 consecutive increases</td>
</tr>
</tbody>
</table>

| Source: Bloomberg. Data as of June 30, 2023. For index definitions to the indices referenced in this report please visit the following: [https://www.morganstanley.com/wealth-investmentsolutions/wmir-definitions](https://www.morganstanley.com/wealth-investmentsolutions/wmir-definitions) |

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A Deeper Dive into First Half Performance

Strength in US and Global Equities with wide dispersion

Massive Reversal: 2022’s Laggards Dominate 2023’s Returns...

YTD 2023               2022
Value  Blend  Growth    Value  Blend  Growth
Large   5.1%    16.9%  29.0%    Large   -7.6%   -18.1%   -29.1%
Mid     5.2%    8.5%   15.9%    Mid     -12.1%  -17.3%   -26.7%
Small   2.5%    8.1%   13.5%    Small   -14.5%  -20.5%   -26.4%

But Only 28% of Stocks Have Outperformed the S&P 500 in 2023

Global Equity Performance
YTD as of June 30, 2023

- MSCI Canada +8.5%
- S&P 500 +16.9%
- MSCI Mexico +27.3%
- MSCI Brazil +17.1%
- MSCI Europe +13.8%
- MSCI China -5.4%
- MSCI India +5.2%
- MSCI Korea +14.6%
- MSCI Japan +12.6%
- MSCI Australia +3.6%

US Fixed Income Indices
As of June 30, 2023

- Global Aggregate -1.5%
- US Aggregate -0.8%
- US Govt/Corp -1.0%
- EM Debt 2.2%
- Global High Yield 5.2%
- US High Yield 5.4%

Source: Factset, Morgan Stanley Wealth Management GIC, Bloomberg
A Narrow Market Leaves Most on Sidelines

Top S&P 500 companies account for majority of positive results in 2023

YTD Performance within the S&P 500: Small Subset Dominates...
The top 5 stocks in the index accounted for 60% of performance

With Lofty Earnings Expectations Leaving Valuations Stretched
Stock valuations have diverged from moves in interest rates, with valuations continuing to go up while yields have gone down.

Apple, Microsoft, Amazon, NVIDIA and Alphabet’s performance during 2023 dwarfs the rest of the market

Concentration Risk within the S&P 500
2023 levels rival the late 90s Dot-com bubble

Top 25 Stock Weight - 44.5% on May 31, 2023
Top 5 Stock Weight – 24.2% on May 31, 2023
Hard, Soft, Semi-Soft or No Landing?

Data disconnects complicate the economic picture

Soft Landing Sentiment Has Produced Ambitious Profit Forecasts...
S&P 500 Index, Year Over Year EPS Growth

But Much of the Economic Data Points to Lower Growth...
Conference Board US Leading Index, Year-Over-Year Change (Top Graph) and Conference Board Ten Economic Indicators (Bottom Graph)

And Expectations for Fed Policy Have Radically Shifted...

Implied Fed Funds Rate
- July 7, 2023
- May 1, 2023
- March 1, 2023
- 5.60%
- 5.40%
- 5.20%
- 5.00%
- 4.80%
- 4.60%
- 4.40%
- 4.20%
- 4.00%

Delayed Soft Landing
Semi-Soft Landing

With Inflation Coming Down Slowly and Still Stubbornly High

Source: Bloomberg, Morgan Stanley Wealth Management GIC
The Debate Remains…
Bulls and Bears see very different outcomes

**The Bull Case**
- Soft landing appears obvious
- Corporate profits are “fine,” rebounding
- Labor markets are strong but not wage inflationary
- Fed rate cuts imminent despite no pause and no cuts forecast until 2024
- Cash on sidelines is too big and impatient
- AI, AI, AI

**The Bear Case**
- Policy operates with a lag; economy slowing
- Peak company margins unsustainable
- Falling inflation cuts both ways; negative operating leverage
- Recession indicators are screaming
- Regional bank stress has implications for lending standards
- Debt ceiling is source of $650 billion liquidity drain
- The passive indices are overvalued; stock concentration raises idiosyncratic risk
- Rates are not returning to pre-COVID lows; the Fed will fight the market

Source: Morgan Stanley GIC. Lisa Shalett July Monthly Perspectives July 2023
Themes for the Next Bull Market

When a new bull market takes hold, we see important megatrends emerging

**Digitization of Service Businesses**
Hardware and software/service providers behind enterprise automation implementation of AI, natural language processing, and machine learning

**Deglobalization**
Infrastructure and supply chain reconfiguration

**Decarbonization**
Energy both green and carbon, smart highway development

**Biotech & Genomics**
Additional mRNA applications, machine learning, diagnostic and detection advancements focused on early stage disease discoveries

**Defense & Cybersecurity**
Focused on space and satellite surveillance

**Demographics & Residential Housing**
Demand from Millennials and Gen Z, long tailwind for U.S. Housing market

**American Productivity Renaissance**
A unique combination of demand and supply factors could ignite a multiyear US capital investment cycle that ushers in strong growth and greater productivity.

Source: Morgan Stanley Wealth Management GIC as of July 12, 2023
Morgan Stanley Forecasts

While earnings resilience has reinforced the bear market rally, disconnects within the market itself suggest risks beyond just Fed policy, inflation and growth.

Morgan Stanley & Co. Forecasts (as of July 7, 2023)

S&P 500 Earnings Estimates

<table>
<thead>
<tr>
<th>Year</th>
<th>Morgan Stanley Consensus</th>
<th>2023E</th>
<th>2024E</th>
<th>2025E</th>
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<tbody>
<tr>
<td>$220</td>
<td>$245</td>
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<tr>
<td>$185</td>
<td>$228</td>
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<tr>
<td>$245</td>
<td>$275</td>
<td></td>
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<tr>
<td>$228</td>
<td>$250</td>
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MS & Co. S&P 500 Price Target: Midyear 2024

<table>
<thead>
<tr>
<th>LANDSCAPE</th>
<th>Earnings</th>
<th>PRICE/EARNINGS MULTIPLE</th>
<th>PRICE TARGET</th>
<th>UPSIDE/ DOWNSIDE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bull Case</td>
<td>$253</td>
<td>18.6</td>
<td>4,700</td>
<td>6.8%</td>
</tr>
<tr>
<td>Base Case</td>
<td>$239</td>
<td>17.6</td>
<td>4,200</td>
<td>-4.5%</td>
</tr>
<tr>
<td>Bear Case</td>
<td>$222</td>
<td>16.7</td>
<td>3,700</td>
<td>-15.9%</td>
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</table>

Current S&P 500 Price 4,399

Estimated June 2024 forward 12-month earnings are used to project a price target which takes into account MS & Co.’s 2025 base case earnings forecast of $239. Source: Factset, MS & Co. Research as of July 7, 2023.

Morgan Stanley & Co. Forecasts (as of July 7, 2023)

REAL GDP GROWTH (%) 10-YR GOVT. BOND YIELD (%) HEADLINE INFLATION (%)

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<tbody>
<tr>
<td>Global</td>
<td>3.4</td>
<td>2.9</td>
<td>2.8</td>
<td>6.1</td>
<td>4.0</td>
<td>2.7</td>
<td></td>
<td></td>
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<tr>
<td>US</td>
<td>2.1</td>
<td>1.2</td>
<td>0.8</td>
<td>3.50</td>
<td>3.30</td>
<td>8.0</td>
<td>3.9</td>
<td>2.1</td>
<td></td>
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<tr>
<td>Euro Zone</td>
<td>3.5</td>
<td>0.5</td>
<td>1.0</td>
<td>8.4</td>
<td>5.5</td>
<td>2.3</td>
<td></td>
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<tr>
<td>UK</td>
<td>4.1</td>
<td>0.2</td>
<td>0.5</td>
<td>3.70</td>
<td>3.40</td>
<td>9.0</td>
<td>7.6</td>
<td>2.9</td>
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<tr>
<td>Japan</td>
<td>1.1</td>
<td>1.1</td>
<td>1.1</td>
<td>0.55</td>
<td>0.40</td>
<td>2.5</td>
<td>3.3</td>
<td>2.1</td>
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<tr>
<td>Emerging Markets</td>
<td>4.0</td>
<td>4.3</td>
<td>4.2</td>
<td>4.9</td>
<td>3.5</td>
<td>3.0</td>
<td></td>
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<tr>
<td>China</td>
<td>3.0</td>
<td>5.7</td>
<td>4.9</td>
<td>2.0</td>
<td>0.9</td>
<td>1.6</td>
<td></td>
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Source: Morgan Stanley & Co. Research

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2023 Capital Market Assumptions

We represented ultrashort fixed income represented by 90-day T-bills, fixed income & preferreds by Bloomberg Barclays US Aggregate Index, short-term fixed income by Bloomberg Barclays Aggregate 1-3 Year Index, US taxable fixed income by Bloomberg Barclays US Aggregate Index, international fixed income by Barclays Global Aggregate Non-USD (Hedged) Index, inflation-linked securities by Bloomberg Barclays Global Inflation-Linked Index, high yield fixed income by Barclays Global High Yield Corporate Index and emerging market fixed income by JP Morgan EMBI Global Index. All other are based on proprietary models. Strategic annualized return and volatility estimates are based on a seven-year time horizon. Secular annualized return and volatility estimates are based on a 20-year time horizon. Annualized volatility estimates are based on data with longest available history through Feb. 26, 2021. Estimates are for illustrative purposes only, are based on proprietary models and are not indicative of the future performance of any specific investment, index or asset class. Actual performance may be more or less than the estimates shown in this table. Estimates of future performance are based on assumptions that may not be realized. Investor appropriateness: Morgan Stanley Wealth Management recommends that investors independently evaluate each asset class, investment style, issuer, security, instrument or strategy discussed. Legal, accounting and tax restrictions, transaction costs and changes to any assumptions may significantly affect the economics and results of any investment. Investors should consult their own tax, legal or other advisors to determine appropriateness for their specific circumstances. Investments in private funds (including hedge funds, managed futures funds and private equity funds) are speculative and include a high degree of risk.

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Investment return and principal will fluctuate so that an investor’s shares when redeemed may be worth more or less than original cost. Please note, current performance may be higher or lower than the performance data shown. For up-to-date month-end performance information, please contact your Financial Advisor or visit the funds’ company website.

Investors should carefully consider the fund’s investment objectives, risks, charges and expenses before investing. The prospectus and, if available the summary prospectus, contains this and other information that should be read carefully before investing. Investors should review the information in the prospectus carefully. To obtain a prospectus, please contact your Financial Advisor or visit the funds’ company website.

Past performance is no guarantee of future results.

Investing involves market risk, including possible loss of principal. Growth investing does not guarantee a profit or eliminate risk. The stocks of these companies can have relatively high valuations. Because of these high valuations, an investment in a growth stock can be more risky than an investment in a company with more modest growth expectations. Value investing involves the risk that the market may not recognize that securities are undervalued and they may not appreciate as anticipated. Small and mid-capitalization companies may lack the financial resources, product diversification and competitive strengths of larger companies. The securities of small capitalization companies may not trade as readily as, and be subject to higher volatility than those of larger, more established companies. Bond funds and bond holdings have the same interest rate, inflation and credit risks that are associated with the underlying bonds owned by the funds. The return of principal in bond funds, and in funds with significant bond holdings, is not guaranteed. International securities’ prices may carry additional risks, including foreign economic, political, monetary and/or legal factors, changing currency exchange rates, foreign taxes and differences in financial and accounting standards. International investing may not be for everyone. These risks may be magnified in emerging markets. Alternative investments, including private equity funds, real estate funds, hedge funds, managed futures funds, and funds of hedge funds, private equity, and managed futures funds, are speculative and entail significant risks that can include losses due to leveraging or other speculative investment practices, lack of liquidity, volatility of returns, restrictions on transferring interests in a fund, potential lack of diversification, absence and/or delay of information regarding valuations and pricing, complex tax structures and delays in tax reporting, less regulation and higher fees than mutual funds and risks associated with the operations, personnel and processes of the advisor. Master Limited Partnerships (MLPs) are limited partnerships or limited liability companies that are taxed as partnerships and whose interests (limited partnership units or limited liability company units) are traded on securities exchanges like shares of common stock. Currently, most MLPs operate in the energy, natural resources or real estate sectors. Investments in MLP interests are subject to the risks generally applicable to companies in the energy and natural resources sectors, including commodity pricing risk, supply and demand risk, depletion risk and exploration risk; and MLP interests in the real estate sector are subject to special risks, including interest rate and property value fluctuations, as well as risks related to general and economic conditions. Because of their narrow focus, MLPs maintain exposure to price volatility of commodities and/or underlying assets and tend to be more volatile than investments that diversify across many sectors and companies. MLPs are also subject to additional risks including: investors having limited control and rights to vote on matters affecting the MLP, limited access to capital, cash flow risk, lack of liquidity, dilution risk, conflict of interests, and limited call rights related to acquisitions.

Mortgage-backed securities also involve prepayment risk, in that faster or slower prepayments than expected on underlying mortgage loans can dramatically alter the yield-to-maturity of a mortgage-backed security and prepayment risk includes the possibility that a fund may invest the proceeds at generally lower interest rates.
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Tax managed funds may not meet their objective of being tax-efficient.

Real estate investments are subject to special risks, including interest rate and property value fluctuations, as well as risks related to general and economic conditions. High yield fixed income securities, also known as “junk bonds”, are considered speculative, involve greater risk of default and tend to be more volatile than investment grade fixed income securities.

Credit quality is a measure of a bond issuer’s creditworthiness, or ability to repay interest and principal to bondholders in a timely manner. The credit ratings shown are based on security rating as provided by Standard & Poor’s, Moody’s and/or Fitch, as applicable. Credit ratings are issued by the rating agencies for the underlying securities in the fund and not the fund itself, and the credit quality of the securities in the fund does not represent the stability or safety of the fund. Credit ratings shown range from AAA, being the highest, to D, being the lowest based on S&P and Fitch’s classification (the equivalent of Aaa and C, respectively, by Moody’s). Ratings of BBB or higher by S&P and Fitch (Baa or higher by Moody’s) are considered to be investment grade-quality securities. If two or more of the agencies have assigned different ratings to a security, the highest rating is applied. Securities that are not rated by all three agencies are listed as “NR”.

“Alpha tilt strategies comprise a core holding of stocks that mimic a benchmark type index such as the S&P 500 to which additional securities are added to help tilt the fund toward potentially outperforming the market in an effort to enhance overall investment returns. Tilt strategies are subject to significant timing risk and could potentially expose investors to extended periods of underperformance.”

Custom Account Index: The Custom Account Index is an investment benchmark based on your historical target allocations and/or manager selection that you may use to evaluate the performance of your account. The Custom Account index does take into consideration certain changes that may have occurred in your portfolio since the inception of your account, i.e., asset class and/or manager changes. However, in some circumstances, it may not be an appropriate benchmark for use with your specific account composition. For detailed report of the historical composition of this blend please contact your Financial Advisor.

Peer Groups: Peer Groups are a collection of similar investment strategies that essentially group investment products that share the same investment approach. Peer Groups are used for comparison purposes to compare and illustrate a clients investment portfolio versus its peer across various quantitative metrics like performance and risk. Peer Group comparison is conceptually another form of benchmark comparison whereby the actual investment can be ranked versus its peer across various quantitative metrics.

All Peer Group data are provided by Investment Metrics, LLC.
The URL below provides all the definitions and methodology about the various Peer Groups
https://www.invmetrics.com/style-peer-groups

Peer Group Ranking Methodology: A percentile rank denotes the value of a product in which a certain percent of observations fall within a peer group. The range of percentile rankings is between 1 and 100, where 1 represents a high statistical value and 100 represents a low statistical value.
The 30th percentile, for example, is the value in which 30% of the highest observations may be found, the 65th percentile is the value in which 65% of the highest observations may be found, and so on.
Disclosures

Percentile rankings are calculated based on a normalized distribution ranging from 1 to 100 for all products in each peer group, where a ranking of 1 denotes a high statistical value and a ranking of 100 denotes a low statistical value. It is important to note that the same ranking methodology applies to all statistics, implying that a ranking of 1 will always mean highest value across all statistics.

For example, consider a risk/return assessment using standard deviation as a measure of risk. A percentile ranking equal to 1 for return denotes highest return, whereas a percentile ranking of 1 for standard deviation denotes highest risk among peers.

In addition, values may be used to demonstrate quartile rankings. For example, the third quartile is also known as the 75th percentile, and the median is the 50th percentile.

Alternatives

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Disclosures

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Disclosures

2023 Capital Market Assumptions

We represented ultrashort fixed income represented by 90-day T-bills, fixed income & preferreds by Bloomberg Barclays US Aggregate Index, short-term fixed income by Bloomberg Barclays Aggregate 1-3 Year Index, US taxable fixed income by Bloomberg Barclays US Aggregate Index, international fixed income by Barclays Global Aggregate Non-USD (Hedged) Index, inflation-linked securities by Bloomberg Barclays Global Inflation-Linked Index, high yield fixed income by Barclays Global High Yield Corporate Index and emerging market fixed income by JP Morgan EMBI Global Index. All other are based on proprietary models. Strategic annualized return and volatility estimates are based on a seven-year time horizon. Secular annualized return and volatility estimates are based on a 20-year time horizon. Annualized volatility estimates are based on data with longest available history through Feb. 26, 2021. Estimates are for illustrative purposes only, are based on proprietary models and are not indicative of the future performance of any specific investment, index or asset class. Actual performance may be more or less than the estimates shown in this table. Estimates of future performance are based on assumptions that may not be realized. Investor appropriateness: Morgan Stanley Wealth Management recommends that investors independently evaluate each asset class, investment style, issuer, security, instrument or strategy discussed. Legal, accounting and tax restrictions, transaction costs and changes to any assumptions may significantly affect the economics and results of any investment. Investors should consult their own tax, legal or other advisors to determine appropriateness for their specific circumstances. Investments in private funds (including hedge funds, managed futures funds and private equity funds) are speculative and include a high degree of risk.

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CRC5835838 07/2023
Glossary of Terms

**Active Contribution Return:** The gain or loss percentage of an investment relative to the performance of the investment benchmark.

**Active Exposure:** The percentage difference in weight of the portfolio compared to its policy benchmark.

**Active Return:** Arithmetic difference between the manager’s return and the benchmark’s return over a specified time period.

**Actual Correlation:** A measure of the correlation (linear dependence) between two variables X and Y, with a value between +1 and -1 inclusive. This is also referred to as coefficient of correlation.

**Alpha:** A measure of a portfolio’s time weighted return in excess of the market’s return, both adjusted for risk. A positive alpha indicates that the portfolio outperformed the market on a risk-adjusted basis, and a negative alpha indicates the portfolio did worse than the market.

**Best Quarter:** The highest quarterly return for a certain time period.

**Beta:** A measure of the sensitivity of a portfolio’s time weighted return (net of fees) against that of the market. A beta greater than 1.00 indicates volatility greater than the market.

**Consistency:** The percentage of quarters that a product achieved a rate of return higher than that of its benchmark. The higher the consistency figure, the more value a manager has contributed to the product’s performance.

**Core:** Refers to an investment strategy mandate that is blend of growth and value styles without a pronounced tilt toward either style.

**Cumulative Selection Return (Cumulative Return):** Cumulative investment performance over a specified period of time.

**Distribution Rate:** The most recent distribution paid, annualized, and then divided by the current market price. Distribution rate may consist of investment income, short-term capital gains, long-term capital gains, and/or return of capital.

**Down Market Capture:** The ratio of average portfolio returns over the benchmark during periods of negative benchmark return. Lower values indicate better product performance.

**Downside Risk:** A measure similar to standard deviation, but focuses only on the negative movements of the return series. It is calculated by taking the standard deviation of the negative quarterly set of returns. The higher the value, the more risk the product has.

**Downside Semi Deviation:** A statistical calculation that measures the volatility of returns below a minimum acceptable return. This return measure isolates the negative portion of volatility: the larger the number, the greater the volatility.

**Drawdown:** A drawdown is the peak-to-trough decline during a specific period of an investment, fund or commodity.

**Excess over Benchmark:** The percentage gain or loss of an investment relative to the investment’s benchmark.

**Excess Return:** Arithmetic difference between the manager’s return and the risk-free return over a specified time period.

**Growth:** A diversified investment strategy which includes investment selections that have capital appreciation as the primary goal, with little or no dividend payouts. These strategies can include reinvestment in expansion, acquisitions, and/or research and development opportunities.

**Growth of Dollar:** The aggregate amount an investment has gained or lost over a certain time period, also referred to as Cumulative Return, stated in terms of the amount to which an initial dollar investment would have grown over the given time period.

**Investment Decision Process (IDP):** A model for structuring the investment process and implementing the correct attribution methodologies. The IDP includes every decision made concerning the division of the assets under management over the various asset categories. To analyze each decision’s contribution to the total return, a modeling approach must measure the marginal value of every individual decision. In this respect, the hierarchy of the decisions becomes very important. We therefore use the IDP model, which serves as a proper foundation for registering the decisions and relating them to each other.

**Information Ratio:** Measured by dividing the active rate of return by the tracking error. The higher the Information Ratio, the more value-added contribution by the manager.

**Jensen’s Alpha:** The Jensen’s alpha measure is a risk-adjusted performance measure that represents the average return on a portfolio or investment above or below that predicted by the capital asset pricing model (CAPM) given the portfolio’s or investment’s beta and the average market return. This metric is also commonly referred to as alpha.

**Kurtosis:** A statistical measure that is used to describe the distribution, or skewness, of observed data around the mean, sometimes referred to as the volatility of volatility.

**Maximum Drawdown:** The drawdown is defined as the percent retrenchment from a fund’s peak to the fund’s trough value. It is in effect from the time the fund’s retrenchment begins until a new fund high is reached. The maximum drawdown encompasses both the period from the fund’s peak to the fund’s valley (length), and the time from the fund’s valley to a new fund high (recovery). It measures the largest percentage drawdown that has occurred in any fund’s data record.
Glossary of Terms

**Modern Portfolio Theory (MPT):** An investment analysis theory on how risk-averse investors can construct portfolios to optimize or maximize expected return based on a given level of market risk, emphasizing that risk is an inherent part of higher reward.

**Mutual Fund (MF):** An investment program funded by shareholders that trade in diversified holdings and is professionally managed.

**Peer Group:** A combination of funds that share the same investment style combined as a group for comparison purposes.

**Peer/ Plan Sponsor Universe:** A combination of asset pools of total plan investments by specific sponsor and plan types for comparison purposes.

**Performance Ineligible Assets:** Performance returns are not calculated for certain assets because accurate valuations and transaction data for these assets are not processed or maintained by us. Common examples of these include life insurance, some annuities and some assets held externally.

**Performance Statistics:** A generic term for various measures of investment performance measurement terms.

**Portfolio Characteristics:** A generic term for various measures of investment portfolio characteristics.

**Preferred Return:** A term used in the private equity (PE) world, and also referred to as a “Hurdle Rate.” It refers to the threshold return that the limited partners of a private equity fund must receive, prior to the PE firm receiving its carried interest or “carry.”

**Ratio of Cumulative Wealth:** A defined ratio of the Cumulative Return of the portfolio divided by the Cumulative Return of the benchmark for a certain time period.

**Regression Based Analysis:** A statistical process for estimating the relationships among variables. It includes many techniques for modeling and analyzing several variables, when the focus is on the relationship between a dependent variable and one or more independent variables

**Residual Correlation:** Within returns-based style analysis, residual correlation refers to the portion of a strategy’s return pattern that cannot be explained by its correlation to the asset-class benchmarks to which it is being compared.

**Return:** A rate of investment performance for the specified period.

**Rolling Percentile Ranking:** A measure of an investment portfolio’s ranking versus a peer group for a specific rolling time period (i.e. Last 3 Years, Last 5 years, etc.).

**R-Squared:** The percentage of a portfolio’s performance explained by the behavior of the appropriate benchmark. High R-Squared means a higher correlation of the portfolio’s performance to the appropriate benchmark.

**SA/CF (Separate Account/Comingled Fund):** Represents an acronym for Separate Account and Commingled Fund investment vehicles.

**Sector Benchmark:** A market index that serves as a proxy for a sector within an asset class.

**Sharpe Ratio:** Represents the excess rate of return over the risk free return divided by the standard deviation of the excess return. The result is the absolute rate of return per unit of risk. The higher the value, the better the product’s historical risk-adjusted performance results in.

**Standard Deviation:** A statistical measure of the range of a portfolio's performance; the variability of a return around its average return over a specified time period.

**Total Fund Benchmark:** The policy benchmark for a complete asset pool that could consist of multiple investment mandates.

**Total Fund Composite:** The aggregate of multiple portfolios within an asset pool or household.

**Tracking Error:** A measure of standard deviation for a portfolio’s investment performance, relative to the performance of an appropriate market benchmark.

**Treynor Ratio:** A ratio that divides the excess return (above the risk free rate) by the portfolio’s beta to arrive at a unified measure of risk adjusted return. It is generally used to rank portfolios, funds and benchmarks. A higher ratio is indicative of higher returns per unit of market risk. This measurement can help determine if the portfolio is reaching its goal of increasing returns while managing market risk.

**Up Market Capture:** The ratio of average portfolio returns over the benchmark during periods of positive benchmark return. Higher values indicate better product performance.

**Upside Semi Deviation:** A statistical calculation that measures the volatility of returns above an acceptable return. This return measure isolates the positive portion of volatility: the larger the number, the greater the volatility.

**Value:** A diversified investment strategy that includes investment selections which tend to trade at a lower price relative to its dividends, earnings, and sales. Common attributes are stocks that include high dividend, low price-to-book ratio, and/or low price-to-earnings ratio.

**Worst Quarter:** The lowest rolling quarterly return for a certain time period.