UWMF Finance Committee
August 23, 2022. 7:00 - 8:30 AM

WebEx: https://uwhealth.webex.com/uwhealth/j.php?MTID=mf59532360d624b115b6356e59b68cc56
Meeting number: 2621 179 8666 // Password: 082322

**ADVANCE MEETING MATERIALS ARE POSTED FOR REFERENCE. OCCASIONALLY, THE POSTED MATERIALS DO NOT REFLECT CHANGES MADE SHORTLY BEFORE OR DURING COMMITTEE MEETINGS. THE FULL COMMITTEE MINUTES ARE THE OFFICIAL RECORD OF FINAL COMMITTEE ACTION**
## Agenda

### 7:00 AM

**I. Call to Order**

Dr. Molly Hinshaw

### 7:00 AM

**II. Meeting Minutes - Open Session**

Dr. Molly Hinshaw

### 7:02 AM

**III. UW Health Financial Report**

Ms. Jodi Vitello

Presentation - UW Health Consolidated Financial Report - YTD July 31, 2022

### 7:12 AM

**IV. Graystone Consulting Update - Market Commentary**

Ms. Chris O'Connor, Mr. Tom Parks, Mr. Matt Conway, Ms. Kelli Schrade, Ms. Kristina Van Liew

Presentation - Graystone Market Commentary - Second Quarter 2022

### 7:22 AM

**V. Closed Session**

(Materials Available To Members Only)

Motion to enter into closed session pursuant to Wisconsin Statutes section 19.85(1)(e) for discussion of the following confidential strategic matters, which for competitive reasons require a closed session: review and approval of closed session minutes; discussion of financial and budgetary matters including: UWMF financial indicators; Northern Illinois market update; Graystone Consulting update including UW Health Capital Markets and Portfolio Review – Second Quarter 2022 and proposed UW Health Investment Policy revisions; and UW Health 10-year Capital plan report.

### 8:30 AM

**VI. Adjourn**
UW Health Current Month Preliminary Operating Margin – July 31, 2022

<table>
<thead>
<tr>
<th></th>
<th>UWH-Madison/ACO/Isthmus</th>
<th>UWHNI/RDI</th>
<th>Total *</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Actual</strong></td>
<td>0.8%</td>
<td>2.6%</td>
<td>0.6%</td>
</tr>
<tr>
<td><strong>Budget</strong></td>
<td>1.5%</td>
<td>-2.2%</td>
<td>0.8%</td>
</tr>
<tr>
<td><strong>Prior Year</strong></td>
<td>5.1%</td>
<td>2.6%</td>
<td>4.6%</td>
</tr>
</tbody>
</table>
## Summary of Enterprise-wide Month of July 31, 2022 Preliminary Operating Results

### Favorable Variance
- **Actual Plan Variance Var. %**
- **Actual Variance Var. %**

### Unfavorable Variance
- **Variance vs. Plan**
- **Variance vs. Plan**

### TOTAL OPERATING REVENUE

<table>
<thead>
<tr>
<th></th>
<th>Jul- FY23</th>
<th>Plan Jul- FY23</th>
<th>Variance</th>
<th>Var. %</th>
<th>Jul- FY22 vs. Plan</th>
<th>Var. %</th>
<th>Jul- FY22 vs. PY</th>
<th>Var. %</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>NET PATIENT SERVICE REVENUE</strong></td>
<td>343,000,246</td>
<td>343,741,505</td>
<td>(741,259)</td>
<td>0%</td>
<td>324,667,654</td>
<td>18,532,592</td>
<td>(11)%</td>
<td></td>
</tr>
<tr>
<td><strong>OTHER OPERATING REVENUES</strong></td>
<td>4,551,080</td>
<td>7,030,237</td>
<td>(2,479,157)</td>
<td>-35%</td>
<td>5,222,752</td>
<td>(771,672)</td>
<td>-13%</td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL OPERATING REVENUES, NET</strong></td>
<td>347,551,326</td>
<td>350,771,742</td>
<td>(3,220,416)</td>
<td>-1%</td>
<td>329,690,406</td>
<td>17,860,920</td>
<td>5%</td>
<td></td>
</tr>
</tbody>
</table>

### TOTAL OPERATING EXPENSES

<table>
<thead>
<tr>
<th></th>
<th>Actual</th>
<th>Variance</th>
<th>Var. %</th>
<th>Variance</th>
<th>Var. %</th>
<th>Variance</th>
<th>Var. %</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SALARIES AND BENEFITS</strong></td>
<td>193,308,687</td>
<td>196,002,323</td>
<td>(2,693,636)</td>
<td>-1%</td>
<td>177,447,657</td>
<td>15,861,030</td>
<td>9%</td>
</tr>
<tr>
<td><strong>PURCHASED SERVICES AND AGENCY COSTS</strong></td>
<td>27,525,436</td>
<td>27,736,734</td>
<td>(211,298)</td>
<td>-1%</td>
<td>18,800,885</td>
<td>8,724,551</td>
<td>46%</td>
</tr>
<tr>
<td><strong>MEDICAL MATERIALS AND SUPPLIES</strong></td>
<td>25,581,906</td>
<td>25,548,493</td>
<td>33,413</td>
<td>0%</td>
<td>23,427,071</td>
<td>2,154,835</td>
<td>9%</td>
</tr>
<tr>
<td><strong>PHARMACEUTICALS</strong></td>
<td>53,851,618</td>
<td>52,762,743</td>
<td>1,088,875</td>
<td>2%</td>
<td>54,066,927</td>
<td>(155,309)</td>
<td>0%</td>
</tr>
<tr>
<td><strong>FACILITIES AND EQUIPMENT</strong></td>
<td>13,989,215</td>
<td>15,700,683</td>
<td>(1,711,468)</td>
<td>-11%</td>
<td>17,328,828</td>
<td>(3,939,613)</td>
<td>-19%</td>
</tr>
<tr>
<td><strong>DEPRECIATION AND AMORTIZATION</strong></td>
<td>12,915,916</td>
<td>13,402,448</td>
<td>(486,532)</td>
<td>-4%</td>
<td>9,304,878</td>
<td>3,611,038</td>
<td>39%</td>
</tr>
<tr>
<td><strong>INTEREST EXPENSE</strong></td>
<td>3,777,793</td>
<td>3,779,983</td>
<td>(2,190)</td>
<td>0%</td>
<td>2,132,895</td>
<td>1,644,898</td>
<td>77%</td>
</tr>
<tr>
<td><strong>PUBLIC AID ASSESSMENT</strong></td>
<td>5,350,613</td>
<td>5,442,700</td>
<td>(92,087)</td>
<td>-2%</td>
<td>5,100,371</td>
<td>250,242</td>
<td>5%</td>
</tr>
<tr>
<td><strong>OTHER EXPENSES</strong></td>
<td>3,179,383</td>
<td>1,328,873</td>
<td>1,850,510</td>
<td>139%</td>
<td>1,057,450</td>
<td>2,121,933</td>
<td>201%</td>
</tr>
<tr>
<td><strong>NONOPERATING EXPENSES - ACADEMIC SUPPORT</strong></td>
<td>6,078,202</td>
<td>6,088,396</td>
<td>(10,194)</td>
<td>0%</td>
<td>6,029,446</td>
<td>48,746</td>
<td>1%</td>
</tr>
<tr>
<td><strong>TOTAL OPERATING EXPENSES</strong></td>
<td>345,558,769</td>
<td>347,793,376</td>
<td>(2,234,607)</td>
<td>-1%</td>
<td>314,636,408</td>
<td>30,922,361</td>
<td>10%</td>
</tr>
</tbody>
</table>

### INCOME FROM OPERATIONS

<table>
<thead>
<tr>
<th></th>
<th>Actual</th>
<th>Variance</th>
<th>Var. %</th>
<th>Variance</th>
<th>Var. %</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>INCOME FROM OPERATIONS</strong></td>
<td>1,992,557</td>
<td>2,978,366</td>
<td>(985,809)</td>
<td>-33%</td>
<td>15,053,998</td>
</tr>
</tbody>
</table>

### NON-OPERATING REVENUE/EXPENSES

<table>
<thead>
<tr>
<th></th>
<th>Actual</th>
<th>Variance</th>
<th>Var. %</th>
<th>Variance</th>
<th>Var. %</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>NET INCREASE/DECREASE IN FAIR VALUE OF INVESTMENTS</strong></td>
<td>65,753,258</td>
<td>- 65,753,258</td>
<td>0%</td>
<td>5,824,660</td>
<td>59,928,598</td>
</tr>
<tr>
<td><strong>INVESTMENT INCOME</strong></td>
<td>1,814,173</td>
<td>4,053,715</td>
<td>(2,239,542)</td>
<td>-55%</td>
<td>2,712,131</td>
</tr>
<tr>
<td><strong>EQUITY INTEREST IN INCOME/LOSS OF JOINT VENTURES</strong></td>
<td>(401,766)</td>
<td>854,350</td>
<td>(1,256,116)</td>
<td>-147%</td>
<td>4,362,311</td>
</tr>
<tr>
<td><strong>NET INCINDEC IN FAIR VALUE OF DERIVATIVE INSTRUMENT</strong></td>
<td>(224,909)</td>
<td>- (224,909)</td>
<td>0%</td>
<td>(112,873)</td>
<td>(112,036)</td>
</tr>
<tr>
<td><strong>TOTAL OTHER NON-OPERATING REVENUES (EXPENSES), NET</strong></td>
<td>68,651,522</td>
<td>5,777,898</td>
<td>62,873,624</td>
<td>1088%</td>
<td>15,081,862</td>
</tr>
</tbody>
</table>

### REVENUES OVER EXPENSES BEFORE CAPITAL GRANTS, GIFTS & DONATIONS

<table>
<thead>
<tr>
<th></th>
<th>Actual</th>
<th>Variance</th>
<th>Var. %</th>
<th>Variance</th>
<th>Var. %</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>REVENUES OVER EXPENSES BEFORE CAPITAL GRANTS, GIFTS &amp; DONATIONS</strong></td>
<td>70,644,079</td>
<td>8,757,264</td>
<td>61,886,815</td>
<td>707%</td>
<td>28,135,860</td>
</tr>
</tbody>
</table>
# Enterprise-wide July 31, 2022 Preliminary Balance Sheet

<table>
<thead>
<tr>
<th></th>
<th>UWHCA</th>
<th>UWMF</th>
<th>ACO/Isthmus</th>
<th>Total UWHCA and UWMF</th>
<th>Discrete Components</th>
<th>UW Health Consolidated</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cash &amp; Investments</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unrestricted</td>
<td>1,610,132,981</td>
<td>438,250,529</td>
<td>6,391,716</td>
<td>2,054,775,226</td>
<td>492,507,499</td>
<td>2,547,282,725</td>
</tr>
<tr>
<td>Restricted by Trustee &amp; Donors</td>
<td>379,263,409</td>
<td>-</td>
<td>-</td>
<td>379,263,409</td>
<td>-</td>
<td>379,263,409</td>
</tr>
<tr>
<td><strong>Accounts Receivable</strong></td>
<td>398,152,129</td>
<td>78,206,682</td>
<td>-</td>
<td>476,358,811</td>
<td>79,828,361</td>
<td>556,187,172</td>
</tr>
<tr>
<td><strong>Property, Plant &amp; Equipment, Net</strong></td>
<td>862,230,646</td>
<td>108,299,306</td>
<td>6,059</td>
<td>970,536,011</td>
<td>417,206,815</td>
<td>1,376,296,037</td>
</tr>
<tr>
<td><strong>Other Assets &amp; Deferred Outflows of Resources</strong></td>
<td>1,289,017,947</td>
<td>104,722,616</td>
<td>476,050</td>
<td>1,255,363,443</td>
<td>90,360,931</td>
<td>1,105,151,246</td>
</tr>
</tbody>
</table>

**Total Assets & Deferred Outflows of Resources**

$4,538,797,112 $729,479,133 $6,873,825 $5,136,296,900 $1,079,903,606 $5,964,180,589

<table>
<thead>
<tr>
<th></th>
<th>UWHCA</th>
<th>UWMF</th>
<th>ACO/Isthmus</th>
<th>Total UWHCA and UWMF</th>
<th>Discrete Components</th>
<th>UW Health Consolidated</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Current Liabilities</strong></td>
<td>463,855,890</td>
<td>277,061,559</td>
<td>521,897</td>
<td>608,938,104</td>
<td>176,495,743</td>
<td>777,593,009</td>
</tr>
<tr>
<td><strong>Long-term Debt &amp; Deferred Inflows of Resources</strong></td>
<td>1,857,410,828</td>
<td>69,316,643</td>
<td>-</td>
<td>1,926,727,471</td>
<td>303,243,757</td>
<td>2,002,590,995</td>
</tr>
<tr>
<td><strong>Net Position</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unrestricted</td>
<td>2,111,091,393</td>
<td>383,100,931</td>
<td>6,351,928</td>
<td>2,494,192,324</td>
<td>592,578,145</td>
<td>3,069,971,623</td>
</tr>
<tr>
<td>Restricted</td>
<td>106,439,001</td>
<td>-</td>
<td>-</td>
<td>106,439,001</td>
<td>7,585,961</td>
<td>114,024,962</td>
</tr>
</tbody>
</table>

**Total Liabilities, Deferred Inflows of Resources & Net Position**

$4,538,797,112 $729,479,133 $6,873,825 $5,136,296,900 $1,079,903,606 $5,964,180,589

Elimination Entries are not displayed but are part of the Consolidated Numbers
## Enterprise-wide July 31, 2022 Preliminary Performance Ratios

<table>
<thead>
<tr>
<th>Healthcare System Industry Comparisons</th>
<th>Favorable Direction</th>
<th>FY 23</th>
<th>S&amp;P &quot;AA-&quot; Rated (1)</th>
<th>Moody's &quot;Aa3&quot; Rated (2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Margin*</td>
<td>↑</td>
<td>0.6%</td>
<td>1.9%</td>
<td>2.0%</td>
</tr>
<tr>
<td>Total Margin</td>
<td>↑</td>
<td>17.0%</td>
<td>4.1%</td>
<td>5.7%</td>
</tr>
<tr>
<td>Days Cash on Hand*</td>
<td>↑</td>
<td>242</td>
<td>287</td>
<td>299</td>
</tr>
<tr>
<td>Days in Accounts Receivable **</td>
<td>↓</td>
<td>46</td>
<td>47</td>
<td>47</td>
</tr>
<tr>
<td>Long Term Debt to Capitalization</td>
<td>↓</td>
<td>27.2%</td>
<td>26.9%</td>
<td>26.2%</td>
</tr>
<tr>
<td>Operating Cash Flow</td>
<td>↑</td>
<td>5.4%</td>
<td>7.1%</td>
<td>7.0%</td>
</tr>
<tr>
<td>Cash-to-Debt</td>
<td>↑</td>
<td>221.6%</td>
<td>237.3%</td>
<td>280.2%</td>
</tr>
</tbody>
</table>

* excludes provision for bad debt and retiree health insurance, includes academic support
** average for 12 months

(1) S&P’s 2020 financial ratios based on 38 obligators rated “AA-” by S&P. Based on 2020 audited financials.
(2) Moody’s 2020 financial ratios based on 32 “Aa3” rated hospitals. Based on 2020 audited financials.
- Surgical Volumes in the system were unfavorable to budget and prior year. Admissions, patient days, and ED visits were favorable to budget.

- We saw net revenues coming in $3.2M unfavorable to budget, split between patient care revenues and other operating revenue.

- Expense were favorable to budget by $2.2M. There were several factors contributing to this for July. The main contributing factors were salary & benefits favorable to budget by $2.7M.

- On the non-operating side, we saw favorable results compared to budget, with an unrealized gain on investments of $65.8M.
Finance Committee Meeting

Open Session
Market Commentary

Graystone Consulting | August 23, 2022

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Second Quarter Rout

US Stocks, Global Equities and Bonds all slide in second quarter, breaking records.

Source: Bloomberg. Data as of June 30, 2022. For index definitions to the indices referenced in this report please visit the following: https://www.morganstanley.com/wealth-investmentsolutions/wmir-definitions

Past performance is no guarantee of future results. Estimates of future performance are based on assumptions that may not be realized. This material is not a solicitation of any offer to buy or sell any security or other financial instrument or to participate in any trading strategy. Please refer to important information, disclosures and qualifications at the end of this material. Investment and services offered through Morgan Stanley Smith Barney LLC. Member SIPC. Graystone Consulting, a business of Morgan Stanley.
A Historically Bad First Half

Active management improves, but remains challenged

Global Equity Performance
YTD as of June 30, 2022

MSCI Canada IMI: -11.3%
MSCI UK IMI: -8.6%
MSCI Europe IMI: -20.3%
MSCI China IMI: -14.9%
MSCI Japan IMI: -20.0%
MSCI India IMI: -11.2%
MSCI Australia IMI: -11.0%
MSCI Mexico IMI: -7.7%
MSCI Brazil IMI: +2.9%

MSCI S&P 500: -20.0%

US Fixed Income Indices
As of June 30, 2022

EM (Local): -16.0%
Global High Yield: -16.9%
US High Yield Corp: -14.2%
Global Aggregate: -13.9%
US Aggregate: -10.3%
US Govt/Corporate: -11.1%

US High Yield Corp: -9.8%
Global Aggregate: -8.3%
US Aggregate: -4.7%
US Govt/Corporate: -5.1%

Active Management Performance Rebounds
After a difficult Q1, there has been a positive shift in active manager performance across a wide swath of asset classes. Table below shows % of active managers outperforming their respective index per quarter.

<table>
<thead>
<tr>
<th>Asset Class</th>
<th>Q1</th>
<th>Q2</th>
<th>Q1</th>
<th>Q2</th>
<th>Q1</th>
<th>Q2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large Core</td>
<td>25%</td>
<td>57%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Large Growth</td>
<td>23%</td>
<td>46%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Large Value</td>
<td>61%</td>
<td>69%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Small Cap Growth</td>
<td></td>
<td></td>
<td>42%</td>
<td>47%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Small Cap Value</td>
<td></td>
<td></td>
<td>44%</td>
<td>60%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emerging Mkts Equities</td>
<td></td>
<td></td>
<td>19%</td>
<td>32%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>International Equities</td>
<td></td>
<td></td>
<td>14%</td>
<td>63%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Bloomberg, FactSet, Morgan Stanley & Co. Research
Road Ahead: Looming Recession or Stagflation?

Difficult balancing act for the Fed

Typical Economic Behavior During Stagflation and Recessions

Stagflation
- Economic Growth: Up
- Unemployment: Up
- Corporate Earnings: Down
- Inflation: Up

Recessions
- Economic Growth: Down
- Unemployment: Up
- Corporate Earnings: Down
- Inflation: Up

Current Conditions
- Economic Growth: Down
- Unemployment: Down
- Corporate Earnings: Up
- Inflation: Up

Can the Fed Pull Off a Soft Landing?
Recent history suggests a soft landing may be difficult.

Effective Federal Funds Rate

Source: Bloomberg, Morgan Stanley & Co Research
Inflation Surges to Highest Levels in Decades

The cost of necessities continues to rise dramatically

Headline Less Core CPI at 50-Year High

Goods and Energy Are Up Dramatically in the CPI

Prices at the Pump Peaked in Mid-June

Transportation Is Driving Headline CPI

Source: Bloomberg
Morgan Stanley Forecasts

We are likely nearing the peak of bad news for inflation, Fed policy and earnings guidance, but other risks remain as volatility continues.

Morgan Stanley & Co. Forecasts (as of July 29, 2022)

<table>
<thead>
<tr>
<th>REAL GDP GROWTH (%)</th>
<th>10-YR GOVT. BOND YIELD (%)</th>
<th>HEADLINE INFLATION (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2021</td>
<td>2022E</td>
</tr>
<tr>
<td>Global</td>
<td>6.2</td>
<td>2.4</td>
</tr>
<tr>
<td>US</td>
<td>5.7</td>
<td>1.8</td>
</tr>
<tr>
<td>Euro Zone</td>
<td>5.3</td>
<td>3.0</td>
</tr>
<tr>
<td>UK</td>
<td>7.4</td>
<td>3.4</td>
</tr>
<tr>
<td>Japan</td>
<td>1.7</td>
<td>1.3</td>
</tr>
<tr>
<td>Emerging Markets</td>
<td>7.0</td>
<td>2.5</td>
</tr>
<tr>
<td>China</td>
<td>8.1</td>
<td>3.2</td>
</tr>
</tbody>
</table>

Source: Morgan Stanley & Co. Research

MS & Co. S&P 500 Price Target: Mid-Year 2023

<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>$249</td>
<td>17.9</td>
<td>4,450</td>
<td>12.3%</td>
</tr>
<tr>
<td>Base Case</td>
<td>$236</td>
<td>16.5</td>
<td>3,900</td>
<td>-1.6%</td>
</tr>
<tr>
<td>Bear Case</td>
<td>$212</td>
<td>15.9</td>
<td>3,350</td>
<td>-15.4%</td>
</tr>
</tbody>
</table>

Current S&P 500 Price: 4,130

Source: Refinitiv, S&P, MS & Co. Research as July 29, 2022

Note: Price targets are based on estimated 2023 earnings.
Source: MS & Co. Research as of July 29, 2022
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**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 portfolio 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.

**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 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
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.


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.

Information Disclosures

The performance data shown reflects past performance, which does not guarantee future results. 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.

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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. This includes the possibility that a fund may invest the proceeds at generally lower interest rates.

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 client’s 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.

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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As fees are deducted quarterly, the compounding effect will be to increase the impact of the fees by an amount directly related to the gross account performance. For example, for an account with an initial value of $100,000 and a 2.5% annual fee, if the gross performance is 5% per year over a three year period, the compounding effect of the fees will result in a net annual compound rate of return of approximately 2.40% per year over a three year period, and the total value of the client’s portfolio at the end of the three year period would be approximately $115,762.50 without the fees and $107,372.63 with the fees.

Please see the applicable Morgan Stanley Smith Barney LLC Form ADV Part 2A for more information including a description of the fee schedule. It is available at www.morganstanley.com/ADV <http://www.morganstanley.com/ADV> or from your Financial Advisor/Private Wealth Advisor.

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