UW Health Investment Sub-Committee

February 18, 2021, 4:00 - 5:30 PM

WebEx: https://uwhealth.webex.com/uwhealth/onstage/g.php?MTID=eaec1cc72d53e4c78c1efc97ed96a1d5

Meeting number: 120 439 5458 // Password: 021821


**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

<table>
<thead>
<tr>
<th>Time</th>
<th>Item</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>4:00 PM</td>
<td><strong>I. Call to Order</strong></td>
<td>Approval</td>
</tr>
<tr>
<td></td>
<td>Mr. John Litscher</td>
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<tr>
<td>4:00 PM</td>
<td><strong>II. Open Session Meeting Minutes</strong></td>
<td>Approval</td>
</tr>
<tr>
<td></td>
<td>Mr. John Litscher</td>
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<tr>
<td>4:01 PM</td>
<td><strong>III. University of Wisconsin Foundation - Market Observations</strong></td>
<td>Report/Discussion</td>
</tr>
<tr>
<td></td>
<td>Mr. Richard Shepley, Mr. Tom Olson, Mr. David Golden (University of Wisconsin Foundation)</td>
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<tr>
<td></td>
<td>Presentation - University of Wisconsin Foundation - Market Observations</td>
<td>Page 3</td>
</tr>
<tr>
<td>4:16 PM</td>
<td><strong>IV. Closed Session</strong></td>
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<td></td>
<td>Motion to enter into closed session pursuant to Wisconsin Statutes section 19.85(1)(e) for the discussion of the following investment matters which for competitive reasons require a closed session: review and approval of closed session minutes, performance of University of Wisconsin Foundation investments, UW Health Capital Markets and Portfolio Review – Fourth Quarter, and review of UW Health's investment portfolio rebalancing options.</td>
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<td>5:20 PM</td>
<td><strong>V. Return to Open Session</strong></td>
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<tr>
<td>5:20 PM</td>
<td><strong>VI. ACTION: UW Health Portfolio Rebalancing</strong></td>
<td>Approval</td>
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<td></td>
<td>Mr. John Litscher</td>
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<td></td>
<td>Motion to approve Graystone's recommendation regarding UW Health's portfolio rebalancing as discussed in Closed Session.</td>
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<tr>
<td>5:21 PM</td>
<td><strong>VII. Graystone Consulting Update</strong></td>
<td>Report/Discussion</td>
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<tr>
<td></td>
<td>Mr. Tom Parks, Mr. Matt Conway, Ms. Kelli Schrade, Ms. Kristina Van Liew</td>
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<tr>
<td></td>
<td>Presentation - Graystone Market Commentary and Future Meeting Topics for Consideration</td>
<td>Page 19</td>
</tr>
<tr>
<td>5:30 PM</td>
<td><strong>VIII. Adjourn</strong></td>
<td></td>
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</tbody>
</table>
Open Session
Supporting Alumni Engagement and Development

Wisconsin Foundation & Alumni Association
UNIVERSITY OF WISCONSIN–MADISON

Divisions of the
Wisconsin Foundation and Alumni Association

supportuw.org
uwalumni.com

Supporting Alumni Engagement and Development
• Established in 1945, the UW Foundation engages those who care about the university, provides opportunities to enhance its teaching, research and outreach programs and guarantees ethical stewardship of the gifts received

• The UWF’s primary responsibilities including raising, investing, stewarding and distributing funds for the benefit of UW-Madison
UWF manages assets for several organizations affiliated with the University of Wisconsin System
Investment Staff Organization Chart

Richard Shepley
Co-Chief Investment Officer

Tom Olson, CFA
Co-Chief Investment Officer

Greg Elkins
Assistant Director-Fixed Income

Josh Ross
Director-Private Markets

Michele Bernius, CFA
Senior Analyst-Public Equities

Ana Maria Murphy
Senior Analyst-Private Markets

David Golden
Director of Operations

Heidi Bausch
Office Coordinator
Fiduciary responsibility for investing the Endowment and Callable Pool portfolios

- Recommends investment objectives, goals, risk assessments, investing vehicles, security types & position limits

- Work in conjunction with President/CEO to manage investment operations, resources and expenses
# Portfolio Values as of 12/31/20

## Market Values

<table>
<thead>
<tr>
<th>% of Total</th>
<th>Period Ending</th>
<th>Quarter Increase/Decrease</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>12/31/2020</td>
<td>9/30/2020</td>
</tr>
<tr>
<td><strong>Endowment</strong></td>
<td>$3,619,982,862</td>
<td>$3,324,062,291</td>
</tr>
<tr>
<td><strong>Callable Pool</strong></td>
<td>$955,756,798</td>
<td>$915,908,427</td>
</tr>
<tr>
<td><strong>Life Income</strong></td>
<td>$96,295,639</td>
<td>$91,303,196</td>
</tr>
<tr>
<td><strong>Total Fund</strong></td>
<td>$4,672,035,299</td>
<td>$4,331,273,914</td>
</tr>
</tbody>
</table>

## UWF Total Funds

The chart above illustrates the growth of the UWF Total Funds portfolio from December 2010 to December 2020. The shaded areas represent different fund categories: Endowment, Callable Pool, and Life Income. The x-axis represents the years, while the y-axis shows the total value in billions of dollars.
US GDP Growth Over Time

Drivers of GDP growth
Average year-over-year % change

- Growth in workers
- Growth in real output per worker
- Growth in real GDP
Inflation History

CPI and core CPI
% change vs. prior year, seasonally adjusted

Recession

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<thead>
<tr>
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<tbody>
<tr>
<td>Headline CPI</td>
<td>3.8%</td>
<td>1.2%</td>
<td>1.2%</td>
</tr>
<tr>
<td>Core CPI</td>
<td>3.8%</td>
<td>1.6%</td>
<td>1.7%</td>
</tr>
<tr>
<td>Food CPI</td>
<td>3.9%</td>
<td>3.9%</td>
<td>3.7%</td>
</tr>
<tr>
<td>Energy CPI</td>
<td>4.1%</td>
<td>-0.1%</td>
<td>-0.4%</td>
</tr>
<tr>
<td>Headline PCE deflator</td>
<td>3.4%</td>
<td>1.2%</td>
<td>1.1%</td>
</tr>
<tr>
<td>Core PCE deflator</td>
<td>3.3%</td>
<td>1.4%</td>
<td>1.4%</td>
</tr>
</tbody>
</table>

Source: BLS, FactSet, J.P. Morgan Asset Management.
CPI used is CPI-U and values shown are % change vs. one year ago. Core CPI is defined as CPI excluding food and energy prices. The Personal Consumption Expenditure (PCE) deflator employs an evolving chain-weighted basket of consumer expenditures instead of the fixed-weight basket used in CPI calculations.
Interest Rate History

![Nominal and real 10-year Treasury yields chart](chart.png)

During a recession, short US yields could approach zero and longer maturities could test historical lows, but we expect them to remain positive.
## Market Performance History

### 2020 – Positive Performance Across Most Markets Despite COVID-19-Driven Volatility

**Real Return (Net of Core CPI)**

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</thead>
<tbody>
<tr>
<td>3</td>
<td>U.S. IG</td>
<td>Global HY</td>
<td>REITs</td>
<td>MSCI EM</td>
<td>Global HY</td>
<td>MSCI Japan</td>
<td>EM HC Sov</td>
<td>Global HY</td>
<td>MSCI Europe</td>
<td>U.S. HY</td>
<td>Russell 2000</td>
<td>MSCI EM</td>
<td></td>
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<tr>
<td>4</td>
<td>EM LC Debt</td>
<td>U.S. HY</td>
<td>Commodities</td>
<td>U.S. IG</td>
<td>REITs</td>
<td>MSCI Europe</td>
<td>U.S. IG</td>
<td>S&amp;P 500</td>
<td>MSCI Europe</td>
<td>U.S. IG</td>
<td>MSCI Europe</td>
<td>S&amp;P 500</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Inflation Bonds</td>
<td>MSCI Europe</td>
<td>MSCI Japan</td>
<td>U.S. Aqq Bond</td>
<td>MSCI EM</td>
<td>U.S. HY</td>
<td>EM HC Sov</td>
<td>U.S. Treasury</td>
<td>Commodities</td>
<td>S&amp;P 500</td>
<td>EM LC Debt</td>
<td>MSCI China</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>REITs</td>
<td>Inflation Bonds</td>
<td>U.S. Treasury</td>
<td>Commodities</td>
<td>MSCI Japan</td>
<td>EM LC Debt</td>
<td>MSCI China</td>
<td>MSCI Japan</td>
<td>U.S. Aqq Bond</td>
<td>EM HC Sov</td>
<td>MSCI Japan</td>
<td>EM HC Sov</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>MSCI Europe</td>
<td>MSCI Japan</td>
<td>MSCI China</td>
<td>U.S. Aqq Bond</td>
<td>EM HC Sov</td>
<td>MSCI Japan</td>
<td>EM LC Debt</td>
<td>MSCI China</td>
<td>U.S. Aqq Bond</td>
<td>MSCI Europe</td>
<td>EM HC Sov</td>
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</tr>
<tr>
<td>15</td>
<td>MSCI China</td>
<td>U.S. Aqq Bond</td>
<td>MSCI Europe</td>
<td>EM LC Debt</td>
<td>MSCI Europe</td>
<td>MSCI EM</td>
<td>U.S. Treasury</td>
<td>U.S. Treasury</td>
<td>MSCI Europe</td>
<td>Commodities</td>
<td>Commodities</td>
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</tr>
<tr>
<td>16</td>
<td>MSCI EM</td>
<td>U.S. Treasury</td>
<td>MSCI China</td>
<td>Commodities</td>
<td>Commodities</td>
<td>Commodities</td>
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<td>Commodities</td>
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</tbody>
</table>

*Red boxes reflect negative real return; blue boxes reflect positive real returns*
Public Equity Market History Since 1900

S&P Composite Index
Log scale, annual

1,000
100
10

Contact Information

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February 18, 2021

Investment Sub-Committee Meeting

UW Health

Open Session

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Matt Conway
Assistant Vice President
Business Development Director
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Market Commentary
A Year of Perseverance

From recession, to recovery, to bull

Total Returns – 2020

<table>
<thead>
<tr>
<th></th>
<th>Q1 2020</th>
<th>Q2 2020</th>
<th>Q3 2020</th>
<th>Q4 2020</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>S&amp;P 500</td>
<td>-19.60%</td>
<td>20.54%</td>
<td>8.93%</td>
<td>12.15%</td>
<td>18.39%</td>
</tr>
<tr>
<td>Russell 2000</td>
<td>-30.62%</td>
<td>25.42%</td>
<td>4.93%</td>
<td>31.35%</td>
<td>19.93%</td>
</tr>
<tr>
<td>MSCI EAFE</td>
<td>-22.83%</td>
<td>14.88%</td>
<td>4.79%</td>
<td>16.05%</td>
<td>7.82%</td>
</tr>
<tr>
<td>MSCI Emerging Markets</td>
<td>-23.57%</td>
<td>18.09%</td>
<td>9.57%</td>
<td>19.70%</td>
<td>18.31%</td>
</tr>
<tr>
<td>MSCI ACWI</td>
<td>-21.26%</td>
<td>19.41%</td>
<td>8.24%</td>
<td>14.76%</td>
<td>16.83%</td>
</tr>
</tbody>
</table>

March 3rd - FED issues an Emergency 50 bps Rate Cut before March Meeting

March 27th – Congress passes $2 trillion CARES act to help nation amid COVID-19 crisis

May 8th - Bureau of Labor Statistics reports historic unemployment and job loss numbers

November 3rd – FED Chairman Jerome Powell announces major policy shift to “average inflation targeting”

January 11th - China reports its first known death caused by the coronavirus

March 11th – The World Health Organization officially characterizes the COVID-19 outbreak as a pandemic

April 20th – Oil prices reach all-time low

May 26th – Protests break out after the death of George Floyd

August 27th – FED Chairman Jerome Powell announces major policy shift to “average inflation targeting”

June 30th – S&P 500 records its best quarter since 1998

September 2nd – The S&P 500 index closes at record high of 3579.25

December 14th – Electoral College vote affirms Joe Biden as President-elect

December 22nd – U.S. Congress passes additional COVID relief bill

December 11th Pfizer vaccine approved in US

November 3rd Moderna vaccine approved in US

Source: Bloomberg. Data as of December 31, 2020 - 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)

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.
Making Sense of 2020

A wide divergence and changing leadership in Q4

Global Equity Performance
As of December 31st, 2020

<table>
<thead>
<tr>
<th>Country/Region</th>
<th>Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSCI China IMI</td>
<td>+19.2%</td>
</tr>
<tr>
<td>MSCI India IMI</td>
<td>+28.2%</td>
</tr>
<tr>
<td>S&amp;P 500</td>
<td>+18.4%</td>
</tr>
<tr>
<td>MSCI Europe IMI</td>
<td>+7.6%</td>
</tr>
<tr>
<td>MSCI Japan IMI</td>
<td>+10.7%</td>
</tr>
<tr>
<td>MSCI Russia IMI</td>
<td>-0.6%</td>
</tr>
<tr>
<td>MSCI Mexico IMI</td>
<td>-1.5%</td>
</tr>
<tr>
<td>MSCI Brazil IMI</td>
<td>-19.0%</td>
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<tr>
<td>MSCI Australia IMI</td>
<td>+2.6%</td>
</tr>
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</table>

US Fixed Income Indices
As of December 31st, 2020

<table>
<thead>
<tr>
<th>Category</th>
<th>Performance</th>
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</thead>
<tbody>
<tr>
<td>Long Government/Credit</td>
<td>+16.1%</td>
</tr>
<tr>
<td>High Yield</td>
<td>+6.5%</td>
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<tr>
<td>Mortgage Backed Securities</td>
<td>+3.9%</td>
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<tr>
<td>Investment Grade</td>
<td>+7.5%</td>
</tr>
<tr>
<td>Intermediate Government/Credit</td>
<td>+6.5%</td>
</tr>
<tr>
<td>US Treasuries</td>
<td>+8.0%</td>
</tr>
<tr>
<td>Government/Credit</td>
<td>+9.1%</td>
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</tbody>
</table>

For most of 2020, US Large caps outperformed small caps, but that shifted in the 4th quarter and has continued into 2021. Growth continued to outperform value throughout the past year, though at a decreasing pace during the fourth quarter.

US Small Cap Vs. US Large Cap (As of January 15, 2021)

US Growth Vs. US Value (As of January 15, 2021)
The Year Ahead - 4 Key Themes

This new bull market presents shifting paradigms

“Helicopter Money:” Fed’s Balance Sheet to Peak at US $9 Trillion in 2022

![Fed's Balance Sheet Graph]

Changing Equity Leadership: Since the Bear Market Low in March, Economically Sensitive Cyclical Stocks Have the Best Total Returns

![Equity Leadership Graph]

10-Year Treasury Yields May Rise: A Crucial Pricing Mechanism Is, At Least 1%, Too Low

![10-Year Treasury Yield Graph]

Inflation Likely to Rise: US Core Inflation to Reach 2% by end of 2021 & rise sustainably above 2% in 2022

![Inflation Graph]
Global: The Next Phase of the V-Recovery

The impact of the new economic cycle as Global GDP bounces back

ECONOMIC EXPANSION ABROAD
Emerging Markets macro stability is now in check. With the COVID-19 situation improving in a broad range of EMs, their pace of recovery is catching up

GLOBAL SYNCHRONOUS RECOVERY TAKING HOLD
Global GDP: Pre-Covid-19 levels achieved in 4Q20, back to pre-COVID-19 path by 2Q21

CHINA’S REBOUND
China’s imports growth has rebounded at a fast pace
Sustainable Investing Continues to Accelerate

Demand from investors and a changing investment landscape

US Sustainable Assets (US$ Trillions)

1 of 3
AUM globally and in the US now has a sustainable mandate

$30+ Trillion
In AUM globally

90%
Of S&P 500 Companies published a sustainability report in 2019, up from 20% in 2011

ESG Indices Gain Ground on Traditional Indices
MSCI ESG leaders have generally outperformed mainstream indices, particularly over the past year.

What’s Ahead for Sustainable Investing in 2021 – Three Potential Themes

1. Climate Change
2021 should be a defining year for climate change regulation with the “Fit for 55 package” in Europe, a Biden Administration in the US and further details emerging on China’s Net Zero strategy

2. Sustainable Consumption
The global food system needs to reinvent itself over the next thirty years in order to produce 50% more food, help 2.5 billion people escape from malnutrition, and cut ~13GT of carbon emissions

3. Inclusive Growth
Precipitated by the inequities uncovered by the global Covid-19 pandemic and the focus on racial equity in the US this year, we expect this to be a key topic for investor engagement during 2021


Source: MSCI, Datastream, Morgan Stanley Research. Note performance relative to MSCI Europe, USA, Japan, World respectively. Prices as of 4 May 2020
Morgan Stanley Forecasts: January 2021

S&P 500 Earnings Estimates

Morgan Stanley Consensus

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<tbody>
<tr>
<td>Global</td>
<td>$138</td>
<td>$137</td>
<td>$175</td>
<td>$168</td>
<td>$193</td>
<td>$195</td>
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<tr>
<td>US</td>
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<tr>
<td>Euro Zone</td>
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<td>Japan</td>
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<td>Emerging Markets</td>
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<tr>
<td>China</td>
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</table>

Note: 2022 consensus is as of Nov. 14, 2020
Source: Refinitiv, S&P, MS & Co. Research as of Jan. 8, 2020

MS & Co. S&P 500 Price Target: Year-End 2021

<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>$202</td>
<td>20.75</td>
<td>4,175</td>
<td>9.2%</td>
</tr>
<tr>
<td>Base Case</td>
<td>$193</td>
<td>20.25</td>
<td>3,900</td>
<td>2.0%</td>
</tr>
<tr>
<td>Bear Case</td>
<td>$176</td>
<td>19.25</td>
<td>3,375</td>
<td>-11.8%</td>
</tr>
</tbody>
</table>

Current S&P 500 Price

3,825

Note: Price targets are based on estimated 2022 earnings.
Source: MS & Co. Research as of Jan 8, 2020

Morgan Stanley & Co. Forecasts (as of Jan 8, 2021)

<table>
<thead>
<tr>
<th>REAL GDP GROWTH (%)</th>
<th>10-YR GOVT. BOND YIELD (%)</th>
<th>HEADLINE INFLATION (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global</td>
<td>-3.4</td>
<td>6.4</td>
</tr>
<tr>
<td>US</td>
<td>-3.5</td>
<td>5.9</td>
</tr>
<tr>
<td>Euro Zone</td>
<td>-7.2</td>
<td>5.0</td>
</tr>
<tr>
<td>UK</td>
<td>-11.4</td>
<td>5.3</td>
</tr>
<tr>
<td>Japan</td>
<td>-5.2</td>
<td>2.4</td>
</tr>
<tr>
<td>Emerging Markets</td>
<td>-1.8</td>
<td>7.4</td>
</tr>
<tr>
<td>China</td>
<td>2.3</td>
<td>9.0</td>
</tr>
</tbody>
</table>

Source: Morgan Stanley & Co. Research
Preview of Future Meeting Topics
Future Topics for Considerations

Planning Education and Strategic Topics for 2021

Manager Presentations on Strategies and Market Overview

Asset Allocation Study & Portfolio Assessment

Fee Analysis for Investment Strategies

Financial Education Topics
Important Disclosures
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.

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.

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...
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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.

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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Indices are unmanaged and investors cannot directly invest in them. Composite index results are shown for illustrative purposes and do not represent the performance of a specific investment.

Past performance is no guarantee of future results. Actual results may vary. Diversification does not assure a profit or protect against loss in a declining market.

Any performance or related information presented has not been adjusted to reflect the impact of the additional fees paid to a placement agent by an investor (for Morgan Stanley placement clients, a one-time upfront Placement Fee of up to 3%, and for Morgan Stanley investment advisory clients, an annual advisory fee of up to 2.5%), which would result in a substantial reduction in the returns if such fees were incorporated.
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For most investment advisory clients, the program account will be charged an asset-based wrap fee every quarter ("the Fee"). In general, the Fee covers investment advisory services and reporting. In addition to the Fee, clients will pay the fees and expenses of any funds in which their account is invested. Fund fees and expenses are charged directly to the pool of assets the fund invests in and impact the valuations. Clients must understand that these fees and expenses are an additional cost and will not be included in the Fee amount in the account statements.

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.

Alternative investments involve complex tax structures, tax inefficient investing, and delays in distributing important tax information. Individual funds have specific risks related to their investment programs that will vary from fund to fund. Clients should consult their own tax and legal advisors as Morgan Stanley does not provide tax or legal advice. Interests in alternative investment products are offered pursuant to the terms of the applicable offering memorandum, are distributed by Morgan Stanley Smith Barney LLC and certain of its affiliates, and (1) are not FDIC-insured, (2) are not deposits or other obligations of Morgan Stanley or any of its affiliates, (3) are not guaranteed by Morgan Stanley and its affiliates, and (4) involve investment risks, including possible loss of principal. Morgan Stanley Smith Barney LLC is a registered broker-dealer, not a bank.

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The Global Investment Committee is a group of seasoned investment professionals who meet regularly to discuss the global economy and markets. The committee determines the investment outlook that guides our advice to clients. They continually monitor developing economic and market conditions, review tactical outlooks and recommend model portfolio weightings, as well as produce a suite of strategy, analysis, commentary, portfolio positioning suggestions and other reports and broadcasts.

The GIC Asset Allocation Models are not available to be directly implemented as part of an investment advisory service and should not be regarded as a recommendation of any Morgan Stanley investment advisory service. The GIC Asset Allocation Models do not represent actual trading or any type of account or any type of investment strategies and none of the fees or other expenses (e.g. commissions, mark-ups, mark-downs, advisory fees, fund expenses) associated with actual trading or accounts are reflected in the GIC Asset Allocation Models which, when compounded over a period of years, would decrease returns.

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outperform. Please note that this data may be derived from back-testing, which has the benefit of hindsight. In addition, highly ranked managers can have differing risk profiles that might not be suitable for all investors. Our view is that Adverse Active Alpha is a good starting point and should be used in conjunction with other information. Morgan Stanley Wealth Management’s qualitative and quantitative investment manager due diligence process are equally important factors for investors when considering managers for use through an investment advisory program. Factors including, but not limited to, manager turnover and changes to investment process can partially or fully negate a positive Adverse Active Alpha ranking. Additionally, highly ranked managers can have differing risk profiles that might not be suitable for all investors. For more information on AAA, please see the Adverse Active Alpha Ranking Model and Selecting Managers with Adverse Active Alpha whitepapers. The whitepaper are available from your Financial Advisor or Private Wealth Advisor.

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Consider Your Own Investment Needs: The model portfolios and strategies discussed in the material are formulated based on general client characteristics including risk tolerance. This material is not intended to be a client-specific suitability analysis or recommendation, or offer to participate in any investment. Therefore, clients should not use this profile as the sole basis for investment decisions. They should consider all relevant information, including their existing portfolio, investment objectives, risk tolerance, liquidity needs and investment time horizon. Such a suitability determination may lead to asset allocation results that are materially different from the asset allocation shown in this profile. Talk to your Financial Advisor about what would be a suitable asset allocation for you, whether CGCM is a suitable program for you.

No obligation to notify – Morgan Stanley Wealth Management has no obligation to notify you when the model portfolios, strategies, or any other information, in this material changes.

Please consider the investment objectives, risks, fees, and charges and expenses of mutual funds, ETFs, closed end funds, unit investment trusts, and variable insurance products carefully before investing. The prospectus contains this and other information about each fund. To obtain a prospectus, contact your Financial Advisor or Private Wealth Advisor or
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The type of mutual funds and ETFs discussed in this presentation utilizes nontraditional or complex investment strategies and/or derivatives. Examples of these types of funds include those that utilize one or more of the below noted investment strategies or categories or which seek exposure to the following markets: (1) commodities (e.g., agricultural, energy and metals), currency, precious metals; (2) managed futures; (3) leveraged, inverse or inverse leveraged; (4) bear market, hedging, long-short equity, market neutral; (5) real estate; (6) volatility (seeking exposure to the CBOE VIX Index). Investors should keep in mind that while mutual funds and ETFs may, at times, utilize nontraditional investment options and strategies, they should not be equated with unregistered privately offered alternative investments. Because of regulatory limitations, mutual funds and ETFs that seek alternative-like investment exposure must utilize a more limited investment universe. As a result, investment returns and portfolio characteristics of alternative mutual funds and ETFs may vary from traditional hedge funds pursuing similar investment objectives. Moreover, traditional hedge funds have limited liquidity with long “lock-up” periods allowing them to pursue investment strategies without having to factor in the need to meet client redemptions and ETFs trade on an exchange. On the other hand, mutual funds typically must meet daily client redemptions. This differing liquidity profile can have a material impact on the investment returns generated by a mutual or ETF pursuing an alternative investing strategy compared with a traditional hedge fund pursuing the same strategy.

Nontraditional investment options and strategies are often employed by a portfolio manager to further a fund's investment objective and to help offset market risks. However, these features may be complex, making it more difficult to understand the fund’s essential characteristics and risks, and how it will perform in different market environments and over various periods of time. They may also expose the fund to increased volatility and unanticipated risks particularly when used in complex combinations and/or accompanied by the use of borrowing or “leverage.”

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Investing in the markets entails the risk of market volatility. The value of all types of investments, including stocks, mutual funds, exchange-traded funds (“ETFs”), closed-end funds, and unit investment trusts, may increase or decrease over varying time periods. To the extent the investments depicted herein represent international securities, you should be aware that there may be additional risks associated with international investing, including foreign economic, political, monetary and/or legal factors, changing currency exchange rates, foreign taxes, and differences in financial and accounting standards. These risks may be magnified in emerging markets and frontier markets. Small- and mid-capitalization companies may lack the financial resources, product diversification and competitive strengths of larger companies. In addition, the securities of small- and mid-capitalization companies may not trade as readily as, and be subject to higher volatility than, those of larger, more established companies. The value of fixed income securities will fluctuate and, upon a sale, may be worth more or less than their original cost or maturity value. Bonds are subject to interest rate risk, call risk, reinvestment risk, liquidity risk, and credit risk of the issuer. High yield bonds are subject to additional risks such as increased risk of default and greater volatility because of the lower credit quality of the issuers. In the case of municipal bonds, income is generally exempt from federal income taxes. Some income may be subject to state and local taxes and to the federal alternative minimum tax. Capital gains, if any, are subject to tax. Treasury inflation Protection Securities’ (TIPS) coupon payments and underlying principal are automatically increased to compensate for inflation by tracking the consumer price index (CPI). While the real rate of return is guaranteed, TIPS tend to offer a low return. Because the return of TIPS is linked to inflation, TIPS may significantly underperform versus conventional U.S. Treasuries in times of low inflation. There is no guarantee that investors will receive par if TIPS are sold prior to maturity. The returns on a portfolio consisting primarily of environmental, social, and governance-aware investments (“ESG”) may be lower or higher than a portfolio that is more diversified or where decisions are based solely on investment considerations. Because ESG criteria exclude some investments, investors may not be able to take advantage of the same opportunities or market trends as investors that do not use such criteria. The companies identified and investment examples are for illustrative purposes only and should not be deemed a recommendation to purchase, hold or sell any securities or investment products. They are intended to demonstrate the approaches taken by managers who focus on ESG criteria in their investment strategy. There can be no guarantee that a client's account will be managed as described herein. Options and margin trading involve substantial risk and are not suitable for all investors. Besides the general investment risk of holding securities that may decline in value and the possible loss of principal invested, closed-end funds may have additional risks related to declining market prices relative to net asset values (NAVs), active manager underperformance and potential leverage. Closed-end funds, unlike open-end funds, are not continuously offered. There is a one-time public offering and once issued, shares of closed-end funds are sold in the open market through a stock exchange. NAV is total assets less liabilities divided by the number of shares outstanding.
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Alternative investments often are speculative and include a high degree of risk. Investors could lose all or a substantial amount of their investment. Alternative investments are suitable only for eligible, long-term investors who are willing to forgo liquidity and put capital at risk for an indefinite period of time. They may be highly illiquid and can engage in leverage and other speculative practices that may increase the volatility and risk of loss. Alternative Investments typically have higher fees than traditional investments. Investors should carefully review and consider potential risks before investing. 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Composite index results are shown for illustrative purposes and do not represent the performance of a specific investment. Individual funds have specific tax related risks related to their investment programs that will vary from fund to fund. Clients should consult their own tax and legal advisors as Morgan Stanley Wealth Management does not provide tax or legal advice. Interests in alternative investment products are offered pursuant to the terms of the applicable offering memorandum, are distributed by Morgan Stanley Wealth Management and certain of its affiliates, and (1) are not FDIC-insured, (2) are not deposits or other obligations of Morgan Stanley Wealth Management or any of its affiliates, (3) are not guaranteed by Morgan Stanley Wealth Management and its affiliates, and (4) involve investment risks, including possible loss of principal. Morgan Stanley Wealth Management is a registered broker-dealer, not a bank. 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Investment products in this category may employ various investment strategies and techniques for both hedging and more speculative purposes such as short-selling, leverage, derivatives and options, which can increase volatility and the risk of investment loss. Alternative investments are not suitable for all investors. As a diversified global financial services firm, Morgan Stanley Wealth Management engages in a broad spectrum of activities including financial advisory services, investment management activities, sponsoring and managing private investment funds, engaging in broker-dealer transactions and principal securities, commodities and foreign exchange transactions, research publication, and other...
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activities. In the ordinary course of its business, Morgan Stanley Wealth Management therefore engages in activities where Morgan Stanley Wealth Management’s interests may conflict with the interests of its clients, including the private investment funds it manages. Morgan Stanley Wealth Management can give no assurance that conflicts of interest will be resolved in favor of its clients or any such fund. Alternative investments involve complex tax structures, tax inefficient investing, and delays in distributing important tax information. Individual funds have specific risks related to their investment programs that will vary from fund to fund. Clients should consult their own tax and legal advisors as Morgan Stanley Wealth Management does not provide tax or legal advice.

It should be noted that the majority of hedge fund indexes are comprised of hedge fund manager returns. This is in contrast to traditional indexes, which are comprised of individual securities in the various market segments they represent and offer complete transparency as to membership and construction methodology. As such, some believe that hedge fund index returns have certain biases that are not present in traditional indexes. Some of these biases inflate index performance, while others may skew performance negatively. However, many studies indicate that overall hedge fund index performance has been biased to the upside. Some studies suggest performance has been inflated by up to 260 basis points or more annually depending on the types of biases included and the time period studied. Although there are numerous potential biases that could affect hedge fund returns, we identify some of the more common ones throughout this paper. Self-selection bias results when certain manager returns are not included in the index returns and may result in performance being skewed up or down. Because hedge funds are private placements, hedge fund managers are able to decide which fund returns they want to report and are able to opt out of reporting to the various databases. Certain hedge fund managers may choose only to report returns for funds with strong returns and opt out of reporting returns for weak performers. Other hedge funds that close may decide to stop reporting in order to retain secrecy, which may cause a downward bias in returns.

Survivorship bias results when certain constituents are removed from an index. This often results from the closure of funds due to poor performance, “blow ups,” or other such events. As such, this bias typically results in performance being skewed higher. As noted, hedge fund index performance biases can result in positive or negative skew. However, it would appear that the skew is more often positive. While it is difficult to quantify the effects precisely, investors should be aware that idiosyncratic factors may be giving hedge fund index returns an artificial “lift” or upwards bias.

Hedge Funds of Funds and many funds of funds are private investment vehicles restricted to certain qualified private and institutional investors. They are often speculative and include a high degree of risk. Investors can lose all or a substantial amount of their investment. They may be highly illiquid, can engage in leverage and other speculative practices that may increase volatility and the risk of loss, and may be subject to large investment minimums and initial lockups. They involve complex tax structures, tax inefficient investing and delays in distributing important tax information. Categorically, hedge funds and funds of funds have higher fees and expenses than traditional investments, and such fees and expenses can lower the returns achieved by investors. Funds of funds have an additional layer of fees over and above hedge fund fees that will offset returns. An investment in an exchange-traded fund involves risks similar to those of investing in a broadly based portfolio of equity securities traded on an exchange in the relevant securities market, such as market fluctuations caused by such factors as economic and political developments, changes in interest rates and perceived trends in stock and bond prices. An investment in a target date portfolio is subject to the risks attendant to the underlying funds in which it invests, in these portfolios the funds are the Consulting Group Capital Market funds. A target date portfolio is geared to investors who will retire and require income at an approximate year. The portfolio is managed to meet the investor’s goals by the pre-established year or “target date.” A target date portfolio will transition its invested assets from a more aggressive portfolio to a more conservative portfolio as the target date draws closer. An investment in the target date portfolio is not guaranteed at any time, including, before or after the target date is reached. Managed futures investments are speculative, involve a high degree of risk, use significant leverage, are generally illiquid, have substantial charges, subject investors to conflicts of interest, and are suitable only for the risk capital portion of an investor’s portfolio. Managed futures investments do not replace equities or bonds but rather may act as a complement in a well diversified portfolio. Managed Futures are complex and not appropriate for all investors. Rebalancing does not protect against a loss in declining financial markets. There may be a potential tax implication with a rebalancing strategy.

Asset allocation and diversification do not assure a profit or protect against loss in declining financial markets. Past performance is no guarantee of future results. Actual results may vary. Tax laws are complex and subject to change. Morgan Stanley Smith Barney LLC (“Morgan Stanley”), its affiliates and Morgan Stanley Financial Advisors and Private Wealth Advisors do not provide tax or legal advice and are not “fiduciaries” (under ERISA, the Internal Revenue Code or otherwise) with respect to the services or activities described herein except as otherwise provided in writing by Morgan Stanley and/or as described at www.morganstanley.com/disclosures/dol. Individuals are encouraged to consult their tax and legal advisors (a) before establishing a retirement plan or account, and (b) regarding any potential tax, ERISA and related consequences of any investments made under such plan or account.
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Indices are unmanaged and investors cannot directly invest in them. They are not subject to expenses or fees and are often comprised of securities and other investment instruments the liquidity of which is not restricted. A particular investment product may consist of securities significantly different than those in any index referred to herein. Composite index results are shown for illustrative purposes only, generally do not represent the performance of a specific investment, may not, for a variety of reasons, be a suitable comparison or benchmark for a particular investment and may not necessarily reflect the actual investment strategy or objective of a particular investment. Consequently, comparing an investment to a particular index may be of limited use.

This material is not a financial plan and does not create an investment advisory relationship between you and your Morgan Stanley Financial Advisor. We are not your fiduciary either under the Employee Retirement Income Security Act of 1974 (ERISA) or the Internal Revenue Code of 1986, and any information in this report is not intended to form the primary basis for any investment decision by you, or an investment advice or recommendation for either ERISA or Internal Revenue Code purposes. Morgan Stanley Private Wealth Management will only prepare a financial plan at your specific request using Private Wealth Management approved financial planning signature.

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For index, indicator and survey definitions referenced in this report please visit the following: https://www.morganstanley.com/wealth-investmentsolutions/wmir-definitions

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HYPOTHETICAL MODEL PERFORMANCE (GROSS): Hypothetical model performance results do not reflect the investment or performance of an actual portfolio following a GIC Strategy, but simply reflect actual historical performance of selected indices on a real-time basis over the specified period of time representing the GIC’s strategic and tactical allocations as of the date of this report. The past performance shown here is simulated performance based on benchmark indices, not investment results from an actual portfolio or actual trading. There can be large differences between hypothetical and actual performance results achieved by a particular asset allocation or trading strategy. Hypothetical performance results do not represent actual trading and are generally designed with the benefit of hindsight. Actual performance results of accounts vary due to, for example, market factors (such as liquidity) and client-specific factors (such as investment vehicle selection, timing of contributions and withdrawals, restrictions and rebalancing schedules). Clients would not necessarily have obtained the performance results shown here if they had invested in accordance with any GIC Asset Allocation Model for the periods indicated. Despite the limitations of hypothetical performance, these hypothetical performance results allow clients and Financial Advisors to obtain a sense of the risk/return trade-off of different asset allocation constructs. The hypothetical performance results in this report are calculated using the returns of benchmark indices for the asset classes, and not the returns of securities, fund or other investment products. Models may contain allocations to Hedge Funds, Private Equity and Private Real Estate. The benchmark indices for these asset classes are not issued on a daily basis. When calculating model performance on a day for which no benchmark index data is issued, we have assumed straight line growth between the index levels issued before and after that date.

FEES REDUCE THE PERFORMANCE OF ACTUAL ACCOUNTS: None of the fees or other expenses (e.g. commissions, mark-ups, mark-downs, fees) associated with actual trading or accounts are reflected in the GIC Asset Allocation Models. The GIC Asset Allocation Models and any model performance included in this presentation are intended as educational.
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materials. Were a client to use these models in connection with investing, any investment decisions made would be subject to transaction and other costs which, when compounded over a period of years, would decrease returns. Information regarding Morgan Stanley’s standard advisory fees is available in the Form ADV Part 2, which is available at www.morganstanley.com/adv. The following hypothetical illustrates the compound effect fees have on investment returns: For example, if a portfolio’s annual rate of return is 15% for 5 years and the account pays 50 basis points in fees per annum, the gross cumulative five-year return would be 101.1% and the five-year return net of fees would be 96.8%. Fees and/or expenses would apply to clients who invest in investments in an account based on these asset allocations, and would reduce clients’ returns. The impact of fees and/or expenses can be material.

Variable annuities are long-term investments designed for retirement purposes and may be subject to market fluctuations, investment risk, and possible loss of principal. All guarantees, including optional benefits, are based on the financial strength and claims-paying ability of the issuing insurance company and do not apply to the underlying investment options. Optional riders may not be able to be purchased in combination and are available at an additional cost. Some optional riders must be elected at time of purchase. Optional riders may be subject to specific limitations, restrictions, holding periods, costs, and expenses as specified by the insurance company in the annuity contract. If you are investing in a variable annuity through a tax-advantaged retirement plan such as an IRA, you will get no additional tax advantage from the variable annuity. Under these circumstances, you should only consider buying a variable annuity because of its other features, such as lifetime income payments and death benefits protection. Taxable distributions (and certain deemed distributions) are subject to ordinary income tax and, if taken prior to age 59½, may be subject to a 10% federal income tax penalty. Early withdrawals will reduce the death benefit and cash surrender value.

Equity securities may fluctuate in response to news on companies, industries, market conditions and general economic environment. Ultrashort-term fixed income asset class is comprised of fixed income securities with high quality, very short maturities. They are therefore subject to the risks associated with debt securities such as credit and interest rate risk. 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. Individual MLPs are publicly traded partnerships that have unique risks related to their structure. These include, but are not limited to, their reliance on the capital markets to fund growth, adverse ruling on the current tax treatment of distributions (typically mostly tax deferred), and commodity volume risk. The potential tax benefits from investing in MLPs depend on their being treated as partnerships for federal income tax purposes and, if the MLP is deemed to be a corporation, then its income would be subject to federal taxation at the entity level, reducing the amount of cash available for distribution to the fund which could result in a reduction of the fund’s value. MLPs carry interest rate risk and may underperform in a rising interest rate environment. MLP funds accrue deferred income taxes for future tax liabilities associated with the portion of MLP distributions considered to be a tax-deferred return of capital and for any net operating gains as well as capital appreciation of its investments; this deferred tax liability is reflected in the daily NAV, and, as a result, the MLP fund’s after-tax performance could differ significantly from the underlying assets even if the pre-tax performance is closely tracked.

Investing in commodities entails significant risks. Commodity prices may be affected by a variety of factors at any time, including but not limited to, (i) changes in supply and demand relationships, (ii) governmental programs and policies, (iii) national and international political and economic events, war and terrorist events, (iv) changes in interest and exchange rates, (v) trading activities in commodities and related contracts, (vi) pestilence, technological change and weather, and (vii) the price volatility of a commodity. In addition, the commodities markets are subject to temporary distortions or other disruptions due to various factors, including lack of liquidity, participation of speculators and government intervention. Physical precious metals are non-regulated products. Precious metals are speculative investments, which may experience short-term and long term price volatility. The value of precious metals investments may fluctuate and may appreciate or decline, depending on market conditions. Unlike bonds and stocks, precious metals do not make interest or dividend payments. Therefore, precious metals may not be suitable for investors who require current income. Precious metals are commodities that should be safely stored, which may impose additional costs on the investor.

REITs investing risks are similar to those associated with direct investments in real estate: property value fluctuations, lack of liquidity, limited diversification and sensitivity to economic factors such as interest rate changes and market recessions. Risks of private real estate include: illiquidity; a long-term investment horizon with a limited or nonexistent secondary market; lack of transparency; volatility (risk of loss); and leverage. Principal is returned on a monthly basis over the life of a mortgage-backed security. Principal
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Prepayment can significantly affect the monthly income stream and the maturity of any type of MBS, including standard MBS, CMOs and Lottery Bonds. Asset-backed securities generally decrease in value as a result of interest rate increases, but may benefit less than other fixed-income securities from declining interest rates, principally because of prepayments.

Yields are subject to change with economic conditions. Yield is only one factor that should be considered when making an investment decision. Credit ratings are subject to change. Duration, the most commonly used measure of bond risk, quantifies the effect of changes in interest rates on the price of a bond or bond portfolio. The longer the duration, the more sensitive the bond or portfolio would be to changes in interest rates. The majority of $25 and $1000 par preferred securities are “callable” meaning that the issuer may retire the securities at specific prices and dates prior to maturity. Interest/dividend payments on certain preferred issues may be deferred by the issuer for periods of up to 5 to 10 years, depending on the particular issue. The investor would still have income tax liability even though payments would not have been received. Price quoted is per $25 or $1,000 share, unless otherwise specified. Current yield is calculated by multiplying the coupon by par value divided by the market price. The initial interest rate on a floating-rate security may be lower than that of a fixed-rate security of the same maturity because investors expect to receive additional income due to future increases in the floating security's underlying reference rate. The reference rate could be an index or an interest rate. However, there can be no assurance that the reference rate will increase. Some floating-rate securities may be subject to call risk. The market value of convertible bonds and the underlying common stock(s) will fluctuate and after purchase may be worth more or less than original cost. If sold prior to maturity, investors may receive more or less than their original purchase price or maturity value, depending on market conditions. Callable bonds may be redeemed by the issuer prior to maturity. Additional call features may exist that could affect yield. Some $25 or $1000 par preferred securities are QDI (qualified Dividend Income) eligible. Information on QDI eligibility is obtained from third party sources. The dividend income on QDI eligible preferreds qualifies for a reduced tax rate. Many traditional ‘dividend paying’ perpetual preferred securities (traditional preferreds with no maturity date) are QDI eligible. In order to qualify for the preferential tax treatment all qualifying preferred securities must be held by investors for a minimum period – 91 days during a 180 day window period, beginning 90 days before the ex-dividend date.

Companies paying dividends can reduce or cut payouts at any time.

Nondiversification: For a portfolio that holds a concentrated or limited number of securities, a decline in the value of these investments would cause the portfolio’s overall value to decline to a greater degree than a less concentrated portfolio. The indices selected by Morgan Stanley Wealth Management to measure performance are representative of broad asset classes. Morgan Stanley Wealth Management retains the right to change representative indices at any time. Because of their narrow focus, sector investments tend to be more volatile than investments that diversify across many sectors and companies.

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 does not guarantee a profit or eliminate risk. Not all companies whose stocks are considered to be value stocks are able to turn their business around or successfully employ corrective strategies which would result in stock prices that do not rise as initially expected. Any type of continuous or periodic investment plan does not assure a profit and does not protect against loss in declining markets. Since such a plan involves continuous investment in securities regardless of fluctuating price levels of such securities, the investor should consider his financial ability to continue his purchases through periods of low price levels. This material is disseminated in the United States of America by Morgan Stanley Smith Barney LLC. Morgan Stanley Wealth Management is not acting as a municipal advisor to any municipal entity or obligated person within the meaning of Section 15B of the Securities Exchange Act (the “Municipal Advisor Rule”) and the opinions or views contained herein are not intended to be, and do not constitute, advice within the meaning of the Municipal Advisor Rule. This material, or any portion thereof, may not be reprinted, sold or redistributed without the written consent of Morgan Stanley Smith Barney LLC.

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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 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.

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/Commingled 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 rate 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.

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Benchmark Indices

For index definitions to the indices referenced in this report please visit the following:
https://www.morganstanley.com/wealth-investmentsolutions/wmir-definitions

Benchmark Indices

Depending on the composition of your account and your investment objectives, any indices shown in this report may not be an appropriate measure for comparison purposes and are therefore presented for illustration only. Indices are unmanaged. They do not reflect any management, custody, transaction or other expenses, and generally assume reinvestment of dividends, accrued income and capital gains. Past performance of indices does not guarantee future results. You cannot invest directly in an index. Performance of indices may be more or less volatile than any investment product. The risk of loss in value of a specific investment (such as with an investment manager or in a fund) is not the same as the risk of loss in a broad market index. Therefore, the historical returns of an index will not be the same as the historical returns of a particular investment product.

MSCI ACWI Ex USA NR USD: The MSCI ACWI Index is a free float-adjusted market capitalization weighted index that is designed to measure the equity market performance of developed and emerging markets. The MSCI ACWI consists of 46 country indexes comprising 23 developed and 23 emerging market country indexes. The developed market country indexes included are: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Hong Kong, Ireland, Israel, Italy, Japan, Netherlands, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, Switzerland, the United Kingdom and the United States. The emerging market country indexes included are: Brazil, Chile, China, Colombia, Czech Republic, Egypt, Greece, Hungary, India, Indonesia, Korea, Malaysia, Mexico, Peru, Philippines, Poland, Qatar, Russia, South Africa, Taiwan, Thailand, Turkey, and United Arab Emirates (as of June 2014). This index is excluding the United States. Performance is showing net withholding tax. Net total return indices reinvest dividends after the deduction of withholding taxes, using (for international indices) a tax rate applicable to non-resident institutional investors who do not benefit from double taxation treaties. For historical purposes the AC World ex US Gross returns are being used from 1/29/1988 - 1/1/2001 and the net returns begin as of 1/1/2001.

MSCI EAFE (Net) - The MSCI EAFE Index (Europe, Australasia, Far East) is a free float-adjusted market capitalization index that is designed to measure developed market equity performance, excluding the US & Canada. As of December 2003 the MSCI EAFE Index consisted of the following 21 developed market country indexes: Australia, Austria, Belgium, Denmark, Finland, France, Germany, Greece, Hong Kong, Ireland, Italy, Japan, the Netherlands, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, Switzerland and the United Kingdom.

MSCI EM (Emerging Markets) (Net) - The MSCI Emerging Markets Index is a free float-adjusted market capitalization index that is designed to measure equity market performance in the global emerging markets. This series approximates the minimum possible dividend reinvestment. The dividend is reinvested after deduction of withholding tax, applying the rate to non-resident individuals who do not benefit from double taxation treaties. MSCI uses withholding tax rates applicable to Luxembourg holding companies, as Luxembourg applies the highest rates. For historical return purposes the Emerging Markets gross returns are being used from 1/31/1988 to 1/31/2001 and the net returns begin as of 2/28/2001.

Russell 2000 - Russell 2000 Index measures the performance of the 2,000 smallest companies in the Russell 3000 Index, which represents approximately 11% of the total market capitalization of the Russell 3000 Index.

S&P 500 Total Return: The S&P 500 has been widely regarded as the best single gauge of the large cap U.S. equities market since the index was first published in 1957. The index has over $5.58 trillion benchmarked, with index assets comprising approximately $1.31 trillion of this total. The index includes 500 leading companies in leading industries of the U.S. economy, capturing 75% coverage of U.S. equities. This index includes dividend reinvestment.

MSCI Europe - The MSCI Europe Index represents the performance of large and mid-cap equities across 15 developed countries in Europe. The Index has a number of sub-Indexes which cover various sub-regions market segments/sizes, sectors and covers approximately 85% of the free float-adjusted market capitalization in each country.

MSCI Japan - The MSCI Japan Index is designed to measure the performance of the large and mid cap segments of the Japanese market. With 322 constituents, the index covers approximately 85% of the free float-adjusted market capitalization in Japan.

MSCI ACWI - The MSCI ACWI Index is a free float-adjusted market capitalization weighted index that is designed to measure the equity market performance of developed and emerging markets. The MSCI ACWI consists of 46 country indexes comprising 23 developed and 23 emerging market country indexes. The developed market country indexes included are: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Hong Kong, Ireland, Israel, Italy, Japan, Netherlands, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, Switzerland, the United Kingdom and the United States. The emerging market country indexes included are: Brazil, Chile, China, Colombia, Czech Republic, Egypt, Greece, Hungary, India, Indonesia, Korea, Malaysia, Mexico, Peru, Philippines, Poland, Qatar, Russia, South Africa, Taiwan, Thailand, Turkey, and United Arab Emirates (as of June 2014). This index is excluding the United States. Performance is showing net withholding tax. Net total return indices reinvest dividends after the deduction of withholding taxes, using (for international indices) a tax rate applicable to non-resident institutional investors who do not benefit from double taxation treaties. For historical purposes the AC World ex US Gross returns are being used from 1/29/1988 - 1/1/2001 and the net returns begin as of 1/1/2001.
Benchmark Indices

NASDAQ - The Nasdaq Composite Index is the market capitalization-weighted index of over 3,300 common equities listed on the Nasdaq stock exchange. The types of securities in the index include American depositary receipts, common stocks, real estate investment trusts (REITs) and tracking stocks, as well as limited partnership interests. The index includes all Nasdaq-listed stocks that are not derivatives, preferred shares, funds, exchange-traded funds (ETFs) or debenture securities.

Fixed Income Indices:


Securitized: Bloomberg Barclays US Securitized Index is comprised of predominantly MBS Agency securities, but also includes ABS, CMBS and covered securities.


US High Yield: Bloomberg Barclays US Corporate High Yield Caa Index is comprised of predominantly US high yield corporate bonds.

Global EM: Barclays Capital Global Emerging Markets comprises fixed income debt issues from countries with developing economies. These include government bonds and corporate bonds in Asia, Latin America, Africa and elsewhere.

MSCI ESG Indices:

MSCI EU ESG Leaders - The MSCI Europe ESG Leaders Index is a capitalization weighted index that provides exposure to companies with high Environmental, Social and Governance (ESG) performance relative to their sector peers. MSCI Europe ESG Leaders Index consists of large and mid cap companies in 15 developed markets countries.

MSCI USA ESG Leaders - The MSCI USA ESG Leaders Index is a capitalization weighted index that provides exposure to companies with high Environmental, Social and Governance (ESG) performance relative to their sector peers. MSCI USA ESG Leaders Index consists of large and mid cap companies in the US market.

MSCI Japan ESG Leaders - The MSCI Japan ESG Leaders Index is a capitalization weighted index that provides exposure to companies with high Environmental, Social and Governance (ESG) performance relative to their sector peers. MSCI Japan ESG Leaders Index consists of large and mid cap companies in Japanese markets.

MSCI World ESG Leaders - The MSCI World ESG Leaders Index is a capitalization weighted index that provides exposure to companies with high Environmental, Social and Governance (ESG) performance relative to their sector peers.

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