Strategic Fixed Income Strategy
Prepared for Boston Public Library

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Senior Managing Director, Senior Portfolio Manager

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Managing Director, Fixed Income Portfolio Specialist

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Managing Director, Institutional Sales

Kevin Brady, CRPC
Associate Director, John Hancock Asset Management, A Division of Manulife Asset Management

November 10, 2017

For a discussion of the risks associated with this strategy, please see the Investment Considerations page at the end of the presentation.
Manulife Asset Management

We are the global asset management arm of Manulife

- USD$370 billion in assets under management for global investors
- Deep, local market knowledge in US, Canada, Europe and throughout Asia
- Investment management roots dating back over 100 years
Our Global Footprint

More than 450\textsuperscript{2} Investment Professionals; Offices in 16 countries and territories

\begin{itemize}
  \item \textbf{CANADA} \hspace{1cm} 102 Investment Professionals
  \item \textbf{USA} \hspace{1cm} 159 Investment Professionals
  \item \textbf{EUROPE} \hspace{1cm} 18 Investment Professionals
  \item \textbf{JAPAN} \hspace{1cm} 11 Investment Professionals
  \item \textbf{ASIA EX-JAPAN} \hspace{1cm} 161 Investment Professionals\textsuperscript{1}
\end{itemize}

As of June 30, 2017

\textsuperscript{1} Total is comprised of investment professionals of Manulife Asset Management (Asia) and of Manulife TEDA and Sinochem.

\textsuperscript{2} Includes Public Markets investment professionals (IP) and Private Markets investment professionals from Hancock Natural Resource Group (HNRG) and Real Estate. Does not include IPs from Renewable Energy, Oil & Gas, Private Equity & Mezzanine, Commercial Mortgage Loans and Private Placement Debt.
Typical Plan Sponsor
Fixed Income Investment Objectives

1. Seek to increase the return profile in a low yield environment
2. Maintain volatility consistent with fixed income instruments
3. Seek to protect against a rising rate environment
4. Diversify fixed income allocation away from benchmark-centric, domestic exposure
5. Preserve liquidity
Strategic Fixed Income Strategy
Combining Global and Multi-Sector Fixed Income

1. Seek to increase the return profile in a low yield environment
   - Strategy invests across global developed and emerging markets sovereign, credit and securitized debt
   - By expanding the investment universe to include multiple sectors and currencies, we believe we increase our potential to add value

2. Maintain volatility consistent with fixed income instruments
   - Global multi-sector approach to fixed income has the potential to lower volatility
   - Rolling 3 year standard deviation has ranged from 4-8%

Source: Manulife Asset Management, Bloomberg Barclays, BoA Merrill Lynch, Citigroup, JPMorgan.
*As of September 30, 2017.
Performance shown is the Manulife Asset Management (US) Strategic Fixed income composite net of fees, and does not include advisory fees and other expenses an investor would incur. This information is supplemental to the GIPS-compliant presentation included as a part of this presentation.
### Strategic Fixed Income Strategy

**Combining Global and Multi-Sector Fixed Income**

#### 3 Seek to protect against a rising rate environment

The 10 Year US Treasury Yield Increased **126 bps** in 2013 and **85 bps** in Q4 2016

<table>
<thead>
<tr>
<th></th>
<th>2013 Return</th>
<th>2013 Y/E Duration</th>
<th>Q4 2016 Return</th>
<th>2016 Y/E Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bloomberg Barclays US Aggregate Index:</td>
<td>-2.03%</td>
<td>5.55 yrs</td>
<td>-2.98%</td>
<td>5.89 yrs</td>
</tr>
<tr>
<td>Citigroup World Government Bond Index:</td>
<td>-4.00%</td>
<td>6.74 yrs</td>
<td>-8.53%</td>
<td>7.80 yrs</td>
</tr>
<tr>
<td>Strategic Fixed Income Composite (net)¹:</td>
<td>+2.10%</td>
<td>1.99 yrs</td>
<td>-1.29%</td>
<td>2.57 yrs</td>
</tr>
</tbody>
</table>

#### 4 Diversify fixed income allocation away from benchmark-centric, domestic exposure

**10 Year Correlation vs Bloomberg Barclays US Aggregate³**

- Citigroup World Government Bond Index: 0.71
- Strategic Fixed Income Strategy¹: 0.33

*Combining global and multi-sector fixed income with active currency management has the potential to increase diversification*

#### 5 Preserve liquidity

- Sophisticated global bond strategy delivered in a transparent fashion
- $27.0 billion in assets⁴; strategy is implemented using physical bonds
- Limited derivatives usage

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¹ Performance shown is the Manulife Asset Management (US) Strategic Fixed income composite net of fees and does not include advisory fees and other expenses an investor would incur. Past performance is not indicative of future results. This information is supplemental to the GIPS-compliant presentation included as a part of this presentation.


³ Source: Manulife Asset Management, Zephyr StyleAdvisor, as of September 30, 2017

⁴ AUM in USD as of September 30, 2017
Global Multi-Sector Fixed Income Team

Roles and Experience

As of September 30, 2017

Global Multi-Sector Fixed Income Team

Daniel S. Janis, III
Head of Global Multi-Sector Fixed Income
Senior Portfolio Manager
33 Years’ Experience
Boston

Thomas C. Goggins
Senior Portfolio Manager
30 Years’ Experience
Boston

Christopher Chapman, CFA
Portfolio Manager
18 Years’ Experience
London

Kisoo Park
Portfolio Manager
31 Years’ Experience
Hong Kong

Peter Azzinaro
Global Macro Strategist
25 Years’ Experience
Boston

Chuck Tomes
Investment Analyst
9 Years’ Experience
Boston

Joseph Rothwell
Investment Analyst
9 Years’ Experience
Boston

David Zielinski, CFA
Portfolio Specialist
20 Years’ Experience
Hong Kong

Global Multi-Sector Portfolio Implementation

Christopher Camell
Senior Portfolio Analyst
Boston

Kelly Lim, CFA
Senior Portfolio Analyst
Hong Kong

Jeff Momplaisir
Portfolio Analyst
Boston

Additional Resources

Credit & Securitized Asset Research

Tech/Media/Telecom & Financial Services
Industrials/Utilities/Energy
Securitized Asset Research

Donald Tucker, CFA
Team Leader
Bradley Lutz, CFA
Team Leader
David A. Bees, CFA
Co-Team Leader
William Paolino
Co-Team Leader
Caryn Rothman, CFA
Team Leader
Richard Segal
Team Leader
Additional Credit Research
13 Analysts

Asia Team

55 Investment Professionals in 10 Markets

China
Hong Kong
Indonesia
Japan
Malaysia
Philippines
Taiwan
Thailand
Vietnam
Singapore

Traders

10 Traders

Economists

Megan E. Greene
Chief Economist
3 Economists

Investment Risk & Quantitative Analytics

Peter Mennie, ASIP
Global Head
12 Quantitative Analysts

Global Portfolio Specialists

Richard Baker
Dylan Ngai, CFA
Christopher Smith, CFA, CAIA

As of September 30, 2017
Strategic Fixed Income Strategy
Investment Philosophy & Process

Philosophy
We believe strong, consistent returns can be generated by investing primarily in a portfolio of global government and corporate bonds, including emerging markets and high yield securities. Currency management is employed to further diversify the portfolio, mitigate risk and add value. By expanding the investment universe to include multiple sectors and currencies, we believe we increase our potential to add value while reducing risk.

Process
▪ Consistent adherence to disciplined investment style and process which utilizes diverse sources of alpha

▪ Using a comprehensive investment process, we seek to:
  ▪ Invest in attractive sectors based on our top-down view of macro economic conditions
  ▪ Engage in an intensive bottom-up research process to identify relative value opportunities within those sectors
  ▪ Make opportunistic currency investments to add value and further diversify our portfolio position

For illustrative purposes only.
Macro Themes Drive Portfolio Exposures

- Daily US-based morning meeting consisting of US portfolio managers, credit analysts and traders
  - Review prior day’s and overnight market events, recent earnings updates, new issuance calendar and market liquidity
- Weekly global meetings consisting of local portfolio managers and credit analysts
  - Macroeconomic discussion on factors impacting local sovereign and credit markets
- Quarterly Global Multi-Sector Team Macroeconomic Scorecard Review
  - Review and rank economic, interest rate and spread data across developed and emerging countries
  - Analyze current indicators versus their historical levels and the direction and magnitude of change
  - Macroeconomic scorecard summarizes the attractiveness of the global landscape from an interest rate, credit, currency and liquidity perspective

For illustrative purposes only.
Strategic Fixed Income Strategy
Dynamic Sector Allocation

As of September 2017

Emerging Markets Debt
High Yield Corporates
Foreign Government/Supranational

Emerging Markets
CMBS
ABS
Non-Agency MBS
Agency MBS
Convertible
Bank Loan
HY Corporates
IG Corporates
Foreign Govt & Supra
Municipals/Local Authorities
US Government/Agencies
The Credit Research Team takes a disciplined, fundamental bottom-up approach to credit analysis.
Strategic Fixed Income Strategy

Currency & Duration Management

Currency:
- Strategic positioning
  - Intended to capture medium to long term currency trends
  - Fundamentally driven
  - Generally implemented through local currency denominated securities
- Tactical positioning
  - Intended to take advantage of short-term volatility and dislocations
  - Fundamentally and technically driven
  - Currency risk is hedged back to base currency or cross-hedged to a different currency which has the potential for appreciation
- Tail risk/proxy hedging
  - Intended to act as a proxy hedge for underlying portfolio risk exposures in volatile and distressed markets
  - Liquid currency forwards and options provide an effective and efficient way to mitigate risk

Duration:
- Interest rates are hard to time
  - Intermediate duration targeting 4 years with a band of +/- 2 years (i.e., 2–6 years)

Role of Currency Management

- Diversifier
- Risk Mitigator
- Alpha Source
Portfolio construction is a collaborative effort between experienced portfolio managers, research analysts and traders

- Diversification guidelines and a multi-dimension risk management process govern the portfolio’s construction
- Benchmark unconstrained; position sizes are determined by fundamental analysis, diversification benefits and impact on the overall portfolio volatility
- Physical bond implementation is an integral part of managing liquidity risk
  - Derivatives usage limited to exchange-traded interest rate futures/options and currency forwards/options
- Strong sell discipline
  - Business cycle shifts in favor of other sector
  - Credit fundamentals deteriorate
  - Better relative value opportunity is identified

For illustrative purposes only.
*Sources of alpha values are targets and not a guarantee of performance.
Strategic Fixed Income Strategy
Multi-Dimensional Risk Management

**Investment Philosophy & Process**

<table>
<thead>
<tr>
<th>Risk Category</th>
<th>Guideline Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Quality</td>
<td>Investment Grade</td>
</tr>
<tr>
<td>Industry Max</td>
<td>25%</td>
</tr>
<tr>
<td>Single Foreign Gov't Max</td>
<td>25%</td>
</tr>
<tr>
<td>Average Holding Size</td>
<td>0.5–1.5%</td>
</tr>
<tr>
<td></td>
<td>Greater diversification for lower quality bonds</td>
</tr>
</tbody>
</table>

**Senior Management Oversight**
- Identify and monitor risks
- Operational risk oversight
- Operating Committee
- Derivative usage and counterparty selection policies

**Strategic Fixed Income Strategy**

**Risk Management**
- Dedicated risk management team
- Daily reporting
- Volatility forecasts
- Tracking error decomposition
- Value at Risk (VaR)
- Scenario analysis/stress testing
- ESG exposure analysis

**Compliance Monitoring**
- Bloomberg
- Pre-trade compliance
- Over-night compliance
- Investigation, documentation and resolution of violations

**Manulife Asset Management**

For illustrative purposes only.
Strategic Fixed Income
*Portfolio Structure & Performance*
Strategic Fixed Income Strategy
Characteristics as of September 30, 2017

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Strategic Fixed Income Strategy</th>
<th>Bloomberg Barclays US Aggregate Bond Index</th>
<th>Bloomberg Barclays Multiverse Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Rating</td>
<td>BAA1</td>
<td>AA2</td>
<td>A1</td>
</tr>
<tr>
<td>Average Coupon (%)</td>
<td>4.38</td>
<td>3.14</td>
<td>3.01</td>
</tr>
<tr>
<td>Average Life (Years)</td>
<td>5.27</td>
<td>8.19</td>
<td>8.55</td>
</tr>
<tr>
<td>Yield to Maturity (%)</td>
<td>3.10</td>
<td>2.55</td>
<td>1.87</td>
</tr>
<tr>
<td>Yield to Worst (%)</td>
<td>2.90</td>
<td>2.55</td>
<td>1.85</td>
</tr>
<tr>
<td>Effective Duration (Years)</td>
<td>2.56</td>
<td>5.97</td>
<td>6.79</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Top Ten Issuers</th>
<th>Portfolio Weight (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>United Mexican States</td>
<td>3.45</td>
</tr>
<tr>
<td>New Zealand</td>
<td>2.91</td>
</tr>
<tr>
<td>Republic of Indonesia</td>
<td>2.83</td>
</tr>
<tr>
<td>Canada</td>
<td>2.71</td>
</tr>
<tr>
<td>United Nations Organization</td>
<td>2.63</td>
</tr>
<tr>
<td>Republic of Singapore</td>
<td>2.37</td>
</tr>
<tr>
<td>State of Queensland Australia</td>
<td>1.89</td>
</tr>
<tr>
<td>Republic of the Philippines</td>
<td>1.86</td>
</tr>
<tr>
<td>Wells Fargo</td>
<td>1.67</td>
</tr>
<tr>
<td>JPMorgan Chase</td>
<td>1.57</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>23.89</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sector Allocation (%)</th>
<th>Strategic Fixed Income Strategy</th>
<th>Bloomberg Barclays US Aggregate Bond Index</th>
<th>Bloomberg Barclays Multiverse Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>US Government</td>
<td>0.00</td>
<td>39.48</td>
<td>15.01</td>
</tr>
<tr>
<td>US Treasuries</td>
<td>0.00</td>
<td>36.98</td>
<td>14.05</td>
</tr>
<tr>
<td>US Agency</td>
<td>0.00</td>
<td>1.84</td>
<td>0.70</td>
</tr>
<tr>
<td>Local Authorities &amp; Municipals</td>
<td>0.00</td>
<td>0.67</td>
<td>0.26</td>
</tr>
<tr>
<td>Credit</td>
<td><strong>54.91</strong></td>
<td><strong>25.23</strong></td>
<td><strong>20.41</strong></td>
</tr>
<tr>
<td>IG Corporates</td>
<td>26.84</td>
<td>25.23</td>
<td>17.08</td>
</tr>
<tr>
<td>HY Corporates</td>
<td>16.30</td>
<td>0.00</td>
<td>3.33</td>
</tr>
<tr>
<td>Bank Loans</td>
<td>7.74</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Convertibles</td>
<td>4.03</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Equities</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td><strong>Securitized</strong></td>
<td><strong>12.08</strong></td>
<td><strong>30.51</strong></td>
<td><strong>14.22</strong></td>
</tr>
<tr>
<td>Agency MBS</td>
<td>0.85</td>
<td>28.13</td>
<td>10.69</td>
</tr>
<tr>
<td>Non-Agency MBS</td>
<td>2.25</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>ABS</td>
<td>4.03</td>
<td>0.57</td>
<td>2.82</td>
</tr>
<tr>
<td>CMBS</td>
<td>4.95</td>
<td>1.81</td>
<td>0.71</td>
</tr>
<tr>
<td><strong>Foreign Developed</strong></td>
<td><strong>19.70</strong></td>
<td><strong>3.00</strong></td>
<td><strong>42.12</strong></td>
</tr>
<tr>
<td>Govt &amp; Agency</td>
<td>15.61</td>
<td>1.41</td>
<td>39.98</td>
</tr>
<tr>
<td>Supranationals</td>
<td>4.10</td>
<td>1.59</td>
<td>2.14</td>
</tr>
<tr>
<td><strong>Emerging Markets</strong></td>
<td><strong>11.67</strong></td>
<td><strong>1.78</strong></td>
<td><strong>8.25</strong></td>
</tr>
<tr>
<td>Emerging Markets — USD</td>
<td>3.36</td>
<td>1.78</td>
<td>3.75</td>
</tr>
<tr>
<td>Emerging Markets — Non-USD</td>
<td>8.30</td>
<td>0.00</td>
<td>4.50</td>
</tr>
</tbody>
</table>
Strategic Fixed Income Composite
Investment Results as of September 30, 2017

Annualized Returns (%)

<table>
<thead>
<tr>
<th></th>
<th>3 Months</th>
<th>YTD</th>
<th>1 Year</th>
<th>3 Years</th>
<th>5 Years</th>
<th>7 Years</th>
<th>10 Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strategic Fixed Income Composite — Net</td>
<td>1.13</td>
<td>3.14</td>
<td>2.84</td>
<td>3.09</td>
<td>3.45</td>
<td>4.71</td>
<td>6.19</td>
</tr>
<tr>
<td>Bloomberg Barclays US Aggregate Index</td>
<td>0.85</td>
<td>0.07</td>
<td>0.07</td>
<td>1.56</td>
<td>2.06</td>
<td>0.76</td>
<td>4.27</td>
</tr>
<tr>
<td>Bloomberg Barclays Multiverse Index</td>
<td>1.88</td>
<td>4.18</td>
<td>6.55</td>
<td>2.71</td>
<td>4.27</td>
<td>1.87</td>
<td>3.50</td>
</tr>
</tbody>
</table>

Calendar Year Returns (%)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Strategic Fixed Income Composite (Net)</td>
<td>3.74</td>
<td>0.87</td>
<td>3.86</td>
<td>2.10</td>
<td>12.07</td>
<td>2.40</td>
<td>15.51</td>
<td>29.57</td>
<td>-9.27</td>
<td>6.14</td>
</tr>
<tr>
<td>Bloomberg Barclays US Aggregate Index</td>
<td>2.65</td>
<td>0.55</td>
<td>5.97</td>
<td>-2.03</td>
<td>4.22</td>
<td>7.84</td>
<td>6.54</td>
<td>5.93</td>
<td>5.24</td>
<td>6.97</td>
</tr>
<tr>
<td>Excess Return</td>
<td>1.09</td>
<td>0.32</td>
<td>-2.11</td>
<td>4.13</td>
<td>7.85</td>
<td>-5.44</td>
<td>8.97</td>
<td>23.64</td>
<td>-14.51</td>
<td>-0.83</td>
</tr>
<tr>
<td>Bloomberg Barclays Multiverse Index</td>
<td>2.84</td>
<td>-3.29</td>
<td>0.48</td>
<td>-2.19</td>
<td>4.83</td>
<td>5.55</td>
<td>5.85</td>
<td>8.04</td>
<td>3.76</td>
<td>9.22</td>
</tr>
<tr>
<td>Excess Return</td>
<td>0.9</td>
<td>4.16</td>
<td>3.38</td>
<td>4.29</td>
<td>7.24</td>
<td>-3.15</td>
<td>9.66</td>
<td>21.53</td>
<td>-13.03</td>
<td>-3.08</td>
</tr>
</tbody>
</table>

In USD
Composite inception date: October 1986
Strategic Fixed Income Strategy
Risk Analysis

### Rolling 3 Year Volatility
(36 Month Annualized Standard Deviation)

<table>
<thead>
<tr>
<th>Year</th>
<th>Net Return</th>
<th>Standard Deviation</th>
<th>Sharpe Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 Year</td>
<td>3.09</td>
<td>1.93</td>
<td>1.46</td>
</tr>
<tr>
<td>5 Year</td>
<td>3.45</td>
<td>2.65</td>
<td>1.23</td>
</tr>
<tr>
<td>10 Year</td>
<td>6.19</td>
<td>5.45</td>
<td>1.06</td>
</tr>
</tbody>
</table>

### Risk/Return Analysis
As of September 30, 2017

<table>
<thead>
<tr>
<th></th>
<th>3 Year</th>
<th>5 Year</th>
<th>10 Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strategic Fixed Income Strategy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Net Return</td>
<td>3.09</td>
<td>3.45</td>
<td>6.19</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>1.93</td>
<td>2.65</td>
<td>5.45</td>
</tr>
<tr>
<td>Sharpe Ratio</td>
<td>1.46</td>
<td>1.23</td>
<td>1.06</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>3 Year</th>
<th>5 Year</th>
<th>10 Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>vs. Bloomberg Barclays US Aggregate Index</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Correlation</td>
<td>0.78</td>
<td>0.69</td>
<td>0.33</td>
</tr>
</tbody>
</table>

Source: Manulife Asset Management, Barclays, Zephyr StyleAdvisor as of September 30, 2017
Inception Date: October, 1986
Strategic Fixed Income Strategy
A Response to a Challenging Fixed Income Environment

Why Global Multi-Sector Today?

- **Global yield curve diversification**
  Potential for rising interest rates in the US due to Fed interest rate hikes and balance sheet unwind

- **Sector diversification**
  Multi-sector allocation has the ability to lower portfolio volatility

- **Additional alpha source from foreign bonds**
  Potential for a weaker US dollar as global central bank policies converge

- **Global sources of liquidity**

Why Manulife AM’s Strategic Fixed Income Strategy?

- **Experienced Portfolio Managers**
- **Demonstrated Ability to Adjust to Markets**
- **Transparency & Liquidity**
- **Active Currency Management**
- **“Risk Managers First” Competitive, Consistent Risk-Adjusted Returns**

For illustrative purposes only.
Appendix
Strategic Fixed Income Strategy
Characteristics as of September 30, 2017

Currency Allocation
As of September 30, 2017

<table>
<thead>
<tr>
<th>Currency</th>
<th>Allocation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia Dollar</td>
<td>3.60</td>
</tr>
<tr>
<td>Brazilian Real</td>
<td>0.26</td>
</tr>
<tr>
<td>Canada Dollar</td>
<td>3.53</td>
</tr>
<tr>
<td>Colombian Peso</td>
<td>0.25</td>
</tr>
<tr>
<td>Euro</td>
<td>0.49</td>
</tr>
<tr>
<td>India Rupee</td>
<td>0.88</td>
</tr>
<tr>
<td>Indonesia Rupiah</td>
<td>2.37</td>
</tr>
<tr>
<td>Malaysian Ringgit</td>
<td>0.24</td>
</tr>
<tr>
<td>Mexico Peso</td>
<td>2.17</td>
</tr>
<tr>
<td>New Zealand Dollar</td>
<td>-2.42</td>
</tr>
<tr>
<td>Norway Krone</td>
<td>1.57</td>
</tr>
<tr>
<td>Philippines Peso</td>
<td>1.86</td>
</tr>
<tr>
<td>Singapore Dollar</td>
<td>-2.96</td>
</tr>
<tr>
<td>South Korean Won</td>
<td>-1.51</td>
</tr>
<tr>
<td>Swedish Krona</td>
<td>0.05</td>
</tr>
<tr>
<td>United Kingdom Pound</td>
<td>0.01</td>
</tr>
<tr>
<td>United States Dollar</td>
<td>89.62</td>
</tr>
</tbody>
</table>

In USD

Geographic Allocation
As of September 30, 2017

<table>
<thead>
<tr>
<th>Region</th>
<th>Allocation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Developed Markets</td>
<td>88.36</td>
</tr>
<tr>
<td>United States</td>
<td>63.84</td>
</tr>
<tr>
<td>Canada</td>
<td>6.09</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>0.41</td>
</tr>
<tr>
<td>Europe ex-UK</td>
<td>2.16</td>
</tr>
<tr>
<td>Scandinavia</td>
<td>2.07</td>
</tr>
<tr>
<td>Middle East (Developed)</td>
<td>0.00</td>
</tr>
<tr>
<td>Japan</td>
<td>0.00</td>
</tr>
<tr>
<td>Asia ex-Japan</td>
<td>2.44</td>
</tr>
<tr>
<td>Australasia</td>
<td>7.00</td>
</tr>
<tr>
<td>Other Developed</td>
<td>4.35</td>
</tr>
<tr>
<td>Emerging Markets</td>
<td>11.64</td>
</tr>
<tr>
<td>Latin America</td>
<td>6.33</td>
</tr>
<tr>
<td>Europe</td>
<td>0.00</td>
</tr>
<tr>
<td>Middle East (EM)</td>
<td>0.00</td>
</tr>
<tr>
<td>Africa</td>
<td>0.00</td>
</tr>
<tr>
<td>Asia</td>
<td>5.31</td>
</tr>
</tbody>
</table>

In USD
We have become more constructive on a number of global macroeconomic factors and believe there is more upside risk to the global economy than downside. With valuations through fair value in many fixed income sectors, we will look to increase risk within the portfolio on a selective basis. As global central bank policies potentially become more in sync, the strong US dollar trend has likely peaked.

Opportunities:
- Bank loans, Eurozone and select emerging markets
- Tactical duration positioning
- Strategic/tactical currency positioning
## Strategic Fixed Income Composite

### Benchmark Comparison as of September 30, 2017

#### Benchmark Characteristics

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description</strong></td>
<td>▪ The Bloomberg Barclays Multiverse Index provides a broad-based measure of the global fixed-income bond market. The index represents the union of the Global Aggregate Index and the Global High Yield Index.</td>
<td>▪ The Global Aggregate Index provides a broad-based measure of the global investment-grade fixed income markets. The three major components of this index are the US Aggregate, the Pan-European Aggregate, and the Asian-Pacific Aggregate Indices.</td>
<td>▪ The World Government Bond Index consists of the government bond markets of multiple countries. Country eligibility is determined based upon market capitalization and investability criteria.</td>
<td>▪ The US Universal Index represents the union of the US Aggregate Index, the US High-Yield Corporate Index, the 144A Index, the Eurodollar Index, the Emerging Markets Index, and the non-ERISA portion of the CMBS Index.</td>
<td>▪ The US Aggregate Index represents securities that are SEC-registered, taxable, and dollar denominated.</td>
</tr>
<tr>
<td><strong>Key Differences</strong></td>
<td>▪ US 38%, Pan-Euro 30%, Asia-Pac 22%, 5% high yield, 45% US Dollar, 55% foreign currency</td>
<td>▪ US 40%, Pan-Euro 31%, Asia-Pac 22%, No high yield, 44% US Dollar, 56% foreign currency</td>
<td>▪ US 33%, Non-US 67%, No securitized or corporate bonds (including HY)</td>
<td>▪ US Aggregate Index 84%, High yield 6%, EM 3%, No foreign currency exposure (100% US Dollar)</td>
<td>▪ No high yield, No foreign currency exposure (100% US Dollar)</td>
</tr>
</tbody>
</table>

#### Annualized Returns (%)

<table>
<thead>
<tr>
<th></th>
<th>3 Month</th>
<th>1 Year</th>
<th>3 Year</th>
<th>5 Year</th>
<th>10 Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strategic Fixed Income Composite</td>
<td>1.13</td>
<td>3.25</td>
<td>3.51</td>
<td>3.87</td>
<td>6.62</td>
</tr>
<tr>
<td>Bloomberg Barclays Multiverse Index</td>
<td>1.88</td>
<td>-0.56</td>
<td>1.56</td>
<td>0.76</td>
<td>3.50</td>
</tr>
<tr>
<td>Excess Return</td>
<td>-0.75</td>
<td>3.81</td>
<td>1.95</td>
<td>3.11</td>
<td>3.13</td>
</tr>
<tr>
<td>Bloomberg Barclays Global Aggregate Bond Index</td>
<td>1.76</td>
<td>-1.26</td>
<td>1.30</td>
<td>0.48</td>
<td>3.31</td>
</tr>
<tr>
<td>Excess Return</td>
<td>-0.63</td>
<td>4.51</td>
<td>2.21</td>
<td>3.39</td>
<td>3.31</td>
</tr>
<tr>
<td>Citi World Gov Bond Index (WGBI)</td>
<td>1.81</td>
<td>-2.69</td>
<td>0.88</td>
<td>-0.43</td>
<td>2.95</td>
</tr>
<tr>
<td>Excess Return</td>
<td>-0.68</td>
<td>5.94</td>
<td>2.63</td>
<td>4.30</td>
<td>3.67</td>
</tr>
<tr>
<td>Bloomberg Barclays US Universal Index</td>
<td>1.01</td>
<td>0.96</td>
<td>3.11</td>
<td>2.53</td>
<td>4.56</td>
</tr>
<tr>
<td>Excess Return</td>
<td>0.12</td>
<td>2.29</td>
<td>0.39</td>
<td>1.34</td>
<td>2.06</td>
</tr>
<tr>
<td>Bloomberg Barclays US Aggregate Bond Index</td>
<td>0.85</td>
<td>0.07</td>
<td>2.71</td>
<td>2.06</td>
<td>4.27</td>
</tr>
<tr>
<td>Excess Return</td>
<td>0.28</td>
<td>3.18</td>
<td>0.79</td>
<td>1.80</td>
<td>2.35</td>
</tr>
</tbody>
</table>

Source: Manulife Asset Management, Bloomberg Barclays, Citigroup

Composite inception date: October 1986
Strategic Fixed Income Strategy
Attractive Risk/Return Profile

Over the last 10 years, the Strategic Fixed Income Strategy has delivered equity-like returns with fixed income volatility

5 Year Risk/Return Profile (September 2017)

10 Year Risk/Return Profile (September 2017)

As of September 30, 2017
Source: Zephyr StyleAdvisor
Performance shown is the Manulife Asset Management (US) Strategic Fixed income composite net of fees, and does not include advisory fees and other expenses an investor would incur. This information is supplemental to the GIPS-compliant presentation included as a part of this presentation.

US Bonds = Bloomberg Barclays US Aggregate Bond Index; US High Yield = BoA ML US High Yield Master II Index; EM Bonds = JPMorgan EMBI Global Diversified Index; Global Bonds = Bloomberg Barclays Multiverse Index; Int’l Bonds = Citigroup WGBI ex US; US TIPS = Bloomberg Barclays US TIPS Index; US Equities = Russell 3000 Index; EM Equities = MSCI EM Index; Int’l Equities = MSCI EAFE Index; Commodities = Dow UBS Commodity Index; REITs = FTSE NAREIT Equity-REITs Index; Hedge Funds = HFRX Global Hedge Fund Index; Cash = Citigroup 3-Month Treasury Bill Index.
## Strategic Fixed Income Strategy

### Primary Investments
The Strategies focus their investments in government, corporate and securitized debt securities and other instruments issued in developed and emerging markets countries, which may be denominated in US dollars or other foreign currencies.

### Duration
Targets a 4 year duration with a band of +/- 2 years (i.e., 2–6 years).

### Min Average Quality
Investment Grade

### Max HY Corporate
50%

### Max Emerging Markets
40%; Individual country exposure limited to 10%

### Max MBS/CMBS/ABS
40%

### Max Private Placements
10% (excludes Rule 144A with & without registration rights)

### Max Industry Weighting
25%

### Max Single Foreign Gov’t
25%

### Max Preferred Stocks
10%

### Max Common Stocks
Prohibited

### Max Issuer Exposure
5%

### Average Corporate Issuer
0.5–1.5%; Broadly diversified portfolio with greater diversification for lower quality bonds

### Use of Cash
Under normal market conditions, the Strategy seeks to be fully invested; cash will be limited to 10% or less

### Derivatives
Financial derivatives may be used to manage risk, provide diversification and enhance returns

### Leverage
When engaging in derivative transactions, the Strategy does not “borrow” or take on debt for the purpose of creating leverage

For Separate Accounts, additional guidelines may apply as directed by clients. Characteristics, guidelines and constraints are for illustrative purposes only. They may change at any time and may differ for a specific account.
Biographies

Daniel S. Janis, III is head of Global Multi-Sector Fixed Income at Manulife Asset Management. He is a senior managing director, senior portfolio manager and the lead portfolio manager for the company's global multi-sector fixed income strategies, responsible for asset allocation, global bond research and currency management. His areas of expertise include global economics, foreign exchange, derivatives and risk management. Prior to joining the company, Dan was a vice president and proprietary risk manager for BankBoston. Earlier in his career, he worked as a vice president for Morgan Stanley in the foreign exchange department and managed their forward desk from 1991 to 1997. He holds certification from the Association of International Bond Dealers.

*Education: Harvard University, AB in Economics, 1983*

*Joined Company: 1999*

*Began Career: 1984*

Thomas C. Goggins is a senior managing director and senior portfolio manager on the Global Multi-Sector Fixed Income Team at Manulife Asset Management. He is responsible for portfolio management, global bond research, security selection and risk management for the company’s global multi-sector fixed income strategies. Prior to joining the company, Tom held positions at Putnam Investments, Transamerica Investments, SAC Capital and Fontana Capital.

*Education: University of Wisconsin, BBA, 1981; JL Kellogg Graduate School of Management at Northwestern University, MA in Finance and Accounting, 1987*

*Joined Company: 1995; rejoined 2009*

*Began Career: 1987*

Kisoo Park is a managing director and portfolio manager on the Global Multi-Sector Fixed Income Team at Manulife Asset Management. He is responsible for portfolio management, global bond research and currency management for the company's global multi-sector fixed income strategies. Kisoo joined Manulife Asset Management from a hedge fund firm based in Hong Kong, where he was a founding member and COO. Prior to that, he was the CIO responsible for tactical asset allocation investing in global equities, fixed income, commodities, FX and interest rate asset classes at Prince Asset Management, Hong Kong. Earlier in his career, Kisoo held positions at Bank of Montreal, Fleet National Bank, Morgan Stanley and Bank of New England, where he began his career specializing in treasury products, FX and interest rate trading.

*Education: Tufts University, Bachelor of Arts in Economics, 1986; University of Chicago, Graduate School of Business, 2007*

*Joined Company: 2011*

*Began Career: 1986*
Biographies

**Christopher Chapman, CFA**, is a managing director and portfolio manager on the Global Multi-Sector Fixed Income Team at Manulife Asset Management. Chris is responsible for portfolio management, global sovereign debt and currency research, portfolio construction, and risk management for the company’s global multi-sector fixed income strategies. Prior to this position, Chris was a senior investment analyst with the Global Multi-Sector Fixed Income Team. Before that, he worked in several other areas of the firm, including as an investment risk analyst on the Quantitative Research Team. Chris began his career at State Street Bank. He is a CFA charterholder and a member of CFA Society Boston, Inc.

*Education: Stonehill College, BSBA in Management, 1999; Boston College, MSF, 2003*

*Joined Company: 2005*

*Began Career: 1999*

**David W. Zielinski, CFA**, is a managing director and portfolio specialist on the Global Multi-Sector Fixed Income Team at Manulife Asset Management. He is responsible for supporting our client facing teams in the effective communication and positioning of our global multi-sector fixed income strategies with clients, prospects and consultants. Prior to joining the company, David was a vice president and senior product engineer for Global Fixed Income at State Street Global Advisors (SSgA). Prior to that, he was a portfolio manager in currency management with SSgA. He began his career with MassMutual Financial Group as an investment analyst, and later worked at Babson Capital Management as an investment analyst in quantitative management. David is a CFA charterholder.

*Education: Bryant College, BS in Finance, 1997; Babson College, MBA, 2004*

*Joined Company: 2010*

*Began Career: 1997*

**Nancy C. Irving** is a managing director at Manulife Asset Management, responsible for institutional sales and business development. Nancy joined the company from Congress Asset Management, where she orchestrated their introduction to the institutional marketplace. Prior to that, Nancy was a senior sales executive with The Boston Company Asset Management/Mellon Financial, responsible for international and domestic equity sales. Earlier, she was a vice president at Mellon Private Asset Management responsible for the development and growth of the company’s jumbo mortgage product sales. Nancy was a private banking officer at Fleet Bank of Massachusetts responsible for private loan portfolios for the high net worth market. She began her career at Bank of New England as an assistant credit officer.

*Joined Company: 2010*

*Began Career: 1988*
The Commingled Investment Trust ("the Fund") incurs a maximum annual Administrative Fee of three (3) basis points. This fee is accrued daily to cover the Fund’s ordinary operating expenses such as audit, custody, fund accounting, and transfer agency fees and is accrued daily from the Fund prior to striking the daily net asset value. US Commingled trust funds are available only to qualified US investors through Manulife Asset Management Trust Company. Minimum account sizes may apply.

### Manulife Asset Management Strategic Fixed Income Strategy – Separate Account

<table>
<thead>
<tr>
<th>Basis Points</th>
<th>AUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>40 bps on the first</td>
<td>$25 million</td>
</tr>
<tr>
<td>35 bps on the next</td>
<td>$75 million</td>
</tr>
<tr>
<td>30 bps on the next</td>
<td>$75 million</td>
</tr>
<tr>
<td>25 bps thereafter</td>
<td></td>
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</table>
Manulife Asset Management (US)  
Strategic Fixed Income Composite

Creation Date: 01/01/2006  
Inception Date: 10/01/1986  
Reporting Currency: USD

Schedule of Calendar Year Returns and Assets

<table>
<thead>
<tr>
<th>Year End</th>
<th>Gross of Fees Return (%)</th>
<th>Net of Fees Return (%)</th>
<th>Benchmark Return (%)</th>
<th>Composite 3-Yr Std. Dev. (%)</th>
<th>Benchmark 3-Yr Std. Dev. (%)</th>
<th>Number of Portfolios End of Period</th>
<th>Composite Dispersion (%)</th>
<th>Total Assets End of Period (Thousands)</th>
<th>Percent of Firm Assets (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>4.16</td>
<td>3.74</td>
<td>2.84</td>
<td>2.26</td>
<td>4.95</td>
<td>&lt;=5</td>
<td>N/A</td>
<td>5,798,861</td>
<td>2.98</td>
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<tr>
<td>2015</td>
<td>1.28</td>
<td>0.87</td>
<td>-3.29</td>
<td>2.99</td>
<td>3.91</td>
<td>6</td>
<td>0.15</td>
<td>5,351,227</td>
<td>2.59</td>
</tr>
<tr>
<td>2014</td>
<td>4.28</td>
<td>3.86</td>
<td>0.48</td>
<td>3.64</td>
<td>3.96</td>
<td>7</td>
<td>0.75</td>
<td>4,420,605</td>
<td>2.15</td>
</tr>
<tr>
<td>2013</td>
<td>2.51</td>
<td>2.10</td>
<td>-2.19</td>
<td>5.58</td>
<td>4.37</td>
<td>6</td>
<td>0.66</td>
<td>4,592,201</td>
<td>2.38</td>
</tr>
<tr>
<td>2012</td>
<td>12.52</td>
<td>12.07</td>
<td>4.83</td>
<td>6.18</td>
<td>4.93</td>
<td>&lt;=5</td>
<td>N/A</td>
<td>3,836,306</td>
<td>2.72</td>
</tr>
<tr>
<td>2011</td>
<td>2.81</td>
<td>2.40</td>
<td>5.55</td>
<td>6.84</td>
<td>6.53</td>
<td>&lt;=5</td>
<td>N/A</td>
<td>3,535,645</td>
<td>2.78</td>
</tr>
<tr>
<td>2010</td>
<td>15.97</td>
<td>15.51</td>
<td>5.85</td>
<td>N/A</td>
<td>N/A</td>
<td>&lt;=5</td>
<td>N/A</td>
<td>2,524,603</td>
<td>2.00</td>
</tr>
<tr>
<td>2009</td>
<td>30.09</td>
<td>29.57</td>
<td>8.04</td>
<td>N/A</td>
<td>N/A</td>
<td>&lt;=5</td>
<td>N/A</td>
<td>2,701,926</td>
<td>2.53</td>
</tr>
<tr>
<td>2008</td>
<td>-8.90</td>
<td>-9.27</td>
<td>3.76</td>
<td>N/A</td>
<td>N/A</td>
<td>&lt;=5</td>
<td>N/A</td>
<td>1,861,532</td>
<td>2.44</td>
</tr>
<tr>
<td>2007</td>
<td>6.56</td>
<td>6.14</td>
<td>9.22</td>
<td>N/A</td>
<td>N/A</td>
<td>&lt;=5</td>
<td>N/A</td>
<td>2,124,766</td>
<td>2.21</td>
</tr>
</tbody>
</table>

Firm Definition
Manulife Asset Management (US) (“the Firm”) comprises Manulife Asset Management (US) LLC (“MAM US”), Manulife Asset Management (North America) Limited (“MAM NA”) and Manulife Asset Management Trust Company (“MAM TC”). Effective January 1, 2011 the Firm was redefined to include MAM NA to reflect the alignment of the underlying businesses of the two firms. Effective June 22, 2011 the Firm was redefined to include the MAM TC, the then newly formed institutional investment management company, and now an affiliate of MAM US. Effective October 1, 2016 the firm was redefined to include assets from the dissolution of Declaration Management & Research LLC, a prior affiliate of MAM US. Total Firm Assets reported prior to 1/1/2011 are the combination of assets from both MAM US and MAM NA.

合规性
Manulife Asset Management (US) claims compliance with the Global Investment Performance Standards (“GIPS®”) and has prepared and presented this report in compliance with the GIPS standards. Manulife Asset Management (US) or predecessor firms have been independently verified for periods 1/1/1993 to 12/31/2015. The verification reports are available upon request. Verification assesses whether (1) the firm has complied with all the composite construction requirements of the GIPS standards on a firm-wide basis and (2) the firm’s policies and procedures are designed to calculate and present performance in compliance with the GIPS standards. Verification does not ensure the accuracy of any specific composite presentation.

一般披露
The Strategic Fixed Income strategy seeks to generate high current income and competitive total returns by investing primarily in high yield securities in all eligible currencies. The index represents the union of the Global Aggregate Index and the Global High Yield Index and captures investment grade and high yield securities in all eligible currencies.

基准指数
The Bloomberg Barclays Multiverse Index provides a broad-based measure of the global fixed income bond market. The index represents the union of the Global Aggregate Index and the Global High Yield Index and captures investment grade and high yield securities in all eligible currencies.

基准指数
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衍生物披露
As part of the investment process, financial derivatives may be used to manage risk, provide diversification and enhance returns. The strategy may engage in foreign currency transactions, such as forwards, futures and options for investment or hedging purposes. The strategy may employ a variety of hedging strategies with respect to specific portfolio holdings, or to the entire portfolio, or to both. Such strategies include "cross-hedging" and "proxy hedging." The strategy may also engage in exchange-traded interest rate futures and options for investment or hedging purposes. Derivative instruments are only used when and as guidelines and/or regulations permit.

For Institutional/Investment Professional Use Only.  
Not for distribution to the public.
### Benchmark Definitions

<table>
<thead>
<tr>
<th>Index</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bloomberg Barclays Multiverse Index</td>
<td>The Bloomberg Barclays Multiverse Index provides a broad-based measure of the global fixed income bond market. The index represents the union of the Global Aggregate Index and the Global High Yield Index and captures investment grade and high yield securities in all eligible currencies.</td>
</tr>
<tr>
<td>Bloomberg Barclays US Aggregate Index</td>
<td>The Bloomberg Barclays US Aggregate Bond Index represents securities that are US domestic, taxable, dollar-denominated. The index covers the US investment-grade fixed-rate bond market, with index components for government and corporate securities, mortgage pass-through securities, and asset-backed securities.</td>
</tr>
<tr>
<td>Bloomberg Barclays US TIPS Index</td>
<td>The Bloomberg Barclays Capital US TIPS Index consists of fixed-rate Inflation-Protection securities issued by the US Treasury with at least one year to maturity.</td>
</tr>
<tr>
<td>Citigroup Non-USD World Government Bond Index</td>
<td>The Citigroup World Government Bond Index is a market capitalization weighted bond index consisting of the government bond markets of multiple countries. The index includes government bonds that meet certain investability criteria, including, but not limited to, a fixed-rate coupon, an investment grade quality rating, a remaining maturity of one year or longer and a minimum issuance size. The Non-USD Index excludes US dollar securities.</td>
</tr>
<tr>
<td>BofA Merrill Lynch US High Yield</td>
<td>The BofA Merrill Lynch U.S. High Yield Master II Index is composed of bonds in the form of publicly placed nonconvertible, coupon-bearing U.S. domestic debt and must carry a maturity of at least one year. Issues must be rated by Standard &amp; Poor’s or Moody’s Investors Service as less than investment grade (i.e., BB or B) but not in default (i.e., D01 or less). This index excludes floating rate debt, equipment trust certificates and Title 11 securities.</td>
</tr>
<tr>
<td>JP Morgan EMBI Global Diversified Index</td>
<td>JP Morgan EMBI Global Diversified Index is a uniquely weighted index that tracks total returns for U.S. dollar-denominated debt instruments issued by emerging market sovereign and quasi-sovereign entities, including Brady bonds, loans and Eurobonds.</td>
</tr>
<tr>
<td>Citigroup 3-month T-bill Index</td>
<td>The 3-month T-bill index measures monthly return equivalents of yield averages that are not marked to market. The 3-Month Treasury Bill Indices consist of the last three three-month Treasury bill issues.</td>
</tr>
<tr>
<td>Russell 3000 Index</td>
<td>The Russell 3000 Index measures the broad US equity universe representing approximately 98% of the US market. The Russell 3000 is completely reconstituted annually to ensure new and growing equities are reflected.</td>
</tr>
<tr>
<td>MSCI EM Index</td>
<td>The MSCI EM Index is a free float-adjusted market capitalization index that is designed to measure equity market performance in the emerging markets. The universe includes large, mid, and small cap securities, and can be segmented across styles and sectors. Net total return indices reinvest dividends after the deduction of withholding taxes, using a tax rate applicable to non-resident institutional investors who do not benefit from double taxation treaties.</td>
</tr>
<tr>
<td>MSCI EAFE Index</td>
<td>The MSCI EAFE Index is an equity index which captures large and mid cap representation across Developed Markets countries around the world, excluding the US and Canada. With 904 constituents, the index covers approximately 85% of the free float-adjusted market capitalization in each country.</td>
</tr>
<tr>
<td>Dow UBS Commodity Index</td>
<td>The Dow Jones-UBS Commodity Index aims to provide broadly diversified representation of commodity markets as an asset class. The index is made up of exchange-traded futures on physical commodities. Commodity weights are based on production and liquidity, subject to weighting restrictions applied annually such that no related group of commodities constitutes more than 33% of the index and no single commodity constitutes more than 15%.</td>
</tr>
<tr>
<td>FTSE NAREIT Equity REITs Index</td>
<td>The FTSE NAREIT US Real Estate Index covers all US REITs and publicly-traded real estate companies. Stocks are free-float weighted to ensure that only the investable opportunity set is included within the indices. The FTSE NAREIT Equity REITs index contains all Equity REITs not designated as Timber REITs or Infrastructure REITs. Stocks are screened to ensure that the indices are tradable.</td>
</tr>
<tr>
<td>HFRX Global Hedge Fund Index</td>
<td>HFRX Global Hedge Fund Index is designed to be representative of the overall composition of the hedge fund universe. It is composed of all eligible hedge fund strategies, including but not limited to convertible arbitrage, distressed securities, equity hedge, equity market neutral, event driven, macro, merger arbitrage, and relative value arbitrage. The strategies are asset weighted based on the distribution of assets in the hedge fund industry.</td>
</tr>
</tbody>
</table>
## Benchmark Definitions

<table>
<thead>
<tr>
<th>Index</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bloomberg Barclays US CMBS Index</td>
<td>The Bloomberg Barclays CMBS ERISA-Eligible Index is the ERISA-eligible component of the Bloomberg Barclays CMBS Index. This index, which includes investment grade securities that are ERISA eligible under the underwriters exemption, is the only CMBS sector that is included in the U.S. Aggregate Index.</td>
</tr>
<tr>
<td>Bloomberg Barclays US High Yield Loan Index</td>
<td>The Bloomberg Barclays US High Yield Loans Index also known as the Bank Loan Index, provides broad and comprehensive total return metrics of the universe of syndicated term loans. To be included in the index, a bank loan must be dollar denominated, have at least $150 million funded loan, a minimum term of one year, and a minimum initial spread of LIBOR+125.</td>
</tr>
<tr>
<td>JPMorgan GBI-EM Index</td>
<td>The JPMorgan GBI-EM is a comprehensive emerging markets debt benchmark that track local currency bonds issued by Emerging Market governments.</td>
</tr>
<tr>
<td>Bloomberg Barclays US ABS Index</td>
<td>The Asset-Backed Securities (ABS) Index has three subsectors (credit cards, autos and utilities). The index includes pass-through, bullet, and controlled amortization structures. The ABS Index includes only the senior class of each ABS issue and the ERISA-eligible B and C tranche.</td>
</tr>
<tr>
<td>BofA Merrill Lynch Global High Yield</td>
<td>The BofA Merrill Lynch Global High Yield Index tracks the performance of USD, CAD, GBP and EUR denominated below investment grade corporate debt publicly issued in the major domestic or eurobond markets. Qualifying securities must have a below investment grade rating (based on an average of Moody’s, S&amp;P and Fitch), at least 18 months to final maturity at the time of issuance, at least one year remaining term to final maturity as of the rebalancing date.</td>
</tr>
<tr>
<td>BofA Merrill Lynch US Convertibles</td>
<td>The index consists of convertible bonds traded in the U.S. dollar denominated investment grade and non investment grade convertible securities sold into the U.S. market and publicly traded in the United States. The Index constituents are market value weighted based on the convertible securities prices and outstanding shares.</td>
</tr>
<tr>
<td>JP Morgan CEMBI Broad Diversified</td>
<td>The JP Morgan Corporate Emerging Markets Bond Index (CEMBI) is a market capitalization weighted index consisting of liquid USD-denominated emerging market corporate bonds.</td>
</tr>
<tr>
<td>Bloomberg Barclays Pan-Euro Government Bond Index</td>
<td>The Pan-European Government Bond Index is a component of the Pan-European Aggregate Index. The index covers eligible government securities that are investment grade rated from the entire European continent. The Pan-European Index include eligible securities denominated in Euros (EUR), British pounds (GBP), Swedish krona (SEK), Danish krone (DKK), Norwegian krone (NOK), Czech koruna (CZK), Hungarian forint (HUF), Polish zloty (PLN), Slovenian tolar (SIT), Slovakian koruna (SKK), and Swiss franc (CHF). Securities in the index must have a remaining maturity of at least one year.</td>
</tr>
<tr>
<td>Bloomberg Barclays Asian Pacific Government Bond Index</td>
<td>The Bloomberg Barclays Asian-Pacific Government Bond Index is a component of the Bloomberg Barclays Asia-Pacific Aggregate Index. The index includes investment-grade, fixed-rate securities that are issued in any of the following currencies: Australian Dollar, Hong Kong Dollar, Japanese Yen, New Zealand Dollar, Singapore Dollar, South Korean Won, and Thailand Baht. Securities in the index must have a remaining maturity of at least one year.</td>
</tr>
<tr>
<td>BofA Merrill Lynch Global Corporate Index</td>
<td>The BofA Merrill Lynch Global Corporate Index tracks the performance of investment grade corporate debt publicly issued in the major domestic and eurobond markets. Qualifying securities must have an investment grade rating (based on an average of Moody’s, S&amp;P and Fitch), at least 18 months to final maturity at the time of issuance, at least one year remaining term to final maturity as of the rebalancing date and a fixed coupon schedule.</td>
</tr>
</tbody>
</table>
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