Minutes of the Office of Hawaiian Affairs Committee on Resource Management
November 6, 2019
1:31 pm

ATTENDANCE:
Trustee Dan Ahuna, Chairperson
Trustee Robert Lindsey, Vice-Chair
Trustee Kalei Akaka
Trustee Keli‘i Akina
Trustee Carmen Hulu Lindsey
Trustee Colette Machado

Trustee John Waihe‘e
Trustee Brendon Kalei‘aina Lee
Trustee Leina‘ala Ahu Isa

STAFF PRESENT:
Sylvia Hussey, CEO
Raina Gushiken
Ray Matsuura
Lehua Itokazu
Alyssa Kau
Lopaka Baptiste
Claudine Calpito
Anuhea Patoc
Paul Harleman
Brandon Mitsuda
Kama Hopkins
Kauikeaoalani Wailehua
Zuri Aki
Lei Ann Durant
Priscilla Nakama
Nathan Takeuchi

Guest and Community:
Robert G. Klein, Esq.
Kurt Klein, Esq.
Germaine Meyers
Darren Smith, JP Morgan
Charlie Fishman, JP Morgan (telecom)
I. CALL TO ORDER

Chair Ahuna welcomes everyone to the Committee on Resource Management and states it is 1:31 pm.

<table>
<thead>
<tr>
<th>Present</th>
<th>Excused</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRUSTEE LEI AHU ISA</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>TRUSTEE KALEI AKAKA</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>TRUSTEE KELI ‘I AKINA</td>
<td></td>
<td>arrived at 1:34pm</td>
</tr>
<tr>
<td>TRUSTEE BRENDON KALEI ‘AINA LEE</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>TRUSTEE HULU LINDSEY</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>TRUSTEE ROBERT LINDSEY</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>TRUSTEE COLETTE MACHADO</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>TRUSTEE JOHN WAIHE‘E</td>
<td></td>
<td>arrived at 1:32pm</td>
</tr>
<tr>
<td>CHAIRPERSON DAN AHUNA</td>
<td>x</td>
<td></td>
</tr>
</tbody>
</table>

TOTAL 7

At the Call to Order, there are (7) Trustees present.

Chair Ahuna asks if anyone would like to provide public testimony.

Chair Ahuna calls Germaine Meyers.

II. PUBLIC TESTIMONY

Germaine Meyers gave a summary of her concerns regarding the CLA audit.

Chair Ahuna stated we will move onto item III.

III. NEW BUSINESS

A. Approval of Minutes

1. May 1, 2019
2. May 22, 2019
3. May 29, 2019
4. June 18, 2019
5. August 21, 2019
6. September 25, 2019
7. October 2, 2019

Chair Ahuna stated we would be deferring Sept. 25, 2019 minutes. Asked for motion to approve minutes for May 1 2019, May 22, 2019, May 29, 2019, June 18, 2019, August 21, 2019 and October 2, 2019.
Trustee Akaka moved.

Trustee Hulu Lindsey seconded.

Chair Ahuna asked for discussion.

Trustee Lee stated he would like to amend the motion to approve the draft minutes as submitted with the attachments that were submitted electronically, because we do not physically have the attachments. These attachments were already provided to us via the electronic folder file.

Chair Ahuna stated that we did not add the attachments to the minutes for the draft due to excessive waste of paper, but intended to include it in the final minutes.

<table>
<thead>
<tr>
<th>TRUSTEE</th>
<th>1</th>
<th>2</th>
<th>‘AE (YES)</th>
<th>‘A’OLE (NO)</th>
<th>KANALUA (ABSTAIN)</th>
<th>EXCUSED</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRUSTEE LEI</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRUSTEE KALEI</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>TRUSTEE KELI'I</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>TRUSTEE BRENDON</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRUSTEE HULU LINDSEY</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>TRUSTEE ROBERT LINDSEY</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRUSTEE COLETTE MACHADO</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>TRUSTEE JOHN WAIHE'E</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHAIRPERSON DAN AHUNA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL VOTE COUNT</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>9</strong></td>
</tr>
</tbody>
</table>

**MOTION:** [ ] UNANIMOUS [ X] PASSED [ ] DEFERRED [ ] FAILED

Motion passes with nine (9) YES votes.

Chair Ahuna stated we will now vote on the main motion (to approve minutes from May 1, 2019, May 22, 2019, May 29, 2019, June 18, 2019, August 21, 2019, and October 2, 2019).

**Motion made previously to approve motion (as amended) for minutes of May 1, 2019, May 22, 2019, May 29, 2019, June 18, 2019, August 21, 2019 and October 2, 2019 to approve the draft minutes as submitted with the attachments that were submitted electronically.**

Chair Ahuna called upon Ray Matsuura to share on JP Morgan Report.


Darren Smith and Charlie Fishman (JP Morgan staff) shared details on management of investment account including multi-asset strategy group, market review, new performance with less line items, as well as market outlook/individualized investments to the customized portfolio as provided in the materials.

Trustee Lee had further discussion and expresses concerns in communication/information exchanges regarding the investments, specifically differing opinions and risk tolerance.

Trustee Ahu Isa had further discussion regarding differing views on bonds.

Trustee Akina had further discussion on “duration,” level of interest rates, and the hedge.

Trustee Ahu Isa commented and had further discussion on monetary policy.
C. Review of CLA Status Report #5 – Kama Hopkins

Chair Ahuna called upon Kama Hopkins to share CLA Status Report.

Kama Hopkins shares highlights on item B.

Trustee Hulu Lindsey had further discussion on item B.

Kama Hopkins shares highlights on page 4, item F, items 3 and 4.

Trustee Akina asks about final report.

Trustees (multiple) discuss different thoughts on dates of report and filing.

Kama Hopkins re-clarifies dates for upcoming report delivery and reviews.

Trustees (multiple) ready to adjourn.

IV. ADJOURNMENT

Chair Ahuna calls for motion to adjourn.

Trustee Machado moved.

Trustee Kalei Akaka seconded.

| Trustee Machado, MOVED, SECOND by Trustee Kalei Akaka. Motion to adjourn. |
|---|---|---|---|---|
| Trustee Lei | Ahu Isa | 1 | 2 | ‘AE (YES) | ‘A’OLE (NO) | KANALUA (ABSTAIN) | EXCUSED |
| Trustee Kae’i | Akaka | | | X | | |
| Trustee Keli’i | Akina | | | | | X |
| Trustee Brendon | Lee | | | | X | X |
| Trustee Hulu | Lindsey | | | X | | |
| Trustee Robert | Lindsey | | | X | | |
| Trustee Colette | Machado | | 1 | | X | |
| Trustee John | Waihe’e | | | X | | |
| Chairperson Dan | Ahuna | | | X | | |
| TOTAL VOTE COUNT | | | | | 9 | |

MOTION: [ ] UNANIMOUS [ X ] PASSED [ ] DEFERRED [ ] FAILED

Motion passes with seven (9) YES votes.
Chair Ahuna adjourned meeting at 2:46 pm.

Respectfully Submitted,

__________________________________________________
Anuhea Patoc, Trustee Secretary
Committee on Resource Management

__________________________________________________
Dan Ahuna, Chairperson
Committee on Resource Management

Approved: RM Committee meeting 10/21/2020

Attachment(s):

- Presentation by JP Morgan Report on Quarter ending September 30, 2019
- CLA Contract & Disbursement Review and Recommendations
MEETING OF THE COMMITTEE ON RESOURCE MANAGEMENT

DATE: Wednesday, November 6, 2019
TIME: 1:30 pm
PLACE: OHA Board Room, Nā Lama Kukui
560 N. Nimitz Hwy., Suite 200
Honolulu, HI 96817

AGENDA

I. Call to Order
II. Public Testimony*
III. New Business
   A. Approval of Minutes
      1. May 1, 2019
      2. May 22, 2019
      3. May 29, 2019
      4. June 18, 2019
      5. August 21, 2019
      6. September 25, 2019
      7. October 2, 2019
   B. Presentation by JP Morgan Report on Quarter ending September 30, 2019
   C. Review of CLA Status Report #5 – Kama Hopkins

IV. Adjournment

If you require an auxiliary aid or accommodation due to a disability, please contact Raina Gushiken at telephone number 594-1772 or by email at: rainag@oha.org no later than three (3) business days prior to the date of the meeting.

*Notice: Persons wishing to provide testimony are requested to submit 13 copies of their testimony to the Chief Executive Officer at 560 N. Nimitz, Suite 200, Honolulu, HI 96817 or fax to 594-1868, or email BOTmeetings@oha.org 48 hours prior to the scheduled meeting. Persons wishing to testify orally may do so at the meeting, provided that oral testimony shall be limited to five minutes.

† Notice: The 72 Hour rule, pursuant to OHA BOT Operations Manual, Section 49, shall be waived for distribution of new committee materials.

‡ Notice: This portion of the meeting will be closed pursuant to HRS § 92-5.

Trustee Dan Ahuna
Chairperson, Committee on Resource Management

Date 10/29/19
Office of Hawaiian Affairs

November 2019

Darren Smith, Client Advisor
(415) 315-8939, darren.f.smith@jpmorgan.com

Charles Fishman, CFA, Investment Specialist
(212) 648-0306, charles.fishman@jpmorgan.com

Alex Middleton, Investment Specialist
(212) 648-0642, alexander.i.middleton@jpmorgan.com
Agenda

- Market Review
- Portfolio Update
- Market Outlook
- Appendix
Global market performance 2019 vs. 2018

<table>
<thead>
<tr>
<th>Category</th>
<th>YTD 2019 (%)</th>
<th>2018 FY (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. Large Cap Equity</td>
<td>20.6</td>
<td>-4.4</td>
</tr>
<tr>
<td>U.S. Small Cap Equity</td>
<td>14.2</td>
<td>-11.0</td>
</tr>
<tr>
<td>U.S. REITs</td>
<td>26.8</td>
<td>-4.6</td>
</tr>
<tr>
<td>International Developed Equity</td>
<td>12.8</td>
<td>-13.8</td>
</tr>
<tr>
<td>Emerging Markets Equity</td>
<td>5.9</td>
<td>-14.6</td>
</tr>
<tr>
<td>Core Fixed Income</td>
<td>8.5</td>
<td>0.0</td>
</tr>
<tr>
<td>Long Duration Fixed Income</td>
<td>20.9</td>
<td>-4.7</td>
</tr>
<tr>
<td>High Yield Fixed Income</td>
<td>11.4</td>
<td>-2.1</td>
</tr>
<tr>
<td>Emerging Markets Debt</td>
<td>7.9</td>
<td>-6.2</td>
</tr>
<tr>
<td>Direct Real Estate</td>
<td>8.3</td>
<td>3.8</td>
</tr>
<tr>
<td>Cash</td>
<td>1.9</td>
<td>1.8</td>
</tr>
</tbody>
</table>
Portfolio Update
## Investment Performance

### September 30, 2019

### Portfolio Performance

<table>
<thead>
<tr>
<th></th>
<th>YTD</th>
<th>1 Year</th>
<th>3 Year</th>
<th>5 Year</th>
<th>7 year</th>
<th>Since Inception*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Return</strong></td>
<td>14.15%</td>
<td>2.57%</td>
<td>8.24%</td>
<td>6.15%</td>
<td>8.01%</td>
<td>7.33%</td>
</tr>
<tr>
<td><strong>Total Portfolio Policy Benchmark</strong>¹</td>
<td>14.45%</td>
<td>4.06%</td>
<td>8.27%</td>
<td>6.37%</td>
<td>7.83%</td>
<td>7.17%</td>
</tr>
<tr>
<td><strong>Excess Return</strong></td>
<td>-0.30%</td>
<td>-1.49%</td>
<td>-0.03%</td>
<td>-0.22%</td>
<td>0.18%</td>
<td>0.16%</td>
</tr>
<tr>
<td><strong>Total Portfolio Custom Benchmark</strong>²</td>
<td>14.21%</td>
<td>4.32%</td>
<td>8.23%</td>
<td>6.37%</td>
<td>7.73%</td>
<td>7.03%</td>
</tr>
<tr>
<td><strong>Excess Returns</strong></td>
<td>-0.06%</td>
<td>-1.75%</td>
<td>0.01%</td>
<td>-0.22%</td>
<td>0.28%</td>
<td>0.30%</td>
</tr>
</tbody>
</table>

*Since inception date of June 30, 2011. Total Portfolio Custom Benchmark reflect underlying managers’ benchmarks, at their strategic portfolio weights. Total Portfolio Policy Benchmark reflects benchmark indices and weights as indicated in investment guidelines. ¹² For benchmark compositions denoted with numbered footnotes, please see slide “Index Compositions” in the Appendix. Performance is shown net of fees. Past performance is no guarantee of future results.
## Asset Class Performance

**September 30, 2019**

<table>
<thead>
<tr>
<th>Asset Class Performance</th>
<th>YTD</th>
<th>1 Year</th>
<th>3 Year</th>
<th>5 Year</th>
<th>7 Year</th>
<th>Since Inception*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Equity</strong></td>
<td>17.00%</td>
<td>0.21%</td>
<td>9.47%</td>
<td>6.83%</td>
<td>9.54%</td>
<td>7.66%</td>
</tr>
<tr>
<td>MSCI AC World</td>
<td>16.20%</td>
<td>1.38%</td>
<td>9.71%</td>
<td>6.81%</td>
<td>8.98%</td>
<td>7.50%</td>
</tr>
<tr>
<td>Excess Return</td>
<td>0.80%</td>
<td>-1.17%</td>
<td>-0.24%</td>
<td>0.02%</td>
<td>0.56%</td>
<td>0.16%</td>
</tr>
<tr>
<td><strong>Total Fixed Income</strong></td>
<td>8.48%</td>
<td>7.67%</td>
<td>4.06%</td>
<td>3.47%</td>
<td>3.36%</td>
<td>4.28%</td>
</tr>
<tr>
<td>Bloomberg Barclays U.S. Aggregate</td>
<td>8.52%</td>
<td>10.30%</td>
<td>2.92%</td>
<td>3.38%</td>
<td>2.72%</td>
<td>7.34%</td>
</tr>
<tr>
<td>Excess Return</td>
<td>-0.04%</td>
<td>-2.63%</td>
<td>1.14%</td>
<td>0.09%</td>
<td>0.64%</td>
<td>-3.06%</td>
</tr>
<tr>
<td><strong>Total Real Return</strong></td>
<td>12.29%</td>
<td>8.21%</td>
<td>2.62%</td>
<td>6.83%</td>
<td>7.29%</td>
<td>7.75%</td>
</tr>
<tr>
<td>Barclays U.S. TIPS +3%</td>
<td>9.98%</td>
<td>10.34%</td>
<td>4.66%</td>
<td>6.54%</td>
<td>7.13%</td>
<td>6.91%</td>
</tr>
<tr>
<td>Excess Return</td>
<td>2.31%</td>
<td>-2.13%</td>
<td>-2.04%</td>
<td>0.29%</td>
<td>0.16%</td>
<td>0.84%</td>
</tr>
</tbody>
</table>

## Current portfolio positioning

**September 30, 2019**

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Market Value</th>
<th>Strategic Allocation</th>
<th>Current Allocation</th>
<th>(+/-)</th>
</tr>
</thead>
<tbody>
<tr>
<td>US Equity</td>
<td>42,709,074</td>
<td>37.50%</td>
<td>37.74%</td>
<td>0.24%</td>
</tr>
<tr>
<td>International Equity</td>
<td>20,342,552</td>
<td>21.00%</td>
<td>17.97%</td>
<td>-3.03%</td>
</tr>
<tr>
<td>Emerging Markets Equity</td>
<td>5,099,505</td>
<td>7.50%</td>
<td>4.51%</td>
<td>-2.99%</td>
</tr>
<tr>
<td><strong>Global Equity</strong></td>
<td>68,151,130</td>
<td>66.00%</td>
<td>60.22%</td>
<td>-5.78%</td>
</tr>
<tr>
<td>Core Fixed Income</td>
<td>11,469,786</td>
<td>17.50%</td>
<td>10.13%</td>
<td>-7.37%</td>
</tr>
<tr>
<td>High Yield</td>
<td>7,368,240</td>
<td>4.50%</td>
<td>6.51%</td>
<td>2.01%</td>
</tr>
<tr>
<td>Emerging Markets Debt</td>
<td>3,402,806</td>
<td>3.00%</td>
<td>3.01%</td>
<td>0.01%</td>
</tr>
<tr>
<td><strong>Global Credit</strong></td>
<td>22,240,832</td>
<td>25.00%</td>
<td>19.65%</td>
<td>-5.35%</td>
</tr>
<tr>
<td>US REITs</td>
<td>4,514,579</td>
<td>4.00%</td>
<td>3.99%</td>
<td>-0.01%</td>
</tr>
<tr>
<td>Inflation Sensitive Fixed Income</td>
<td>5,651,021</td>
<td>5.00%</td>
<td>4.99%</td>
<td>-0.01%</td>
</tr>
<tr>
<td><strong>Total Real Assets</strong></td>
<td>10,165,600</td>
<td>9.00%</td>
<td>8.98%</td>
<td>-0.02%</td>
</tr>
<tr>
<td><strong>Total Cash</strong></td>
<td>12,616,713</td>
<td>0.00%</td>
<td>11.15%</td>
<td>11.15%</td>
</tr>
<tr>
<td><strong>Total Portfolio</strong></td>
<td>113,174,275</td>
<td>100.00%</td>
<td>100.00%</td>
<td>0.00%</td>
</tr>
</tbody>
</table>


1 As of November 1, 2017, the JPMorgan Disciplined Equity Fund has been renamed to JPMorgan U.S. Research Enhanced Equity Fund.

2 As of July 31, 2018, the Intrepid International Fund has been renamed to JPM International Advantage Fund.
## Asset Allocation Over Time

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Q2 18</th>
<th>Q3 18</th>
<th>Q4 18</th>
<th>Q1 19</th>
<th>Q2 19</th>
<th>September -19</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>US Equity</strong></td>
<td>40.89%</td>
<td>41.95%</td>
<td>39.71%</td>
<td>39.88%</td>
<td>39.62%</td>
<td>37.74%</td>
</tr>
<tr>
<td><strong>International Equity</strong></td>
<td>21.57%</td>
<td>20.20%</td>
<td>16.44%</td>
<td>16.95%</td>
<td>19.01%</td>
<td>17.97%</td>
</tr>
<tr>
<td><strong>Emerging Markets Equity</strong></td>
<td>8.60%</td>
<td>6.46%</td>
<td>5.08%</td>
<td>8.49%</td>
<td>6.62%</td>
<td>4.51%</td>
</tr>
<tr>
<td><strong>Global Equity</strong></td>
<td>71.05%</td>
<td>68.61%</td>
<td>61.23%</td>
<td>65.32%</td>
<td>65.25%</td>
<td>60.22%</td>
</tr>
<tr>
<td><strong>Core Fixed Income</strong></td>
<td>9.30%</td>
<td>15.64%</td>
<td>18.26%</td>
<td>14.68%</td>
<td>12.91%</td>
<td>10.13%</td>
</tr>
<tr>
<td><strong>High Yield</strong></td>
<td>5.58%</td>
<td>6.35%</td>
<td>5.48%</td>
<td>7.58%</td>
<td>8.43%</td>
<td>6.51%</td>
</tr>
<tr>
<td><strong>Emerging Markets Debt</strong></td>
<td>1.99%</td>
<td>0.21%</td>
<td>0.12%</td>
<td>2.95%</td>
<td>3.96%</td>
<td>3.01%</td>
</tr>
<tr>
<td><strong>Global Credit</strong></td>
<td>16.88%</td>
<td>22.20%</td>
<td>23.86%</td>
<td>25.22%</td>
<td>25.31%</td>
<td>19.65%</td>
</tr>
<tr>
<td><strong>US REITs</strong></td>
<td>4.00%</td>
<td>4.02%</td>
<td>3.92%</td>
<td>4.17%</td>
<td>4.16%</td>
<td>4.26%</td>
</tr>
<tr>
<td><strong>Commodities</strong></td>
<td>1.28%</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.00%</td>
</tr>
<tr>
<td><strong>Inflation Sensitive Fixed Income</strong></td>
<td>6.49%</td>
<td>4.95%</td>
<td>4.97%</td>
<td>4.98%</td>
<td>4.98%</td>
<td>4.99%</td>
</tr>
<tr>
<td><strong>Total Real Assets</strong></td>
<td>11.77%</td>
<td>8.97%</td>
<td>8.89%</td>
<td>9.16%</td>
<td>9.14%</td>
<td>8.98%</td>
</tr>
<tr>
<td><strong>Total Cash</strong></td>
<td>0.29%</td>
<td>0.30%</td>
<td>6.02%</td>
<td>0.30%</td>
<td>0.30%</td>
<td>11.15%</td>
</tr>
<tr>
<td><strong>Total Portfolio</strong></td>
<td>100.00%</td>
<td>100.00%</td>
<td>100.00%</td>
<td>100.00%</td>
<td>100.00%</td>
<td>100.00%</td>
</tr>
</tbody>
</table>


1 As of November 1, 2017, the JPMorgan Disciplined Equity Fund has been renamed to JPMorgan U.S. Research Enhanced Equity Fund.

2 As of July 31, 2018, the Intrepid International Fund has been renamed to JPM International Advantage Fund. Please see the prospectus for more details.
Market Outlook
The current U.S. expansion is now officially the longest on record

Source: BEA, NBER, J.P. Morgan Asset Management. *Chart assumes current expansion started in July 2009 and continued through September 2019, lasting 123 months so far. Data for length of economic expansions and recessions obtained from the National Bureau of Economic Research (NBER). These data can be found at www.nber.org/cycles/ and reflect information through September 2019. Past performance is not a reliable indicator of current and future results.

Guide to the Markets – U.S. Data are as of September 30, 2019.
Recession monitor: High frequency signals mixed; focus on sentiment

Historical leading economic indicators

Source: JPMAM Global Multi-Asset Strategy; assessments as of September 2019
The U.S. consumer remains strong

**Civilian unemployment rate and wage growth**

- Seasonally adjusted, percent
- 50-year avg.
  - Unemployment Rate: 6.2%
  - Wage Growth: 4.0%

- May 1975: 9.0%
- Nov. 1982: 10.8%
- Jun. 1992: 7.8%
- Jun. 2003: 6.3%
- Oct. 2009: 10.0%
- Sep. 2019: 3.5%

**Household debt service ratio**

- Debt payments as % of disposable personal income, SA
- 4Q07: 13.2%
- 3Q19**: 9.7%

**Household net worth**

- Not seasonally adjusted, USD billions
- 3Q07: $71,346
- 3Q19**: $114,907

Manufacturing momentum has slowed across all major economy

Source: Markit, J.P. Morgan Asset Management. Heatmap colors are based on PMI relative to the 50 level, which indicates acceleration or deceleration of the sector, for the time period shown. Heat map is based on quarterly averages, with the exception of the two most recent figures, which are single month readings. Data for Canada, Indonesia and Mexico are back-tested and filled in from December 2007 to November 2010 for Canada and May 2011 for Indonesia and Mexico due to lack of existing PMI figures for these countries. DM and EM represent developed markets and emerging markets, respectively.

Guide to the Markets – U.S. Data are as of September 30, 2019.
Major central banks are expected to ease

What's Priced In By Year?

Bars represent the frequency of 25bps hikes (+) or cuts (-)

Source: Bloomberg, J.P. Morgan Asset Management Multi-Asset Solutions; data as of September 2019
Manufacturing is impacting earnings, particularly international markets

Manufacturing data has been a weak spot...

...and this has been a drag on earnings estimates

Source: Datastream, Bloomberg, J.P. Morgan Asset Management; data and estimates as of September 2019.
Trade war is a tail risk and increases volatility

**World trade volume**
Year-over-year, % change, 3-month moving average, monthly

- Average: 4.9%
- Jul. 2019: -0.9%

**Exports as a share of GDP**
Goods exports, 2018

<table>
<thead>
<tr>
<th>Country</th>
<th>U.S.</th>
<th>EU</th>
<th>EM ex-China</th>
<th>China</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>India</td>
<td>12%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brazil</td>
<td>13%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>China</td>
<td>19%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S. Africa</td>
<td>26%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Russia</td>
<td>28%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mexico</td>
<td>37%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Korea</td>
<td>37%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Taiwan</td>
<td></td>
<td></td>
<td></td>
<td>57%</td>
<td></td>
</tr>
<tr>
<td>U.S.</td>
<td>8%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Japan</td>
<td>15%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UK</td>
<td>17%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eurozone</td>
<td>20%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Canada</td>
<td>26%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: FactSet, J.P. Morgan Asset Management; (Top left) CPB Netherlands Bureau for Economic Policy Analysis; (Bottom left) IMF, USITC, World Bank; (Right) IMF. Guide to the Markets – U.S. Data are as of September 30, 2019.
Increasingly mature credit cycle has us move up in quality; keep an eye on energy

Default rates are defined as the par value percentage of the total market trading at or below 50% of par value and include any Chapter 11 filing, prepackaged filing or missed interest payments. Spread to worst indicated are the difference between the yield-to-worst of a bond and yield-to-worst of a U.S. Treasury security with a similar duration. High yield is represented by the J.P. Morgan Domestic High Yield Index. *Default rate is as of August 2019. Guide to the Markets – U.S. Data are as of September 30, 2019.
Recent rally in U.S. rates makes valuations less appealing...

10-Year U.S. Treasury Yields (%)

...but duration still plays a critical role in portfolio’s as a hedge

U.S. stock/bond correlations


Note: Stock/bond correlations represent the rolling 90-day correlation between the S&P 500 Index and the Bloomberg Barclay’s U.S. Aggregate Index
# JPMorgan Growth Advantage: Summary

**As of September 30, 2019**

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Portfolio</th>
<th>Benchmark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weighted Avg. Market Cap</td>
<td>$276.8bn</td>
<td>$304.7bn</td>
</tr>
<tr>
<td>Price / Earnings, 12-mth fwd</td>
<td>22.0x</td>
<td>20.5x</td>
</tr>
<tr>
<td>EPS Growth, 12-mth fwd</td>
<td>13.0%</td>
<td>13.3%</td>
</tr>
<tr>
<td>Beta</td>
<td>1.07</td>
<td>1.00</td>
</tr>
<tr>
<td>Tracking Error</td>
<td>2.80</td>
<td>N/A</td>
</tr>
<tr>
<td>Turnover</td>
<td>31%</td>
<td>N/A</td>
</tr>
<tr>
<td>Active Share</td>
<td>58%</td>
<td>N/A</td>
</tr>
<tr>
<td>Number of holdings</td>
<td>89</td>
<td>1,695</td>
</tr>
</tbody>
</table>

1. Excludes negatives.
2. Three-year trailing, calculated on a monthly basis.
3. Average 12-month turnover over past three years.

The benchmark is the Russell 3000 Growth Index. For illustrative purposes only.

**BARRA tilts**

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Portfolio</th>
<th>Benchmark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beta</td>
<td>0.27</td>
<td>0.22</td>
</tr>
<tr>
<td>Liquidity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Growth</td>
<td>0.14</td>
<td></td>
</tr>
<tr>
<td>Book to Price</td>
<td></td>
<td>0.06</td>
</tr>
<tr>
<td>Momentum</td>
<td></td>
<td>0.01</td>
</tr>
<tr>
<td>Residual Volatility</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Earnings Yield</td>
<td>-0.23</td>
<td>0.00</td>
</tr>
<tr>
<td>Leverage</td>
<td>0.17</td>
<td>-0.06</td>
</tr>
<tr>
<td>Size</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dividend Yield</td>
<td>-0.17</td>
<td></td>
</tr>
</tbody>
</table>

**Market capitalization**

<table>
<thead>
<tr>
<th>Size</th>
<th>Portfolio</th>
<th>Benchmark</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; USD 50 Bn</td>
<td>49.3</td>
<td>67.6</td>
</tr>
<tr>
<td>USD 20-50 Bn</td>
<td>25.5</td>
<td></td>
</tr>
<tr>
<td>USD 10-20 Bn</td>
<td>13.3</td>
<td></td>
</tr>
<tr>
<td>USD 5-10 Bn</td>
<td>13.0</td>
<td></td>
</tr>
<tr>
<td>&lt; USD 5 Bn</td>
<td>8.4</td>
<td>5.1</td>
</tr>
</tbody>
</table>

The fund is an actively managed portfolio, holdings, sector weights, allocations and leverage, as applicable are subject to change at the discretion of the Investment Manager without notice. *Past performance is no guarantee of future results.*

## JPMorgan Growth Advantage: Performance

As of September 30, 2019

<table>
<thead>
<tr>
<th>Market value</th>
</tr>
</thead>
<tbody>
<tr>
<td>JPMorgan Growth Advantage Fund</td>
</tr>
<tr>
<td>J.P. Morgan Growth Advantage Strategy</td>
</tr>
</tbody>
</table>

### Annualized performance (%)

<table>
<thead>
<tr>
<th>JPMorgan Growth Advantage Fund (R6 Shares)**</th>
<th>Current Quarter</th>
<th>YTD</th>
<th>One Year</th>
<th>Three Years</th>
<th>Five Years</th>
<th>Ten Years</th>
<th>Since Inception*</th>
</tr>
</thead>
<tbody>
<tr>
<td>JPMorgan Growth Advantage Fund (R6 Shares)**</td>
<td>-1.56</td>
<td>21.48</td>
<td>-0.10</td>
<td>17.46</td>
<td>13.70</td>
<td>15.72</td>
<td>11.82</td>
</tr>
<tr>
<td>Russell 3000 Growth Index</td>
<td>1.10</td>
<td>22.75</td>
<td>2.70</td>
<td>16.36</td>
<td>13.07</td>
<td>14.74</td>
<td>10.15</td>
</tr>
<tr>
<td><strong>Excess returns</strong></td>
<td>-2.66</td>
<td>-1.27</td>
<td>-2.80</td>
<td>1.09</td>
<td>0.63</td>
<td>0.99</td>
<td>1.66</td>
</tr>
</tbody>
</table>

| Morningstar % Rank (LCG)                  | --              | --   | 67       | 16          | 12         | 5         | 3               |

### Calendar year returns performance at NAV (%)

<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>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>JPMorgan Growth Advantage Fund (R6 Shares)</td>
<td>14.33</td>
<td>25.07</td>
<td>-41.96</td>
<td>36.62</td>
<td>21.11</td>
<td>-1.72</td>
<td>15.88</td>
<td>44.36</td>
<td>9.94</td>
<td>9.16</td>
<td>1.54</td>
<td>35.83</td>
<td>-1.12</td>
</tr>
<tr>
<td>Russell 3000 Growth Index</td>
<td>9.46</td>
<td>11.40</td>
<td>-38.44</td>
<td>37.01</td>
<td>17.64</td>
<td>2.18</td>
<td>15.21</td>
<td>34.23</td>
<td>12.44</td>
<td>5.09</td>
<td>7.39</td>
<td>29.59</td>
<td>-2.12</td>
</tr>
<tr>
<td><strong>Excess returns</strong></td>
<td>4.87</td>
<td>13.67</td>
<td>-3.52</td>
<td>-0.39</td>
<td>3.47</td>
<td>-3.90</td>
<td>0.67</td>
<td>10.13</td>
<td>-2.50</td>
<td>4.07</td>
<td>-5.85</td>
<td>6.24</td>
<td>1.00</td>
</tr>
<tr>
<td>Morningstar % Rank (LCG)</td>
<td>13</td>
<td>9</td>
<td>67</td>
<td>46</td>
<td>14</td>
<td>56</td>
<td>45</td>
<td>4</td>
<td>53</td>
<td>9</td>
<td>64</td>
<td>7</td>
<td>40</td>
</tr>
</tbody>
</table>

*The performance quoted is past performance and is not a guarantee of future results. Mutual funds are subject to certain market risks. Investment returns and principal value of an investment will fluctuate so that an investor's shares, when redeemed, may be worth more or less than original cost. Current performance may be higher or lower than the performance data shown. For performance current to the most recent month-end please call 1-800-338-4345.*

**Performance shown net of fees for the JPMorgan Growth Advantage R6 share class until its inception on 12/23/2013. I-Share class shown prior to R6 inception until inception 5/1/2006, and A-Share class shown prior to I-share inception.

The quoted performance of the Fund includes performance of a predecessor fund/share class prior to the Fund's commencement of operations. Please refer to the current prospectus for further information. As of 9/30/19 the Growth Advantage Fund (R6 Shares) was ranked in the Morningstar Large Cap Growth Category for the following time periods: 903 out of 1,338 for the one-year period, 197 out of 1,215 funds for the three-year period, 127 out of 1,090 funds for the five-year period, 34 out of 814 funds for the ten-year period and 16 out of 615 funds for the since inception period. Past performance is no guarantee of future results. Other classes may have different performance characteristics.

Source: JPMorgan Asset Management; Frank Russell Company; Morningstar Ratings \(^{1}\) and Morningstar category; © Morningstar. All Rights Reserved.
JPMorgan Emerging Markets Equity Fund: Summary
As of September 30, 2019

### Portfolio vs. Benchmark

<table>
<thead>
<tr>
<th>Measure</th>
<th>Portfolio</th>
<th>Benchmark</th>
</tr>
</thead>
<tbody>
<tr>
<td>12-Month Forward Price to Earnings (x)</td>
<td>18.5</td>
<td>12.3</td>
</tr>
<tr>
<td>Price to Book Ratio (x)</td>
<td>3.8</td>
<td>1.6</td>
</tr>
<tr>
<td>Dividend Yield (%)*</td>
<td>2.3</td>
<td>3.2</td>
</tr>
<tr>
<td>Return on Equity (%)</td>
<td>16.8</td>
<td>11.8</td>
</tr>
<tr>
<td>5 year expected growth (%)**</td>
<td>16.1</td>
<td>11.3</td>
</tr>
<tr>
<td>Number of issuers</td>
<td>65</td>
<td>1131</td>
</tr>
<tr>
<td>Net debt to equity (%)**</td>
<td>-5.0</td>
<td>37.0</td>
</tr>
<tr>
<td>Active share (%)</td>
<td>71.2</td>
<td></td>
</tr>
</tbody>
</table>

### Market Capitalization

- **Premium**: Portfolio: 40.5%, Benchmark: 8.9%
- **Quality**: Portfolio: 53.3%, Benchmark: 31.1%
- **Trading/NC**: Portfolio: 6.2%

Source: J.P. Morgan Asset Management, Factset, IBES. The portfolio is actively managed. Holdings, sector weights, allocations and leverage, as applicable, are subject to change at the discretion of the Investment Manager without notice. Strategic classification percentages exclude cash. Strategic classifications for portfolio and index are market-cap weighted. NC = non-classified. *Portfolio yield is the aggregate weighted sum of the estimated yields of the stocks in which the portfolio invested. It is calculated as (12-month forward DPS / Current price) * 100. It is not based on the portfolio's dividend distributions. **Forecast annual growth rate of earnings per share in local currency over the next five years. ***Net debt to equity ratio excludes financials.
### JPMorgan Emerging Markets Equity Fund: Performance

As of September 30, 2019

#### Annualized performance (%)

<table>
<thead>
<tr>
<th>Fund / Index</th>
<th>Three months</th>
<th>YTD</th>
<th>One year</th>
<th>Three years</th>
<th>Five years</th>
<th>Ten years</th>
</tr>
</thead>
<tbody>
<tr>
<td>I Shares (JEMSX) (at NAV)</td>
<td>-2.06%</td>
<td>18.83%</td>
<td>11.27%</td>
<td>10.11%</td>
<td>5.63%</td>
<td>4.89%</td>
</tr>
<tr>
<td>MSCI Emerging Markets Net Index</td>
<td>-4.25%</td>
<td>5.89%</td>
<td>-2.02%</td>
<td>5.97%</td>
<td>2.33%</td>
<td>3.37%</td>
</tr>
<tr>
<td>Excess Return</td>
<td><strong>2.29%</strong></td>
<td><strong>12.22%</strong></td>
<td>13.56%</td>
<td><strong>3.91%</strong></td>
<td><strong>3.22%</strong></td>
<td><strong>1.47%</strong></td>
</tr>
<tr>
<td>Morningstar Rank (Diversified Emerging Mkts)</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>20</td>
</tr>
</tbody>
</table>

#### ANNUAL OPERATING EXPENSES

<table>
<thead>
<tr>
<th>Expenses</th>
<th>I Shares</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross expenses</td>
<td>1.09%</td>
</tr>
<tr>
<td>Net expenses</td>
<td>0.99%</td>
</tr>
</tbody>
</table>

The performance quoted is past performance and is not a guarantee of future results. Mutual funds are subject to certain market risks. Investment returns and principal value of an investment will fluctuate so that an investor's shares, when redeemed, may be worth more or less than original cost. Current performance may be higher or lower than the performance data shown. For performance current to the most recent month-end please call 1-800-338-4345.

Source: J.P. Morgan Asset Management, Morningstar, as of 9/30/19. © Morningstar. All Rights Reserved. The JPMorgan Emerging Markets Equity Fund (I Shares) was ranked against the following number of funds in the Morningstar Diversified Emerging Markets category. Ranked: 1-yr. (15/839), 3-ys. (17/701), 5-ys. (9/569) and 10-ys. (50/243). *Past performance does not guarantee future results.* Ratings are calculated upon risk-adjusted returns. Different share classes may have different rankings. Morningstar rankings do not reflect the deduction of sales charges, which, if reflected, would reduce returns.

Returns for periods less than 1 year are not annualized. Returns are net of fees in USD. Excess returns are calculated on a geometric basis.
## Investment Performance

**September 30, 2019**

<table>
<thead>
<tr>
<th></th>
<th>1 Month</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>Since Inception</th>
<th>Inception Date</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>US Large Cap Equity</strong></td>
<td>0.84%</td>
<td>0.88%</td>
<td>18.89%</td>
<td>0.61%</td>
<td>12.34%</td>
<td>9.03%</td>
<td>12.44%</td>
<td>12.26%</td>
<td>4/30/2012</td>
</tr>
<tr>
<td>S&amp;P 500 Index</td>
<td>1.87%</td>
<td>1.70%</td>
<td>20.55%</td>
<td>4.25%</td>
<td>13.39%</td>
<td>10.84%</td>
<td>13.26%</td>
<td>13.07%</td>
<td></td>
</tr>
<tr>
<td><strong>Excess Return</strong></td>
<td>-1.03%</td>
<td>-0.82%</td>
<td>-1.66%</td>
<td>-3.64%</td>
<td>-1.05%</td>
<td>-1.81%</td>
<td>-0.82%</td>
<td>-0.81%</td>
<td></td>
</tr>
<tr>
<td><strong>Multi Cap Equity</strong></td>
<td>1.66%</td>
<td>-0.13%</td>
<td>19.96%</td>
<td>1.88%</td>
<td>14.00%</td>
<td>10.91%</td>
<td>13.81%</td>
<td>13.25%</td>
<td>4/30/2012</td>
</tr>
<tr>
<td>Multi Cap Equity Custom Benchmark</td>
<td>1.81%</td>
<td>1.19%</td>
<td>20.12%</td>
<td>2.96%</td>
<td>12.82%</td>
<td>10.44%</td>
<td>12.99%</td>
<td>12.75%</td>
<td></td>
</tr>
<tr>
<td><strong>Excess Return</strong></td>
<td>-0.15%</td>
<td>-1.32%</td>
<td>-0.16%</td>
<td>-1.08%</td>
<td>1.18%</td>
<td>0.47%</td>
<td>0.82%</td>
<td>0.50%</td>
<td></td>
</tr>
<tr>
<td><strong>US Small Cap + Mid Cap Equity</strong></td>
<td>1.98%</td>
<td>-0.28%</td>
<td>18.21%</td>
<td>-1.98%</td>
<td>8.98%</td>
<td>8.37%</td>
<td>11.73%</td>
<td>10.85%</td>
<td>4/30/2012</td>
</tr>
<tr>
<td>Small/Mid Cap Equity Custom Benchmark</td>
<td>2.02%</td>
<td>-0.77%</td>
<td>18.55%</td>
<td>-2.08%</td>
<td>9.66%</td>
<td>8.74%</td>
<td>11.64%</td>
<td>11.31%</td>
<td></td>
</tr>
<tr>
<td><strong>Excess Return</strong></td>
<td>-0.04%</td>
<td>0.49%</td>
<td>-0.34%</td>
<td>0.10%</td>
<td>-0.68%</td>
<td>-0.37%</td>
<td>0.09%</td>
<td>-0.46%</td>
<td></td>
</tr>
<tr>
<td><strong>REITs</strong></td>
<td>2.24%</td>
<td>7.96%</td>
<td>30.26%</td>
<td>20.72%</td>
<td>7.51%</td>
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<td>7.65%</td>
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<td>8.06%</td>
<td>9.02%</td>
<td>9.03%</td>
<td>8.68%</td>
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<td>-0.62%</td>
<td>0.27%</td>
<td>3.44%</td>
<td>2.41%</td>
<td>-0.55%</td>
<td>-0.68%</td>
<td>-0.87%</td>
<td>-1.03%</td>
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<td><strong>EAFE + Canada</strong></td>
<td>2.88%</td>
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<td>13.38%</td>
<td>-1.58%</td>
<td>5.55%</td>
<td>3.09%</td>
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<td>1.33%</td>
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<td>5.89%</td>
<td>-2.02%</td>
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<td>2.33%</td>
<td>2.41%</td>
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<td>-0.35%</td>
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<td>1.13%</td>
<td>0.70%</td>
<td>0.51%</td>
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Returns are net of fees. Past performance is not a guarantee of comparable future results. Total return assumes the reinvestment of income. The deduction of an advisory fee reduces an investor's return. Fees are described in Part II of the Advisor's ADV which is available upon request. Mutual Fund performance, if any, is shown net of fees and assumes the reinvestment of fund distribution. Returns for periods less than 1 year are not annualized. Discrepancies in excess return may appear due to rounding.
Investment Performance

September 30, 2019

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<th>Fund Type</th>
<th>1 Month</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>Since Inception</th>
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<td>-0.25%</td>
<td>-0.86%</td>
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<td>0.72%</td>
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<td>5.75%</td>
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Returns are net of fees. Past performance is not a guarantee of comparable future results. Total return assumes the reinvestment of income. The deduction of an advisory fee reduces an investor's return. Fees are described in Part II of the Advisor's ADV which is available upon request. Mutual Fund performance, if any, is shown net of fees and assumes the reinvestment of fund distribution. Returns for periods less than 1 year are not annualized. Discrepancies in excess return may appear due to rounding.
### Benchmark Composition

#### Total Portfolio Policy Benchmark

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<th>From</th>
<th>To</th>
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## Benchmark Composition

### Total Portfolio Custom Benchmark

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### Benchmark Composition

#### Multi Cap Equity Custom Benchmark

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<td>Russell 3000 Growth</td>
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#### Small/Mid Cap Equity Custom Benchmark

<table>
<thead>
<tr>
<th>From</th>
<th>To</th>
<th>4/30/2012</th>
<th>6/1/2012</th>
<th>1/1/2013</th>
<th>1/1/2016</th>
<th>2/1/2017</th>
<th>11/1/2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Russell 2000</td>
<td></td>
<td>-</td>
<td>57.14%</td>
<td>44.44%</td>
<td>40.82%</td>
<td>38.46%</td>
<td>40.43%</td>
</tr>
<tr>
<td>Russell Mid Cap</td>
<td></td>
<td>-</td>
<td>42.86%</td>
<td>55.56%</td>
<td>59.18%</td>
<td>61.54%</td>
<td>59.57%</td>
</tr>
<tr>
<td>Russell 2000 Value</td>
<td></td>
<td>50.00%</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Russell 2000 Growth</td>
<td></td>
<td>50.00%</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

#### REITs Custom Benchmark

<table>
<thead>
<tr>
<th>From</th>
<th>To</th>
<th>6/30/2011</th>
<th>4/30/2012</th>
<th>5/1/2012</th>
<th>1/1/2013</th>
<th>10/31/2017</th>
<th>11/1/2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSCI US REIT</td>
<td></td>
<td>50.00%</td>
<td>56.25%</td>
<td>60.00%</td>
<td>100.00%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FTSE EPRA/NAREIT Developed ex US Net of Tax</td>
<td></td>
<td>50.00%</td>
<td>43.75%</td>
<td>40.00%</td>
<td>-</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
# Benchmark Composition

## Core Fixed Income Custom Benchmark

<table>
<thead>
<tr>
<th>From</th>
<th>To</th>
<th>6/30/2011</th>
<th>10/31/2017</th>
<th>11/1/2017</th>
<th>Present</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bloomberg Barclays U.S. Aggregate Index</td>
<td>-</td>
<td>100.00%</td>
<td>84.75%</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Credit Suisse Leveraged Loan Index</td>
<td>-</td>
<td>15.25%</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

## Emerging Markets Debt Custom Benchmark

<table>
<thead>
<tr>
<th>From</th>
<th>To</th>
<th>6/30/2011</th>
<th>4/1/2015</th>
<th>9/30/2016</th>
<th>1/10/2016</th>
<th>Present</th>
</tr>
</thead>
<tbody>
<tr>
<td>JPMorgan EMBI Global Diversified</td>
<td>-</td>
<td>-</td>
<td>25.00%</td>
<td>100.00%</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>JPMorgan GBI-EM Global Diversified Unhedged</td>
<td>75.00%</td>
<td>75.00%</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>JPMorgan EMBI Global</td>
<td>25.00%</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

## EMD Strategic Custom Benchmark

<table>
<thead>
<tr>
<th>From</th>
<th>To</th>
<th>12/31/2012</th>
<th>10/1/2016</th>
<th>Present</th>
</tr>
</thead>
<tbody>
<tr>
<td>JPMorgan EMBI Global Diversified</td>
<td>-</td>
<td>-</td>
<td>100.00%</td>
<td>-</td>
</tr>
<tr>
<td>JPMorgan GBI-EM Global Diversified</td>
<td>100.00%</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
### J.P. Morgan’s 2019 Long-Term Capital Market Return Assumptions

<table>
<thead>
<tr>
<th>Asset Class</th>
<th>Arithmetic Return 2019 (%)</th>
<th>Compound Return 2019 (%)</th>
<th>Annual Volatility (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. Equity</td>
<td>0.13</td>
<td>0.13</td>
<td>0.16</td>
</tr>
<tr>
<td>U.S. Value-Weighted Equity*</td>
<td>0.08</td>
<td>0.08</td>
<td>0.16</td>
</tr>
<tr>
<td>U.S. Value Neutral Equity*</td>
<td>0.13</td>
<td>0.13</td>
<td>0.16</td>
</tr>
<tr>
<td>Emerging Markets Equity</td>
<td>0.20</td>
<td>0.19</td>
<td>0.16</td>
</tr>
<tr>
<td>U.S. Long Treasuries</td>
<td>0.07</td>
<td>0.07</td>
<td>0.16</td>
</tr>
<tr>
<td>Europe</td>
<td>0.17</td>
<td>0.17</td>
<td>0.16</td>
</tr>
<tr>
<td>Euro Area Large Cap</td>
<td>0.17</td>
<td>0.17</td>
<td>0.16</td>
</tr>
<tr>
<td>Asia Pacific Core Real Estate*</td>
<td>0.10</td>
<td>0.10</td>
<td>0.16</td>
</tr>
<tr>
<td>Asia Pacific Excluding Japan</td>
<td>0.19</td>
<td>0.19</td>
<td>0.16</td>
</tr>
<tr>
<td>Japan</td>
<td>0.12</td>
<td>0.12</td>
<td>0.16</td>
</tr>
<tr>
<td>Hong Kong Equity</td>
<td>0.12</td>
<td>0.12</td>
<td>0.16</td>
</tr>
<tr>
<td>Asia Pacific Excluding Japan*</td>
<td>0.13</td>
<td>0.13</td>
<td>0.16</td>
</tr>
<tr>
<td>U.S. Real Estate</td>
<td>0.18</td>
<td>0.18</td>
<td>0.16</td>
</tr>
<tr>
<td>U.S. REITS</td>
<td>0.18</td>
<td>0.18</td>
<td>0.16</td>
</tr>
<tr>
<td>Emerging Markets Corporate Bonds</td>
<td>0.11</td>
<td>0.11</td>
<td>0.16</td>
</tr>
<tr>
<td>U.S. Equity Diversified Factor</td>
<td>0.10</td>
<td>0.10</td>
<td>0.16</td>
</tr>
<tr>
<td>U.S. High Yield Corporate Bonds</td>
<td>0.10</td>
<td>0.10</td>
<td>0.16</td>
</tr>
<tr>
<td>U.S. Leveraged Loans</td>
<td>0.12</td>
<td>0.12</td>
<td>0.16</td>
</tr>
<tr>
<td>Emerging Markets Sovereign Bond*</td>
<td>0.11</td>
<td>0.11</td>
<td>0.16</td>
</tr>
<tr>
<td>Emerging Markets High Yield Corporate Bonds*</td>
<td>0.10</td>
<td>0.10</td>
<td>0.16</td>
</tr>
<tr>
<td>U.S. Equity Exposed to Energy*</td>
<td>0.12</td>
<td>0.12</td>
<td>0.16</td>
</tr>
<tr>
<td>Global Infrastructure Funds</td>
<td>0.10</td>
<td>0.10</td>
<td>0.16</td>
</tr>
<tr>
<td>Global Health Care Funds</td>
<td>0.10</td>
<td>0.10</td>
<td>0.16</td>
</tr>
<tr>
<td>Global Infrastructure Counties</td>
<td>0.10</td>
<td>0.10</td>
<td>0.16</td>
</tr>
<tr>
<td>Global Healthcare REITs</td>
<td>0.10</td>
<td>0.10</td>
<td>0.16</td>
</tr>
<tr>
<td>Emerging Markets Bonds</td>
<td>0.12</td>
<td>0.12</td>
<td>0.16</td>
</tr>
<tr>
<td>Emerging Markets High Yield Bonds</td>
<td>0.11</td>
<td>0.11</td>
<td>0.16</td>
</tr>
</tbody>
</table>

Note: All estimates on this page are in U.S. dollar terms. Given the complex risk-reward trade-offs involved, we advise clients to rely on judgment as well as quantitative optimization approaches in setting strategic allocations to all of these asset classes and strategies. Please note that all information shown is based on qualitative analysis. Expected returns on this interactive slide are not advised. This information is provided as a reference, and the investor should not rely on it to make asset allocation decisions. The model is intended to provide a broad view of the market, and should not be used for investment purposes. Note that not all asset class and strategy assumptions are passive only—they do not consider the impact of active management. References to future returns are not promises or even estimates of actual returns a client portfolio may achieve. Assumptions, opinions and estimates are provided for illustrative purposes only. They should not be relied upon as recommendations to buy or sell any investment funds that are available on current market conditions constitute our judgment and are subject to change without notice. We believe the information provided here is reliable, but do not warrant its accuracy or completeness. This material has been prepared for information purposes only and is not intended to provide, and should not be relied on for, accounting, legal or tax advice.

Source: J.P. Morgan Asset Management; as of September 30, 2018. Alternative asset classes (including hedge funds, private equity, real estate, direct lending and infrastructure) are not included in addition to any underlying index. ** For additional disclosures, please turn to the additional information slide located in the back of the book.
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Past performance does not guarantee future results. Total returns assumes reinvestment of any income. The deduction of an advisory fee reduces an investor’s return. Actual account performance will vary on individual portfolio security selection and the applicable fee schedule. Fees are available upon request.

The following is an example of the effect of compounded advisory fees over a period of time on the value of a client’s portfolio: A portfolio with a beginning value of $100 million, gaining an annual return of 10% per annum would grow to $259 million after 10 years, assuming no fees have been paid out. Conversely, a portfolio with a beginning value of $100 million, gaining an annual return of 10% per annum, but paying a fee of 1% per annum, would only grow to $235 million after 10 years. The annualized returns over the 10 year time period are 10.00% (gross of fees) and 8.91% (net of fees). If the fee in the above example was 0.25% per annum, the portfolio would grow to $253 million after 10 years and return 9.73% net of fees. The fees were calculated on a monthly basis, which shows the maximum effect of compounding.

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Office of Hawaiian Affairs  
Contract & Disbursement Review and Recommendations  
Status Report #5

Date: September 12, 2019

To: Dan Ahuna, Trustee and Chair of the Resource Management Committee  
Robert K. Lindsey, Jr., Trustee and Vice-Chair of the Resource Management Committee

From: Ernie Cooper, Principal, CliftonLarsonAllen LLP  
Jenny Dominguez, Signing Director, CliftonLarsonAllen LLP

RE: OHA Contract & Disbursement Review and Recommendations: August 1, 2019 to September 6, 2019

A. Background

On Tuesday, September 4, 2018, the Office of Hawaiian Affairs (OHA), a body corporate under the Constitution of the State of Hawaii, engaged the services of CliftonLarsonAllen (CLA) to conduct a contract and disbursement review as described in OHA’s contract number 3284. The purpose of this review is to identify and quantify potential areas of waste, abuse, and fraud in the procurement of professional services as well as other disbursements of funds for fiscal years (FY) FY2012, FY2013, FY2014, FY2015, and FY2016 for OHA and its LLCs.

B. Status of Document Request

1. OHA: As reported in Status Report #3 (dated June 4, 2019) OHA had provided all documents on the request list submitted by CLA or had provided an explanation for why a particular item was not available. The CLA request list included financial and organization documents and information requested on September 14, 2018, October 12, 2018, and November 16, 2018. This document request list does NOT include documentation related to the sample contracts and disbursements selected for testing. See section titled “Sample Selection and Testing” for further information regarding the OHA documents pertaining to the sample section.

2. LLCs: The original document request list sent to the LLCs by CLA (sent on September 14, 2018 and updated on September 18, 2018) included 54 items. As of Status Report #4, there were 9 items still outstanding from the list. On August 9, 2019, the LLCs communicated that all available documents had been provided to CLA through the document portal or the documents did not exist and were not available.

See section titled “Sample Selection and Testing” for further information regarding the status of LLC documents to be gathered and provided to CLA.
C. **Trustee & OHA Employee Interviews**

No additional interviews have been conducted since those reported in Status Report #4 dated August 6, 2019.

D. **Sample Selection and Testing**

1. **OHA Sample Selection & Testing:** According to the approved scope of work, CLA is to test 80 contracts and 50 disbursements for OHA. On May 10, 2019, CLA sent to OHA its sample selection for 75 contracts and 45 disbursements. CLA reserved 5 contracts and 5 disbursements to select after the visit to OHA in June 2019 for the initial round of testing and after the trustee interviews that occurred the week of July 22, 2019. On August 2, 2019, CLA sent the remaining sample selection for contracts and disbursements to OHA. The following are key dates related to the submission of documents to CLA and CLA’s submission of questions and requests for additional documents to OHA:

   a. June 10, 2019: OHA completed its submission to CLA of the supporting documents for the initial 75 contracts and 45 disbursements (this date was provided in Status Report #4).

   b. August 2, 2019: CLA selected the remaining sample of 5 contracts and disbursements for OHA and emailed this list to Phyllis Ono-Evangelista.\(^1\)

   c. August 23, 2019: CLA completed its review of the supporting documents provided for the initial 75 contracts and 45 disbursements and submitted all questions and requests for additional documents to OHA. In addition, OHA sent to CLA the supporting documents for the remaining sample of 5 contracts and 19 disbursements (5 remaining disbursements, 9 replacement disbursements, and 5 backup disbursements, as discussed in footnote 4).

   d. August 30, 2019: CLA completed its review of the supporting documents provided by OHA for the remaining sample of 5 contracts and 14 disbursements and sent to OHA all questions and requests for additional documents pertaining to these sample items.

   e. September 6, 2019: OHA began sending to CLA the additional documents requested for the sample contracts and disbursements and responses to the questions CLA asked. OHA continued sending documents and responses to CLA’s questions through September 8, 2019. CLA received additional documents for 32 contracts and 18 disbursements. CLA is in the process of reviewing the additional documents provided.\(^2\)

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\(^1\) During the review of the supporting documents provided by OHA for the disbursement sample, CLA determined that 9 of the transactions selected as “disbursements” were actually payments on existing contracts or grant awards, and were processed by OHA as such. According to the approved scope of work, “contracts will include vendor contracts, other contracts for professional services and/or goods, and grant agreements awarded by the OHA.” Therefore, in addition to the 5 remaining disbursements selected, CLA selected 9 replacement disbursements and 5 back-up disbursements, for a total of 19 disbursements sent to Ms. Ono-Evangelista. Five back-up disbursements were selected in case one of the new 14 disbursements selected was a contract or grant.

\(^2\) As communicated in Status Report #4, as CLA reviewed the supporting documentation provided for the contracts and disbursements selected, CLA identified questions and additional documents needed. CLA prepared an Excel schedule to identify,
f. September 9, 2019: OHA submitted to CLA an updated spreadsheet with responses to CLA’s questions and the status of the additional documents requested. CLA is in the process of reviewing the response to the questions.²

2. LLC Sample Selection & Testing:

On May 10, 2019, CLA sent to ES&A the sample selection for 23 contracts and 21 disbursements for the LLCs. According to the approved scope of work, CLA is to test 30 contracts and 25 disbursements for the LLCs. CLA reserved 7 contracts and 4 disbursements to select after the trustee interviews that occurred the week of July 22, 2019. On August 2, 2019, CLA sent the remaining sample selection for contracts and disbursements to the LLCs. The following are key dates related to the submission of documents to CLA and CLA’s submission of questions and requests for additional documents to the LLCs:

a. July 3, 2019: CLA was informed that the LLCs had gathered the supporting documents for the initial sample selection, and the documents were available in hardcopy at the respective LLC offices.

b. August 2, 2019: CLA selected the remaining sample of 7 contracts and 4 disbursements for the LLCs, emailed this list to the LLCs, and requested that the supporting documents be made available during CLA’s visit the weeks of August 12th and 19th.

c. August 12, 2019 through August 23, 2019: CLA was on site at the LLC offices to review the supporting documentation for the sample selection. As CLA reviewed the documentation, CLA communicated to the respective LLC staff any additional documents needed and inquired about questions related to the documents reviewed. The respective LLC staff supplied CLA with a majority of the additional documents needed and responses to questions while CLA was on site.

d. August 19, 2019: CLA emailed a list of outstanding documents related to Hi’ipaka (Waimea Valley) to the Executive Director of Hi’ipaka. CLA expects to receive the outstanding documents the week of September 16th.

e. August 23, 2019: CLA emailed a list of outstanding documents related to all other LLCs to the Executive Director of Hi’ilei Aloha. CLA expects to receive the outstanding documents the week of September 16th.

E. Other Work Performed

The focus of CLA’s work during the period covered by this status report was to review the supporting documentation related to the sample selection for OHA and the LLCs; therefore, there are no other work steps to report.

² This Excel schedule was then used by OHA to provide responses to CLA’s questions and the status of any additional documents requested.
F. **Next Steps**

1. **OHA Sample – Review Additional Documents and Responses to Questions:** CLA will review the additional documents and responses to questions provided by OHA from September 6th through 9th. CLA expects to have this review completed by Friday, October 4th. By Monday, October 7th, CLA will communicate to OHA (a) any documents not received to confirm that they do not exist or are not available and (b) any additional questions that may result from the review of the additional documents.

2. **LLCs Sample – Obtain and Review Additional Documents:** Based on communications with the LLCs, CLA expects to receive all outstanding documents the week of September 16th. CLA will review the additional documents by Friday, October 4th. By Monday, October 7th, CLA will communicate to the LLCs (a) any documents not received to confirm that they do not exist or are not available and (b) any additional questions that may result from the review of the additional documents.

3. **Discussion/Meeting with RM Committee Leadership:** As documented in the timetable dated April 2, 2019, CLA anticipated briefing the RM Committee Leadership during the week of September 9, 2019 on CLA’s findings from the testing performed, which was contingent on getting the outstanding documents and information needed from OHA. As communicated above, from September 6th through September 9th, OHA provided additional documents and responses to CLA’s questions. CLA requires additional time to review the additional documents and information provided by OHA. Additionally, CLA is waiting for outstanding documents from the LLCs and will need time to review these additional documents. To ensure the briefing of the RM Committee Leadership is productive, CLA recommends having the briefing after October 4th, which is the date by which CLA expects to have all available documents reviewed. CLA is available for the briefing with the RM Committee Leadership on either October 9th or 10th. As the briefing will be high-level, CLA recommends the briefing take place via video conference.

4. **Prepare Draft Report:** CLA will begin an outline of the report on or around September 13, 2019. The results of the testing performed will not be finalized until all documents provided by OHA and the LLCs have been reviewed and CLA has had an opportunity to inquire about any follow-up questions.

G. **Project Obstacles**

Currently, there are no project obstacles, and we are on schedule to complete the project and issue our report by December 16, 2019.

H. **Items of Notable Mention**

There are no new items to report.

I. **Total Hours & Costs Incurred and Billed through August 31, 2019**

Table 1 summarizes the total hours and costs incurred and billed to OHA for professional services and travel-related costs through August 31, 2019. Based on the total estimated budget and the work completed to date, CLA is over the dollar amount budgeted for the categories “Project oversight, meetings, status briefings” and “Travel: 50% of actual travel time.” This is due to the time incurred by CLA in updating the new Resource Management Committee
leadership on the scope of work, historical work performed, and project obstacles. Additionally, CLA attended an in-person meeting with the Resource Management Committee leadership on March 12, 2019. CLA will not bill OHA in excess of the approved $500,000 contract cost to complete the approved scope of work.

Table 1: Summary of Total Hours and Cost

<table>
<thead>
<tr>
<th>Description</th>
<th>Total Budgeted Hours</th>
<th>Total Budgeted Costs</th>
<th>Hours Through 08/31/19</th>
<th>Costs Through 08/31/19</th>
</tr>
</thead>
<tbody>
<tr>
<td>Testing of OHA transactions*</td>
<td>861.00</td>
<td>$ 246,580.00</td>
<td>1,001.25</td>
<td>$ 228,302.38</td>
</tr>
<tr>
<td>Testing of LLC transactions*</td>
<td>354.00</td>
<td>$ 81,090.00</td>
<td>366.55</td>
<td>$ 78,758.80</td>
</tr>
<tr>
<td>Project oversight, meetings, status briefings</td>
<td>180.00</td>
<td>$ 49,840.00</td>
<td>185.15</td>
<td>$ 57,397.75</td>
</tr>
<tr>
<td>Report of findings and recommendations</td>
<td>346.00</td>
<td>$ 86,360.00</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Travel: 50% of actual travel time</td>
<td>130.00</td>
<td>$ 38,773.00</td>
<td>160.20</td>
<td>$ 45,031.00</td>
</tr>
<tr>
<td>Travel: Out-of-pocket costs</td>
<td>N/A</td>
<td>$ 31,470.00</td>
<td>N/A</td>
<td>$ 42,572.30</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1,871.00</strong></td>
<td><strong>$ 534,113.00</strong></td>
<td><strong>1,713.15</strong></td>
<td><strong>$ 452,062.23</strong></td>
</tr>
</tbody>
</table>

*These categories broadly represent the work being conducted related to OHA and its LLCs, including reviewing documents and financial data, performing data analytics on the financial data, preparing for and conducting the process and risk assessment interviews, review of internal controls over the reporting to the OHA Board of Trustees, and the contract and disbursement testing.

As of the date of this status report invoice #2216196 is outstanding; however, CLA has been informed that the invoice has been submitted for payment processing. The invoice for costs incurred from July 31, 2019 through August 31, 2019 is being prepared and will be sent to OHA within the next few days (the costs for this invoice are included in Table 1 above).