TTUS Investment Performance Update

Gary Barnes, *TTUS Vice Chancellor and CFO*

February 24, 2022
AGENDA
THREE BROAD TOPICS

- We are going to cover three broad topics:

  1. Review of 2021 capital markets
  2. Discuss some 2022 macroeconomic issues
  3. Brief review of endowment investing
RISK ASSETS OUTPERFORMED

ANNUAL TOTAL RETURNS

Source: MSCI, S&P, Russell, MSCI, Bloomberg, JPM, FactSet
U.S. EQUITIES TRENDED HIGHER
NUMBER OF DAILY NEW RECORD HIGHS FOR THE S&P 500

Source: S&P, FactSet
INFLATION ROSE AT HIGHEST LEVEL SINCE 1981

TOP 10 ANNUAL U.S. CPI-U CHANGES

Source: Bureau of Labor Statistics, FactSet
TREASURY YIELDS WERE VOLATILE
10- AND 2-YEAR U.S. TREASURY SPREADS

Source: FactSet
COMMODITY PRICES RALLIED DURING 2021
TRAILING 1 YEAR SPOT RETURNS

Source: Bloomberg, FactSet
2022 MACRO CONSIDERATIONS
KEY MARKET THEMES

- Key Market Themes influence global markets and may remain relevant for an extended period with significant implications for capital markets
  - While there are many, we highlight three for consideration

THREE KEY MARKET THEMES:

1. Economic Crossroads
2. Permanent Interventions
3. China Transitions
1. ECONOMIC CROSSROADS
DEFINING THE THEME

- Central bank activity and monetary policy have been the driving force behind economic and market momentum since the 2008 Financial Crisis
- Market sentiment and asset pricing have derived from central bank support and abundant liquidity instead of economic fundamentals
- The pendulum is swinging from Fed policy as the dominant input for capital markets to growth and inflation forces driving market dynamics
  - Transition is occurring due to both diminishing policy support (and potential tightening) with higher levels of inflation and growth
  - Moving across this spectrum from Fed Policy to economic fundamentals will dramatically influence the pricing of risk premia across capital markets
2. PERMANENT INTERVENTIONS
HISTORY OF FOMC OPEN MARKET OPERATIONS

QE1
The Fed purchases Treasuries and MBS securities to support lending and housing markets following the GFC

QE2
The Fed buys and sells both short- and long-term bonds to more directly influence the yield curve

QE3
Tapering
The Fed purchases Treasury and MBS securities to further support its dual mandate

Quantitative Accommodation
The Fed maintains its existing policy for reinvestment to help maintain accommodative financial conditions

Balance Sheet Normalization
The Fed begins reducing the size of the balance sheet and gradually increases pace

Balance Sheet Expansion
The Fed dramatically expands QE due to the significant economic disruption from the COVID-19 pandemic

Notes: Blue line reflects total asset size of the Federal Reserve
Sources: Federal Reserve, FactSet, NEPC
3. CHINA TRANSITIONS
DEFINING THE THEME

- China is undergoing a multi-faceted advancement as the economy transitions to a consumption-oriented model
  - China’s socioeconomic profile is changing with rising income levels, increased urbanization, but also a challenging demographic profile
  - The country’s influence on the global stage has shifted, reflecting its status as an ascending geopolitical power
- Disruption of these transitions will be transmitted widely due to China’s ever-expanding role in the world economy

Sources: IMF, FactSet
ENDOWMENT
INVESTING
Objective of TTUS Endowment:

Provide a consistent, growing, inflation adjusted revenue stream to provide funding for student scholarships, academic chairs, and professorships.
Endowment funds, by design, are unique gifts given by donors that are invested over the long term with the purpose of producing earnings that will support the strategic goals of the institution and fulfill the philanthropic goals of individual donors.

Endowment funds benefit both current and future generations and represent the institution’s promise to donors to use the income and investment gains generated by their gifts to support an aspect of the university’s mission into perpetuity as specified by the donor.

Uniform state laws provide fundamental rules for the investment and expenditures of endowment funds. The rules support two general principles:

1. Assets would be invested prudently in diversified investments that sought growth as well as income, with low volatility over time with stable funding, and
2. Appreciation of assets could prudently be spent for the purposes of the endowment.
Past performance is no guarantee of future results.

The goal of this report is to provide a basis for substantiating asset allocation recommendations. The opinions presented herein represent the good faith views of NEPC as of the date of this report and are subject to change at any time.

Information on market indices was provided by sources external to NEPC. While NEPC has exercised reasonable professional care in preparing this report, we cannot guarantee the accuracy of all source information contained within.

All investments carry some level of risk. Diversification and other asset allocation techniques do not ensure profit or protect against losses.

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TTUS Office of Investments
Performance Update

Tim Barrett, Associate Vice Chancellor and Chief Investment Officer
February 24, 2022
Long Term Investment Fund (LTIF)  
*as of November 30, 2021*

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**Portfolio Holdings & Performance Overview – November 2021**

<table>
<thead>
<tr>
<th>Portfolio Composition</th>
<th>Balance</th>
<th>LTIF Weight</th>
<th>Target</th>
<th>QTD</th>
<th>YTD</th>
<th>Trailing 1 Yr</th>
<th>Trailing 3 Yrs</th>
<th>Trailing 5 Yrs</th>
<th>Trailing 7 Yrs</th>
<th>Trailing 10 Yrs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total LTIF</td>
<td>1,580,131,852.26</td>
<td>100.00%</td>
<td>100.00%</td>
<td>0.96%</td>
<td>17.31%</td>
<td>24.90%</td>
<td>11.33%</td>
<td>9.84%</td>
<td>7.72%</td>
<td>8.32%</td>
</tr>
<tr>
<td>LTIF Policy Composite</td>
<td>1.52%</td>
<td>7.25%</td>
<td>10.46%</td>
<td>10.91%</td>
<td>12.65%</td>
<td>10.94%</td>
<td>8.08%</td>
<td>8.20%</td>
<td>8.75%</td>
<td></td>
</tr>
<tr>
<td>50/40 + 1%</td>
<td>1.52%</td>
<td>7.25%</td>
<td>10.46%</td>
<td>10.91%</td>
<td>12.65%</td>
<td>10.94%</td>
<td>8.08%</td>
<td>8.20%</td>
<td>8.75%</td>
<td></td>
</tr>
<tr>
<td>LTIF - Growth</td>
<td>924,670,230.21</td>
<td>58.52%</td>
<td>60.00%</td>
<td>1.51%</td>
<td>26.39%</td>
<td>39.43%</td>
<td>18.85%</td>
<td>15.60%</td>
<td>11.69%</td>
<td>12.26%</td>
</tr>
<tr>
<td>MSCI ACWI TR Net USD</td>
<td>2.57%</td>
<td>13.98%</td>
<td>19.27%</td>
<td>15.96%</td>
<td>13.99%</td>
<td>9.98%</td>
<td>11.39%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LTIF - Stable Value</td>
<td>655,461,622.05</td>
<td>41.48%</td>
<td>40.00%</td>
<td>0.08%</td>
<td>4.96%</td>
<td>7.23%</td>
<td>3.15%</td>
<td>3.72%</td>
<td>3.96%</td>
<td>4.07%</td>
</tr>
<tr>
<td>Barclays Global Aggregate USD</td>
<td>-0.53%</td>
<td>-4.57%</td>
<td>-3.29%</td>
<td>4.34%</td>
<td>3.29%</td>
<td>2.14%</td>
<td>1.85%</td>
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</tr>
</tbody>
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**LTIF Weight vs Target**

- LTIF - Growth: 58.5% vs 60.0%
- LTIF - Stable Value: 41.5% vs 40.0%

**LTIF Performance vs Benchmarks**

- QTD: 1.0% vs 7.3% vs 10.0% vs 7.3%
- YTD: 17.3% vs 10.5% vs 13.1% vs 10.5%
- Trailing 1 Yr: 0.9% vs 10.9% vs 11.3% vs 10.9%
- Trailing 3 Yrs: 9.8% vs 9.8% vs 9.8% vs 9.8%
- Trailing 5 Yrs: 9.0% vs 9.0% vs 9.0% vs 9.0%
- Trailing 7 Yrs: 7.7% vs 7.7% vs 7.7% vs 7.7%
- Trailing 10 Yrs: 8.3% vs 8.3% vs 8.3% vs 8.3%
# Long Term Investment Fund (LTIF) as of November 30, 2021

## Portfolio Composition – November 2021

<table>
<thead>
<tr>
<th>Category</th>
<th>Balance</th>
<th>Weight</th>
<th>Trailing 1 Yr</th>
<th>Trailing 3 Yrs</th>
<th>Trailing 5 Yrs</th>
<th>Trailing 7 Yrs</th>
<th>Trailing 10 Yrs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>1,580,131,852.26</td>
<td>100.00%</td>
<td>24.90%</td>
<td>11.33%</td>
<td>9.84%</td>
<td>7.72%</td>
<td>8.32%</td>
</tr>
<tr>
<td>LTIF Policy Composite</td>
<td>1,075,461,622.05</td>
<td>68.15%</td>
<td>24.90%</td>
<td>11.33%</td>
<td>9.84%</td>
<td>7.72%</td>
<td>8.32%</td>
</tr>
<tr>
<td>Global 60/40 + 1%</td>
<td>504,670,230.21</td>
<td>31.85%</td>
<td>24.90%</td>
<td>11.33%</td>
<td>9.84%</td>
<td>7.72%</td>
<td>8.32%</td>
</tr>
</tbody>
</table>

### LTIF - Growth

<table>
<thead>
<tr>
<th>Component</th>
<th>Balance</th>
<th>Weight</th>
<th>Trailing 1 Yr</th>
<th>Trailing 3 Yrs</th>
<th>Trailing 5 Yrs</th>
<th>Trailing 7 Yrs</th>
<th>Trailing 10 Yrs</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSCI ACWI TR Net USD</td>
<td>924,670,230.21</td>
<td>58.52%</td>
<td>39.43%</td>
<td>18.85%</td>
<td>15.60%</td>
<td>11.69%</td>
<td>12.26%</td>
</tr>
<tr>
<td>LTIF - Public Equity</td>
<td>504,837,173.18</td>
<td>31.95%</td>
<td>20.06%</td>
<td>11.33%</td>
<td>9.84%</td>
<td>7.72%</td>
<td>8.32%</td>
</tr>
<tr>
<td>LTIF - Private Equity</td>
<td>336,631,551.56</td>
<td>21.30%</td>
<td>65.30%</td>
<td>23.13%</td>
<td>15.49%</td>
<td>11.65%</td>
<td>12.26%</td>
</tr>
</tbody>
</table>

### Bloomberg Global Aggregate USD

<table>
<thead>
<tr>
<th>Component</th>
<th>Balance</th>
<th>Weight</th>
<th>Trailing 1 Yr</th>
<th>Trailing 3 Yrs</th>
<th>Trailing 5 Yrs</th>
<th>Trailing 7 Yrs</th>
<th>Trailing 10 Yrs</th>
</tr>
</thead>
<tbody>
<tr>
<td>LTIF - Private Debt</td>
<td>165,428,780.24</td>
<td>10.47%</td>
<td>12.20%</td>
<td>6.84%</td>
<td>7.52%</td>
<td>6.33%</td>
<td>7.95%</td>
</tr>
</tbody>
</table>

### Global Diversifying Assets

<table>
<thead>
<tr>
<th>Component</th>
<th>Balance</th>
<th>Weight</th>
<th>Trailing 1 Yr</th>
<th>Trailing 3 Yrs</th>
<th>Trailing 5 Yrs</th>
<th>Trailing 7 Yrs</th>
<th>Trailing 10 Yrs</th>
</tr>
</thead>
<tbody>
<tr>
<td>LTIF - Public Debt</td>
<td>134,412,676.21</td>
<td>8.51%</td>
<td>11.58%</td>
<td>0.85%</td>
<td>1.87%</td>
<td>3.55%</td>
<td>4.65%</td>
</tr>
<tr>
<td>LTIF Cash</td>
<td>81,461,365.43</td>
<td>5.16%</td>
<td>0.01%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### LTIF Liquidating Funds

<table>
<thead>
<tr>
<th>Component</th>
<th>Balance</th>
<th>Weight</th>
<th>Trailing 1 Yr</th>
<th>Trailing 3 Yrs</th>
<th>Trailing 5 Yrs</th>
<th>Trailing 7 Yrs</th>
<th>Trailing 10 Yrs</th>
</tr>
</thead>
<tbody>
<tr>
<td>LTIF Liquidating Funds</td>
<td>5,520,712.56</td>
<td>0.35%</td>
<td>11.81%</td>
<td>-7.12%</td>
<td>11.58%</td>
<td>10.05%</td>
<td>7.36%</td>
</tr>
</tbody>
</table>
Long Term Investment Fund (LTIF) preliminary as of December 31, 2021

Portfolio Holdings & Performance Overview – December 2021 – Preliminary

<table>
<thead>
<tr>
<th>Portfolio Composition</th>
<th>Balance</th>
<th>LTIF Weight</th>
<th>Target</th>
<th>QTD</th>
<th>YTD</th>
<th>Trailing 1 Yr</th>
<th>Trailing 3 Yrs</th>
<th>Trailing 5 Yrs</th>
<th>Trailing 7 Yrs</th>
<th>Trailing 10 Yrs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total LTIF</td>
<td>1,644,608,685.22</td>
<td>100.00%</td>
<td>100.00%</td>
<td>2.36%</td>
<td>18.94%</td>
<td>18.94%</td>
<td>12.65%</td>
<td>9.62%</td>
<td>8.05%</td>
<td>8.40%</td>
</tr>
<tr>
<td>LTIF Policy Composite</td>
<td>3.99%</td>
<td>9.86%</td>
<td></td>
<td></td>
<td></td>
<td>9.86%</td>
<td>11.32%</td>
<td>9.35%</td>
<td>7.77%</td>
<td>8.65%</td>
</tr>
<tr>
<td>60/40 + 1%</td>
<td>3.99%</td>
<td>9.86%</td>
<td></td>
<td></td>
<td></td>
<td>9.86%</td>
<td>14.85%</td>
<td>11.21%</td>
<td>8.66%</td>
<td>8.99%</td>
</tr>
<tr>
<td>LTIF - Growth</td>
<td>943,408,509.81</td>
<td>57.36%</td>
<td>60.00%</td>
<td>3.82%</td>
<td>29.27%</td>
<td>29.27%</td>
<td>21.27%</td>
<td>15.36%</td>
<td>12.13%</td>
<td>12.37%</td>
</tr>
<tr>
<td>MSCI ACWI TR Net USD</td>
<td>6.68%</td>
<td>18.54%</td>
<td></td>
<td></td>
<td></td>
<td>18.54%</td>
<td>20.38%</td>
<td>14.40%</td>
<td>10.90%</td>
<td>11.85%</td>
</tr>
<tr>
<td>LTIF - Stable Value</td>
<td>701,200,175.41</td>
<td>42.64%</td>
<td>40.00%</td>
<td>0.29%</td>
<td>5.19%</td>
<td>5.19%</td>
<td>3.04%</td>
<td>3.48%</td>
<td>4.05%</td>
<td>4.05%</td>
</tr>
<tr>
<td>Barclays Global Aggregate USD</td>
<td>-0.67%</td>
<td>-4.71%</td>
<td></td>
<td></td>
<td></td>
<td>-4.71%</td>
<td>3.59%</td>
<td>3.36%</td>
<td>2.22%</td>
<td>1.77%</td>
</tr>
</tbody>
</table>

% of NAV Reported: 56%

LTIF Weight vs Target

LTIF Performance vs Benchmarks
The portfolio since inception in 1996 has met the primary objective of covering the spending (Distribution) rate of 4.5%, while simultaneously growing the endowment.

**LTIF Policy Benchmarks:**
- 60% Equity Global (MSCI ACWI with USA net)
- 40% Debt Global Bonds (Barclays Global Agg)

Returns are since inception of the LTIF (9/1/1996)
Comprehensive Cash Pool (CCP) as of November 30, 2021

Portfolio Holdings & Performance Overview - November 2021

<table>
<thead>
<tr>
<th>Portfolio Composition</th>
<th>Balance</th>
<th>Weight</th>
<th>Target</th>
<th>Fiscal QTD</th>
<th>Fiscal YTD</th>
<th>Trailing 1 Yr</th>
<th>Trailing 3 Yrs</th>
<th>Trailing 5 Yrs</th>
<th>Trailing 7 Yrs</th>
<th>Since Inception</th>
<th>Inception Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Comprehensive Cash Pool</td>
<td>$1,791,826,055</td>
<td>100.0%</td>
<td>100.0%</td>
<td>-0.34%</td>
<td>-0.34%</td>
<td>5.24%</td>
<td>4.08%</td>
<td>3.84%</td>
<td>2.79%</td>
<td>4.60%</td>
<td>11/30/2008</td>
</tr>
<tr>
<td>60% Global 60/40, 40% Bloomberg 1-3 Yr Gov Composite</td>
<td>-1.32%</td>
<td>-1.32%</td>
<td>-0.34%</td>
<td>5.24%</td>
<td>4.08%</td>
<td>3.84%</td>
<td>2.79%</td>
<td>4.60%</td>
<td>5.17%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cash and Contingency Segment</td>
<td>796,952,755</td>
<td>44.5%</td>
<td>40.0%</td>
<td>-0.47%</td>
<td>-0.47%</td>
<td>0.27%</td>
<td>1.57%</td>
<td>1.30%</td>
<td>1.02%</td>
<td>0.79%</td>
<td>01/31/2012</td>
</tr>
<tr>
<td>Cash &amp; Contingency Policy Composite</td>
<td>0.01%</td>
<td>0.13%</td>
<td>0.13%</td>
<td>0.06%</td>
<td>0.25%</td>
<td>0.25%</td>
<td>0.88%</td>
<td>0.83%</td>
<td>0.62%</td>
<td>0.44%</td>
<td>11/30/2010</td>
</tr>
<tr>
<td>Contingency Segment</td>
<td>262,492,932</td>
<td>14.6%</td>
<td>10.0%</td>
<td>0.06%</td>
<td>0.25%</td>
<td>0.25%</td>
<td>0.88%</td>
<td>0.83%</td>
<td>0.62%</td>
<td>0.44%</td>
<td>11/30/2010</td>
</tr>
<tr>
<td>Noncurrent Segment</td>
<td>534,459,824</td>
<td>29.8%</td>
<td>30.0%</td>
<td>-0.67%</td>
<td>-0.67%</td>
<td>0.22%</td>
<td>1.86%</td>
<td>1.45%</td>
<td>1.15%</td>
<td>0.94%</td>
<td>02/29/2012</td>
</tr>
<tr>
<td>Noncurrent Policy Composite</td>
<td>533,108,077</td>
<td>29.8%</td>
<td>30.0%</td>
<td>-0.67%</td>
<td>-0.67%</td>
<td>0.22%</td>
<td>1.86%</td>
<td>1.45%</td>
<td>1.15%</td>
<td>0.94%</td>
<td>02/29/2012</td>
</tr>
<tr>
<td>ITIF Legacy</td>
<td>461,765,223</td>
<td>25.8%</td>
<td>-0.95%</td>
<td>-0.95%</td>
<td>3.05%</td>
<td>3.05%</td>
<td>5.12%</td>
<td>3.70%</td>
<td>5.10%</td>
<td>3.05%</td>
<td>05/31/2021</td>
</tr>
<tr>
<td>NCS-Only</td>
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</tr>
</tbody>
</table>

CCP Weight vs Target

- Cash: 14.6%
- Contingency: 29.8%
- Noncurrent: 55.5%

CCP Performance vs Benchmarks

- Total CCP
- CCP Policy Composite

Reported valuation % of Nav: ~93%
TTUS Office of Investments
Intern & Associate Program

Tim Barrett, Associate Vice Chancellor and Chief Investment Officer
February 24, 2022
Intern Program Overview

• Restarting Intern program (post COVID)
  • Positions will run from (May 23 – August 5)
  • All system institutions included in postings (will include MSU in 2023)

• Become familiarized with the investment process of a large institution gaining exposure to multiple asset classes and investment types

• Get experience across multiple office functions that can be translated to any industry / organization not just investments

• Complete a couple of capstone projects to build up resume
  • Example 1) (Operations): Create a customized dashboard/report going through the full data management process
  • Example 2) (Investments): Written research project on prospective manager
2022 Intern Program

• Current Openings (3)
  • Investment Operations Intern: (2) split between TTU & ASU
  • Investment Intern: (1) from TTU
  • Intern Duration: May 23 – August 5
  • Job posting closes on 2/18
  • Begin selection process on 2/21

• Undergraduate: Must be currently enrolled with a major in Business Administration, Finance, Accounting, MIS, or a related area and will complete the junior year (90 hours) by the end of Summer 2022 semester

• Graduate Student: Must be currently enrolled a graduate program in Finance, Accounting, Business Administration or a related area
Associate Program Overview

• Beginning in 2023, we will have the option to offer an Associate position to one Operations and one Investment candidate after completion of internship
  • Offered by CFO as a direct appointment to Investment Office
  • Up to a 3-year appointment, renewed annually upon evaluation

• Upon completion of Associate Program candidate could feed into a permanent Analyst position if available

• This position offers significant opportunity for a candidate looking to gain experience across an array of Investment Management & Operational functions.
  • Build up resume
  • Gain industry experience
  • Make contacts and build relationships
Investment/Operations Process

Operations Team

- Operational Due Diligence
- Legal
- New Account Set Up
- Funding
- Operational Monitoring / Reporting

Investment Team

- Sourcing
- Research/Analysis
- Investment Due Diligence
- Approval
- Investment Monitoring
Questions?