MSU FINANCIAL ADMINISTRATION: A SYSTEMS APPROACH

Financial Resource Management

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Glen Klein
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Agenda

- Financial Goals
- Cash and Investments Overview
- Cash Management
- Endowment Management
- Debt Management
IFM’s Financial Goals

• Maintain sufficient cash to meet payroll and spending obligations (liquidity)
• Optimize Long-term Risk Adjusted Returns and grow Endowments to sustain future spending needs
• Maintain debt capacity to meet future borrowing needs
Mission Statement:

Provide effective Treasury services including:
• Maximize risk-adjusted returns on investments
• Minimize the risk-adjusted cost of capital
• Administer endowments in accordance with established guidelines
• Provide cash management oversight

Endowment and Investment Information Quick Links

• CIF Benchmark Returns
• CIF Quarterly Results
• Scholarship/Endowment System
• Investment Policy
• 2014 - 2015 Spending Policy
• 2015 - 2016 Spending Policy
• Frequently Asked Questions
MSU’s Two Different Investment and Liquidity Needs

Operating Cash
• Comprised of:
  • Liquidity Pool (LP - MSU’s checkbook)
  • Liquidity Reserve Pool (LRP – MSU’s backup liquidity fund)
• Used for meeting the University’s daily cash requirements

Long-term Investment
• Comprised of:
  • Common investment Fund (CIF)
  • Separately Invested Endowments
• Invested over long investment time horizons and used for funding CIF Endowment Spending Policy
Cash & Investment Structure Through 6/30/15

Cash and Investment Market Values

1) Book values used for CIF operating cash 7/1/1997 - 9/30/2000. Market values used following these dates
MSU’s Cash and Investments Overview at June 30, 2015

($ millions)

Total $2,802

Operating Cash $356

Liquidity Pool $276

Liquidity Reserve Pool $80

Line of credit ($75 authorized, no issuances to date)

Long Term Investments $2,446

Common Investment Fund $2,393

Cash* $62

Endowment Trusts** $1,239

Endowments and Institutional Funds $1,092

Separately Invested Endowments $53

* CIF cash invested in Liquidity Pool pending reallocation to equity and/or fund endowment spending distributions

** Operating cash in excess of liquidity needs invested in CIF long term.
### MSU’s Cash and Investments

**As of June, 2015**

<table>
<thead>
<tr>
<th>Purpose</th>
<th>CIF Long-Term Investments</th>
<th>LP &amp; LRP Short-Term Liquidity</th>
<th>Over (Under) Target</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Invested In</strong></td>
<td><strong>Total</strong></td>
<td><strong>Liquidity</strong></td>
<td><strong>Target</strong></td>
</tr>
<tr>
<td>Liquidity Pool (30-60 days of Op. Cash)</td>
<td>$338</td>
<td>$62</td>
<td>$276</td>
</tr>
<tr>
<td>Liquidity Res. Pool (30 days of Op. Cash*)</td>
<td>80</td>
<td>-</td>
<td>80</td>
</tr>
<tr>
<td>Common Investment Fund CIF</td>
<td>2,331</td>
<td>2,331</td>
<td>-</td>
</tr>
<tr>
<td>Separately Invested LT Investments</td>
<td>53</td>
<td>53</td>
<td>-</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>$2,802</td>
<td>$2,446</td>
<td>$356</td>
</tr>
<tr>
<td>Operating Line of Credit*</td>
<td>75</td>
<td>-</td>
<td>75</td>
</tr>
<tr>
<td><strong>Total with Operating Line of Credit</strong></td>
<td>$2,877</td>
<td>$2,446</td>
<td>$431</td>
</tr>
</tbody>
</table>

(1) CIF cash pending reallocation to equity and/or fund endowment spending distributions.
(2) $30M scheduled for transfer from LP to CIF effective quarterly through FY17.
(3) Preliminary Balance. Private investments valued as of 3/31/15 adjusted for cash flows. (CIF cash included in LP total.)
(4) As of 7/1/15 the market value of operating cash in excess of liquidity needs and invested long-term in the CIF approximated $1.2B or 53% of the CIF.

*Liquidity Reserve Pool target balance includes operating line of credit*
Operating Cash Investment Structure

Overall Cash Pool
- Endowment Trusts (1)
  - Liquidity Pool
- Pooled Cash Fund
  - Liquidity Reserve Pool
    - Bank Credit Line (Maximum of $75 million)

(1) Invested on a long-term basis with other Institutional Funds in the CIF.
## Operating Cash Pool Structure

<table>
<thead>
<tr>
<th>Overall Cash Pool Component</th>
<th>Target Allocation</th>
<th>Target Amount/Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pooled Cash Fund</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Liquidity Pool</td>
<td>The greater of (1) 45 days of operating cash or (2) the minimum daily liquidity to support 5 days of maximum commercial paper maturities</td>
<td>30-60 days of operating cash</td>
</tr>
<tr>
<td>Liquidity Reserve Pool</td>
<td></td>
<td>30 days of operating cash(^{(1)})</td>
</tr>
<tr>
<td>Endowment Trusts</td>
<td></td>
<td>Overall cash pool amounts in excess of the Pooled Cash Fund targeted amount.</td>
</tr>
<tr>
<td>Endowment Trusts</td>
<td>Not applicable</td>
<td></td>
</tr>
</tbody>
</table>

1. Up to $75 million of this amount may be represented by a bank line of credit or its equivalent. Any Liquidity Reserve Pool target amount for which the bank line of credit would substitute would count towards satisfying the PCF minimum amount.
Overall Cash Pool Investment Structure

- **Liquidity Pool** (i.e. check book)
  - The primary objective is to provide a liquid source of funds to meet the University’s daily cash requirements.
  - A secondary objective is to yield a competitive investment return while bearing minimal principal risk.
  - Current target balance is 30 – 60 days of operating cash.

- **Liquidity Reserve Pool** (i.e. backup liquidity fund)
  - The primary objective is to provide a source of funds in the event the Liquidity Pool is insufficient to meet the University’s cash needs.
  - A secondary objective is to earn a higher investment return than the Liquidity Pool.
  - Current target balance is 30 days of operating cash.

- **Endowment Trusts** (i.e. liquidity not required for daily operations)
  - Operating cash in excess of 60 days of operating cash invested on a long-term to indefinite basis with other Institutional Funds in the CIF.
Liquidity Pool

- Objectives:
  - Provide a liquid source of funds to meet the University’s daily cash requirements.
  - A secondary objective is to yield a competitive investment return while bearing minimal principal risk.

- Amount invested at 6/30/15: $276 million

- Amounts invested vary with MSU cash flows – ranged from $230 million to $460 million in fiscal year 2015

- Payden & Rygel is the investment manager
Liquidity Reserve Pool

- Objectives
  - Provides a source of funds in the event the Liquidity Pool is insufficient to meet the University’s operating cash needs.
  - A secondary objective is to earn a higher investment return than the Liquidity Pool.

- Amount invested at 6/30/15: $80 million (balance augmented by a $75 million operating line of credit implemented 10/1/13)

- Wells Capital and Brandywine are the investment managers
Cash and Investments Overview

Operating Cash Liquidity Projection

Note 1. Tuition payments August, December and May

Note 2. Liquidity Pool balance was increased 8/2011 to provide safety cushion due to uncertainties in the financial markets related to the Federal debt ceiling debate

Note 3. Liquidity balance was higher in FY12 and FY13 due to the the spring financial aid receipt being prior to December 31, and the related disbursement to students the first week of January

Note 4. Projection includes a $120M decrease in cash reserves for capital projects. All other programmatic initiatives and capital funding currently being considered over this period will be funded by projected incremental revenues

$420M

$210M
Endowment Trusts

- **Objective**
  - Provide higher long-term investment return for “base” operating cash
    - Base operating cash is
      - the amount in excess of the Liquidity Pool and Liquidity Reserve Pool not expected to be needed for day-to-day operations
      - comprised of numerous departmental working capital balances; unexpended restricted gift and grant balances; committed reserves for self-insurance and Plant expansion, replacement and maintenance

- **Amount invested at 6/30/15:** $1.2 billion

- **Invested in MSU’s Common Investment Fund**
## Operating Cash Pool Returns

<table>
<thead>
<tr>
<th>Overall Cash Pool Components</th>
<th>Net Returns through 6/30/2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>[Liquidity Pool (Payden &amp; Rygel only)]</td>
<td>For the year</td>
</tr>
<tr>
<td>Benchmark: Bank of America Merrill Lynch 1-3 yr Treasury Index</td>
<td>0.9%</td>
</tr>
<tr>
<td>Benchmark: Barclays Aggregate Bond Index</td>
<td>1.9%</td>
</tr>
<tr>
<td>Endowment Trusts*</td>
<td>3.5%</td>
</tr>
</tbody>
</table>

| Benchmark: CIF Policy                              | 0.8%         | 9.5%                  | 9.5%                 | 5.9%                |
Outcomes of Investing Operating Cash in CIF

- CIF excess earnings over the LP and LRP have been significant and have contributed meaningfully to the General Fund budget and infrastructure renovation funding.
- Pro forma CIF additional annual investment income (based on average annual 10 year LP, LRP and CIF returns and balances as of 6/30/15) approximate $56M
  - LP (7.3% - 2.7% = 4.6% x $1.2B) or ~ $53M
  - LRP (7.3% - 3.7% = 3.6% x $80M) or ~ $3M
  - Alternatively, a pro forma withdrawal of $100M of Liquidity Pool cash from the CIF reduces annual total investment income by $3.6M
- No operating cash principal has ever been withdrawn from the CIF including during the 2008-2009 downturn since the current operating cash investment structure was implemented 1/1/98.
Objectives:
1. achieve a total rate of return to cover spending policy distribution to endowment funds and still provide a modest increase in the inflation-adjusted unit value, and
2. achieve the desired return while assuming only moderate risk.

Amount invested: $2.4 billion (includes $1.2 billion of operating cash in excess of combined Liquidity Pool and Liquidity Reserve Pool amount)

Cambridge Associates is the investment consultant
Cash and Investments Overview

Investment Oversight

- Board of Trustees
- Finance Committee
- Investment Advisory Subcommittee
- IFM
- Cambridge Associates
• Monitor and review Cambridge Associates’ reports, the performance of the investment managers, and the status of the University’s investment portfolios;
• Serve as a liaison for interim communication among the Board, the Investment Advisory Subcommittee, the investment consultant, and the investment managers;
• Maintain communications among the Investment Advisory Subcommittee, the investment consultant, and the investment managers;
• Make recommendations concerning investment policies, structure, objectives and selection of investment managers;
• Rebalance the portfolio;
• Report significant declines in market values to the Investment Advisory Subcommittee
# Common Investment Fund

## Asset Allocation

<table>
<thead>
<tr>
<th>Major Asset Class*</th>
<th>Target</th>
<th>Range</th>
<th>Rationale*</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. Equity</td>
<td>16.0%</td>
<td>11.0%-27%</td>
<td>Maximize real returns</td>
</tr>
<tr>
<td>Developed Global ex U.S.</td>
<td>10.0%</td>
<td>8.0% - 20%</td>
<td>Maximize real returns &amp; diversification</td>
</tr>
<tr>
<td>Equity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emerging Markets Equity</td>
<td>8.0%</td>
<td>4.0% - 12.0%</td>
<td>Maximize real returns &amp; diversification</td>
</tr>
<tr>
<td>Real Assets</td>
<td>10.0%</td>
<td>7.5% - 15.0%</td>
<td>Real Asset &amp; diversification</td>
</tr>
<tr>
<td>Private Investments</td>
<td>26%</td>
<td>12% - 32%</td>
<td>Higher returns than equities &amp; diversification</td>
</tr>
<tr>
<td>Hedge Funds</td>
<td>22%</td>
<td>17%-30.0%</td>
<td>Low volatility &amp; moderate correlation with equities</td>
</tr>
<tr>
<td>Fixed Income</td>
<td>8%</td>
<td>3% - 17%</td>
<td>Deflation hedge &amp; diversification</td>
</tr>
</tbody>
</table>
# Cash and Investments Overview

## Common Investment Fund

### Number of Investments

<table>
<thead>
<tr>
<th>Asset Class</th>
<th># of Investments</th>
<th>$M/Mgr</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. Equity</td>
<td>6</td>
<td>$79</td>
</tr>
<tr>
<td>Global ex U.S. Equity - Developed Markets</td>
<td>5</td>
<td>$66</td>
</tr>
<tr>
<td>Emerging Markets Equity</td>
<td>6</td>
<td>$34</td>
</tr>
<tr>
<td>Inflation Hedge (real estate, commodities &amp; natural resources)</td>
<td>43</td>
<td>$2</td>
</tr>
<tr>
<td>Private Investments (distressed, private equity and venture capital)</td>
<td>107</td>
<td>$3</td>
</tr>
<tr>
<td>Marketable Alternatives</td>
<td>48</td>
<td>$15</td>
</tr>
<tr>
<td>Fixed Income</td>
<td>2</td>
<td>$87</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>217</strong></td>
<td></td>
</tr>
</tbody>
</table>
## Common Investment Fund
### Historical Returns

<table>
<thead>
<tr>
<th>MSU CIF</th>
<th>Peer Institution</th>
<th>MSU's Percentile Ranking</th>
<th>Big Ten Mean CPI</th>
</tr>
</thead>
<tbody>
<tr>
<td>6/30/05</td>
<td>15.3%</td>
<td>10.3%</td>
<td>11.3%</td>
</tr>
<tr>
<td>6/30/06</td>
<td>13.9%</td>
<td>12.5%</td>
<td>15.2%</td>
</tr>
<tr>
<td>6/30/07</td>
<td>19.0%</td>
<td>19.6%</td>
<td>21.3%</td>
</tr>
<tr>
<td>6/30/08</td>
<td>1.6%</td>
<td>-4.0%</td>
<td>0.6%</td>
</tr>
<tr>
<td>6/30/09</td>
<td>-17.5%</td>
<td>-18.9%</td>
<td>-20.5%</td>
</tr>
<tr>
<td>6/30/10</td>
<td>11.3%</td>
<td>11.8%</td>
<td>12.2%</td>
</tr>
<tr>
<td>6/30/11</td>
<td>21.3%</td>
<td>22.4%</td>
<td>20.1%</td>
</tr>
<tr>
<td>6/30/12</td>
<td>-3.2%</td>
<td>-1.6%</td>
<td>0.8%</td>
</tr>
<tr>
<td>6/30/13</td>
<td>12.1%</td>
<td>11.6%</td>
<td>11.7%</td>
</tr>
<tr>
<td>6/30/14</td>
<td>17.1%</td>
<td>17.6%</td>
<td>16.5%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>6/30/14 Rank</th>
<th>210th of 806</th>
</tr>
</thead>
<tbody>
<tr>
<td>6/30/15</td>
<td>3.5%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MSU CIF</th>
<th>Peer Institution</th>
<th>MSU's Percentile Ranking</th>
<th>Big Ten Mean CPI</th>
</tr>
</thead>
<tbody>
<tr>
<td>6/30/05</td>
<td>12.5%</td>
<td>7.4%</td>
<td>10.3%</td>
</tr>
<tr>
<td>6/30/06</td>
<td>12.1%</td>
<td>7.3%</td>
<td>11.4%</td>
</tr>
<tr>
<td>6/30/07</td>
<td>11.8%</td>
<td>7.4%</td>
<td>11.1%</td>
</tr>
<tr>
<td>6/30/08</td>
<td>10.2%</td>
<td>5.7%</td>
<td>9.5%</td>
</tr>
<tr>
<td>6/30/09</td>
<td>7.0%</td>
<td>2.2%</td>
<td>6.1%</td>
</tr>
<tr>
<td>6/30/10</td>
<td>7.0%</td>
<td>2.4%</td>
<td>5.0%</td>
</tr>
<tr>
<td>6/30/11</td>
<td>8.5%</td>
<td>5.8%</td>
<td>6.9%</td>
</tr>
<tr>
<td>6/30/12</td>
<td>7.9%</td>
<td>6.4%</td>
<td>7.6%</td>
</tr>
<tr>
<td>6/30/13</td>
<td>8.6%</td>
<td>7.4%</td>
<td>8.3%</td>
</tr>
<tr>
<td>6/30/14</td>
<td>8.6%</td>
<td>7.4%</td>
<td>8.2%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>6/30/14 Rank</th>
<th>57th of 531</th>
</tr>
</thead>
<tbody>
<tr>
<td>6/30/15</td>
<td>7.3%</td>
</tr>
</tbody>
</table>

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(1) Benchmark Composition: 70% MSCI All Country World Index/30% Barclays Capital Aggregate Bond Index
(2) Investment Pools greater than $1 billion since June 30, 2006.
(3) Ranking across reporting categories.
Banking

- IFM serves as the liaison between MSU and its banking relationships.
  - Set up new bank accounts
  - Establish new banking services
  - Administer and maintain users of the bank’s website
  - Facilitate communications between departments and bank personnel
MSU’s Cash Flow Cycle

- MSU has a very predictable cash flow cycle
- Operating cash pool policy changes will reduce the Liquidity Pool balances over the next couple of years
Liquidity Planning and Daily Monitoring

- Need to ensure we have money in MSU’s checkbook
- Provide external investment managers with monthly anticipated cash flows
- Compare projections to actual flows daily
- Investigate any significant differences
Investment Income Projection

- Current projected average annual compound returns:
  - LP 1% - 3%
  - LRP 3% - 6%
  - CIF 7%+

- Investment Income funds $29.3M of the General Fund budget and the balance is credited to MSU’s Infrastructure reserve.

- Estimated Just-in-time maintenance needs over the next 10 years are over $1B.
What is an Endowment?

- An endowment is a non-expendable fund that is invested in perpetuity to preserve the purchasing power of the fund.
- Endowments established at a minimum of $50,000 within 5 years (new minimum effective 7/1/2014)
- Each endowment principal account has an income account
# Endowment Sub-Funds

<table>
<thead>
<tr>
<th>Endowment Type</th>
<th>Principal Account</th>
<th>Income Account</th>
</tr>
</thead>
<tbody>
<tr>
<td>Restricted True Endowment</td>
<td>NX</td>
<td>RT</td>
</tr>
<tr>
<td>Unrestricted True Endowment</td>
<td>NG</td>
<td>DX</td>
</tr>
<tr>
<td>Restricted Funds Functioning</td>
<td>NR</td>
<td>RH</td>
</tr>
<tr>
<td>Unrestricted Funds Functioning</td>
<td>NB</td>
<td>DE</td>
</tr>
<tr>
<td>Restricted Term Endowment</td>
<td>NM</td>
<td>RM</td>
</tr>
<tr>
<td>Unrestricted Term Endowment</td>
<td>NE</td>
<td>DM</td>
</tr>
</tbody>
</table>
Endowment Agreements and Accounting

- Review and approve new endowment agreements
- Establish new endowment accounts
- Monitor accounts for proper transactions
  - No expenditures on principal accounts
  - No revenues on income accounts
- Monitor Endowment principal balances to ensure minimum balance thresholds over 5 year contribution period are achieved
Endowment Spending Distributions

• Part of the investment income is distributed to support the endowed program at MSU with the balance retained to hedge against inflation.

• The current programmatic endowment income distribution percentage (over the long-term) approximates 4.7% of the endowments market value.

• The endowment income distribution percentage is reviewed annually by BOT.
## FY16 Spending Policy Calculation

- **Annual Spending Rate** = 5% of 20 quarter average of CIF unit values

- Annual spending policy rate available at: [http://ifm.msu.edu/](http://ifm.msu.edu/)

### CIF Unit Value Table

<table>
<thead>
<tr>
<th>Quarter</th>
<th>CIF Unit Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>4/1/2010</td>
<td>$6.07398910</td>
</tr>
<tr>
<td>7/1/2010</td>
<td>$5.72836670</td>
</tr>
<tr>
<td>10/1/2010</td>
<td>$6.03600875</td>
</tr>
<tr>
<td>1/1/2011</td>
<td>$6.36414511</td>
</tr>
<tr>
<td>4/1/2011</td>
<td>$6.53958398</td>
</tr>
<tr>
<td>7/1/2011</td>
<td>$6.55912338</td>
</tr>
<tr>
<td>10/1/2011</td>
<td>$5.89086656</td>
</tr>
<tr>
<td>1/1/2012</td>
<td>$5.94146856</td>
</tr>
<tr>
<td>4/1/2012</td>
<td>$6.25306864</td>
</tr>
<tr>
<td>7/1/2012</td>
<td>$6.03421099</td>
</tr>
<tr>
<td>10/1/2012</td>
<td>$6.16289836</td>
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<tr>
<td>1/1/2013</td>
<td>$6.17574102</td>
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<tr>
<td>4/1/2013</td>
<td>$6.38488096</td>
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<td>7/1/2013</td>
<td>$6.31014986</td>
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<td>$6.52717532</td>
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<td>1/1/2014</td>
<td>$6.77256218</td>
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<td>4/1/2014</td>
<td>$6.81707817</td>
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<tr>
<td>7/1/2014</td>
<td>$6.99343200</td>
</tr>
<tr>
<td>10/1/2014</td>
<td>$6.85368085</td>
</tr>
<tr>
<td>1/1/2015</td>
<td>$6.81946672</td>
</tr>
</tbody>
</table>

**Average Unit Value - 20 Qtrs (A)**: $6.36189486

**Spending Rate (B)**: 5.00%

**Spending Rate (per unit):** \((A \times B)\) $0.3181
CIF Unit Purchase/Spending Distribution

• Investment of gifts and operating cash in excess of liquidity needs in CIF
  • Quarterly process

• Spending policy distribution
  • Quarterly distribution to endowment income accounts
  • Spending allowed for current balance plus projected annual distribution
Spending Utilization

- Annual spending utilization review of endowment income accounts
- Goals for endowment spending utilization review
  - To ensure endowment income distributions are being utilized timely
    - Cultivate donor relationships by timely usage of existing endowments revenues
    - Avoid audit issues regarding timely spending
Current criteria:

- **Criteria 1:** Endowment spending accounts which spent on average less than 50% of the spending policy distributions over the last three years and had a balance greater than $15,000 as of June 30.
  - Using this criterion, 56 accounts were selected for review at June 30, 2014.
    - 56 accounts resolved via reinvestment or through future spending plans.

- **Criteria 2:** Endowment spending accounts that had no spending over the same three-year period and reinvested 100% of their spending policy distributions into their principal accounts.
  - Using this criterion, 36 accounts were selected for review at June 30, 2014.
    - 36 accounts resolved through future spending plans.
Debt Management - it all begins with capital projects
How will we pay for the project?

• Got any state or federal grants?
• Could we fundraise for it?
• How about paying with cash out of the current budget?
• Should we use the reserves we’ve saved?
• Do we borrow on our future expected revenues?

MSU shall incur debt to fund only capital projects that are consistent with MSU’s mission and strategic priorities...
- From the Capital Projects Debt Policy, enacted June 2006
Who decides to use debt?

The Board of Trustees established the Capital Projects Debt Policy. See it at [http://trustees.msu.edu/policy-manual/01-07-03.html](http://trustees.msu.edu/policy-manual/01-07-03.html)

The Vice President for Finance, in consultation with the Provost, shall be responsible for analysis and recommendations to the President and the Board of Trustees ...  
- From the Capital Projects Debt Policy, enacted June 2006
We have debt, who is managing it?

The Board has delegated authority to:

- Vice President for Finance and Treasurer
- Director of Investments and Financial Management

Debt Oversight

IFM staff are responsible for day-to-day management of debt including:

- Compliance with applicable laws and with contractual covenants
- Payments of principal and interest
- Charging the internal borrowers for their portion of debt service
- Issuing debt as needed
- Reporting to the Board
But we are not alone…

We work with numerous external parties to issue and administer debt:

• municipal financial advisor
• bond counsel
• underwriters
• remarketing agents
• rating agencies
• swap counterparties
• liquidity providers
• trustees
We think about debt capacity

Current Debt - Debt issued as of June 2015

Approved Debt - $163M needed for projects the BOT has authorized but we haven't borrowed for yet

Near Term Planning - Interdisciplinary Science Building needs bridging debt of $78M

Possible Future Debt - $60M per year, amortized over 30 years at 4%

Debt Capacity (no growth)
Credit ratings matter…

<table>
<thead>
<tr>
<th>S&amp;P</th>
<th>Moody’s</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAA</td>
<td>Aaa</td>
</tr>
<tr>
<td>AA+</td>
<td>Aa1</td>
</tr>
<tr>
<td>AA</td>
<td>Aa2</td>
</tr>
<tr>
<td>AA-</td>
<td>Aa3</td>
</tr>
<tr>
<td>A+</td>
<td>A1</td>
</tr>
<tr>
<td>A</td>
<td>A2</td>
</tr>
<tr>
<td>A-</td>
<td>A3</td>
</tr>
</tbody>
</table>

because the better your rating, the lower your interest rate.
Speaking of interest…

We’ll pay over $40M in interest this year
Most of our debt is fixed rate and tax exempt.

- **Fixed Rate via Swaps**
  - $280
  - 25%

- **Variable Rate**
  - $62
  - 5%

- **Fixed Rate**
  - $803
  - 70%

- **Tax Exempt**
  - 93%

- **Taxable**
  - 7%
...but we use various debt structures to diversify risks in the portfolio

<table>
<thead>
<tr>
<th>Debt Series</th>
<th>VRDB</th>
<th>Libor Index</th>
<th>Fixed Rate Bonds</th>
<th>CP</th>
<th>Notes and Bonds Outstanding</th>
<th>Fixed Rate</th>
<th>Fixed Rate via Swap</th>
<th>Variable Rate</th>
<th>Yield Curve Swaps</th>
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<tbody>
<tr>
<td>2000A</td>
<td>X</td>
<td>Note</td>
<td>X</td>
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<td>$77</td>
<td>X</td>
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<td>2003A</td>
<td>X</td>
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<td></td>
<td></td>
<td>48</td>
<td>X</td>
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<td>2005</td>
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<td></td>
<td></td>
<td></td>
<td>54</td>
<td>X</td>
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<td>2007A</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
<td>12</td>
<td>X</td>
<td></td>
<td></td>
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<tr>
<td>2007B</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>25</td>
<td>X</td>
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<tr>
<td>2010A (BABs)</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>205</td>
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<td>2010C</td>
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<td>Tax Exempt Notes</td>
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<td>Taxable Notes</td>
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<td></td>
<td>51</td>
<td>X</td>
<td></td>
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<td>X</td>
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<tr>
<td><strong>Total</strong></td>
<td>$179</td>
<td>$25</td>
<td>$803</td>
<td>$137</td>
<td>$1,144</td>
<td>$803</td>
<td>$280</td>
<td>$62</td>
<td>$446</td>
</tr>
</tbody>
</table>

70%  25%  5%
Risks? What risks?

- No Put Risk
- No Interest Rate Risk
- No Tax Risk
- No Yield Curve Risk

Basis Risk on F/F Swaps
- No Basis Risk
- 67% LIBOR
- 100% LIBOR

Basis Risk on Yield Curve Swaps
- No Basis Risk
- Tax Basis 67% LIBOR
- BMS
- CMS

Callability
- Callable at Market
- Callable at Par
- Non-Callable

Diversification of Liquidity Providers
- BMO Harris
- Northern Trust
- RBC
- Bank of America
- PNC Bank
Having a diverse debt portfolio helps minimize our risk-adjusted cost of capital.

MSU’s All-In Cost of Capital

<table>
<thead>
<tr>
<th>Year</th>
<th>FY2015</th>
<th>FY2014</th>
<th>FY2013</th>
<th>FY2012</th>
<th>FY2011</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3.4%</td>
<td>3.2%</td>
<td>3.1%</td>
<td>3.3%</td>
<td>3.5%</td>
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</table>

Average Cost of Capital for Peers with Endowments > $1B (source NCSE)

<table>
<thead>
<tr>
<th>Year</th>
<th>FY2015</th>
<th>FY2014</th>
<th>FY2013</th>
<th>FY2012</th>
<th>FY2011</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3.8%</td>
<td>4.0%</td>
<td>3.9%</td>
<td>4.0%</td>
<td></td>
</tr>
</tbody>
</table>

Debt Service Coverage

Debt Service to Operations

Favorable
Questions?

- Glen Klein
  - klein@ifm.msu.edu  517-432-4763
- Val Montgomery
  - vally@ifm.msu.edu  517-432-9173
- Lane Adams
  - adams@ifm.msu.edu  517-355-8434