University of Maine at Machias
Core Financial Ratios and Composite Financial Index
FY06 to FY11
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The financial health of the University of Maine at Machias (UMM) can be evaluated through the use of industry benchmarks and ratios. The following ratios and related benchmarks are derived from *Strategic Financial Analysis for Higher Education*, Seventh Edition published by KPMG; Prager, Sealy & Co., LLC; and ATTAIN. This book is widely used in the higher education industry and includes guidance for both private and public institutions. Ratios presented for the University of Maine System (UMS) were obtained from the separately prepared “Core Financial Ratios and Composite Financial Index” report prepared for the UMS.

According to the above publication, there are four fundamental financial questions that need to be addressed. Analysis of four core ratios can help us answer these questions.

- Are resources sufficient and flexible enough to support the mission? - **Primary Reserve Ratio**
- Do operating results indicate the institution is living within available resources? - **Net Operating Revenues Ratio**
- Does asset performance and management support the strategic direction? - **Return on Net Assets**
- Are financial resources, including debt, managed strategically to advance the mission? - **Viability Ratio**

When combined, these four ratios deliver a single measure of UMM’s overall financial health, hereafter referred to as the **Composite Financial Index**.
The **Primary Reserve Ratio** provides a snapshot of financial strength and flexibility by indicating how long the institution could function using its expendable reserves (both unrestricted and restricted, excluding net assets restricted for capital investments) without relying on additional net assets generated by operations. This ratio is calculated as follows:

\[
\frac{\text{Expendable Net Assets}^{*}}{\text{Total Expenses}}
\]

* Excluding net assets restricted for capital investments

- A ratio of .40 (provides about 5 months) or better is advisable to give institutions the flexibility to manage the enterprise.

- Key items that can impact the primary reserve ratio include principal payments on debt, use of unrestricted net assets to fund capital construction projects, operating results (operating revenues – operating expenses + net nonoperating revenues + depreciation), endowment returns, and total operating expenses.
Components:

<table>
<thead>
<tr>
<th></th>
<th>FY06</th>
<th>FY07</th>
<th>FY08</th>
<th>FY09</th>
<th>FY10</th>
<th>FY11</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expendable net assets</td>
<td>$552</td>
<td>$260</td>
<td>($256)</td>
<td>($451)</td>
<td>($153)</td>
<td>$44</td>
</tr>
<tr>
<td>Expenses</td>
<td>$11,051</td>
<td>$11,636</td>
<td>$12,562</td>
<td>$12,676</td>
<td>$12,744</td>
<td>$13,322</td>
</tr>
</tbody>
</table>

- At the high point in FY06, UMM’s reserves only provided about ½ month of expenses.
- From FY08 to FY10, UMM’s total expendable net assets had a deficit balance; thus, UMM was completely dependent on the generation of revenue to cover its expenses.
- During FY07 through FY09, UMM’s expendable net assets steadily declined as operating expenses steadily increased.
- In FY10, UMM significantly reduced the deficit in its expendable net assets as unrestricted operating revenues increased and unrestricted operating expenses decreased. The increase in total unrestricted and restricted operating expenses is attributable to increased grant activity.
- The FY11 endowment return was more than double the FY10 return and was the primary contributor to the increase in UMM’s total expendable net assets. UMM’s unrestricted expendable net assets were negative at the end of the past six fiscal years.
University of Maine at Machias
Core Financial Ratios and Composite Financial Index
FY06 to FY11

The **Net Operating Revenues Ratio** is a measure of operating results and answers the question, “Do operating results indicate that the University is living within available resources?” Operating results either increase or decrease net assets and, thereby, impact the other three core ratios: Primary Reserve, Return on Net Assets, and Viability. This ratio is calculated as follows:

\[
\text{Net Operating Revenues Ratio} = \frac{\text{Operating Income (Loss) plus Net Non-Operating Revenues}}{\text{Operating Revenues plus Non-Operating Revenues}}
\]

- A target of at least 2% to 4% is a goal over an extended time period, although fluctuations from year to year are likely. A key consideration for institutions establishing a benchmark for this ratio would be the anticipated growth in total expenses.

- The authors of *Strategic Financial Analysis for Higher Education*, note the following:

  The primary reason institutions need to generate some level of surplus over long periods of time is because operations are one of the sources of liquidity and resources for reinvestment in institutional initiatives. Conversely, generating a known deficit in the short term may well be the best strategic decision a board makes, if it is an affordable investment in its future and the deficit will clearly be eliminated through specific actions.
Components:

<table>
<thead>
<tr>
<th>$ in thousands</th>
<th>FY06</th>
<th>FY07</th>
<th>FY08</th>
<th>FY09</th>
<th>FY10</th>
<th>FY11</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating income (loss) plus net non-operating revenues</td>
<td>($237)</td>
<td>($635)</td>
<td>($596)</td>
<td>($358)</td>
<td>($30)</td>
<td>($429)</td>
</tr>
<tr>
<td>Operating revenues plus non-operating revenues</td>
<td>$10,813</td>
<td>$11,001</td>
<td>$11,966</td>
<td>$12,318</td>
<td>$12,714</td>
<td>$12,893</td>
</tr>
</tbody>
</table>

• UMM’s ratio has been negative for each of the past six years with the lowest point occurring in FY07 when operating revenues declined 1.4%, nonoperating revenues increased 5.6%, and operating expenses rose 5.1%.

• Although negative from FY07 to FY10, UMM’s ratio steadily improved with the most significant improvements occurring in FY09 and FY10:
  
  ➢ In FY09, $212,000 in federal stimulus monies were used to pay compensation and benefits that would otherwise have been paid from unrestricted operations. A 6.8% increase in operating revenues combined with only a 1.1% increase in operating expenses also contributed to the improvement in the ratio.

  ➢ In FY10, $158,000 in federal stimulus monies were used to pay compensation and benefits that would otherwise have been paid from unrestricted operations or eliminated. Also, unrestricted operating revenues increased 3.9% and unrestricted operating expenses decreased .8%.

• UMM’s ratio decreased significantly in FY11 as a 4.5% increase in expenses outpaced a 1.4% or $179,000 net increase in revenues. Grants and contracts revenue increased $625,000 while gross tuition and fees and educational sales and services revenues decreased.
The **Return on Net Assets Ratio** measures asset performance and management. It determines whether an institution is financially better off than in the previous year by measuring total economic return. It is based on the level and change in total net assets. An improving trend in this ratio indicates that the institution is increasing its net assets and is likely to be able to set aside financial resources to strengthen its future financial flexibility. This ratio is calculated as follows:

\[
\text{Change in Net Assets} \div \text{Total Beginning of the Year Net Assets}
\]

- The nominal rate of return on net assets is the actual return calculated/unadjusted for inflation or other factors. The real rate of return adjusts the nominal rate for the effects of inflation using the Higher Education Price Index.

- Items that may impact this ratio include those that impact the net operating revenues ratio, along with endowment returns, capital appropriations, capital gifts and grants, capital transfers, and endowment gifts.

- Components:

<table>
<thead>
<tr>
<th></th>
<th>FY06</th>
<th>FY07</th>
<th>FY08</th>
<th>FY09</th>
<th>FY10</th>
<th>FY11</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change in total net assets</td>
<td>$1,770</td>
<td>($338)</td>
<td>($117)</td>
<td>$994</td>
<td>$239</td>
<td>$26</td>
</tr>
<tr>
<td>Total net assets (beginning of year)</td>
<td>$7,530</td>
<td>$9,301</td>
<td>$8,962</td>
<td>$8,846</td>
<td>$9,840</td>
<td>$10,079</td>
</tr>
</tbody>
</table>
Over the past six years, UMM has seen large fluctuations in its return on net assets ratio:

- In each of the past six years, UMM has had a loss from operations. These losses have been as great as -$635,000 in FY07 and as low as -$30,000 in FY10. The FY11 loss was -$429,000.

- The positive return on net assets in FY06 is attributable to a $1.5 million capital transfer from the System Office to fund deficit balances in both E&G and Auxiliary reserves. Without this transfer, the real rate of return would have been -2.1%.

- The positive return in FY09 is attributable to an $892,000 capital transfer made from the System Office as match money on a construction project funded with State of Maine capital appropriation (State bond) monies. Without this transfer, the real rate of return would have been -1.09%.

- The positive return in FY10 is attributable to a significantly reduced loss from operations, positive endowment returns, and a $188,000 capital transfer from the System Office to fund the Reynolds Gym boiler project. Without the capital transfer, the real rate of return would have been -.38%.

- State of Maine capital appropriation revenue and significantly increased endowment returns offset the $429,000 loss from operations and enabled UMM to recognize a small increase in net assets for FY11.
The Viability Ratio measures expendable resources that are available to cover debt obligations (e.g., capital leases, notes payable, and bonds payable) and generally is regarded as governing an institution’s ability to assume new debt. This ratio is calculated as follows:

\[
\text{Expendable Net Assets}^* / \text{Long-Term Debt}
\]

* Excluding net assets restricted for capital investments

- A ratio of 1.00 or greater indicates sufficient resources to satisfy debt obligations.
- The authors of *Strategic Financial Analysis for Higher Education*, note the following:
  
  There is no absolute threshold that will indicate whether the institution is no longer financially viable. However, the Viability Ratio, along with the Primary Reserve Ratio discussed earlier, can help define an institution’s “margin for error”. As the Viability Ratio’s value falls below 1:1, an institution’s ability to respond . . . , to adverse conditions from internal resources diminishes, as does its ability to attract capital from external sources and its flexibility to fund new objectives.

- Like the primary reserve ratio, the viability ratio is impacted by such items as principal payments on debt, use of unrestricted net assets to fund capital construction projects, operating results (operating revenues – operating expenses + net nonoperating
revenues + depreciation) and endowment returns. Issuance of new debt would also impact the ratio.

- Components:

<table>
<thead>
<tr>
<th></th>
<th>FY06</th>
<th>FY07</th>
<th>FY08</th>
<th>FY09</th>
<th>FY10</th>
<th>FY11</th>
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<td>$552</td>
<td>$260</td>
<td>($256)</td>
<td>($451)</td>
<td>($153)</td>
<td>$44</td>
</tr>
<tr>
<td>Long-term debt</td>
<td>$5,481</td>
<td>$5,309</td>
<td>$5,806</td>
<td>$6,093</td>
<td>$5,924</td>
<td>$5,729</td>
</tr>
</tbody>
</table>

- For the past six years, UMM has basically had no viability with ratios that were either negative or barely above zero.

- Operating losses have had an impact on the ratio for each of the six years.

- Another factor impacting the FY08 and FY09 ratios are total advances of $1.1 million on the working capital loan made to UMM by the System Office to cover UMM’s FY07 and FY08 unrestricted net asset deficits.

- In FY10, outstanding debt decreased as UMM made annual debt service payments on outstanding bonds payable and capital lease obligations. Repayment of the working capital loan begins in FY13.

- An increase in expendable net assets (see earlier discussion of the primary reserve ratio) combined with a reduction in debt, due to payment of annual debt service, produced a positive viability ratio for FY11. UMM last experienced a positive viability ratio in FY07. Despite this progress, UMM’s ratio is still far below the industry benchmark.
The **Composite Financial Index (CFI)** creates one overall financial measurement of the institution’s health based on the four core ratios: primary reserve ratio, net operating revenues ratio, return on net assets ratio, and viability ratio. By blending these four key measures of financial health into a single number, a more balanced view of the state of the institution’s finances is possible because a weakness in one measure may be offset by the strength of another measure.

Because the CFI only measures the financial component of an institution’s well-being, it must be analyzed in context with other associated activities and plans to achieve an assessment of the overall health of the institution. A high CFI is not necessarily indicative of a successful institution, although a low CFI generally is indicative of additional challenges. When considered in the context of achievement of mission, a very high CFI with little achievement of mission may indicate a failing institution.

The CFI is calculated by:

1. Determining the value of each ratio;
2. Converting the value of each ratio to strength factors along a common scale;
3. Multiplying the strength factors by specific weighting factors; and
4. Totaling the resulting four numbers to reach the single CFI score.

- These scores do not have absolute precision. They are indicators of ranges of financial health that can be indicators of overall institutional well-being, when combined with nonfinancial indicators. This would be consistent with the fact that there are a large number of variables that can impact an institution and influence the results of these ratios. However, the ranges do have enough precision to be indicators of the
in institutional financial health, and the CFI as well as its trend line, over a period of time, can be the single most important measure of the financial health for the institution.

- A score of 1.0 indicates very little financial health; 3, the low benchmark, represents a relatively stronger financial position; and 10, the top range of the scale.

- The positive CFI scores in FY06 and FY09 are attributable to UMM’s high ratios for return on net assets in those two years. As previously discussed, the System Office made large capital transfers to UMM in FY06 and FY09.

Performance of the CFI score can be evaluated on a scale of -4 to 10 as shown on the following page.
The overlapping arrows represent the ranges of measurement that an institution may find useful in assessing itself.

<table>
<thead>
<tr>
<th>Scoring scale:</th>
<th>-4</th>
<th>-3</th>
<th>-2</th>
<th>-1</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
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<th>7</th>
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<tbody>
<tr>
<td>Consider whether financial exigency is appropriate</td>
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<td>With likely large liquidity &amp; debt compliance issues, consider structured programs to conserve cash</td>
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<tr>
<td>Assess debt and Department of Education compliance remediation issues</td>
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<tr>
<td>Consider substantive programmatic adjustments</td>
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<td>Re-engineer the institution</td>
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<td>Direct Institutional resources to allow transformation</td>
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<td>Focus resources to compete in future state</td>
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<td>Allow experimentation with new initiatives</td>
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<tr>
<td>Deploy resources to achieve a robust mission</td>
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Fiscal year | CFI | 2007 | 2011 | 2010 |
-------------|-----|------|------|------|
               | -.7 | -.4  | .2   |

We have overlaid the scoring scale with UMM's lowest (FY07) and most recent (FY10 and FY11) scores to assist in evaluating UMM's performance. UMM's FY11 CFI is nearing the FY07 low point.
The strength factors that were used in calculating the CFI can be mapped on a diamond to show the shape of an institution’s financial health compared to the industry benchmarks. This **Graphic Financial Profile** can assist management in determining whether a weakness in one ratio is offset by strength in another ratio.

**Illustrated below are two examples** of a Graphic Financial Profile (GFP): one based on strength factors valued at the low industry benchmark of 3 and one with strength factors valued above and below the benchmark:

- **Example of a GFP Based on Strength Factors Valued at the Low Benchmark** 
  Scale of -4 to 10

  ![Example of a GFP Based on Strength Factors Valued at the Low Benchmark](image)

- **Example of a GFP Based on Strength Factors at Varying Values** 
  Scale of -4 to 10

  ![Example of a GFP Based on Strength Factors at Varying Values](image)

- The center point of the graphic financial profiles is -4 as illustrated in the Seventh Edition of *Strategic Financial Analysis for Higher Education*. An actual value that falls below -4, defaults to a value of -4 and is plotted at the center of the graph.

- The maximum value in the graph is 10; thus, an actual value greater than 10 is not plotted beyond the outer diamond.

- The smaller, heavily lined diamond represents the low industry benchmark of 3.

- The actual values of the institution’s ratio strength factors are plotted and shaded to show how the institution’s health compares with the low (3) and high (10) benchmarks.
The following graphs contain UMM’s Graphic Financial Profiles for FY06 thru FY11. From these profiles we can see that UMM has been and remains undercapitalized; thus, they have little flexibility to make organizational changes, address deferred maintenance, etc.

As noted earlier, the high return on net assets for FY06 was attributable to a $1.5 million capital transfer from the System Office.
In FY07, UMM’s negative loss from operations defaulted to the center of the graph. Other changes in net assets were unable to completely offset the loss from operations.
All of UMM’s strength factors were negative in FY08, as UMM experienced another large operating loss and negative endowment returns.
As noted earlier, the high return on net assets for FY09 was attributable to a significant capital transfer from the System Office. Negative operating returns again defaulted to the center of the graph.

Graphic Financial Profile - FY09
UMM
Strength Factors Plotted on a Scale of -4 to 10
CFI Score of .6
As noted earlier, the high return on net assets for FY10 was primarily attributable to a capital transfer from the System Office. The strength factors for the two capitalization ratios remained negative and slipped to a five year low.

![Graphic Financial Profile - FY10](image-url)

**UMM**

**Strength Factors Plotted on a Scale of -4 to 10**

**CFI Score of .2**
For four of the past six years, UMM’s strength factor for its net operating revenues ratio has defaulted to the lowest plotted score of -4.

Graphic Financial Profile - FY11

UMM
Strength Factors Plotted on a Scale of -4 to 10
CFI Score of -.4