Office of Thrift Supervision

List of Charts and Graphs

- Treasury Rates 1
- Libor/Swap Rates 2
- Mortgage TBA-Pricing & Risk 2
- Median Pre- and Post NPV Capital Ratios 3
- Median Sensitivity Measures 3
- Median Effective Durations 4
- Thrifts with NPV Capital Ratios Under 4 percent 4
- TB-13a Matrix 5
- Aggregate & Regional Data 6–11

For further information, please contact:
Scott Ciardi, Director
Risk Modeling & Analysis
(202) 906-6960

Declining Interest Rates Trigger Significant Changes to Pre-Shock Capital and Sensitivity

During the fourth quarter 2008, Treasury rates declined considerably at all maturities and the yield curve flattened modestly, with intermediate and long-term rates dropping more than short-term rates (see Exhibit - 1.) The three-month and one-year rates fell by 81 basis points (bps) and 141 bps, to .11% and .37%, respectively. The two-year, five-year and ten-year rates declined by 124 bps, 143 bps, and 160 bps to .37%, .76% and 1.55%, respectively. The 30-year rate dropped from 4.31% to 2.69%, a decline of 162 bps. The spread between the two-year and ten-year rates, a common measure of yield curve steepness, dropped from 185 bps to 149 bps, a decline of 36 bps.

The fourth quarter changes to the Libor/Swap curve were even more dramatic, especially at the short-end of the curve (see Exhibit - 2.) The one-month and three-month Libor rates declined by an incredible 349 bps and 262 bps, respectively; and the two-year and ten-year swap rates declined by 190 bps and...
Declining Interest Rates Trigger Significant Changes to Pre-Shock Capital and Sensitivity (continued)

188 bps, respectively. The spread between the two-year and ten-year swap rates increased slightly from 101 bps to 103 bps.

The overall decline in interest rates was driven largely by three separate reductions in the Fed Funds rate that occurred during the fourth quarter. On October 8, 2008, the Federal Reserve reduced the target Fed Funds rate by 50 bps to 1.50%. Three weeks later, it dropped the rate another 50 bps, to 1.00%. The last reduction occurred on December 16, 2008, when the target rate was reduced to a range between 0 and .25%. These actions, coupled with the Federal Reserve’s November 2008 announcement of a plan to purchase up to $500 billion (subsequently increased to $1.25 trillion in March 2009) of agency mortgage-backed securities as part of an effort to jump start the housing market, prompted a steep decline in mortgage rates. On December 31, 2008, the Fannie Mae 60-day commitment rate on a 30-year, fixed rate mortgage was 4.49%, a decline of 135 bps from the September 30, 2008 rate of 5.84%.

As expected, the steep decline in mortgage rates significantly increased the value of fixed rate mortgages while reducing weighted average lives and effective durations. As noted in Exhibit 3, the price of a FNMA 5.00 increased from 97.28 on September 30, 2008, to 102.28 on December 31, 2008. Over the same period, the effec-

<table>
<thead>
<tr>
<th>Coupon (%)</th>
<th>WAC (%)</th>
<th>WAM (Months)</th>
<th>Price</th>
<th>10yr Avg CPR (%)</th>
<th>1yr Avg CPR (%)</th>
<th>Yield (%)</th>
<th>WAL (Years)</th>
<th>Z-Spread (BP)</th>
<th>OAS (BP)</th>
<th>Option Cost(BP)</th>
<th>Eff. Duration (Years)</th>
<th>Eff. Convexity</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.50</td>
<td>5.12</td>
<td>349</td>
<td>101.56</td>
<td>33.86</td>
<td>54.30</td>
<td>3.59</td>
<td>2.09</td>
<td>233</td>
<td>162</td>
<td>70.83</td>
<td>2.41</td>
<td>-327.56</td>
</tr>
<tr>
<td>5.00</td>
<td>5.58</td>
<td>353</td>
<td>102.28</td>
<td>38.14</td>
<td>55.41</td>
<td>3.45</td>
<td>1.75</td>
<td>237</td>
<td>191</td>
<td>55.97</td>
<td>1.76</td>
<td>-187.04</td>
</tr>
<tr>
<td>5.50</td>
<td>6.02</td>
<td>352</td>
<td>102.69</td>
<td>41.50</td>
<td>56.36</td>
<td>3.53</td>
<td>1.59</td>
<td>251</td>
<td>210</td>
<td>40.89</td>
<td>1.44</td>
<td>-77.75</td>
</tr>
<tr>
<td>6.00</td>
<td>6.54</td>
<td>353</td>
<td>103.09</td>
<td>44.88</td>
<td>56.05</td>
<td>3.68</td>
<td>1.50</td>
<td>270</td>
<td>243</td>
<td>27.20</td>
<td>1.27</td>
<td>-53.32</td>
</tr>
<tr>
<td>6.50</td>
<td>7.03</td>
<td>347</td>
<td>103.69</td>
<td>46.83</td>
<td>56.44</td>
<td>3.64</td>
<td>1.41</td>
<td>268</td>
<td>254</td>
<td>14.77</td>
<td>1.14</td>
<td>-62.18</td>
</tr>
<tr>
<td>7.00</td>
<td>7.60</td>
<td>349</td>
<td>104.63</td>
<td>48.81</td>
<td>56.44</td>
<td>3.33</td>
<td>1.34</td>
<td>241</td>
<td>236</td>
<td>5.36</td>
<td>1.06</td>
<td>-71.98</td>
</tr>
<tr>
<td>7.50</td>
<td>8.11</td>
<td>280</td>
<td>104.66</td>
<td>48.68</td>
<td>45.10</td>
<td>4.73</td>
<td>1.84</td>
<td>354</td>
<td>354</td>
<td>10.36</td>
<td>1.36</td>
<td>-83.86</td>
</tr>
<tr>
<td>8.00</td>
<td>8.58</td>
<td>261</td>
<td>104.78</td>
<td>39.91</td>
<td>45.25</td>
<td>5.08</td>
<td>1.78</td>
<td>404</td>
<td>398</td>
<td>6.47</td>
<td>1.30</td>
<td>-80.41</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Coupon (%)</th>
<th>WAC (%)</th>
<th>WAM (Months)</th>
<th>Price</th>
<th>10yr Avg CPR (%)</th>
<th>1yr Avg CPR (%)</th>
<th>Yield (%)</th>
<th>WAL (Years)</th>
<th>Z-Spread (BP)</th>
<th>OAS (BP)</th>
<th>Option Cost(BP)</th>
<th>Eff. Duration (Years)</th>
<th>Eff. Convexity</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.50</td>
<td>5.12</td>
<td>352</td>
<td>94.00</td>
<td>16.22</td>
<td>18.09</td>
<td>6.06</td>
<td>6.54</td>
<td>206</td>
<td>178</td>
<td>27.56</td>
<td>5.79</td>
<td>245.71</td>
</tr>
<tr>
<td>5.00</td>
<td>5.58</td>
<td>355</td>
<td>97.28</td>
<td>20.43</td>
<td>30.64</td>
<td>5.90</td>
<td>5.29</td>
<td>212</td>
<td>174</td>
<td>37.97</td>
<td>4.86</td>
<td>-102.19</td>
</tr>
<tr>
<td>5.50</td>
<td>6.02</td>
<td>356</td>
<td>99.56</td>
<td>25.49</td>
<td>46.42</td>
<td>5.75</td>
<td>3.73</td>
<td>236</td>
<td>181</td>
<td>57.61</td>
<td>3.92</td>
<td>-118.27</td>
</tr>
<tr>
<td>6.00</td>
<td>6.54</td>
<td>354</td>
<td>101.19</td>
<td>30.25</td>
<td>54.47</td>
<td>5.43</td>
<td>2.63</td>
<td>254</td>
<td>182</td>
<td>72.16</td>
<td>2.76</td>
<td>-69.71</td>
</tr>
<tr>
<td>6.50</td>
<td>7.06</td>
<td>348</td>
<td>102.50</td>
<td>34.16</td>
<td>56.05</td>
<td>4.95</td>
<td>2.03</td>
<td>229</td>
<td>170</td>
<td>59.83</td>
<td>1.92</td>
<td>-63.83</td>
</tr>
<tr>
<td>7.00</td>
<td>7.62</td>
<td>349</td>
<td>104.47</td>
<td>38.37</td>
<td>56.29</td>
<td>3.85</td>
<td>1.79</td>
<td>222</td>
<td>175</td>
<td>27.37</td>
<td>1.43</td>
<td>-39.49</td>
</tr>
<tr>
<td>7.50</td>
<td>8.11</td>
<td>283</td>
<td>105.41</td>
<td>30.63</td>
<td>43.24</td>
<td>4.80</td>
<td>2.36</td>
<td>204</td>
<td>175</td>
<td>26.71</td>
<td>1.74</td>
<td>-20.59</td>
</tr>
<tr>
<td>8.00</td>
<td>8.58</td>
<td>264</td>
<td>105.25</td>
<td>32.74</td>
<td>43.82</td>
<td>5.20</td>
<td>2.17</td>
<td>254</td>
<td>233</td>
<td>21.64</td>
<td>1.71</td>
<td>-17.88</td>
</tr>
</tbody>
</table>
Declining Interest Rates Trigger Significant Changes to Pre-Shock Capital and Sensitivity (continued)

tive duration of the same security dropped from 4.86 to 1.76 and the weighted average life declined from 5.2 to 1.75.

Because the typical thrift tends to have a high concentration of long-term, fixed rate mortgages and short-term borrowings, falling interest rates usually have a beneficial impact on interest rate risk. Pre-shock NPV capital ratios typically increase due to a rise in asset values and sensitivity measures usually decrease because of faster projected prepayment speeds on fixed rate mortgages. However, the changes that occurred during the fourth quarter had an unexpected effect on the industry’s IRR profile.

During the fourth quarter, 629 out of the 745 thrifts that filed Schedule CMR actually had a decrease in their pre-shock NPV capital ratio. The median pre-shock NPV capital ratio for the industry dropped from 12.71% to 11.35%, a decrease of 136 bps. Similarly, the median post-shock NPV capital ratio fell from 10.94% to 10.40%, a decrease of 54 bps (see Exhibit - 4.)

This unexpected result can be attributed to several factors. First, the NPV Model discounts most assets using the Treasury curve, whereas most liabilities are discounted using the Libor/Swap curve. Because the Libor/Swap rates declined much more than Treasury rates, the valuation gains on liabilities outpaced the valuation gains on assets, even after factoring in the shorter average life of most liabilities. Additionally, single-family mortgages possess “negative convexity” which serves to offset valuation gains that would typically be afforded to instruments without embedded prepayment options in a falling rate environment. (Keep in mind, an increase in the value of a liability has a negative impact on capital.) Thrifts with high concentrations of structured FHLB advances were particularly hard hit. In some cases, the value of these instruments rose by nine or ten percent. Second, the option-adjusted spreads on single-family mortgages increased considerably during the fourth quarter, indicating an increase in the perceived credit risk of such instruments. All things being equal, an increase in the OAS of a mortgage will decrease price. Third, deposit intangible values, which are treated as an asset in the NPV Model, declined considerably between the third and fourth quarter. In the current low rate environment, deposit intangible values tend to be low because the opportunity to pay below market rates is somewhat limited and non-interest costs tend to put a floor on the degree to which monthly cash outflows can fall. The large quarter-to-quarter change was even more pronounced because deposit intangibles are one of the few assets in NPV Model that are discounted using Libor rates. Lastly, the declining value of self-reported CMOs and trust preferred securities hit some firms particularly hard. Due to deteriorating credit quality, the aggregate value of these instruments declined considerably and further eroded pre-shock NPV capital levels.

Exhibit - 4

Exhibit - 5
As expected, the median sensitivity measure for the industry dropped considerably during the fourth quarter due to the dramatic rise in projected prepayment speeds on single-family mortgages (see Exhibit - 5.) This quarter, the median sensitivity measure for the industry was 81 bps, down from 151 bps the previous quarter, a decline of 46%. Further, the sensitivity measure decreased for 578 of 756 institutions that submitted Schedule CMR, or approximately 90% of the industry.

The median effective duration of assets decreased 53 bps between September and December, falling from 1.83 to 1.30. The median effective duration of liabilities increased slightly from 1.38 to 1.4; and the median duration gap for the industry slipped from .45 to –.10, indicating that a majority of the industry is now more exposed to a downward shift in interest rates (see Exhibit - 6.) The topic of negative duration gap was discussed in the third quarter 2002 edition of the Quarterly Review of Interest Rate Risk.

From a supervisory perspective, the steep decline in pre-shock NPV capital and the increase in the number of institutions with post-shock NPV capital ratios below four percent is cause for concern. However, the overall interest rate risk profile of the industry is still good as the dramatic decrease in sensitivity this quarter helped offset the negative impact of the sharp decline in pre-shock NPV capital. Additionally, capital ratios, as measured by the NPV Model, are still relatively high. From a TB-13a perspective, the number of institutions with “significant” and “high” levels of interest rate risk actually declined from 40 in September to 23 in December (see Exhibit - 7.) Most notable is the change in the number of thrifts with sensitivity measures in excess of 200 bps. In September, 283 institutions had a sensitivity measure above 200 bps, but only 14 had such a measure in December.
200 bps, or approximately 37% of the industry. In December, the number fell to 92, or 12% of the industry.

As in the past, however, it is important to point out that our sensitivity and pre-shock NPV capital results are misleading for some institutions. Undoubtedly, prepayment activity has picked up considerably for prime, conforming loans. However, anecdotal evidence suggests that non-conforming borrowers are still encountering significant difficulty in their attempts to refinance.

As of December 31, 2008, the 30-year jumbo retail mortgage rate was 7.01%, down from 7.21% on September 30, 2008, but still well above the conforming retail mortgage rate of 5.26% at year-end. Accordingly, the prepay incentive on jumbo mortgages is not nearly as strong as that for conventional mortgages. In addition, many sub-prime and Alt-A borrowers may not be able to meet the stricter underwriting standards now in place at many institutions.

Because the NPV Model treats all single-family mortgage loans as prime, conforming exposures, the sensitivity measure at institutions with a considerable amount of non-conforming mortgage product may be understated and because the market price of many of these loans are well below par, the pre-shock NPV capital of these institutions may be overstated. As a result, these supervisory results should be viewed cautiously.

- by Scott Ciardi
Appendix A — All Thrifts

Sensitivity Measure Distribution
All Thrifts

Pre-Shock NPV Ratio Distribution
All Thrifts

Post-Shock NPV Distribution
All Thrifts

Asset Duration Distribution
All Thrifts

Liabilities Duration Distribution
All Thrifts

Descriptive Statistics
Median = 81
Mean = 107
Standard Deviation = 85
Skewness = 1.86
Kurtosis = 5.61
Maximum = 95.344
Minimum = 0
Count = 755
Appendix B — Northeast Region

Sensitivity Measure Distribution
Northeast

Descriptive Statistics
Median = 122
Mean = 136
Standard Deviation = 79
Skewness = 0.97
Kurtosis = 0.93
Maximum = 409.924
Minimum = 12.596
Count = 162

Pre-Shock NPV Ratio Distribution
Northeast

Descriptive Statistics
Median = 11.4
Mean = 12.97
Standard Deviation = 5.9
Skewness = 1.92
Kurtosis = 5.93
Maximum = 44.475
Minimum = 2.872
Count = 162

Post-Shock NPV Distribution
Northeast

Descriptive Statistics
Median = 10.12
Mean = 11.67
Standard Deviation = 5.88
Skewness = 1.77
Kurtosis = 5.36
Maximum = 42.088
Minimum = -0.216
Count = 162

Asset Duration Distribution
Northeast

Descriptive Statistics
Median = 1.5
Mean = 1.51
Standard Deviation = 0.52
Skewness = -0.04
Kurtosis = 0.76
Maximum = 2.967
Minimum = -0.183
Count = 162

Liabilities Duration Distribution
Northeast

Descriptive Statistics
Median = 1.52
Mean = 1.55
Standard Deviation = 0.54
Skewness = 2.35
Kurtosis = 13.35
Maximum = 5.144
Minimum = 0.238
Count = 162
Appendix C — Southeast Region

Sensitivity Measure Distribution
Southeast

Descriptive Statistics
- Median = 77
- Mean = 106
- Standard Deviation = 97
- Skewness = 2.14
- Kurtosis = 6.66
- Maximum = 644.488
- Minimum = 0
- Count = 181

Pre-Shock NPV Ratio Distribution
Southeast

Descriptive Statistics
- Median = 11.05
- Mean = 13.4
- Standard Deviation = 9.46
- Skewness = 4.56
- Kurtosis = 30.49
- Maximum = 84.512
- Minimum = -0.233
- Count = 181

Post-Shock NPV Distribution
Southeast

Descriptive Statistics
- Median = 10.16
- Mean = 12.34
- Standard Deviation = 9.49
- Skewness = 4.63
- Kurtosis = 31.46
- Maximum = 84.288
- Minimum = -4.708
- Count = 181

Asset Duration Distribution
Southeast

Descriptive Statistics
- Median = 1.2
- Mean = 1.26
- Standard Deviation = 0.51
- Skewness = 0.99
- Kurtosis = 2.4
- Maximum = 3.684
- Minimum = 0.327
- Count = 181

Liabilities Duration Distribution
Southeast

Descriptive Statistics
- Median = 1.19
- Mean = 1.13
- Standard Deviation = 0.91
- Skewness = -5.48
- Kurtosis = 44
- Maximum = 3.416
- Minimum = -6.478
- Count = 181
Appendix D — Central Region

**Sensitivity Measure Distribution**

<table>
<thead>
<tr>
<th>Basis Points</th>
<th>Percent of Thrifts</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>66</td>
<td>12</td>
</tr>
<tr>
<td>133</td>
<td>12</td>
</tr>
<tr>
<td>200</td>
<td>18</td>
</tr>
<tr>
<td>266</td>
<td>12</td>
</tr>
<tr>
<td>333</td>
<td>6</td>
</tr>
<tr>
<td>400</td>
<td>6</td>
</tr>
<tr>
<td>466</td>
<td>6</td>
</tr>
<tr>
<td>533</td>
<td>18</td>
</tr>
</tbody>
</table>

**Descriptive Statistics**
- Median = 79
- Mean = 104
- Standard Deviation = 86
- Skewness = 2.63
- Kurtosis = 10.1
- Maximum = 633.701
- Minimum = 0
- Count = 187

---

**Pre-Shock NPV Ratio Distribution**

<table>
<thead>
<tr>
<th>NPV Ratio (Percent)</th>
<th>Percent of Thrifts</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>8</td>
<td>11</td>
</tr>
<tr>
<td>11</td>
<td>14</td>
</tr>
<tr>
<td>14</td>
<td>17</td>
</tr>
<tr>
<td>17</td>
<td>20</td>
</tr>
<tr>
<td>20</td>
<td>23</td>
</tr>
<tr>
<td>23</td>
<td>26</td>
</tr>
<tr>
<td>26</td>
<td>29</td>
</tr>
</tbody>
</table>

**Descriptive Statistics**
- Median = 11.75
- Mean = 14.04
- Standard Deviation = 9.82
- Skewness = 5.2
- Kurtosis = 36.86
- Maximum = 91.417
- Minimum = 2.972
- Count = 187

---

**Post-Shock NPV Distribution**

<table>
<thead>
<tr>
<th>NPV Ratio (Percent)</th>
<th>Percent of Thrifts</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>6</td>
<td>9</td>
</tr>
<tr>
<td>9</td>
<td>12</td>
</tr>
<tr>
<td>12</td>
<td>15</td>
</tr>
<tr>
<td>15</td>
<td>18</td>
</tr>
<tr>
<td>18</td>
<td>21</td>
</tr>
<tr>
<td>21</td>
<td>24</td>
</tr>
<tr>
<td>24</td>
<td>27</td>
</tr>
</tbody>
</table>

**Descriptive Statistics**
- Median = 11.01
- Mean = 13
- Standard Deviation = 9.8
- Skewness = 5.33
- Kurtosis = 38.35
- Maximum = 91.16
- Minimum = 1.508
- Count = 187

---

**Asset Duration Distribution**

<table>
<thead>
<tr>
<th>Duration</th>
<th>Percent of Thrifts</th>
</tr>
</thead>
<tbody>
<tr>
<td>-0.25</td>
<td>0.75</td>
</tr>
<tr>
<td>0.25</td>
<td>1.25</td>
</tr>
<tr>
<td>0.75</td>
<td>1.75</td>
</tr>
<tr>
<td>1.25</td>
<td>2.25</td>
</tr>
<tr>
<td>1.75</td>
<td>3.25</td>
</tr>
<tr>
<td>2.25</td>
<td>3.75</td>
</tr>
<tr>
<td>2.75</td>
<td>More</td>
</tr>
</tbody>
</table>

**Descriptive Statistics**
- Median = 1.28
- Mean = 1.35
- Standard Deviation = 0.52
- Skewness = 0.84
- Kurtosis = 1.76
- Maximum = 3.22
- Minimum = 0.077
- Count = 187

---

**Liabilities Duration Distribution**

<table>
<thead>
<tr>
<th>Duration</th>
<th>Percent of Thrifts</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.25</td>
<td>0.44</td>
</tr>
<tr>
<td>0.75</td>
<td>1.12</td>
</tr>
<tr>
<td>1.25</td>
<td>1.75</td>
</tr>
<tr>
<td>1.75</td>
<td>More</td>
</tr>
</tbody>
</table>

**Descriptive Statistics**
- Median = 1.46
- Mean = 1.44
- Standard Deviation = 0.44
- Skewness = -0.24
- Kurtosis = 1.82
- Maximum = 3.015
- Minimum = -0.168
- Count = 187
Appendix E — Midwest Region

Sensitivity Measure Distribution
Midwest

Descriptive Statistics
Median = 68
Mean = 84
Standard Deviation = 69
Skewness = 1.5
Kurtosis = 2.32
Maximum = 379.187
Minimum = 0
Count = 162

Pre-Shock NPV Ratio Distribution
Midwest

Descriptive Statistics
Median = 11.24
Mean = 12.98
Standard Deviation = 11.68
Skewness = 5.13
Kurtosis = 30.82
Maximum = 95.505
Minimum = 0.764
Count = 162

Asset Duration Distribution
Midwest

Descriptive Statistics
Median = 1.2
Mean = 1.21
Standard Deviation = 0.46
Skewness = -0.41
Kurtosis = 3.49
Maximum = 2.636
Minimum = -1.082
Count = 162

Post-Shock NPV Distribution
Midwest

Descriptive Statistics
Median = 10.39
Mean = 12.98
Standard Deviation = 11.66
Skewness = 5.27
Kurtosis = 32.18
Maximum = 95.344
Minimum = 0.764
Count = 162

Liabilities Duration Distribution
Midwest

Descriptive Statistics
Median = 1.4
Mean = 1.38
Standard Deviation = 0.49
Skewness = 1.04
Kurtosis = 5.69
Maximum = 4.037
Minimum = 0.168
Count = 162
Appendix F — West Region

Sensitivity Measure Distribution
West

Descriptive Statistics
Median = 79
Mean = 106
Standard Deviation = 74
Skewness = 1.14
Kurtosis = 0.67
Maximum = 322.583
Minimum = 10.851
Count = 63

Pre-Shock NPV Ratio Distribution
West

Descriptive Statistics
Median = 11.08
Mean = 14.61
Standard Deviation = 12.52
Skewness = 3.46
Kurtosis = 13.42
Maximum = 78.503
Minimum = 4.469
Count = 63

Post-Shock NPV Distribution
West

Descriptive Statistics
Median = 9.89
Mean = 13.55
Standard Deviation = 12.62
Skewness = 3.52
Kurtosis = 13.66
Maximum = 77.962
Minimum = 3.758
Count = 63

Asset Duration Distribution
West

Descriptive Statistics
Median = 1.28
Mean = 1.28
Standard Deviation = 0.6
Skewness = 0.51
Kurtosis = 0.72
Maximum = 3.028
Minimum = 0.09
Count = 63

Liabilities Duration Distribution
West

Descriptive Statistics
Median = 1.46
Mean = 1.38
Standard Deviation = 0.43
Skewness = 0.33
Kurtosis = 2.456
Minimum = 0.351
Count = 63