Estimating Arkansas Farmland Values Based on Historic Index Numbers

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Farmland values have generally increased over the past 60 years (Figure 1). A few exceptions to this general trend have occurred – most notably during the 1980s when Arkansas farmland values decreased by 34 percent between 1982 and 1987. However, this decrease during the 1980s followed a nearly 200 percent increase in farmland values during the 1970s. The farmland value high, set in 1982, was exceeded 16 years later in 1998. Between 1992 and 2008, Arkansas farmland values increased an average of 11 percent per year, with a low of 2.8 percent in 1996 and a high of nearly 13 percent in 2005.

Although a decrease in land values occurred in 2009, the 2010 values exceeded the previous high set in 2008.

Historic farmland values are of interest to farmers, landowners, investors and policy makers. The farmland value index in Table 1 can be used to estimate farmland value in a given year if the value was known for any other year since 1950. The Guide to Using the Arkansas Farm­land Value Index section accompanies Table 1. Index numbers were calculated based upon the year 1982; therefore, the index value for 1982 equals 100.

Figure 1. Arkansas and U.S. Farmland Values
(Source: USDA, ERS and NASS)
### Table 1. Index Numbers\(^1\) of Arkansas Farmland Values

<table>
<thead>
<tr>
<th>Year</th>
<th>Index (1982 = 100)</th>
<th>Year</th>
<th>Index (1982 = 100)</th>
<th>Year</th>
<th>Index (1982 = 100)</th>
</tr>
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<tbody>
<tr>
<td>1950</td>
<td>5.47</td>
<td>1971</td>
<td>23.27</td>
<td>1992</td>
<td>74.36</td>
</tr>
<tr>
<td>1951</td>
<td>6.57</td>
<td>1972</td>
<td>27.01</td>
<td>1993</td>
<td>80.29</td>
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<tr>
<td>1952</td>
<td>7.12</td>
<td>1973</td>
<td>30.75</td>
<td>1994</td>
<td>84.58</td>
</tr>
<tr>
<td>1953</td>
<td>7.21</td>
<td>1974</td>
<td>37.04</td>
<td>1995</td>
<td>89.69</td>
</tr>
<tr>
<td>1954</td>
<td>6.93</td>
<td>1975</td>
<td>38.23</td>
<td>1996</td>
<td>92.15</td>
</tr>
<tr>
<td>1955</td>
<td>7.12</td>
<td>1976</td>
<td>43.34</td>
<td>1997</td>
<td>97.63</td>
</tr>
<tr>
<td>1956</td>
<td>7.76</td>
<td>1977</td>
<td>49.45</td>
<td>1998</td>
<td>104.93</td>
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<tr>
<td>1957</td>
<td>8.30</td>
<td>1978</td>
<td>55.29</td>
<td>1999</td>
<td>111.31</td>
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<tr>
<td>1958</td>
<td>8.94</td>
<td>1979</td>
<td>70.26</td>
<td>2000</td>
<td>117.70</td>
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<td>1959</td>
<td>9.22</td>
<td>1980</td>
<td>83.76</td>
<td>2001</td>
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<td>10.31</td>
<td>1981</td>
<td>96.35</td>
<td>2002</td>
<td>128.65</td>
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<tr>
<td>1961</td>
<td>10.77</td>
<td>1982</td>
<td>100.00</td>
<td>2003</td>
<td>135.04</td>
</tr>
<tr>
<td>1962</td>
<td>11.77</td>
<td>1983</td>
<td>88.69</td>
<td>2004</td>
<td>149.64</td>
</tr>
<tr>
<td>1963</td>
<td>13.32</td>
<td>1984</td>
<td>87.96</td>
<td>2005</td>
<td>168.80</td>
</tr>
<tr>
<td>1964</td>
<td>15.15</td>
<td>1985</td>
<td>82.76</td>
<td>2006</td>
<td>182.48</td>
</tr>
<tr>
<td>1965</td>
<td>16.97</td>
<td>1986</td>
<td>71.08</td>
<td>2007</td>
<td>204.38</td>
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<tr>
<td>1966</td>
<td>18.52</td>
<td>1987</td>
<td>66.06</td>
<td>2008</td>
<td>220.80</td>
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<tr>
<td>1967</td>
<td>19.07</td>
<td>1988</td>
<td>69.43</td>
<td>2009</td>
<td>218.07</td>
</tr>
<tr>
<td>1968</td>
<td>20.62</td>
<td>1989</td>
<td>73.08</td>
<td>2010</td>
<td>228.10</td>
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<tr>
<td>1969</td>
<td>22.45</td>
<td>1990</td>
<td>72.63</td>
<td></td>
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<td>1970</td>
<td>23.72</td>
<td>1991</td>
<td>76.73</td>
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</tbody>
</table>

Source: USDA-NASS

\(^1\)Index numbers, based on 1982 = 100, are calculated from USDA sources including NASS and ERS.

Some years have been revised compared to previous versions of this table due to updates from the Census of Agriculture.

**Bottom-Line Considerations**

Index numbers are based on nominal values and are not based on real values adjusted for inflation or purchasing power. Although it is useful for estimating the value of Arkansas farmland relative to another point in time, the index number only provides a single piece of information to include with other information in the decision-making process.

The value of farmland fluctuates for a variety of reasons and provides opportunity for farmers, landowners and investors. With a continued change in the market for Arkansas farmland, owners and potential owners of farmland can use index numbers based upon USDA information to estimate the value of land given a known value in another year. Estimated farmland values do not substitute for land appraisals and may deviate from true market value for any number of reasons, including land improvements, buildings and facilities, pressure from development and urban sprawl, mineral rights and previous farm production management practices.
Guide to Using the Arkansas Farmland Value Index

The index for farmland values can be used to estimate the farmland value for a past year or to estimate the value of farmland in the current year, depending upon the given information. If the value of farmland is known in any year, the value can be estimated for any other year since 1950 with the farmland value index.

Estimating the farmland value for a past year

The farmland value for a past year can be estimated with the formula:

\[
\text{farmland value from past year} = \text{current farmland value} \times \frac{\text{index from past year}}{\text{index for current year}}
\]

Hypothetical Example 1: Current land values are $2,250 per acre. What was the value of this land in 1987? Using the table, the index for 1987 and 2009 are 66.06 and 218.07, respectively.

Estimated 1987 farmland value = $2,250 \times \frac{66.06}{218.07}

Estimated 1987 farmland value equals $682 per acre.

Estimating the current farmland value based on the value in a past year

Current farmland values can be estimated using past values with the formula:

\[
\text{current farmland value} = \text{farmland value from past year} \times \frac{\text{index for current year}}{\text{index from past year}}
\]

Hypothetical Example 2: My relative paid $225 per acre for land in 1969. What is the estimated value of this land today? Using the table, the index for 1969 and 2009 are 22.45 and 218.07, respectively.

Estimated 2009 farmland value = $225 \times \frac{218.07}{22.45}

Estimated 2009 farmland value equals $2,186 per acre.

Data Resources

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