NCREIF FARMLAND INVESTMENTS
WEBINAR
Q1 2022 Results
5/17/22

Bruce J. Sherrick, Ph.D.
TIAA Center for Farmland Research, University of Illinois

Daniel Serna
Director & Senior Portfolio Manager
Manulife Investment Management - Agriculture

Daniel Murray
UBS Farmland – Head of Asset Management

Advancing Farmland Markets through Research and Information
The NCREIF Farmland Index is a quarterly time series composite return measure of investment performance of a large pool of individual farmland properties acquired in the private market for investment purposes only.

All properties in the Farmland Index have been acquired, at least in part, on behalf of tax-exempt institutional investors - the great majority being pension funds. As such, all properties are held in a fiduciary environment.
1991 to Present: Property Count and Scale

2021-Q4: 1,284 properties, $14.42 Billion Total Value

Source: NCREIF and TIAA Center for Farmland Research
Properties classified by type and region

- **Type**
  - Annual Cropland
    - Leased
    - Directly Operated
    - by Crop Types
  - Permanent Cropland
    - Lease Type
    - Crop Types

- **Regions (similar to USDA)**
  - Pacific NW
  - Mountain
  - Lake
  - Cornbelt
  - Northeast
  - Southeast
  - Delta
  - Southern Plains
  - Pacific West
  - Appalachian
  - Northern Plains
Index and Returns Construction

- Fully accounted, managed returns
- Reported on unlevered basis
- Management Fees by case
- Identical conventions for cap-ex, partial sales, etc.
- Quarterly geometric returns, as basis of index
- Income and Appreciation returns separately
- By property type, lease type, region, mgt. type
Permanent Cropland

1st Quarter 2022

Total Market Value: $5,693,467,908.00

FILTER BY PROPERTY TYPE

- All
- Permanent Cropland
- Annual Cropland

<table>
<thead>
<tr>
<th>Year</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>2Q2021</td>
<td>0.36%</td>
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<tr>
<td>3Q2021</td>
<td>0.38%</td>
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<tr>
<td>4Q2021</td>
<td>2.51%</td>
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<tr>
<td>1Q2022</td>
<td>0.07%</td>
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<tr>
<td>2022 Annual Total</td>
<td>3.34%</td>
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</table>

NCREIF Farmland Property Index

Annual Cropland

1st Quarter 2022

Total Market Value: $8,730,015,921.00

FILTER BY PROPERTY TYPE

All | Permanent Cropland | Annual Cropland

<table>
<thead>
<tr>
<th>2Q2021</th>
<th>3Q2021</th>
<th>4Q2021</th>
<th>1Q2022</th>
<th>2022 ANNUAL TOTAL</th>
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</thead>
<tbody>
<tr>
<td>2.20%</td>
<td>2.25%</td>
<td>4.65%</td>
<td>4.36%</td>
<td>14.12%</td>
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</tbody>
</table>
Total Return – Rolling 4-quarter Total to 2022:Q1

Source: NCREIF and TIAA Center for Farmland Research
**Income Return – Rolling 4-quarter Total to 2022:Q1**

Source: NCREIF and TIAA Center for Farmland Research
Appreciation Return – Rolling 4-quarter Total to 2022:Q1

Source: NCREIF and TIAA Center for Farmland Research
Seasonality of Returns – Total Farmland by quarter

Max Return in-year

<table>
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<tr>
<th>Quarter</th>
<th>Count</th>
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<td>3</td>
<td>2</td>
</tr>
<tr>
<td>4</td>
<td>17</td>
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</tbody>
</table>

Source: NCREIF and TIAA Center for Farmland Research
Pacific Northwest – Permanent Cropland

1st Quarter 2022

Total Market Value:
$466,999,336.00

FILTER BY PROPERTY TYPE

All
Permanent Cropland
Annual Cropland

2.45%  -0.06%  0.69%  -1.77%  1.28%
2Q2021  3Q2021  4Q2021  1Q2022  2022 ANNUAL TOTAL
Pacific Northwest – Annual Cropland

1st Quarter 2022

Total Market Value: $525,763,822.00

FILTER BY PROPERTY TYPE

<table>
<thead>
<tr>
<th>5.70%</th>
<th>4.62%</th>
<th>3.39%</th>
<th>2.05%</th>
<th>16.68%</th>
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</thead>
<tbody>
<tr>
<td>2Q2021</td>
<td>3Q2021</td>
<td>4Q2021</td>
<td>1Q2022</td>
<td>2022 ANNUAL TOTAL</td>
</tr>
</tbody>
</table>

NCREIF Farmland Property Index
Mountain States – All (99%+ Annual)

1st Quarter 2022

Total Market Value: $1,137,840,330.00

FILTER BY PROPERTY TYPE

- All
- Permanent Cropland
- Annual Cropland

0.86%
2Q2021

0.61%
3Q2021

3.09%
4Q2021

2.28%
1Q2022

7.00%
2022 ANNUAL TOTAL
Southern Plains – Annual (All)

1st Quarter 2022

Total Market Value: $306,379,652.00

FILTER BY PROPERTY TYPE

- All
- Permanent Cropland
- Annual Cropland

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Change</th>
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<td>2Q2021</td>
<td>1.56%</td>
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<tr>
<td>3Q2021</td>
<td>0.88%</td>
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<td>4Q2021</td>
<td>3.99%</td>
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<td>1Q2022</td>
<td>2.97%</td>
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<tr>
<td>2022 Annual Total</td>
<td>9.70%</td>
</tr>
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</table>
NCREIF Farmland Property Index

Lake States – Permanent

1st Quarter 2022

Total Market Value: $113,022,125.00

FILTER BY PROPERTY TYPE

All  |  Permanent Cropland  |  Annual Cropland

1.61%  |  4.98%  |  7.29%  |  0.68%  |  15.22%

2Q 2021  |  3Q 2021  |  4Q 2021  |  1Q 2022  |  2022 ANNUAL TOTAL
Lake States – Annual

1st Quarter 2022

Total Market Value: $458,109,646.00

FILTER BY PROPERTY TYPE
- All
- Permanent Cropland
- Annual Cropland

<table>
<thead>
<tr>
<th>Period</th>
<th>Change</th>
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<tr>
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<tr>
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<td>4Q 2021</td>
<td>10.00%</td>
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<td>1Q 2022</td>
<td>3.98%</td>
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<tr>
<td>2022 Annual Total</td>
<td>16.87%</td>
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</table>
Southeast – Annual Cropland

1st Quarter 2022

Total Market Value: $556,861,296.00

FILTER BY PROPERTY TYPE

<table>
<thead>
<tr>
<th>All</th>
<th>Permanent Cropland</th>
<th>Annual Cropland</th>
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<tr>
<th></th>
<th>2Q 2021</th>
<th>3Q 2021</th>
<th>4Q 2021</th>
<th>1Q 2022</th>
<th>2022 Annual Total</th>
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</thead>
<tbody>
<tr>
<td>%</td>
<td>1.51%</td>
<td>1.43%</td>
<td>1.52%</td>
<td>1.46%</td>
<td>6.05%</td>
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Historic Inflation and Interest Rate Relationships
(to 4/1/22)

Shaded areas indicate U.S. recessions.

Sources: BLS; Board of Governors

fred.stlouisfed.org
UBS Farmland Investors, LLC

UBS Asset Management, Real Estate & Private Markets
Food & Agriculture

Daniel Murray
Head of Asset Management
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Section 1

Biography
Daniel E. Murray

Head of Asset Management, Farmland
Executive Director

Dan Murray is the Head Asset Management for UBS Farmland Investors, LLC. In addition to asset management activities, Dan’s responsibilities extend to property and portfolio performance measurement as well as the evaluation and analysis of property acquisitions and sales.

Prior to joining UBS, Dan led the proprietary fundamental research effort for the Grains and Oilseeds desk of Sierentz North America, LLC (a division of the Louis Dreyfus Family Office). In addition, Dan formed their North American farmland acquisition and management effort.

Dan holds two degrees from Cornell University in Animal Science and Applied Economics & Management as well as an MBA from Rensselaer Polytechnic Institute with a concentration in Finance.

Years of investment industry experience: 12

Education: Cornell University (US), BS; Rensselaer Polytechnic Institute (US), MBA

Note: As at March 2022
Section 2

UBS Farmland Investors LLC
UBS Farmland Investors LLC

History of UBS Farmland Investors LLC:

- 1983: AgriVest was spun out of the Agricultural Investment Division of Connecticut Mutual Life Insurance Company.
- 1989: AgriVest becomes one of the first firms to invest in farmland on behalf of pensions.
- 1991: UBS Farmland Investors LLC began investing for US tax-exempt investors in 1991 through its predecessor and has been a major contributor to the NCREIF Farmland Index since its inception in that same year.
- 1996: AgriVest is acquired by Allegis Realty Investors.
- 1999: UBS acquires Allegis Realty Investors, including AgriVest.
- 2022: As of March 31, 2022, UBS Farmland Investors manages USD 2.1 billion in US farmland assets.

UBS Farmland Investors LLC portfolio

- UBS Farmland Investors LLC has USD 2.1 billion of assets under management
  - 277,643 acres (437 square miles)
  - 16 key agricultural states in nine distinct regions of the country
  - Diversified exposure to farmland used in the production of over 30 major crops

- What Farmland Offers to Clients
  - High quality farmland is a finite, income producing, natural resource with no obsolescence that is also uncorrelated to traditional asset classes.
  - Farmland’s characteristics are particularly well-matched to long-term liabilities of pension funds and insurance companies.
  - Farmland combines passive cash flow, appreciation that outpaces inflation, and has less volatility than other asset classes.
  - Clients can invest in a sustainable asset class that is positively affecting climate change. New standards, such as Leading Harvest, are being introduced to address responsible investment in farmland.

Data as of March 31, 2022
Section 3

Ukraine exports and impact to farmland values in the United States
Ukraine and United States farmland values

Ukraine has become a crucial agricultural commodity export

3-Year Average Share of Corn Exports
2019 - 2021

- Argentina: 11%
- Brazil: 21%
- Russia: 18%
- South Africa: 2%
- Ukraine: 32%
- United States: 14%
- Others: 2%

Source: USDA, World Agricultural Outlook Board. Data presented is intended for discussion purposes only.

Ukraine Exports

- Corn Exports, MMT
- Wheat Exports, MMT
Ukraine and United States farmland values

Importers are price sensitive and seek to minimize the cost of commodity imports

## Ukraine and United States Farmland Values

Importer cost minimization will allocate supply from exporters to importers (fill in the grey boxes)

<table>
<thead>
<tr>
<th>Marketing Year 2021/2022</th>
<th>Argentina</th>
<th>Brazil</th>
<th>Russia</th>
<th>South Africa</th>
<th>Ukraine</th>
<th>United States</th>
<th>Others</th>
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<td>Production</td>
<td>53.00</td>
<td>118.00</td>
<td>15.23</td>
<td>16.30</td>
<td>41.50</td>
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<td>44.50</td>
<td>4.50</td>
<td>3.20</td>
<td>25.00</td>
<td>63.50</td>
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<td>197.79</td>
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<td>1.19</td>
<td>5.15</td>
<td>0.63</td>
<td>2.38</td>
<td>6.56</td>
<td>36.97</td>
<td>230.68</td>
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<th>Marketing Year 2022/23</th>
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<th>Brazil</th>
<th>Russia</th>
<th>South Africa</th>
<th>Ukraine</th>
<th>United States</th>
<th>Others</th>
<th>World</th>
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</thead>
<tbody>
<tr>
<td>Production</td>
<td>55.00</td>
<td>128.00</td>
<td>15.50</td>
<td>17.30</td>
<td>19.50</td>
<td>367.30</td>
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<td>8.07</td>
<td>34.54</td>
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* Indonesia, Malaysia, Philippines, Thailand, and Vietnam.

Source: USDA, World Agricultural Outlook Board. Data presented is intended for discussion purposes only.
United States Corn Balance Sheet

United States ending stocks will need to fill the void and price needs to incentivize supply

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<tbody>
<tr>
<td>Yield (MT/HA)</td>
<td>9.6</td>
<td>9.2</td>
<td>7.7</td>
<td>8.9</td>
<td>10.7</td>
<td>10.6</td>
<td>11.0</td>
<td>11.1</td>
<td>10.5</td>
<td>10.8</td>
<td>10.8</td>
<td>10.8</td>
</tr>
<tr>
<td>Beginning Stocks (MMT's)</td>
<td>43</td>
<td>29</td>
<td>25</td>
<td>21</td>
<td>31</td>
<td>44</td>
<td>44</td>
<td>58</td>
<td>54</td>
<td>56</td>
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<tr>
<td>Production</td>
<td>316</td>
<td>313</td>
<td>273</td>
<td>351</td>
<td>361</td>
<td>346</td>
<td>385</td>
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<td>1</td>
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</tbody>
</table>

Total Supply

| Feed Dom. Consumption     | 121       | 115       | 106       | 127       | 134       | 130       | 135       | 135       | 138       | 150       | 142       | 142       |
| FSI Consumption            | 163       | 163       | 154       | 166       | 168       | 169       | 175       | 179       | 173       | 160       | 164       | 166       |
| Exports                    | 47        | 39        | 19        | 49        | 47        | 48        | 58        | 62        | 53        | 45        | 70        | 72        |

Ending Stocks

| Stocks to Use              | 8.7%      | 7.9%      | 7.4%      | 9.2%      | 12.6%     | 12.7%     | 15.7%     | 14.5%     | 15.5%     | 13.7%     | 8.3%      | 7.73%     |

Source: USDA, World Agricultural Outlook Board, UBS Asset Management, Real Estate & Private Markets, Food & Agriculture, LLC. Data presented is intended for discussion purposes only.
Agricultural Headwinds/Tailwinds/Questions:

• Heightened Inflationary uncertainty and impact across asset classes
• Ukraine, Supply and Supply chain disruptions
• Interest rate markets – Fed uncertainty and macro-linkages
• Seasonal issues related to planting and crop insurance
  • Input costs (especially fertilizer, and energy)
  • Late planting, and relationship to yield (supply) and insurance prices
DISCUSSION – Q&A

Thanks - feel free to contact us via:

sherrick@illinois.edu