

FARMLAND INDEX

FARMLAND AND THE BROADER AGRICULTURAL CYCLE

| FARMLAND TOTAL RETURNS | | | | | | | |
|------------------------|-----------|----------------------|--------------|-------------------|-----------|-------|-----------|
| | Total NPI | Total Farmland Index | Pacific West | Pacific Northwest | Corn Belt | Delta | Southeast |
| 3rd Qtr 2019 | 1.41 | 0.97 | 1.44 | (2.50) | 0.84 | 0.97 | 1.33 |
| 2nd Qtr 2019 | 1.51 | 0.73 | 0.61 | 2.05 | 0.45 | 0.65 | 2.18 |
| One Year | 6.24 | 5.33 | 7.21 | (0.42) | 2.40 | 4.78 | 8.46 |
| Three Year | 6.76 | 6.10 | 7.85 | 8.05 | 1.74 | 4.71 | 7.82 |
| Five Year | 8.57 | 7.89 | 12.40 | 6.54 | 0.20 | 4.30 | 8.12 |
| Seven Year | 9.29 | 10.78 | 16.04 | 9.47 | 4.26 | 7.19 | 8.98 |
| Ten Year | 9.77 | 11.05 | 15.01 | 7.84 | 7.88 | 8.88 | 7.56 |
| Inception | 9.12 | 11.07 | 13.36 | 7.00 | 9.99 | 9.66 | 8.79 |

| FARMLAND INCOME AND APPRECIATION RETURNS | | | | | |
|--|--------|--------------|--------------|----------------|----------------|
| | Income | Appreciation | Total Return | Property Count | Market Value |
| 3rd Qtr 2019 | 0.98 | (0.01) | 0.97 | 1,139 | 10,988,261,157 |
| 2nd Qtr 2019 | 0.60 | 0.13 | 0.73 | 899 | 10,492,159,437 |
| One Year | 4.37 | 0.94 | 5.33 | | |
| Three Year | 4.57 | 1.48 | 6.10 | | |
| Five Year | 5.42 | 2.39 | 7.89 | | |
| Seven Year | 6.14 | 4.47 | 10.78 | | |
| Ten Year | 6.42 | 4.45 | 11.05 | | |
| Inception | 6.70 | 4.22 | 11.07 | | |

| FARMLAND PROPERTY DISTRIBUTION BY PROPERTY TYPE AND REGION | | |
|--|----------------------|--------------------------|
| Property Type | Number of Properties | Market Value \$ Millions |
| Annual Cropland | 889 | 6,920 |
| Permanent Cropland | 250 | 4,068 |
| Total | 1,139 | 10,988 |
| Pacific West | 221 | 4,229 |
| Pacific Northwest | 84 | 702 |
| Corn Belt | 371 | 1,238 |
| Delta States | 138 | 2,228 |
| Southeast | 64 | 642 |
| Mountain | 84 | 1,009 |
| Southern Plains | 21 | 246 |
| Lake States | 115 | 389 |
| Appalachian | 6 | 71 |
| Northern Plains | 35 | 235 |
| Other | 41 | 306 |
| Total | 1,180 | 11,294 |

| CROP TYPE DISTRIBUTION | | | | | |
|------------------------|----------------------|--------------------------|---------------------------------|---------------------|--------------|
| Crop Type | Number of Properties | Market Value \$ Millions | 1 year returns ending 9/30/2019 | | |
| | | | Income Return | Appreciation Return | Total Return |
| Annual-Commodity | 702 | 3915 | 2.98% | 1.37% | 4.38% |
| Annual-Fresh Produce | 44 | 838 | 3.65% | -0.52% | 3.12% |
| Annual-All Other | 143 | 2167 | 3.92% | 1.1% | 5.05% |
| Annual-Total | 889 | 6920 | 3.37% | 1.05% | 4.45% |
| Permanent-Apples | 21 | 206 | -6.41% | -1.77% | -8.14% |
| Permanent-Almonds | 61 | 944 | 5.79% | 0.87% | 6.74% |
| Permanent-Citrus | 14 | 227 | 5.64% | 0.34% | 5.99% |
| Permanent-Pistachios | 23 | 664 | 15.39% | -0.9% | 14.6% |
| Permanent-Wine Grapes | 77 | 1618 | 5.28% | 2.51% | 7.79% |
| Permanent-All Others | 54 | 410 | 2.29% | -3.38% | -1.14% |
| Permanent-Total | 250 | 4068 | 5.99% | 0.74% | 6.73% |
| TOTAL | 1139 | 10988 | 4.37% | 0.94% | 5.33% |

* Includes Corn, Soybean, Cotton, Wheat, Rice

** Includes ground primarily used to produce fresh vegetables or fresh fruit

***Includes All varieties of Oranges (Fresh and Juice), Lemons, and Avocados

As I prepared to write the Q3 2019 report for the NCREIF Farmland Index (NFI), I pulled my notes from the last time that I wrote a quarterly NFI report in Q1 2014. At that time, the total annual return of the NFI on a trailing twelve month (TTM) basis was 17.44% and was just beginning to fall off of the cyclical peak returns of CY 2013, while the yield on the 10-Year US Treasury hovered at around 2.60%. Fast forward to Q3

2019, and the total annual return of the index on a TTM basis is 5.33%, while the 10-Year US Treasury is yielding just under 2.00%. Those are two very different total return profiles, which appear to be potential inflection points in the agricultural cycle that merit further analysis.

When analyzing the past two decades of total annual returns of the NFI, an interesting pattern emerges: Total returns peaked on a near-term basis in CY 2005 and CY 2013, while generating relative trough returns in CY 2001, CY 2009 and CY 2017 – basically a steady movement of peak-to-trough and vice versa approximately every four years. In line with that

broader trend, total annual returns increased in 2018 on a year-over-year basis. However, total returns have reversed direction in 2019, and absent a major rally in Q4, the calendar year total returns will be the lowest since the deep cyclical trough of 2001. This reversal is likely due to the compression of income returns in the current international trade environment, as well as dampened appreciation at the property level due to market uncertainty and overall sentiment. While this analysis is not an effective predictive tool, it does provide some evidence that tailwinds related to the ordinary movements of the agricultural cycle could exist for the NFI if a successful resolution of international trade disputes can be negotiated.

In Q3 2019, total returns for permanent crops (1.06%) slightly outperformed annual crops (0.91%). The quarterly returns for permanent crops were anchored by 1.35% of income return, which was offset by capital depreciation of 0.29%. Pistachios (2.23%) and almonds (2.11%) were the strongest permanent crop performers during the quarter, while apples (-1.53%) and citrus (0.48%) were laggards from a total return perspective. The quarterly returns for annual crops were comprised of 0.76% of income return and 0.15% of appreciation. Annual crop total returns were supported by the Pacific West (1.89%), Southeast (1.74%) and Mountain (1.64%) regions, while the Pacific Northwest (-3.22%) endured a tough quarter. It is noteworthy that the Mountain region accounted for market value of annual crops in excess of \$1.0 billion for the first time, cementing its position behind the Delta and Corn Belt in terms of the relative market value of annual crops. The NFI also surpassed 1,000 properties for the first time, and is nearing \$11.0 billion of aggregate market value.

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