



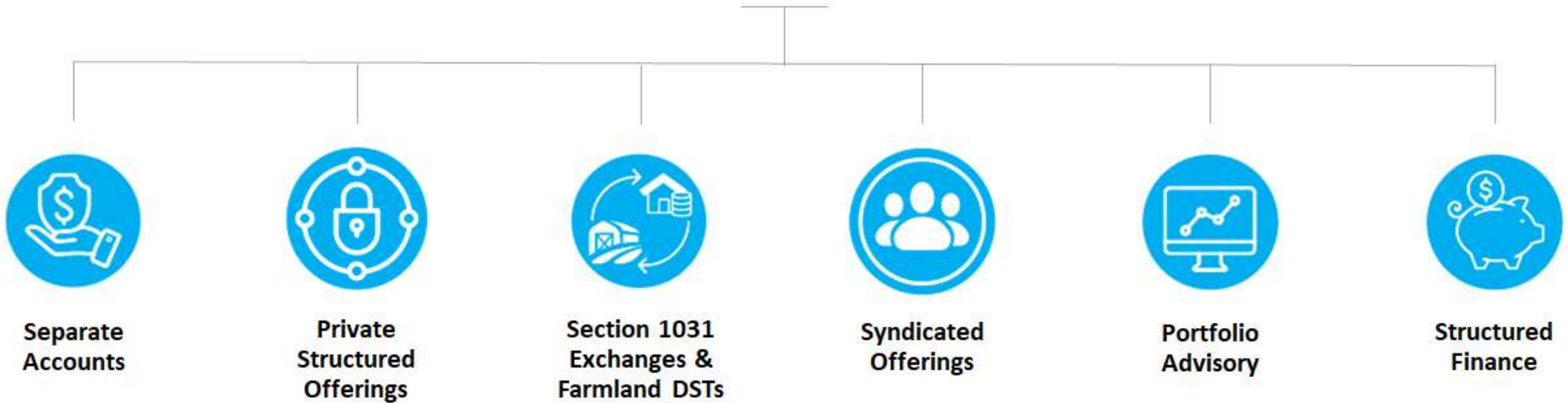
U.S. FARMLAND INVESTING

David Muth Jr., PhD

Capital Markets | Managing Director, Asset Management

CAPITAL MARKETS

Connecting Capital with Opportunity





ASSET CLASS OVERVIEW

U.S. AG SECTOR BALANCE SHEET

Table 1. Selected Balance Sheet Characteristics of US Agricultural Sector

	1970	1980	1990	2000	2010	2013	2015	2017	2019	2021	2023(p)
	<i>(\$ millions, except ratios - source ERS-USDA)</i>										
Farm Assets	278,823	1,000,422	840,609	1,203,215	2,170,832	2,767,754	2,880,015	3,005,945	3,075,148	3,497,614	4,047,027
Real Estate	202,418	782,820	619,149	946,428	1,660,114	2,251,002	2,365,717	2,472,844	2,545,996	2,895,998	3,389,551
Non Real Estate	76,405	217,602	221,459	256,787	510,718	516,752	514,297	533,101	529,153	601,616	657,477
Farm Debt	48,501	162,432	131,116	163,930	278,931	315,332	356,738	390,425	420,495	474,116	535,086
Real Estate	27,238	85,272	67,633	84,724	154,065	185,161	208,769	236,243	267,944	324,257	375,860
Non Real Estate	21,263	77,160	63,483	79,206	124,865	130,172	147,969	154,182	152,551	149,859	159,226
Equity	230,322	837,990	709,493	1,039,285	1,891,902	2,452,422	2,523,277	2,615,520	2,654,653	3,023,498	3,511,942
Selected Indicators											
Debt/Equity	21.1%	19.4%	18.5%	15.8%	14.7%	12.9%	14.1%	14.9%	15.8%	15.7%	15.2%
Debt/Assets	17.4%	16.2%	15.6%	13.6%	12.8%	11.4%	12.4%	13.0%	13.7%	13.6%	13.2%
Real Estate/Equity	87.9%	93.4%	87.3%	91.1%	87.7%	91.8%	93.8%	94.5%	95.9%	95.8%	96.5%
Real Estate/Assets	72.6%	78.2%	73.7%	78.7%	76.5%	81.3%	82.1%	82.3%	82.8%	82.8%	83.8%
Real Estate D/Total D	56.2%	52.5%	51.6%	51.7%	55.2%	58.7%	58.5%	60.5%	63.7%	68.4%	70.2%

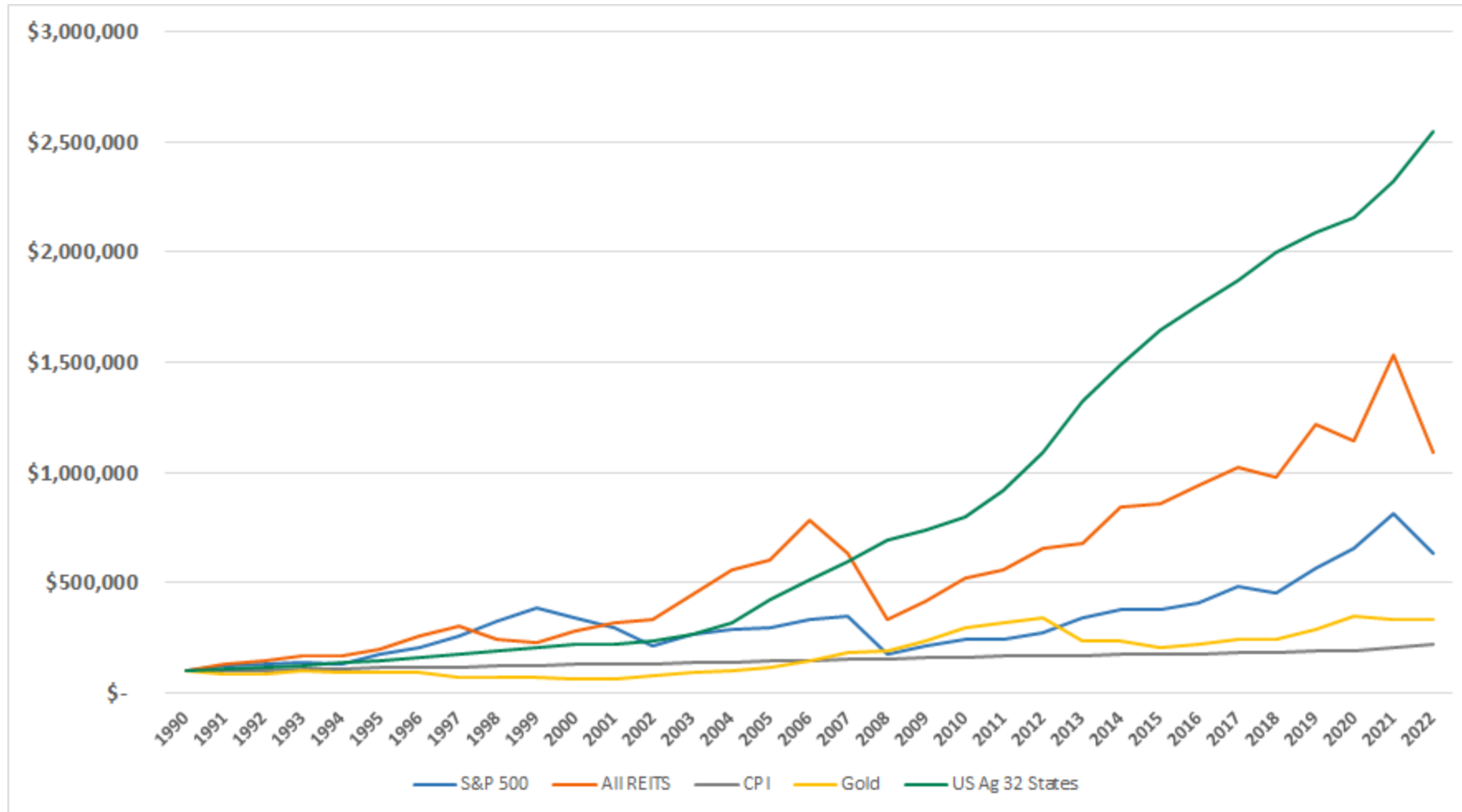


FARMLAND RETURNS IN CONTEXT | 1991-2022

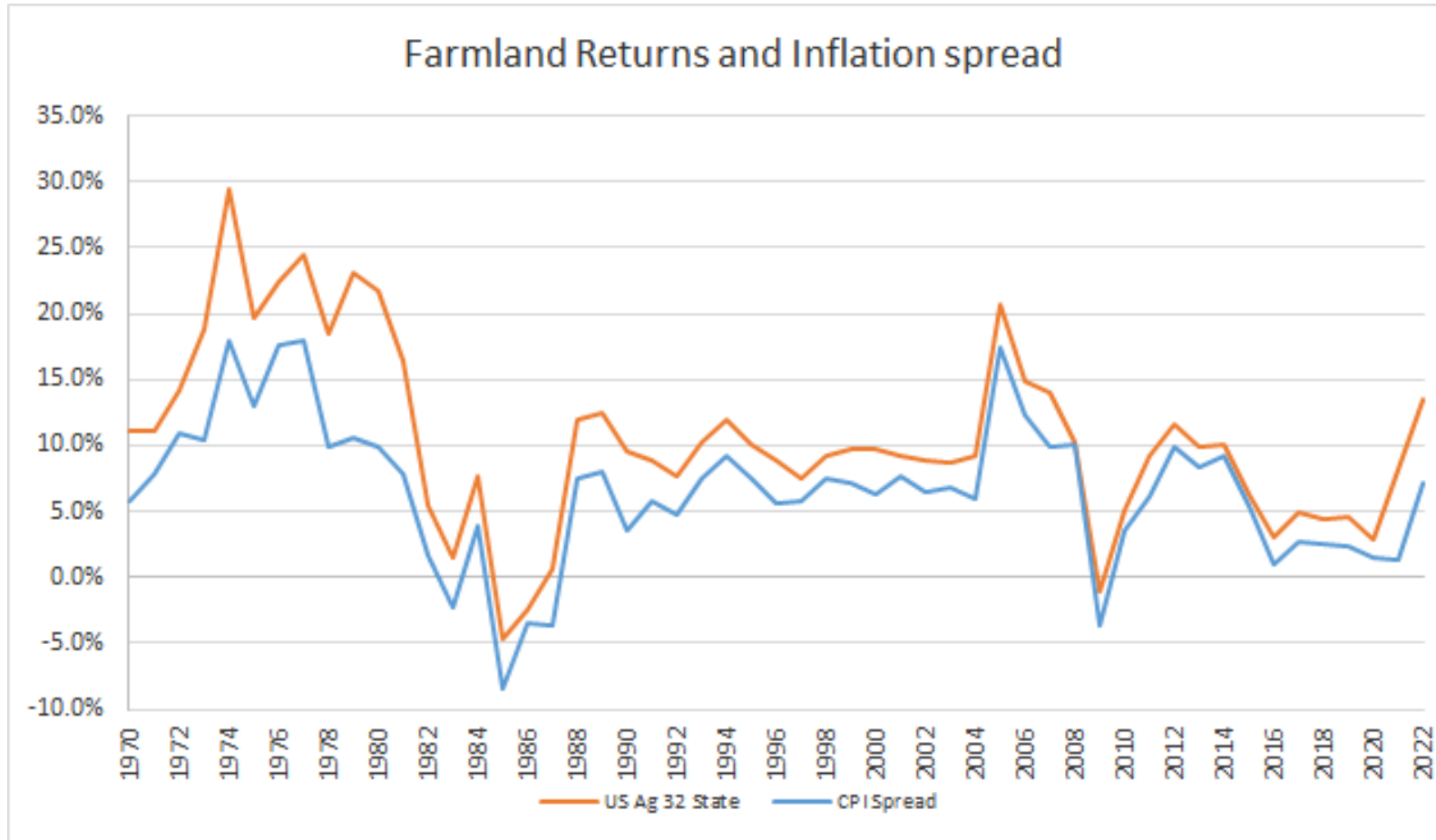
Asset/Index	Annual Ave. Return	Standard Deviation	Coefficient of Variation	US Ag 32 States Correlation	Minimum Return	Maximum Return
	----- 1991 - 2022 -----					
US Ag 32 States	8.8%	3.9%	0.45	1.00	-1.0%	20.7%
Illinois	9.7%	6.0%	0.62	0.82	0.9%	28.8%
Indiana	9.5%	5.3%	0.56	0.62	-1.0%	24.1%
Iowa	11.6%	8.0%	0.69	0.64	-5.0%	27.4%
Washington	12.0%	3.6%	0.30	0.45	5.1%	25.0%
Oregon	11.1%	5.0%	0.45	0.54	-1.3%	24.2%
California	8.6%	5.7%	0.67	0.58	2.5%	35.2%
NCREIF Ann Crop	10.1%	4.8%	0.47	0.71	4.2%	23.6%
NCREIF Perm Crop	11.4%	9.4%	0.83	0.60	-3.5%	43.1%
NCREIF Total Farmland	10.8%	6.4%	0.59	0.71	2.0%	33.9%
S&P500	7.7%	17.3%	2.26	-0.13	-48.6%	29.3%
NASDAQ	10.4%	26.7%	2.57	-0.16	-52.0%	61.8%
TCM10Y	4.1%	1.9%	0.45	0.27	0.9%	7.9%
Gold	4.8%	13.8%	2.86	0.08	-31.9%	27.7%
AAA	5.5%	1.7%	0.31	0.19	2.5%	8.8%



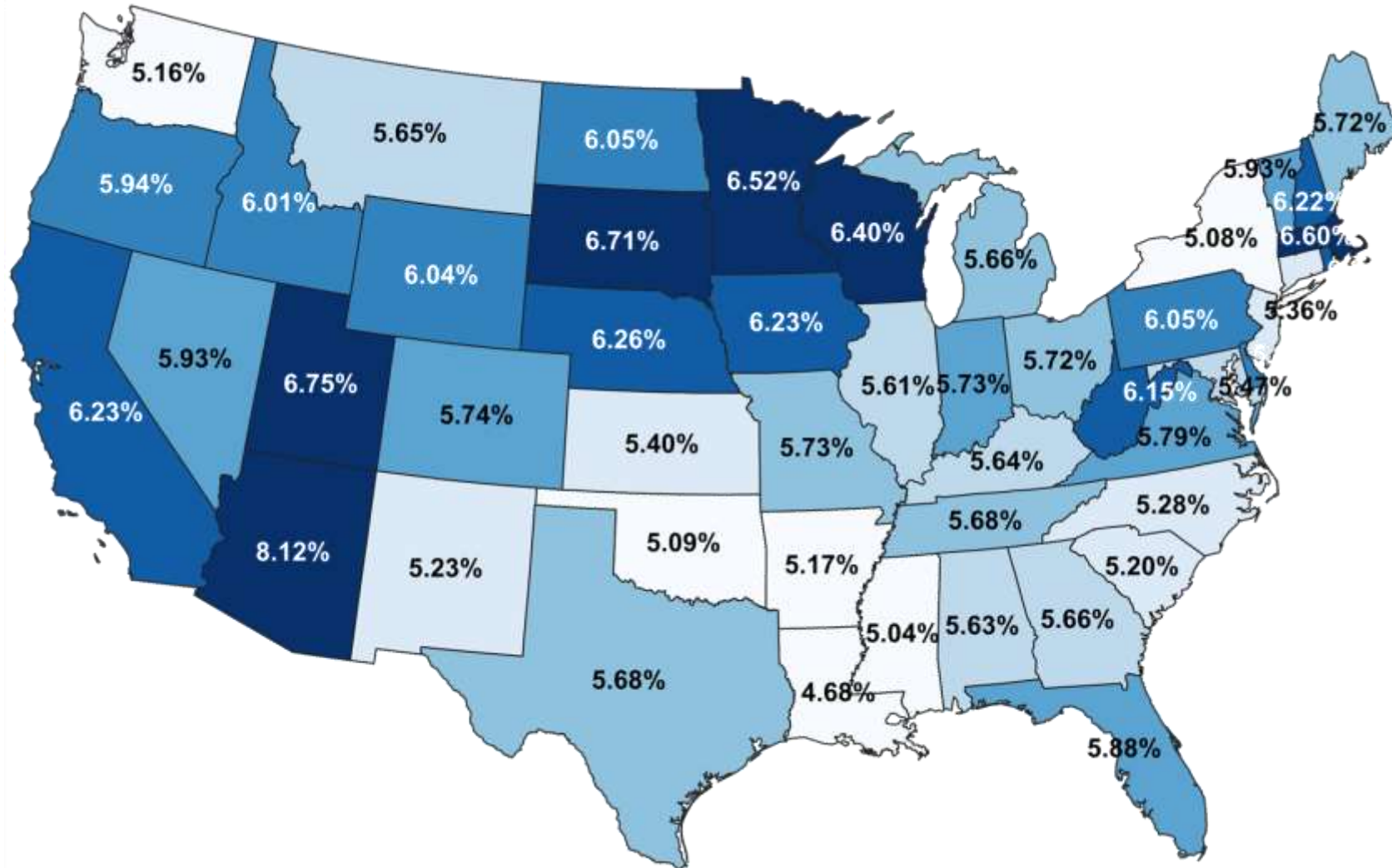
FARMLAND RETURNS | \$100,000 INVESTMENT MADE IN 1990



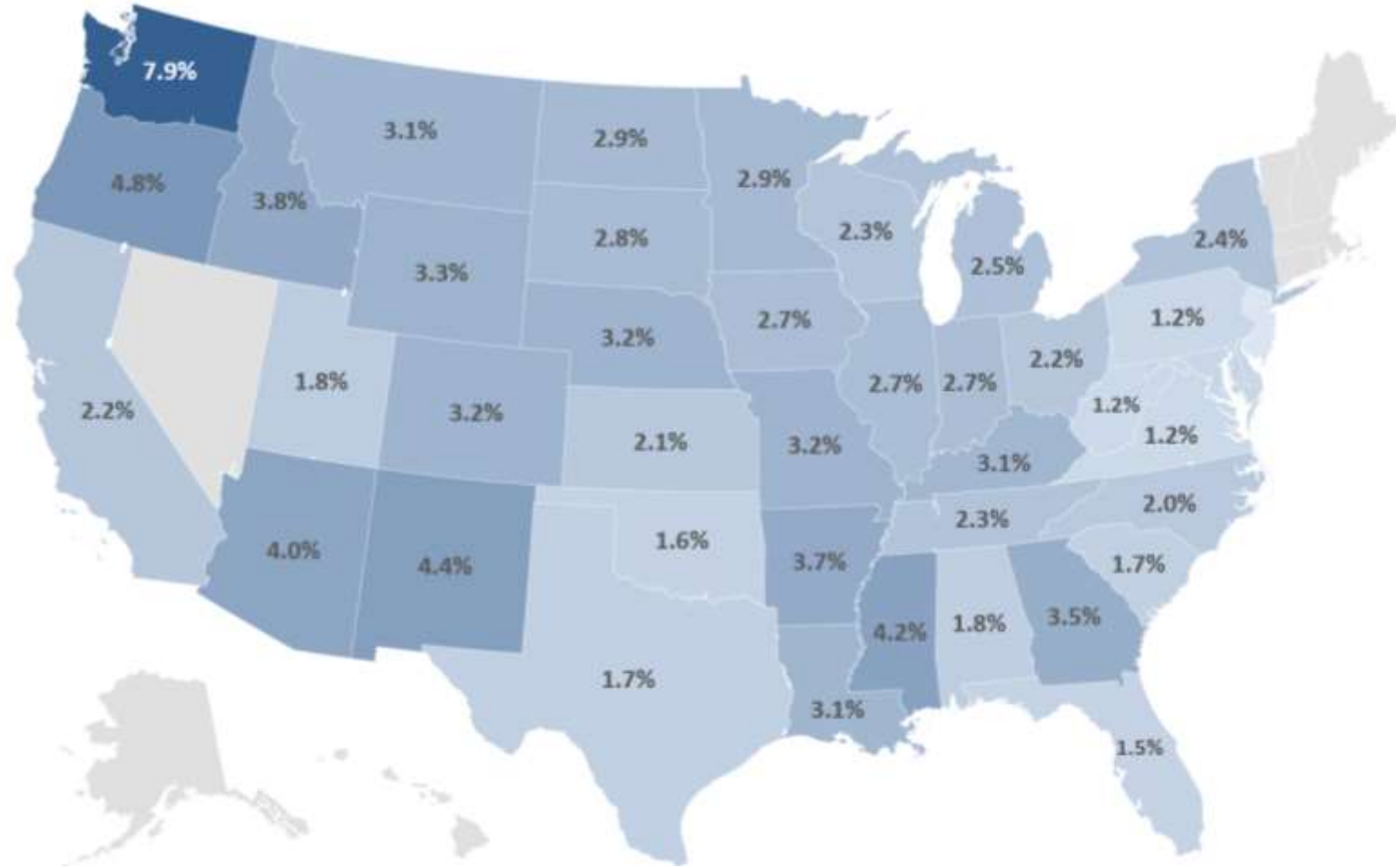
FARMLAND CORRELATION WITH INFLATION



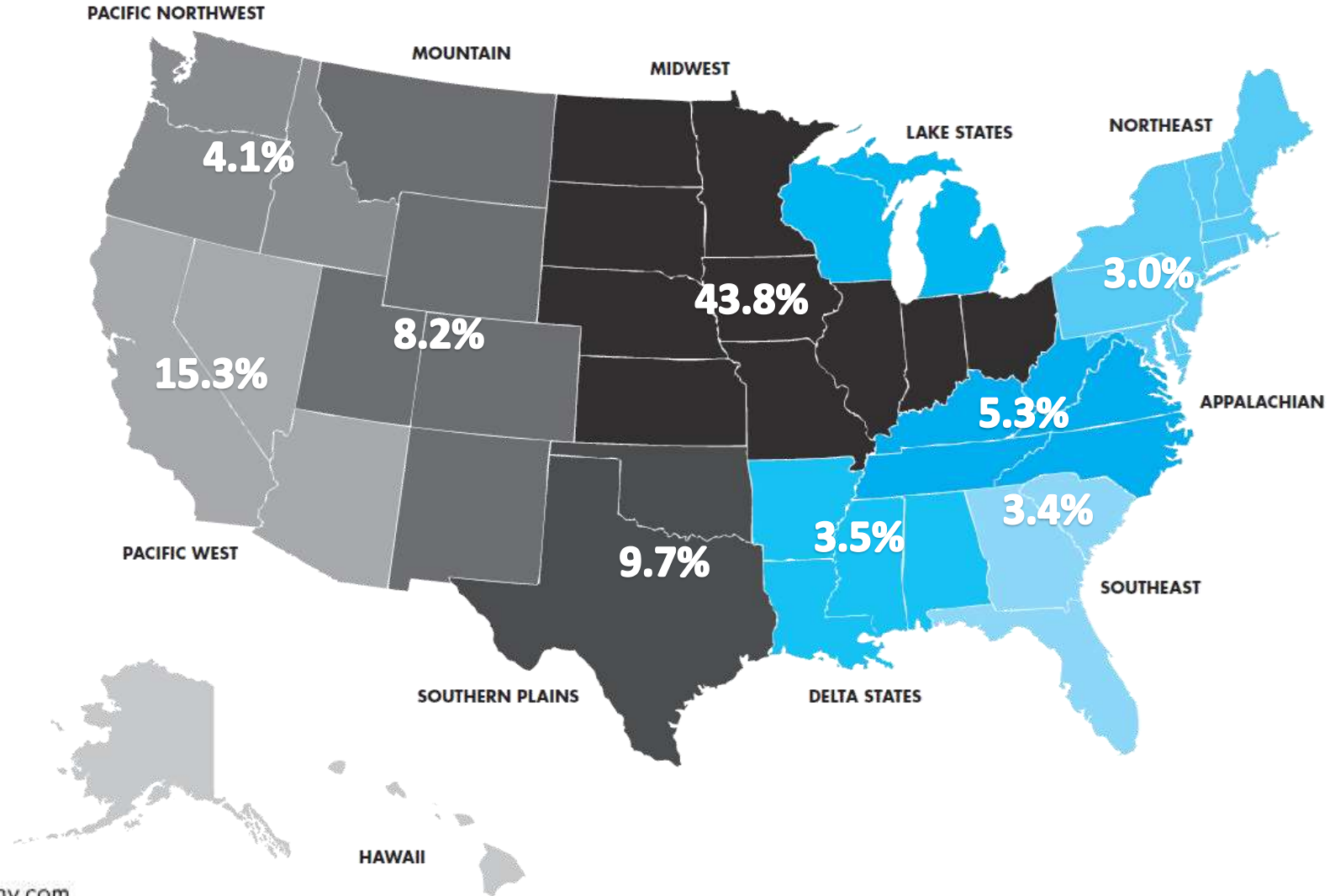
STATE RETURN CHARACTERISTICS | 53-YEAR ANNUAL APPRECIATION



STATE RETURN CHARACTERISTICS | 2023 CAP RATES

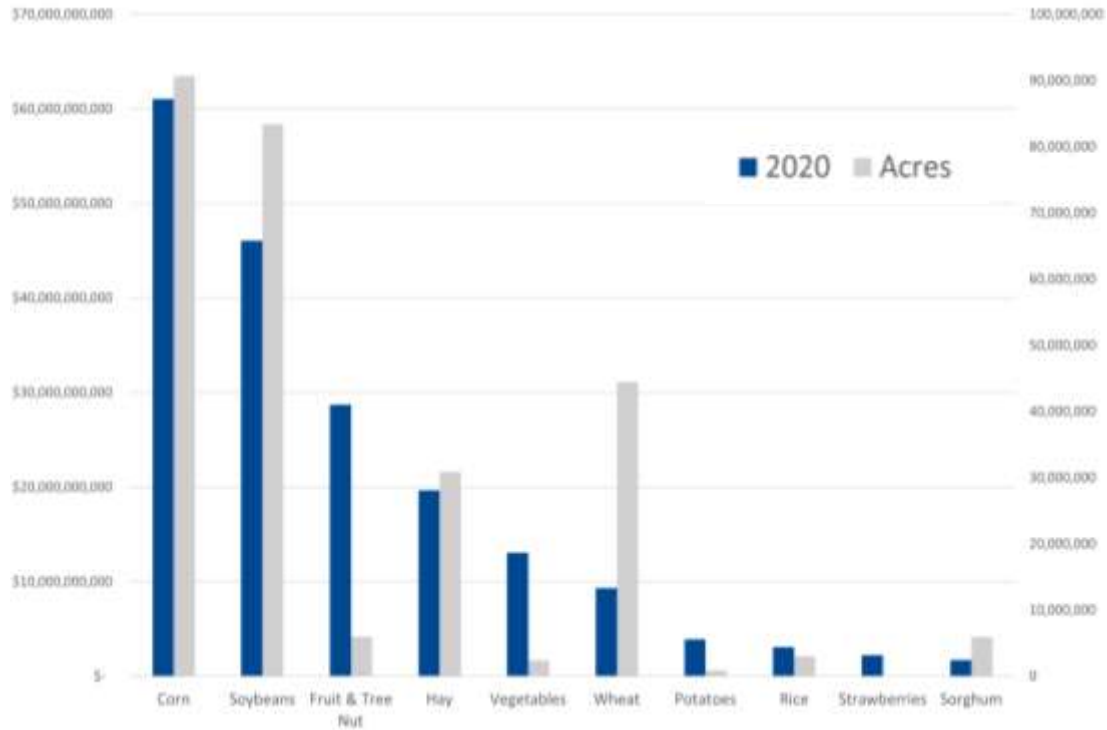


PERCENT OF ASSET VALUE BY REGION

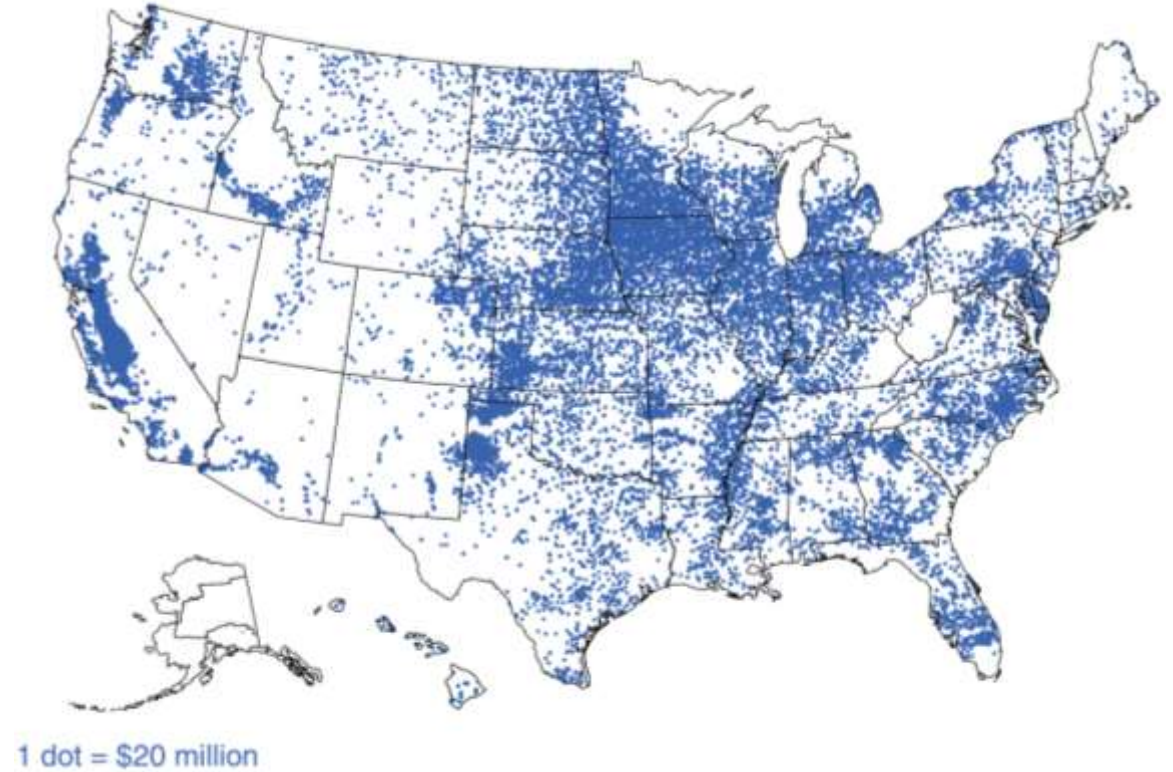


U.S. AGRICULTURAL PRODUCTION SYSTEMS

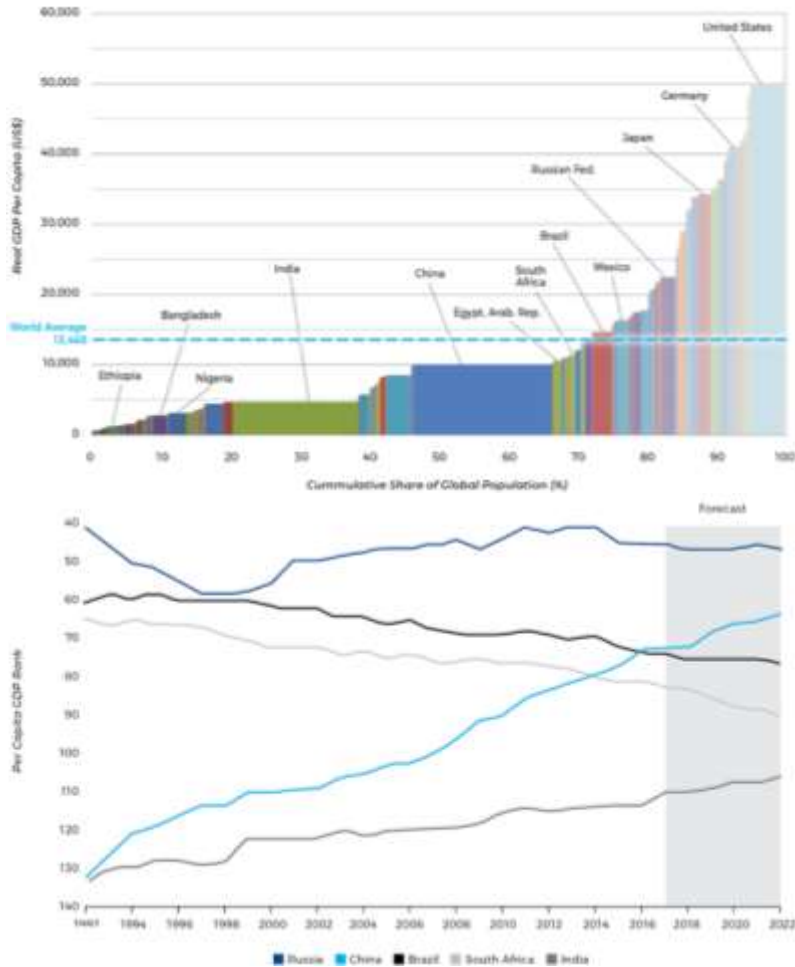
U.S. TOP 10 PRODUCTION CATEGORIES



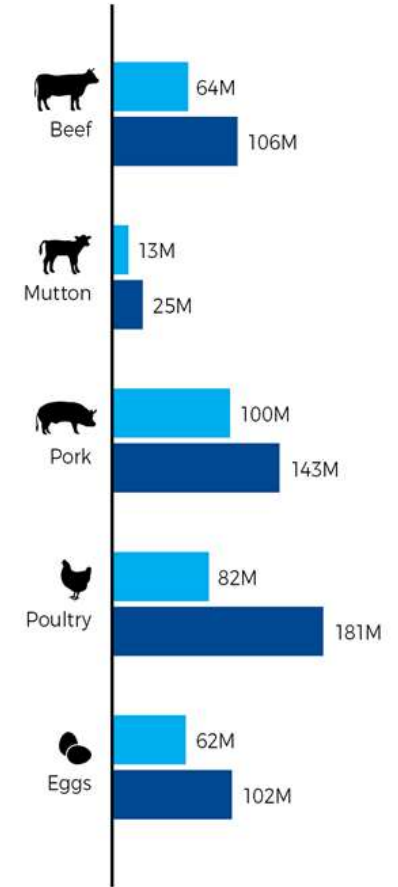
MARKET VALUE OF AG PRODUCTS SOLD IN 2012



BASELINE ECONOMIC FUNDAMENTALS



GLOBAL DEMAND FOR MEAT 2005 vs. 2050 (in tons)



FEDERAL CROP INSURANCE PROGRAM

Administered by the USDA, the Federal Crop Insurance program makes U.S. farmland truly unique and is a fundamental driver of farmland value stability



MINIMUM
REVENUE
GUARANTEE

UNDERWRITING
AND ASSET
DILIGENCE

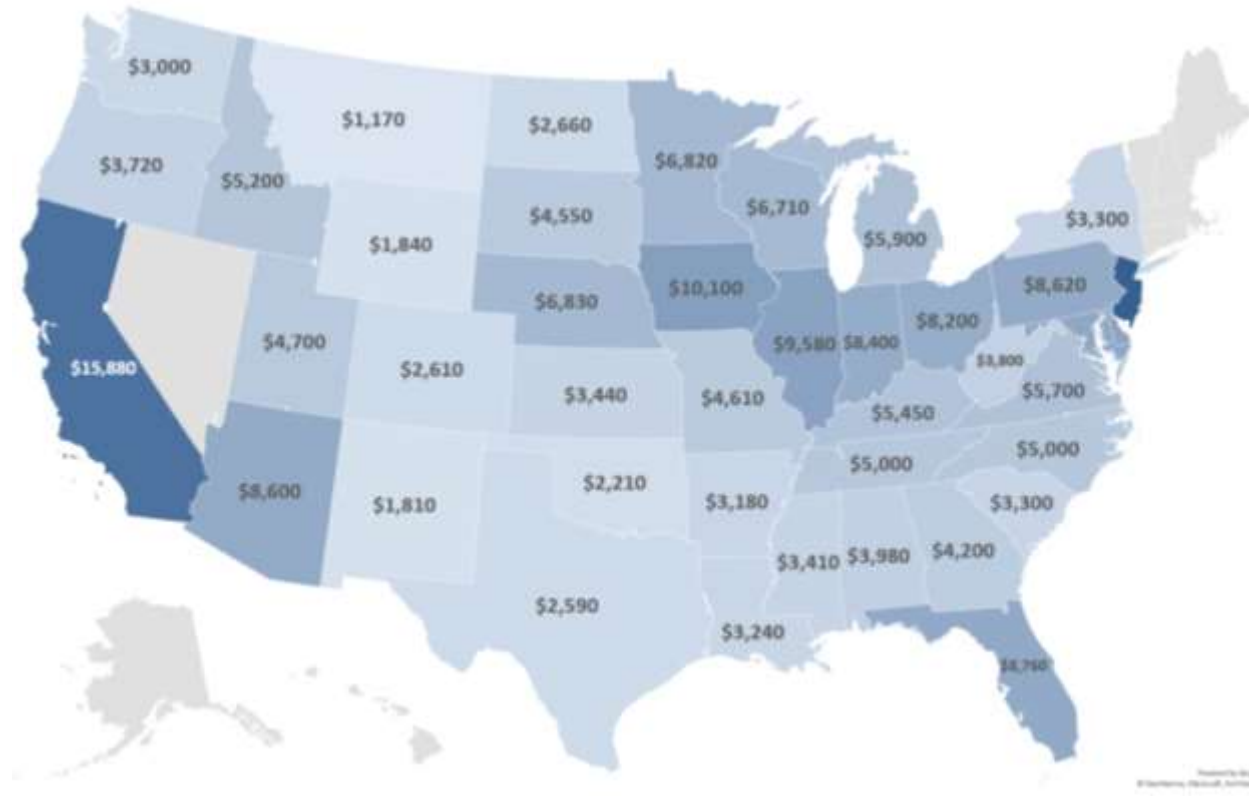
EMERGING
FINANCIAL
INCENTIVES



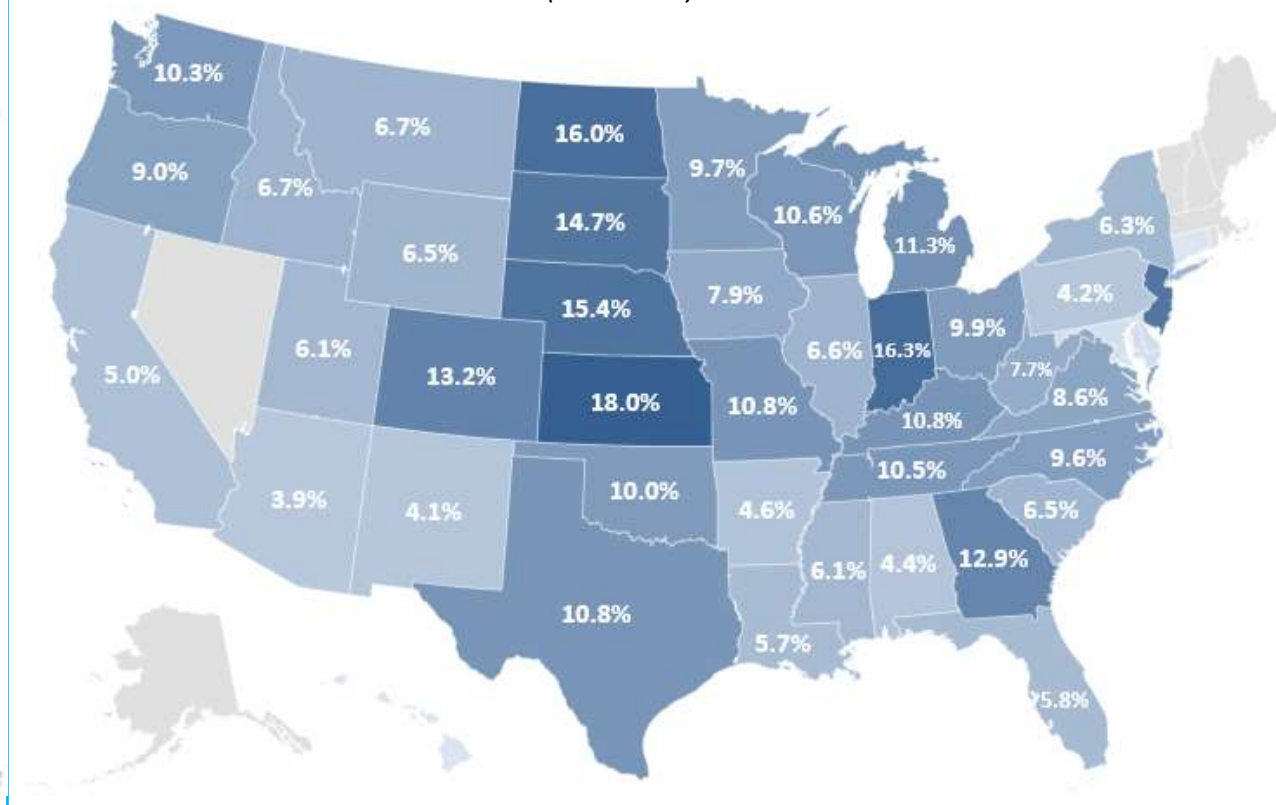
CURRENT MARKET DYNAMICS

2023 FARMLAND VALUES & RETURNS

2023 FARMLAND VALUES

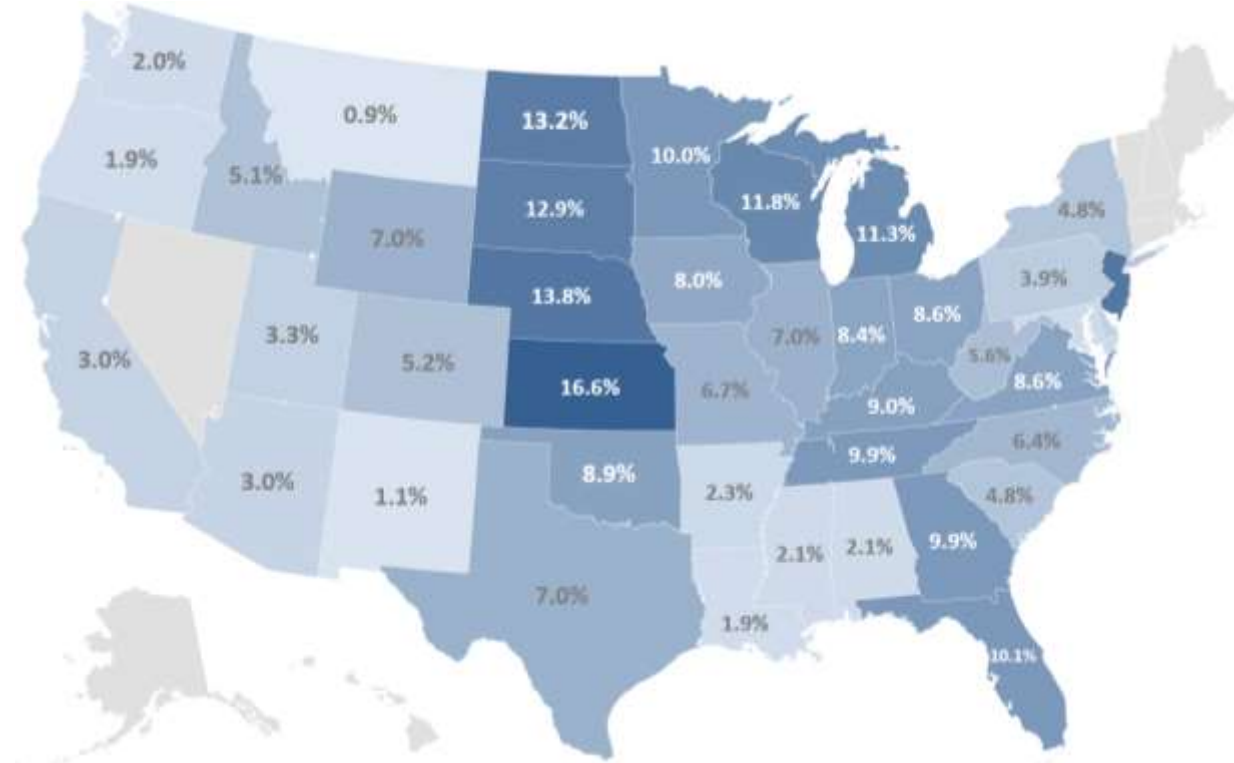


2023 TOTAL ANNUAL RETURN *(estimated)*

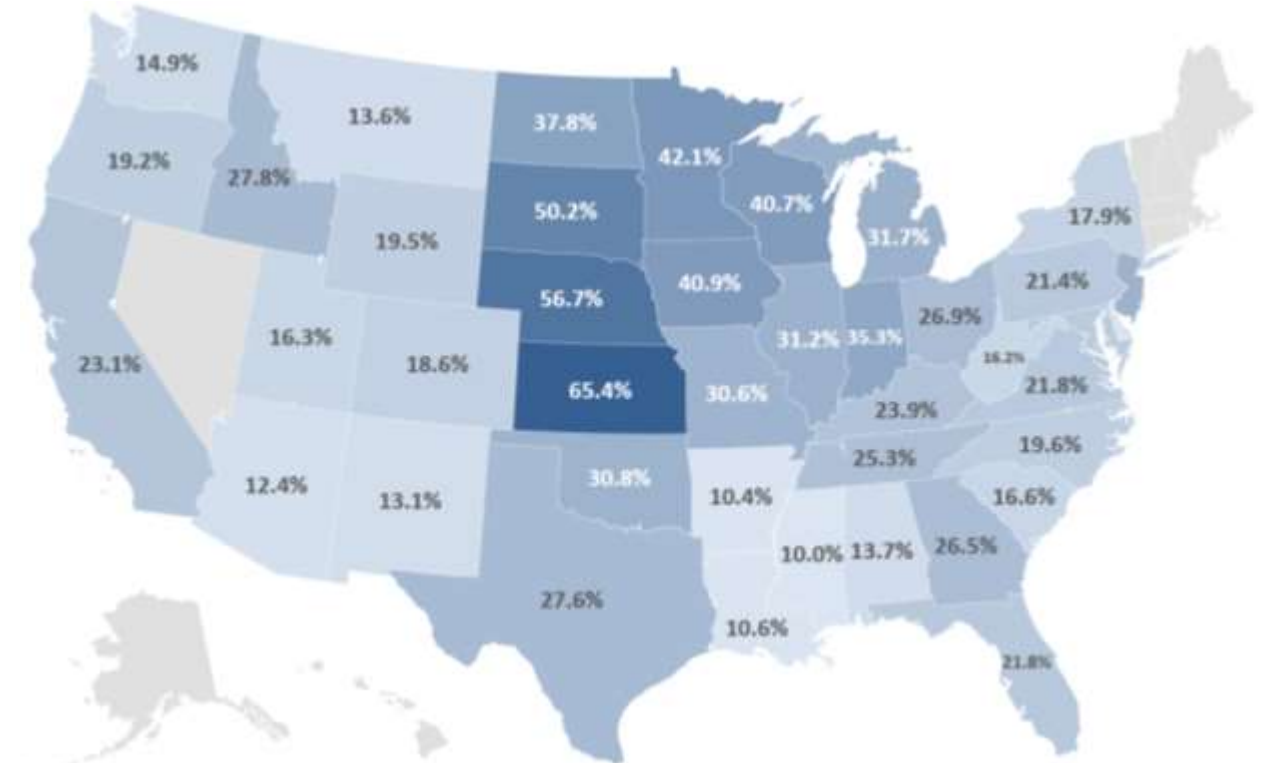


FARMLAND VALUE TRENDS

2022-2023 YEAR-ON-YEAR INCREASE



2020-2023 VALUE INCREASE

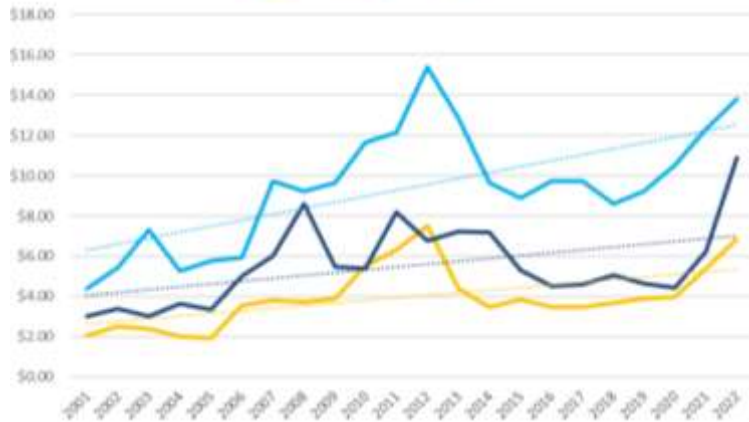


2020-2023 PRICE CHANGE DRIVERS

AVERAGE CLOSING PRICE

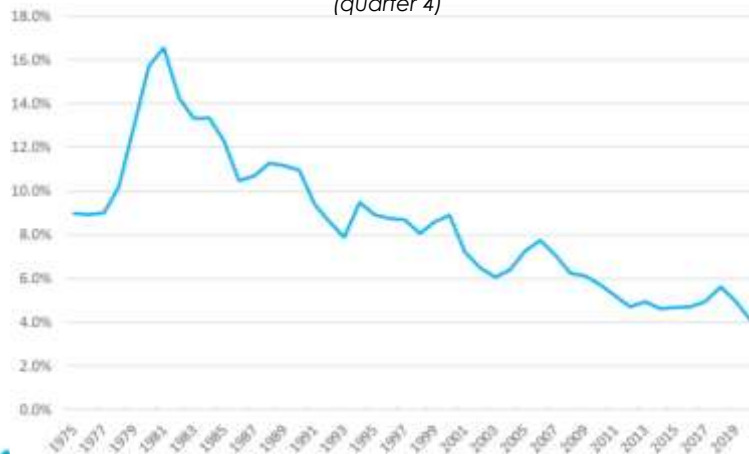
(price per bushel)

— Corn — Soybeans — Wheat



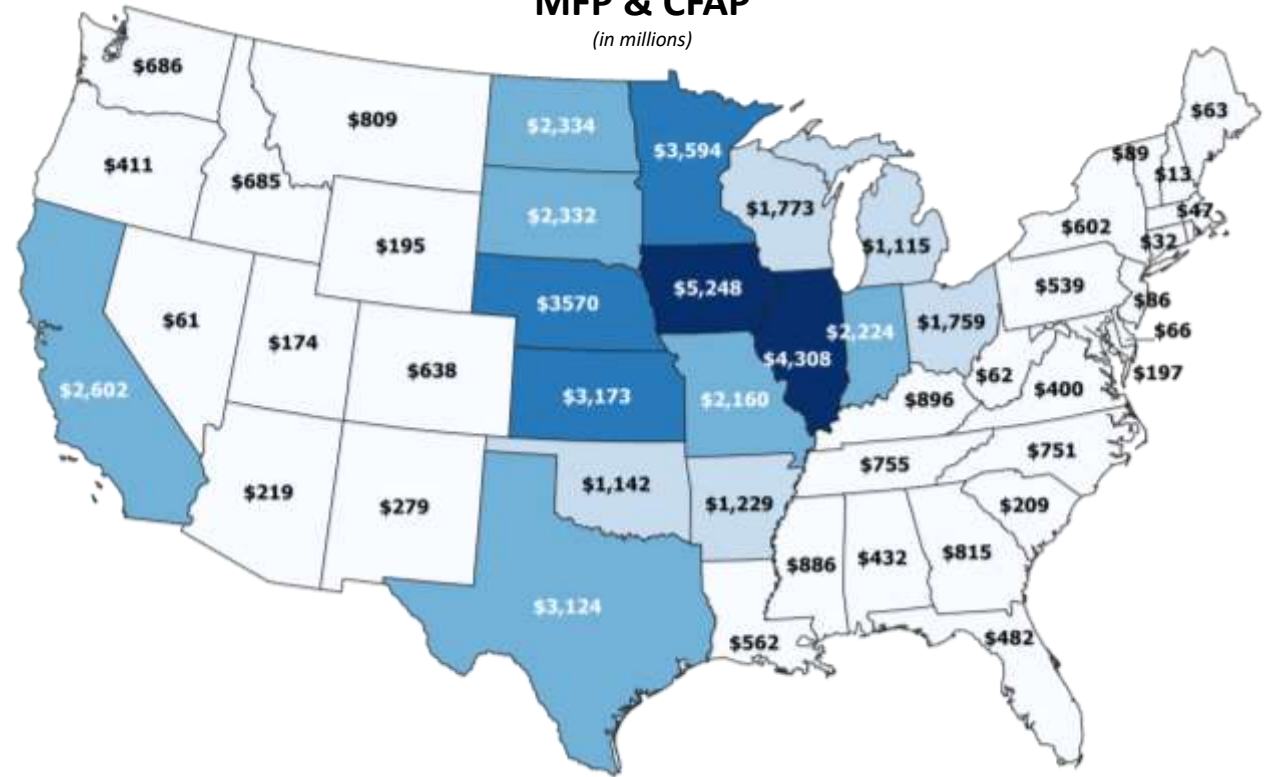
ANNUAL FARMLAND LOAN RATES

(quarter 4)



MFP & CFAP

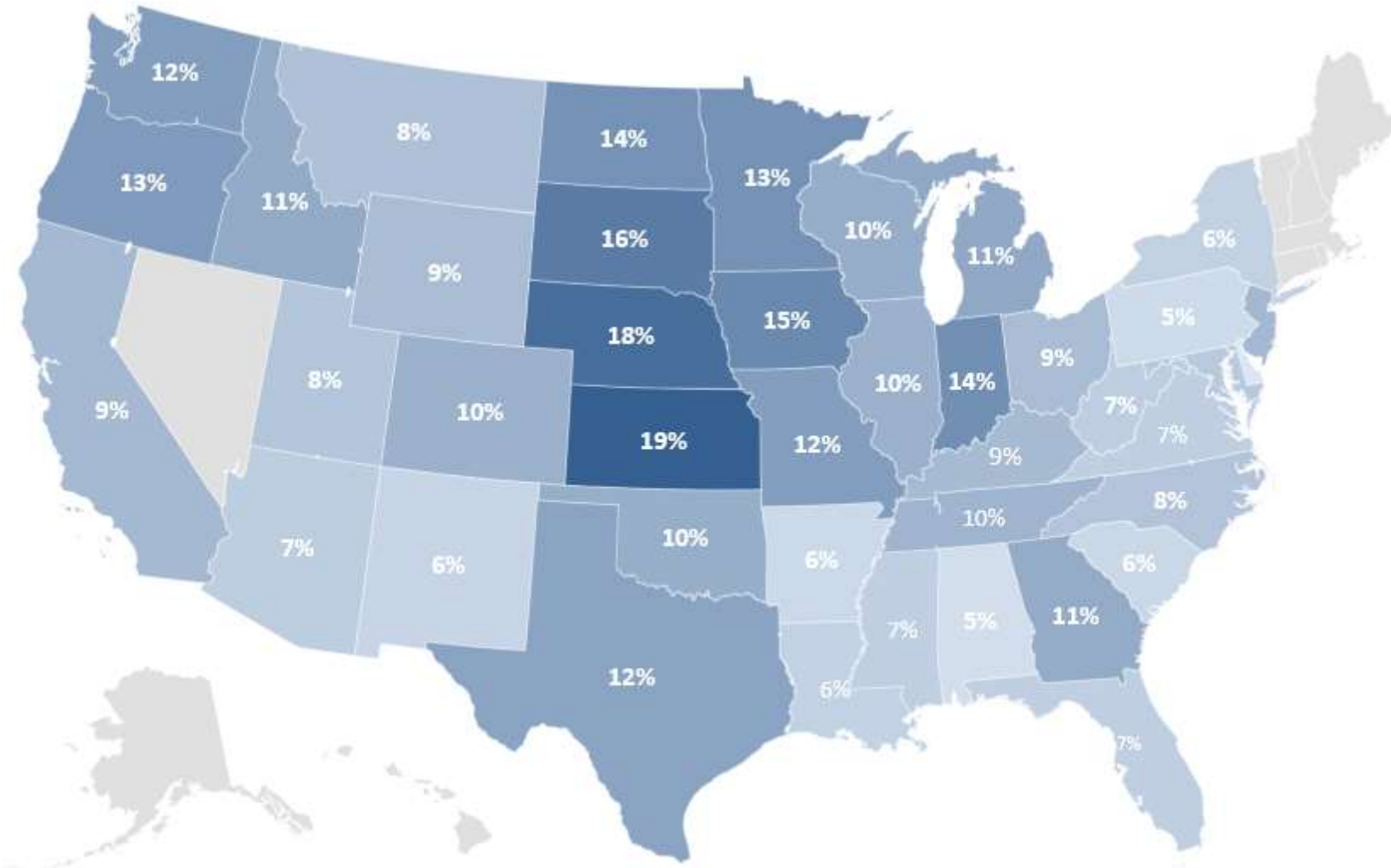
(in millions)



- MFP and CFAP Programs: \$53.9B distributed
- Commodity price run
- Interest rates
- Broad real asset cap rate compression

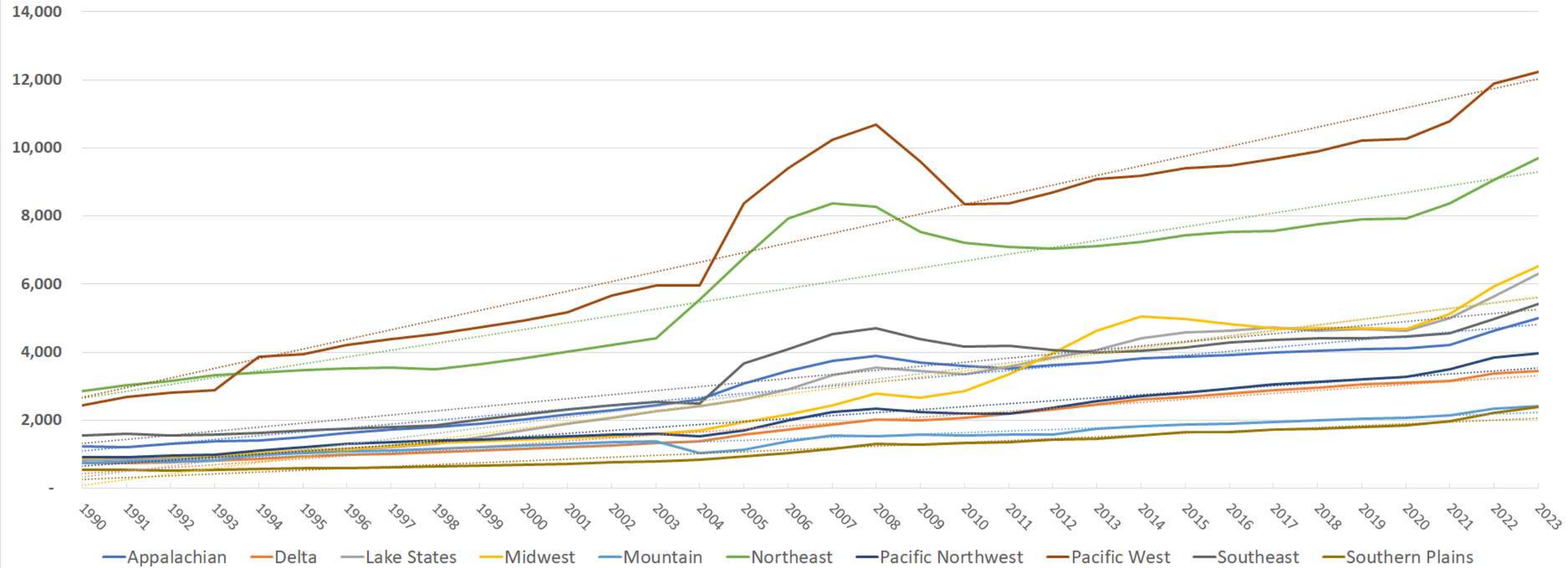


FARMLAND RETURNS – THREE YEAR AVERAGE: 2021-2023



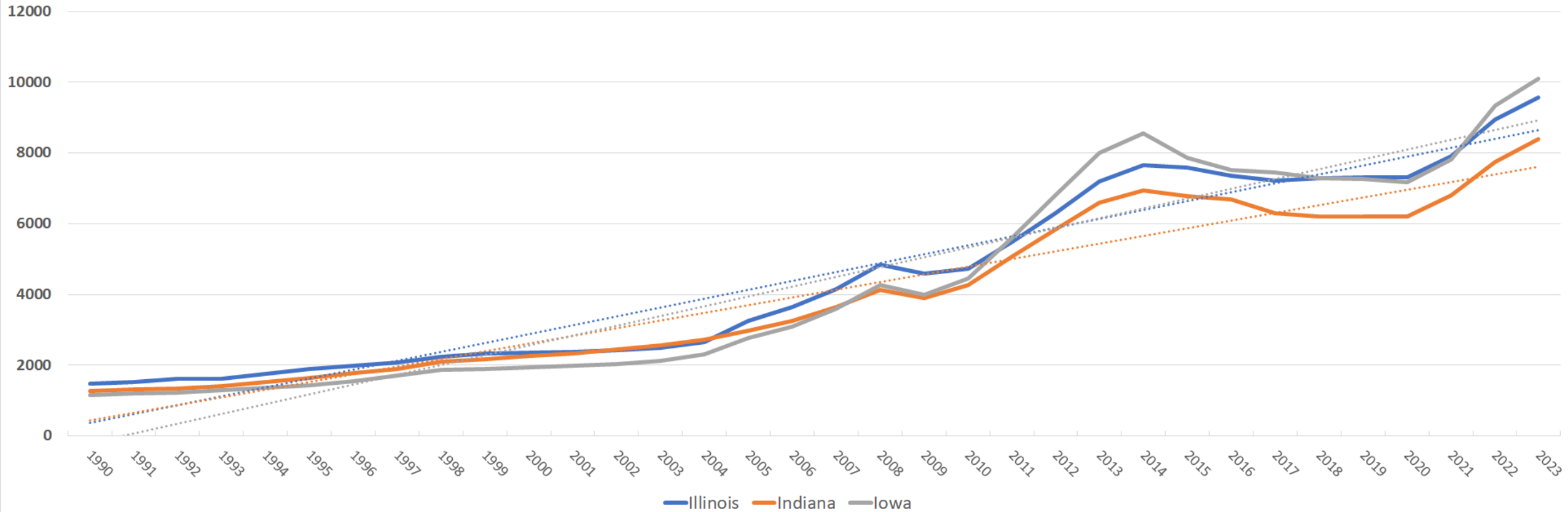
REGIONAL PERFORMANCE

Farmland Values by Region - 30 Year Trendline



CORE MIDWEST PERFORMANCE

Farmland Values - IL, IN, IA - 30 Year Trendline



LEVERAGED BUYERS

Baseline Leverage Scenario

<i>Land Price</i>	\$10,000	<i>\$/acre</i>
<i>Cap Rate</i>	3.00%	
<i>Interest Rate</i>	7.50%	
<i>LTV</i>	50%	
<i>Term</i>	25	<i>years</i>
<i>Annual Payment</i>	(\$449)	<i>\$/acre</i>
<i>Revenue</i>	\$300	<i>\$/acre</i>
<i>Net Income</i>	(\$149)	<i>\$/acre</i>



CASH BUYERS

U.S. 1 Year Treasury Bill

ADD TO WATCHLIST

5.393%

▲ 0.008

Last Updated: Aug 22, 2023 12:02 p.m. EDT



PREVIOUS CLOSE

5.385%

5.361

DAY RANGE

5.401

3.115

52 WEEK RANGE

5.489



IMPACT OF A SHRINKING BUYER POOL

- Driven by cash buyers owning farmland as a business
- Acquisition within +/- 10% variance of trendline
- Unique timing for acquisitions:
 - Sale leasebacks
 - Farmer partnerships
 - Forced and elected transitions



FARMLAND INCOME DRIVERS

Income	Key Factors	Impacts
Crop Revenue	<ul style="list-style-type: none"> • Crop price • Long term yields • Crop insurance protects short term yield issues 	2022 Crop cash receipts = \$278B
Costs of Production	<ul style="list-style-type: none"> • Net income from operations • Cost of working capital 	2022 Est revenue returned to land = \$117B
<i>Farmland Externalities</i>		
Recreation	<ul style="list-style-type: none"> • Hunting/Fishing • Outdoor activities • Agritourism 	\$1B in 2017, tripling over 15 years
Energy Production	<ul style="list-style-type: none"> • Wind • Solar • Electric storage 	\$10B-\$20B for current production goals
Carbon Storage	<ul style="list-style-type: none"> • Offset and inset markets 	\$12B-\$25B for current net-zero goals
Ecosystem Services	<ul style="list-style-type: none"> • Off farm impacts • Water quantity/quality • Biodiversity 	Global total value est at \$33T annually



DOWNSIDE RISK ANALYSIS

Comparing Downside Risks

	Farmland	Corporate Bonds	S&P 500
Negative Years	3	9	11
Worst 1-Year Total Return	-5.0%	-14.5%	-36.6%
Standard Deviation	6.4%	8.4%	17.2%
Downside Deviation	1.7%	3.6%	9.5%



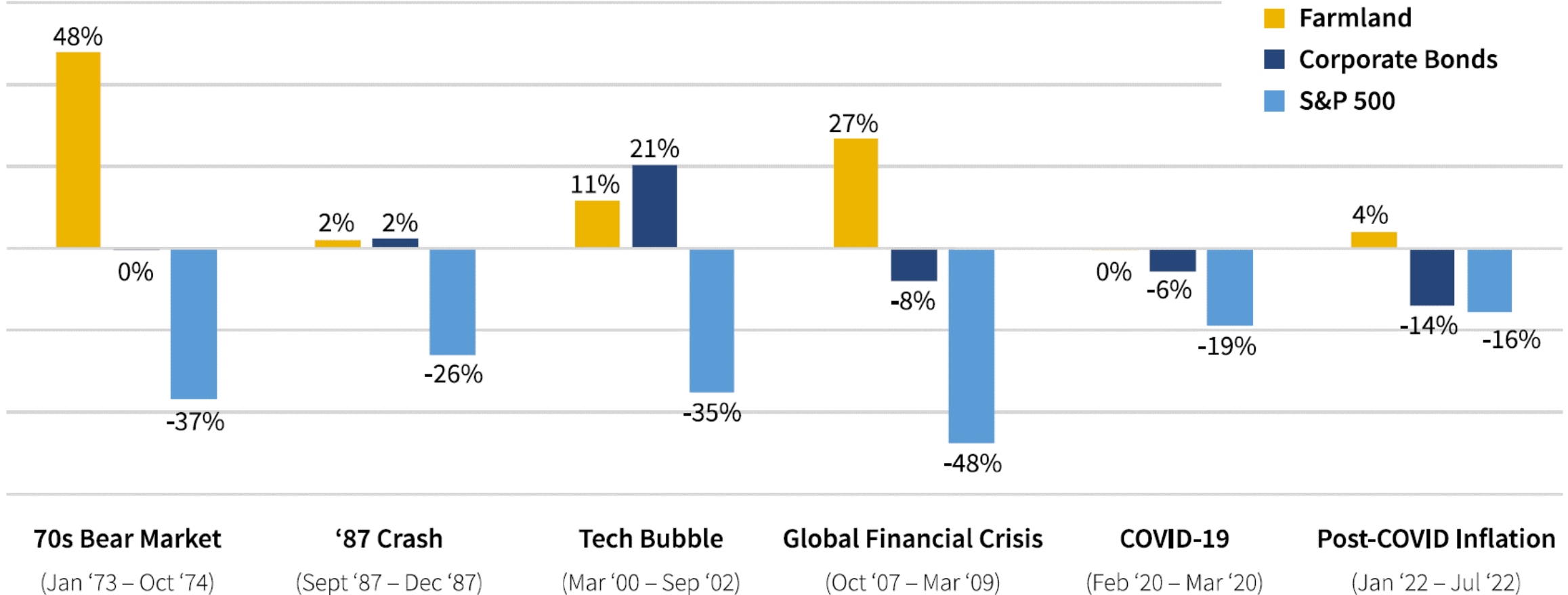
EQUITIES ANNUAL TURNOVER

Ownership and Turnover	Farmland	Public Equities
Percent owned by owner-operators/“insiders”	60%	<2%
Annual turnover	2%	100%

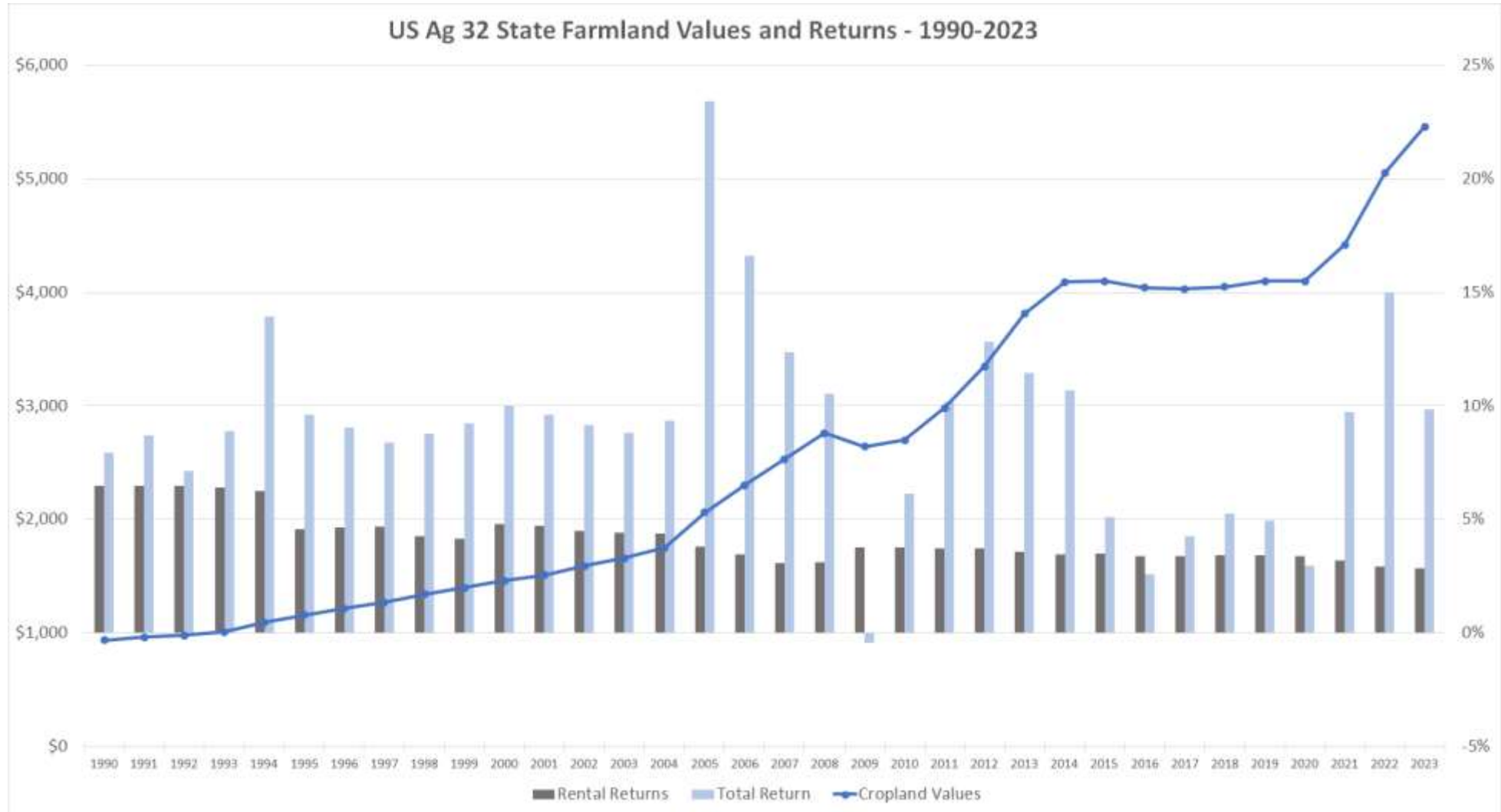


Returns during equity drawdown periods

Asset Class Returns During Equity Drawdown Periods



UNDERSTANDING ACQUISITION TIMING IMPACTS



ASSET CLASS DRIVERS AND OPPORTUNITIES



Financialization of the Asset Class

- Increasing interest from investment capital
- Motivated by broad economic drivers and historical asset class performance
- Will improve efficiency and scale of capitalization
- Aligns with demographic realities of farmland ownership



Consumer Trends

- Sustainable production
- Traceability in supply chains
- Health, wellness, and experience drivers in food consumption



Technology

- Production technology continues to deliver more output with less input
- Ubiquitous access to historical production information
- Improving transactional efficiency



Expanding Revenue

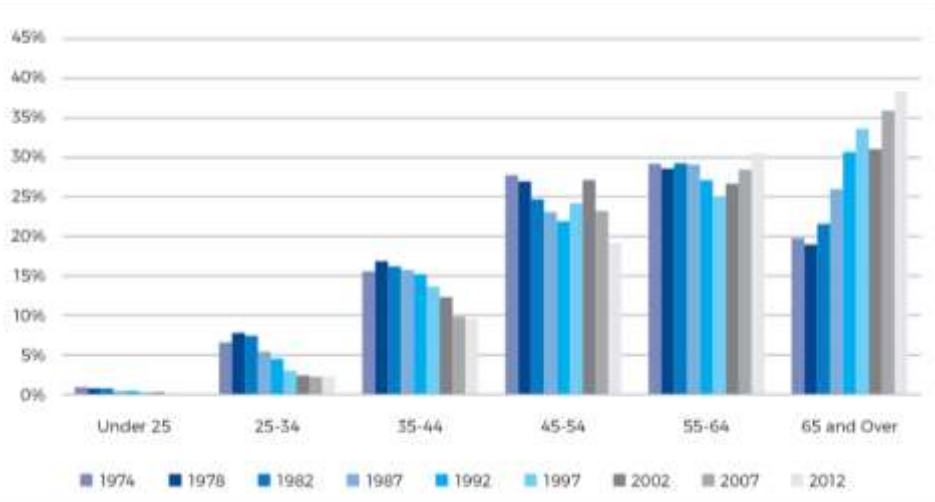
- Carbon storage
- Ecosystem services
- Renewable energy



FINANCIALIZATION OF THE ASSET CLASS

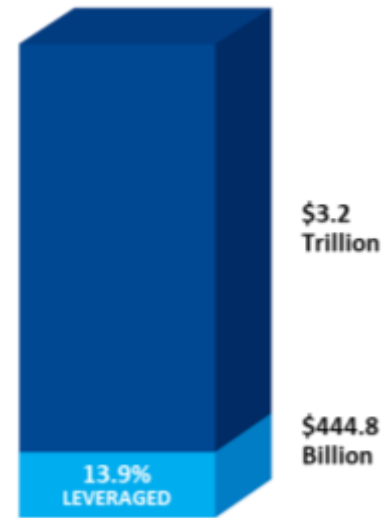
Massive capital turnover as older farmers and landowners exit farm investments leading to greater opportunity for investors.

FARMLAND OWNERSHIP DEMOGRAPHICS



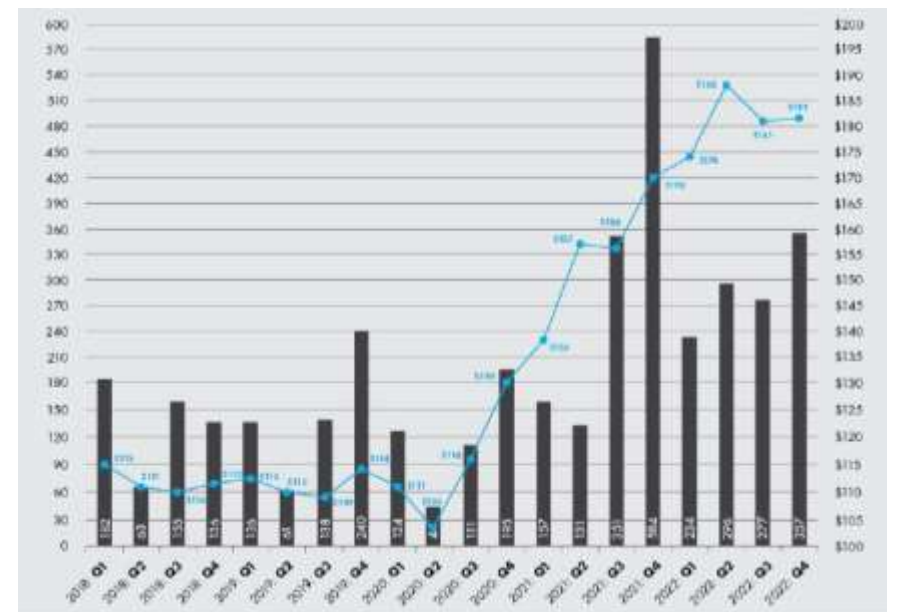
82% of principal landlords were 55 years of age or older in 2014

ASSET CLASS CAPITALIZATION

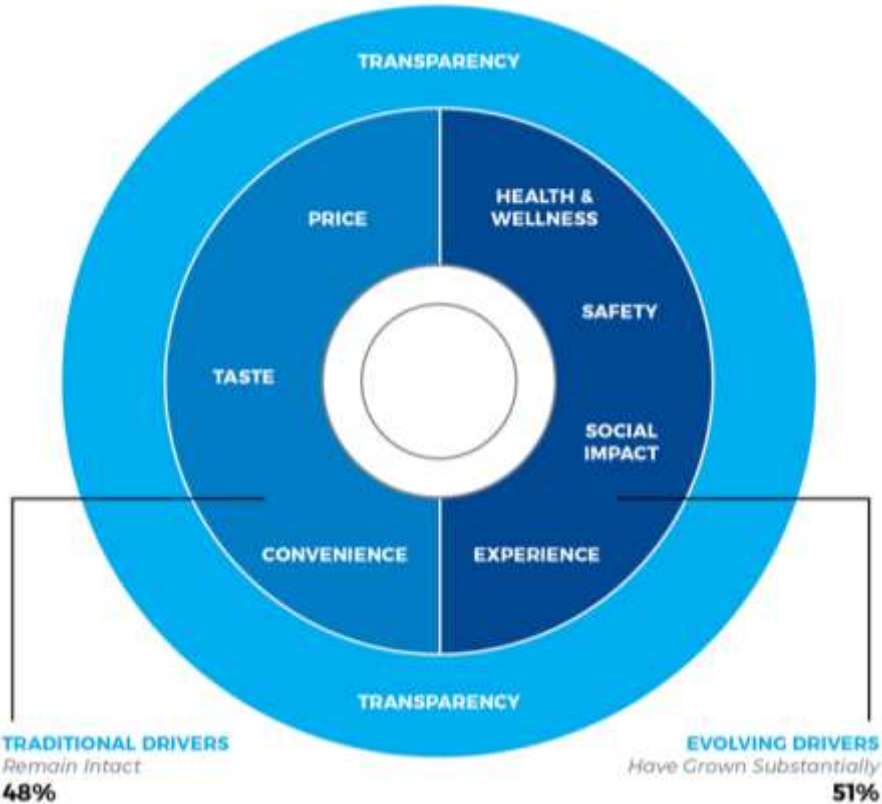


13.9% average asset class leverage

QUANTITY OF AUCTIONS & AVERAGE DOLLAR(\$)/CSR2



CONSUMER TRENDS



Source: Deloitte Development LLC



PeoplesCompany.com

Among evolving value drivers, three distinct buyer groups emerge:

77% **“Balanced health” buyers** who have a preference for health, wellness, and nutritional content

83% **“Free from” buyers** who have a preference for free of harmful elements

95% **“Naturally oriented” buyers** who have a preference for organic, local, non-GMA, all natural, and limited processing/preservatives/artificial ingredients

PEOPLES COMPANY INITIATIVES



TECHNOLOGY

U.S. HISTORICAL AVERAGE CORN YIELD



Source: USDA, Research Economic Service

AGRI-FINTECH DATA



CREDIT



MARKETPLACE/TRADE DATA



EXPANDING REVENUE | INFLATION REDUCTION ACT

“carbon pollution-free power sector by 2035 and net zero emissions economy by no later than 2050”

Inflation Reduction Act Impacts

- 1 Carbon sequestration and GHG quantification
- 2 Accelerating renewable electric generation
- 3 Increased conservation program funding
- 4 Renewable biofuels support extensions

Inflation Reduction Act

Economic Sector Spending

Energy	\$250.6 Billion
Manufacturing	\$47.7 Billion
Environment	\$46.4 Billion
Transportation & Electric Vehicles	\$23.4 Billion
Agriculture	\$20.9 Billion
Water	\$4.7 Billion
TOTAL	\$393.7 Billion

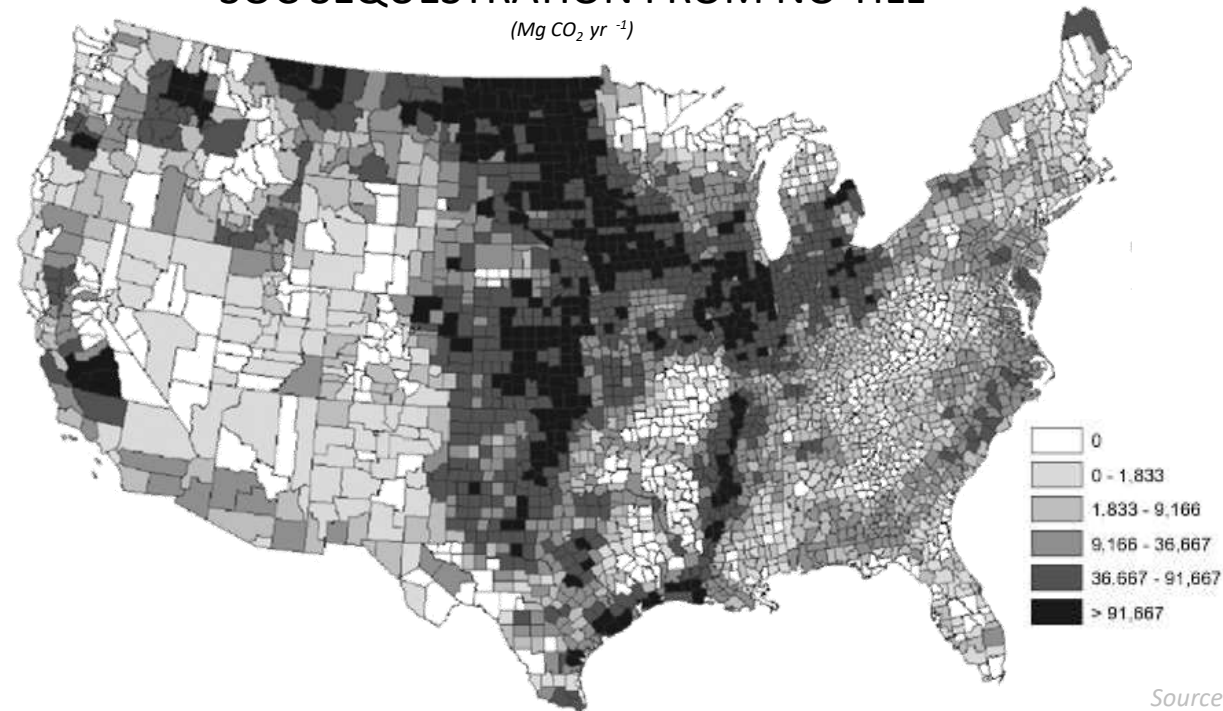


EXPANDING REVENUE | VALUING CARBON SEQUESTRATION

	Value Per MT Carbon		
	\$30	\$60	\$90
Annual Carbon Sequestered (MT)	200,000,000	200,000,000	200,000,000
Total Annual Value	\$6,000,000,000	\$12,000,000,000	\$18,000,000,000
U.S. Farmland Cap Rate	3.5%	3.5%	3.5%
U.S. Farmland Value Impact	\$171,428,571,429	\$342,857,142,857	\$514,285,714,286

SOC SEQUESTRATION FROM NO TILL

(Mg CO₂ yr⁻¹)



EXPANDING REVENUE | RENEWABLE ENERGY

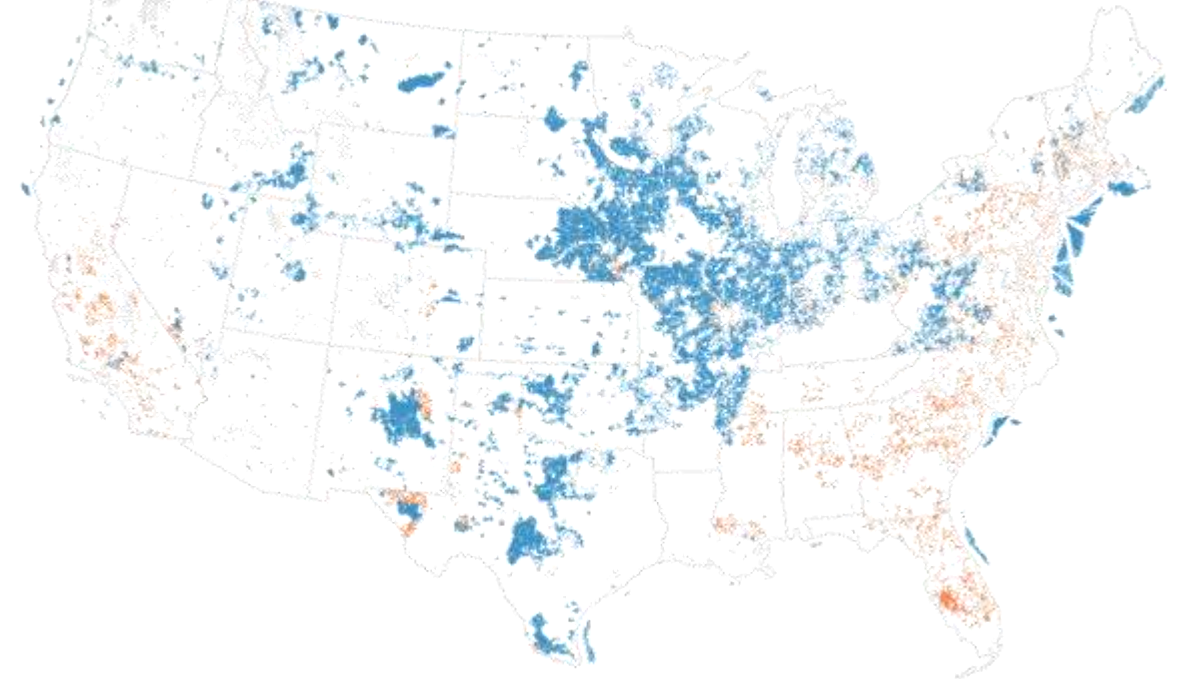
Wind Energy Demand Analysis

Installed wind generation capacity (TW)	3.07
MW produced per wind turbine	2.75
Total turbines installed	1,116,364
Percentage of turbines installed on farmland	80%
Total turbines installed on farmland	893,091
Average annual lease rate per farmland turbine	\$10,000
Total farmland turbine revenue generated	\$8,930,909,091
Cap rate assumption for turbine revenue	6.0%
Total U.S. Farmland Value Impact	\$148,848,484,848

Biofuels Marketplace

Current U.S. fuel ethanol plant capacity (MMgal/year)	17,380
U.S. transportation sector 2021 diesel consumption (MMgal)	46,820
U.S. total airlines 2019 aviation fuel consumption (MMgal)	26,674

WIND & SOLAR INFRASTRUCTURE NEEDED BY 2050





THANK YOU!
