



# Association of Governing Boards

Foundation Leadership Forum

**Why invest in  
farmland now.?**

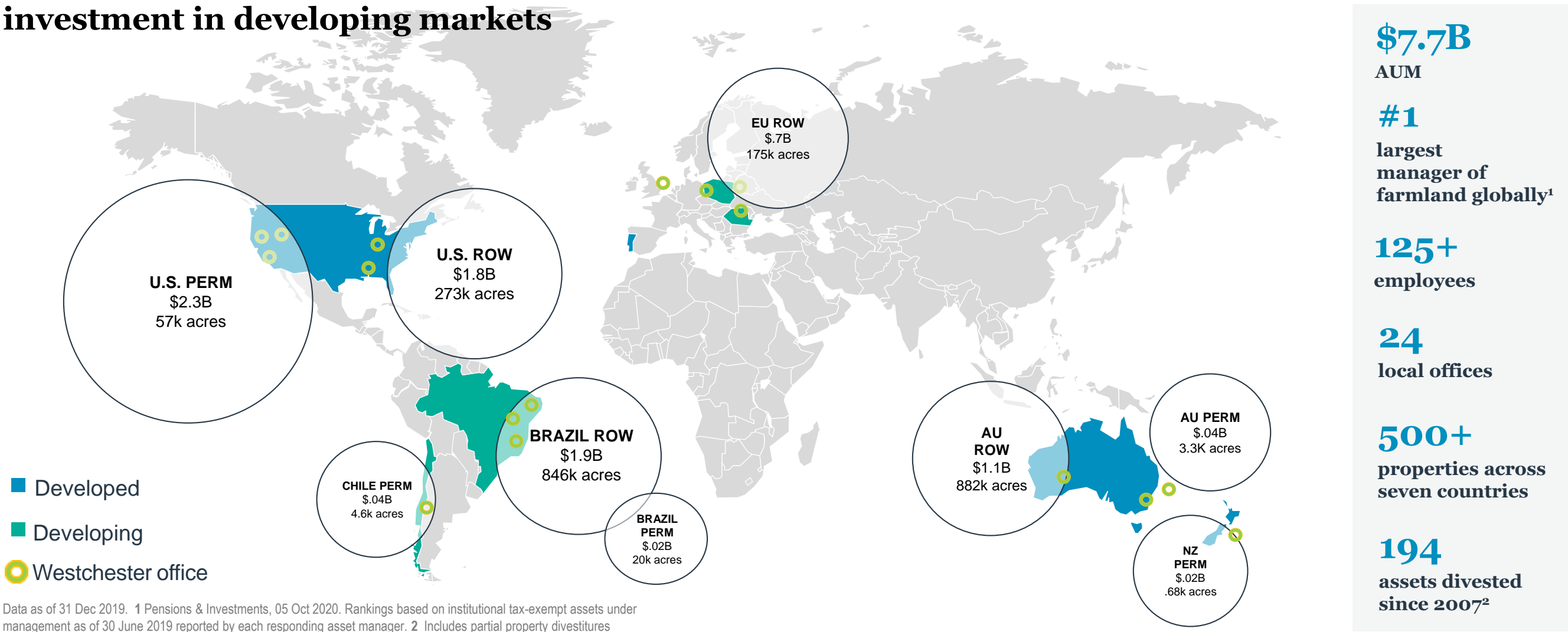
UWF

WESTCHESTER  
from nuveen

26 January 2021

# Westchester: investing globally since 2007

Our investments are anchored around developed markets, with opportunistic investment in developing markets



Data as of 31 Dec 2019. 1 Pensions & Investments, 05 Oct 2020. Rankings based on institutional tax-exempt assets under management as of 30 June 2019 reported by each responding asset manager. 2 Includes partial property divestitures  
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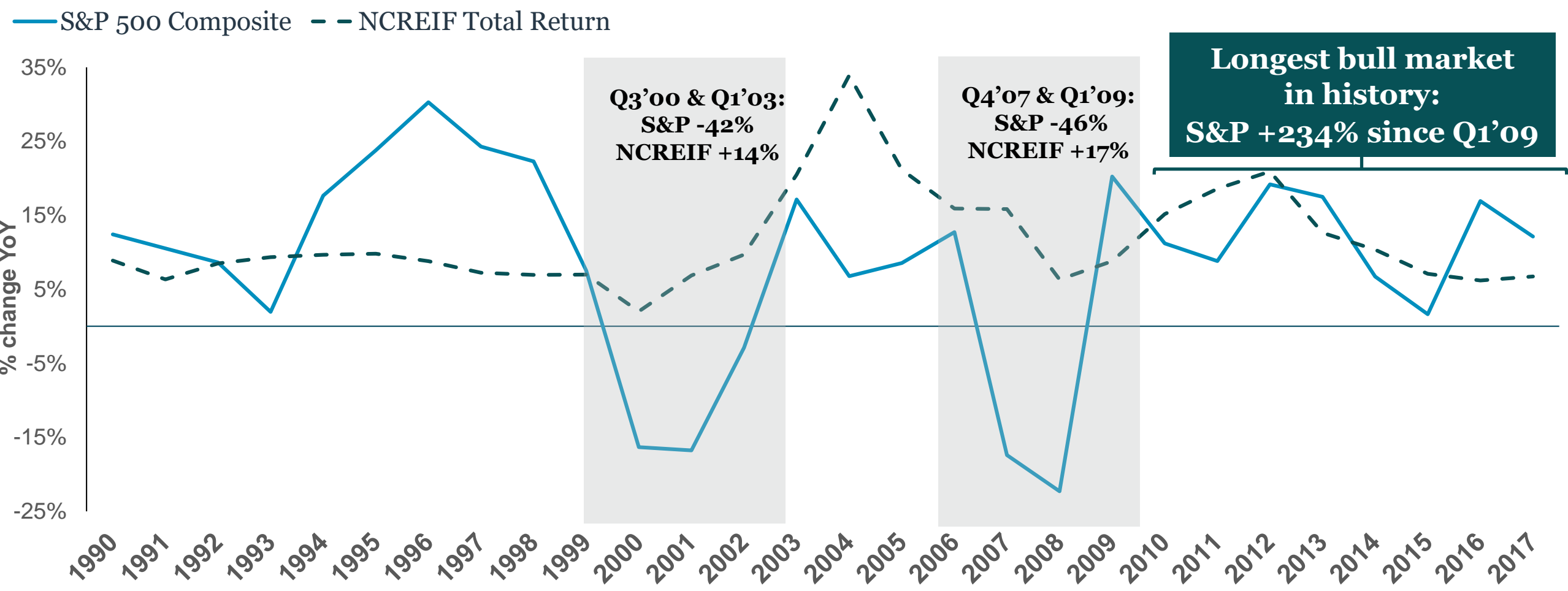
# The case for farmland investment

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# A durable store of value & return throughout market cycles

## NCREIF total returns vs. S&P 500 composite

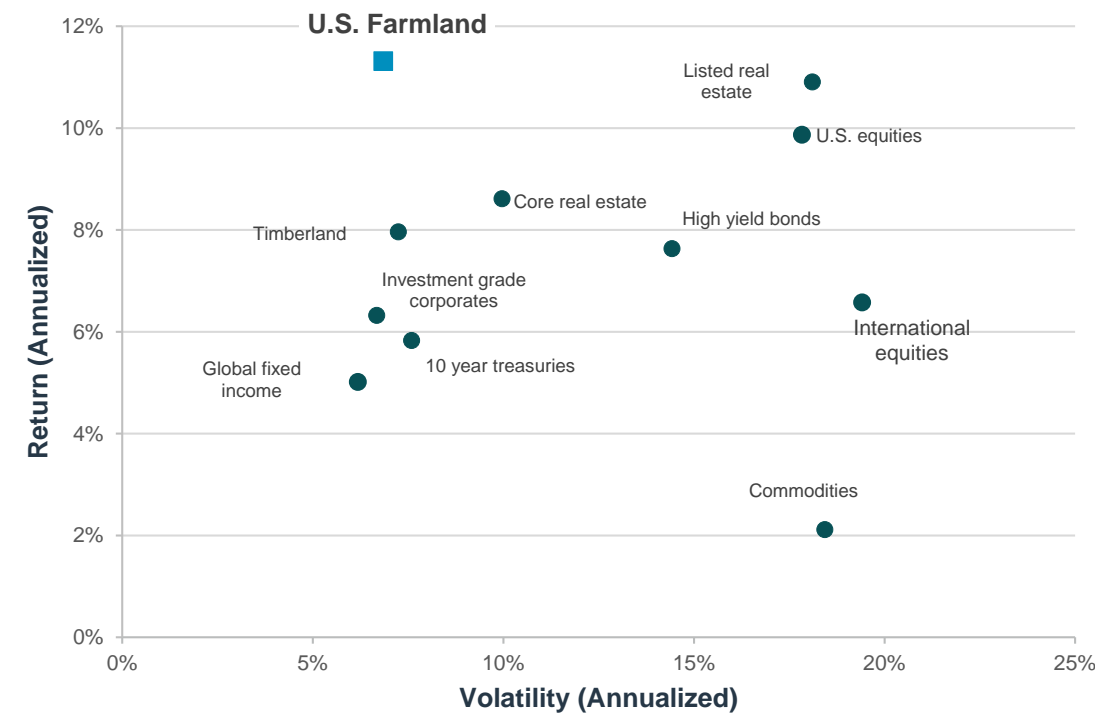


Sources: NCREIF, Haver Analytics. It is not possible to invest in an index. Performance for indices does not reflect investment fees or transactions costs  
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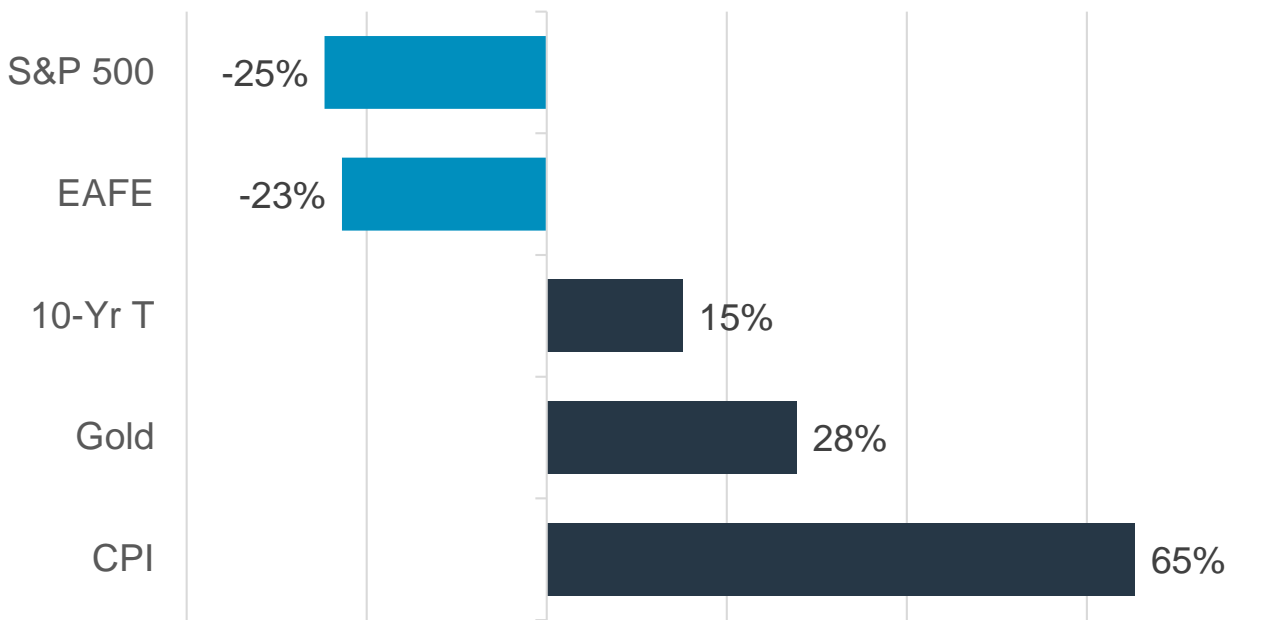
# Farmland returns, volatility & correlations

## Fixed income diversification

High returns achieved with fixed-income level of volatility  
Annual return vs. volatility (1999-2019)<sup>1</sup>



Limited correlation to other assets classes and inflation hedge  
Correlation of select assets vs. average U.S. farmland (1970-2019)<sup>2</sup>

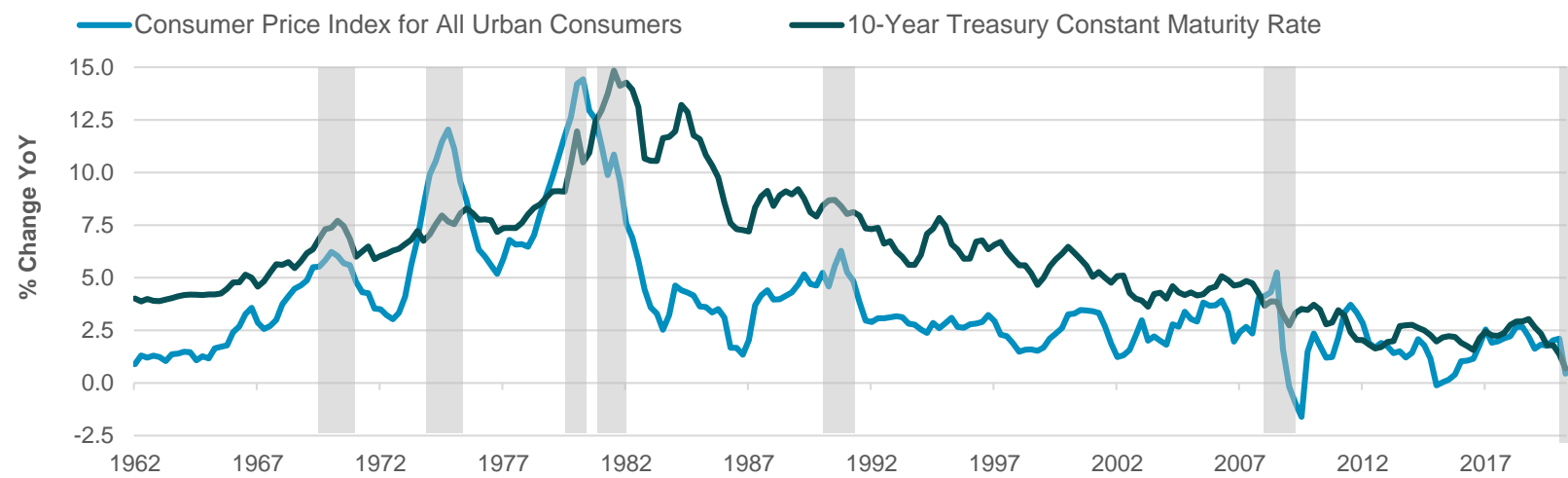


<sup>1</sup> As of 31 Dec 2019. Sources: NCREIF, Bloomberg, S&P, BofAML, Russell 3000, MSCI  
<sup>2</sup> Source: TIAA-CREF Center for Farmland Research, Standard & Poor's, Federal Reserve, MSCI, Commodity Research Bureau, Consumer Price Index. The inception date of the NCREIF Farmland Index is 4Q 1990. The CPI-U produces monthly data on changes in the prices paid by urban consumers for a representative basket of goods and services since 1913. NCREIF Farmland Index returns are used for the time frame above to demonstrate income and capital appreciation components, which are not available from the TIAA-CREF Center for Farmland Research database. It is not possible to invest in an index. Performance for indices does not reflect investment fees or transactions costs.  
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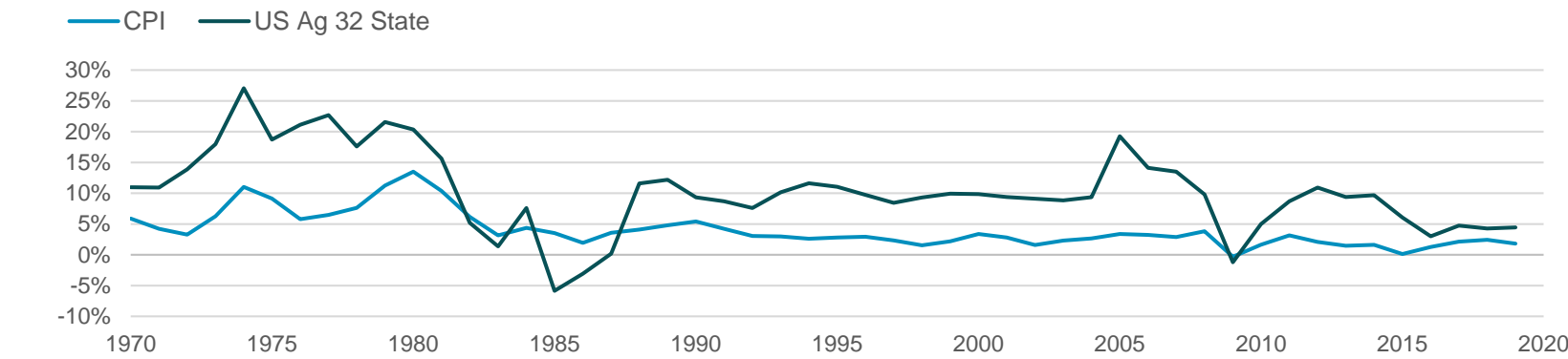
# Farmland & inflation



## U.S. Consumer Price Index (CPI) versus 10-Year Treasury Constant Maturity Rate, 1963 to 2020<sup>1</sup>



## Farmland returns and inflation (CPI) 1970 to 2019<sup>2</sup>



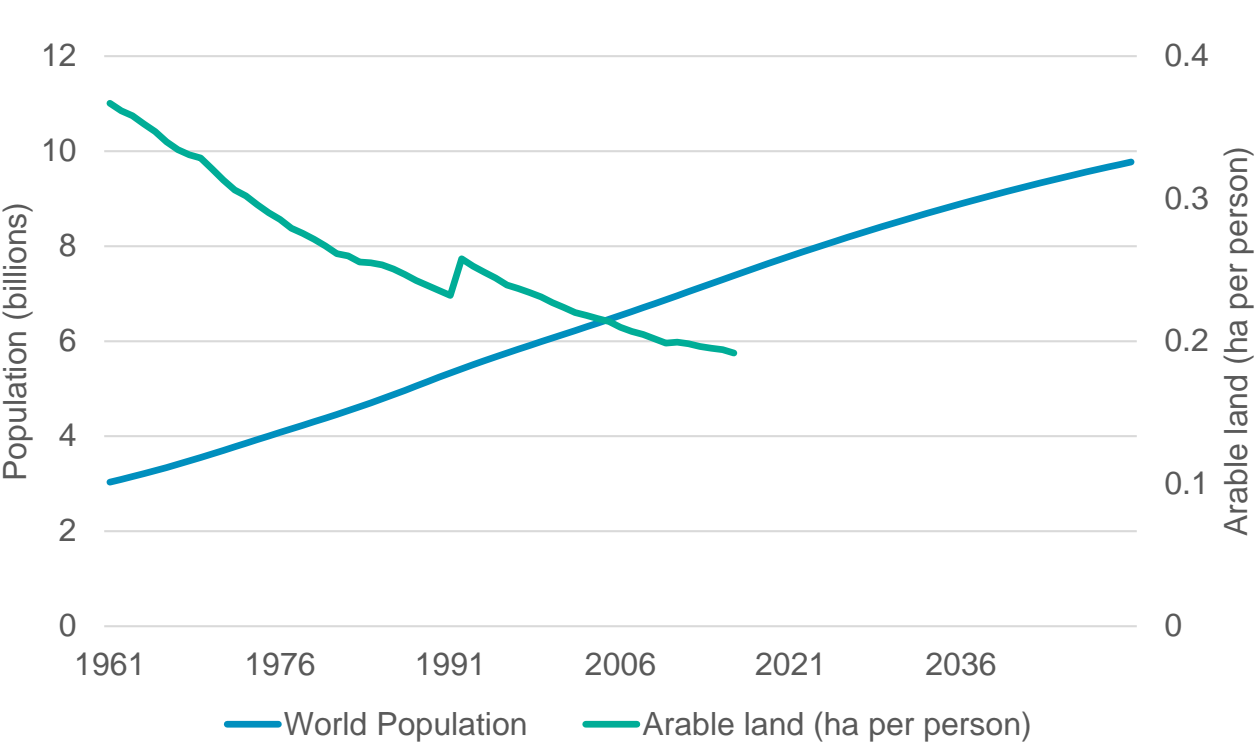
Source: <sup>1</sup> Federal Reserve Economic Data (FRED), U.S. Bureau of Labor Statistics (BLS)  
<sup>2</sup> BLS, USDA, TIAA Center for Farmland Research  
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- Recent posture and guidance of the FED signals accommodation or promotion of inflationary targets that add pressure to cap and other derived return expectations
- Inflation registers in the prices and incomes of soft commodities and the fixed factors of production producing them
- Farmland is one of the greatest stores of real value in periods of inflation across a large set of conditions, time periods and holding intervals

# Long-term farmland value drivers

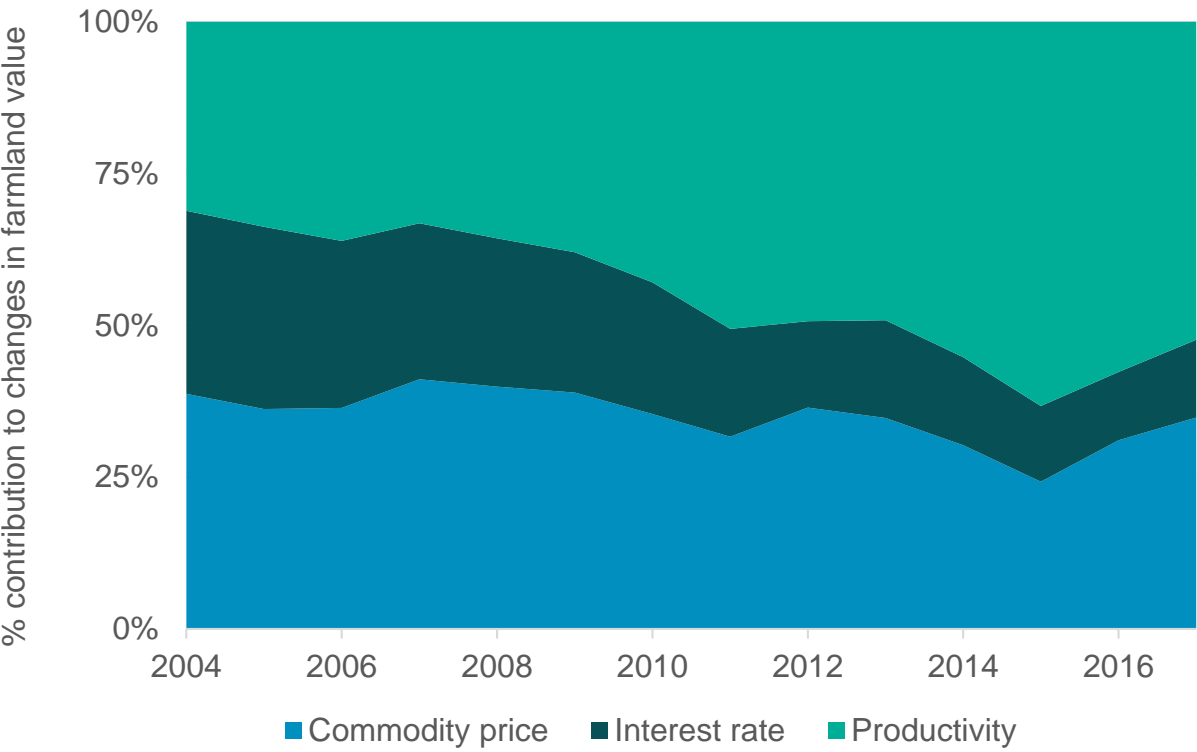
## Rising global population and limited supply of farmland...

Population growth and land availability<sup>1</sup>



## ...requires increased farmland productivity

Farmland returns are driven by rising productivity<sup>2</sup>



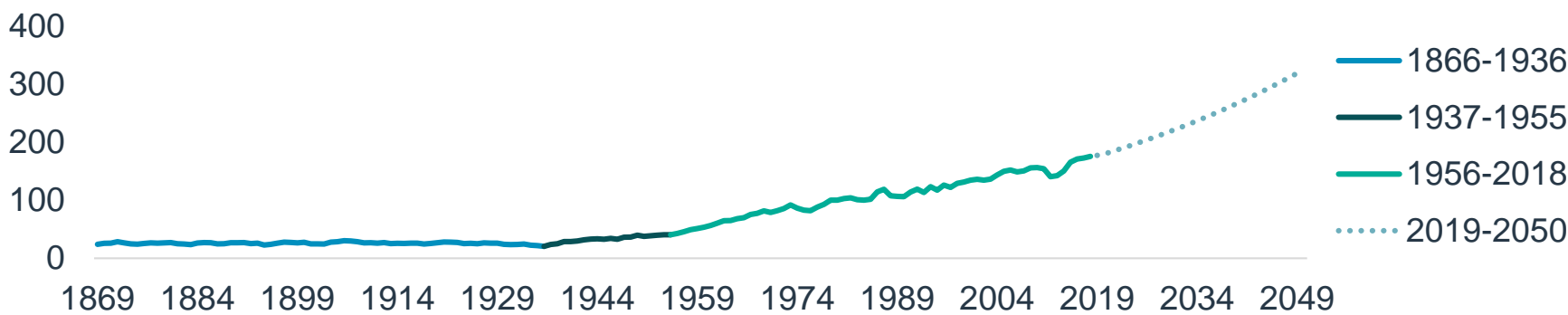
<sup>1</sup> Source: United Nations World Population Forecast 2017 and The World Bank

<sup>2</sup> US Department of Agriculture Economic Research Service, Illinois Farm Bureau. Data for Illinois farmland from 2004 to 2017.

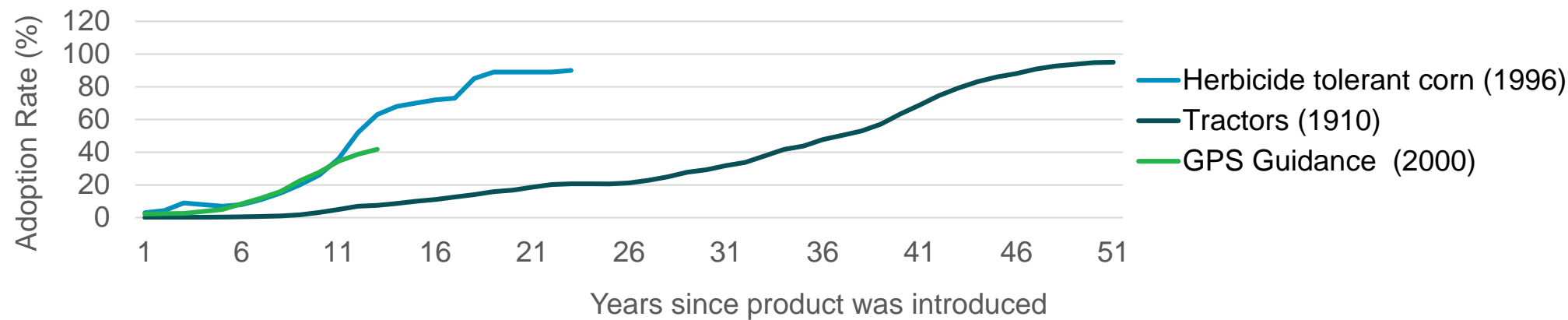
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# Offers upside growth potential

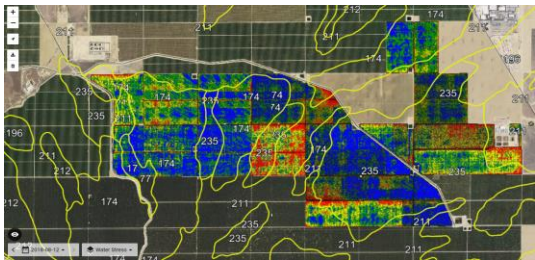
U.S. corn yield (bushels/per acre)<sup>1</sup>



Adoption rates of technology in U.S. agriculture<sup>2</sup>



Poised for growth with ag tech advancements



<sup>1</sup> <https://www.agry.purdue.edu/ext/corn/news/timeless/yieldtrends.html> <sup>2</sup> USDA Economic Research Service, American Economic Association  
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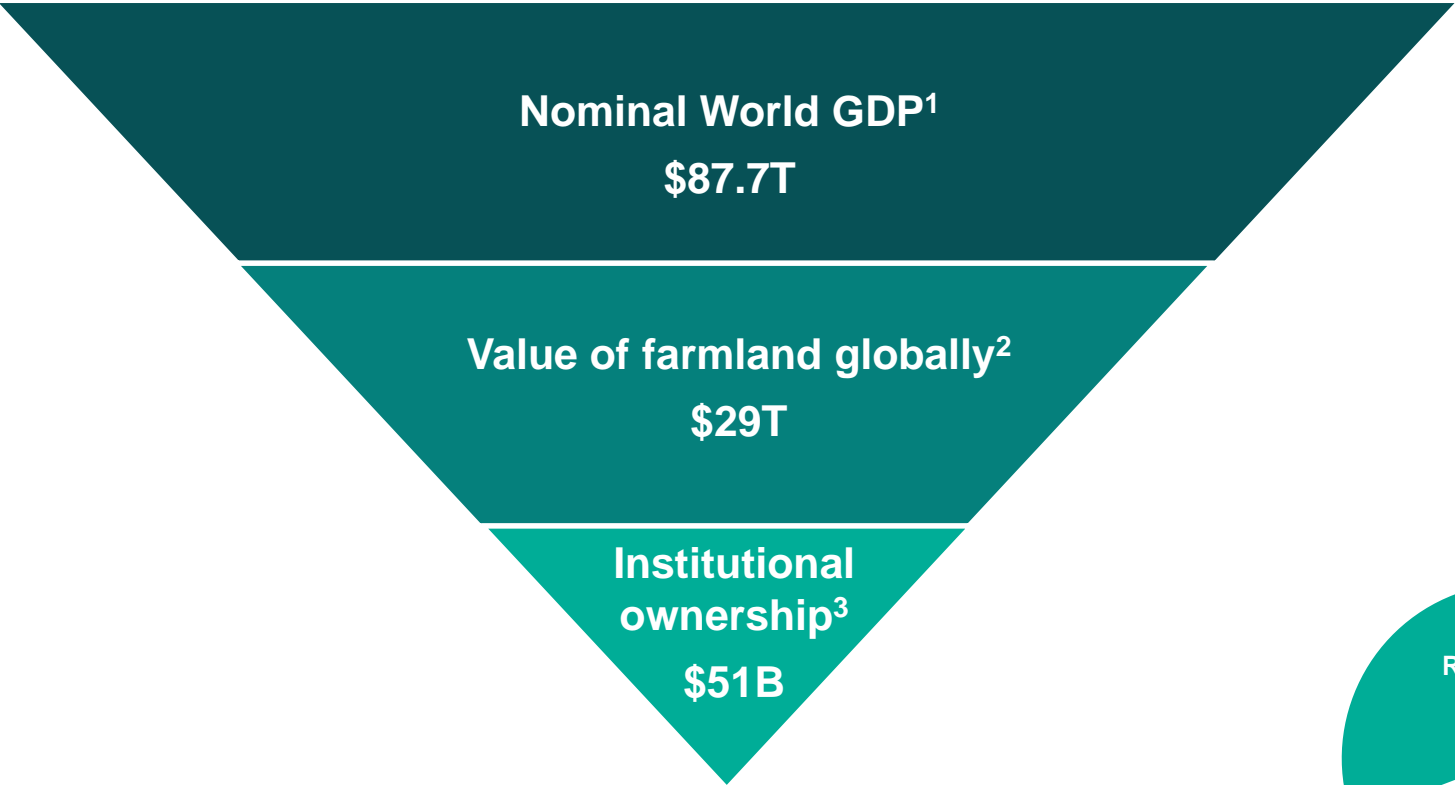


# Further considerations

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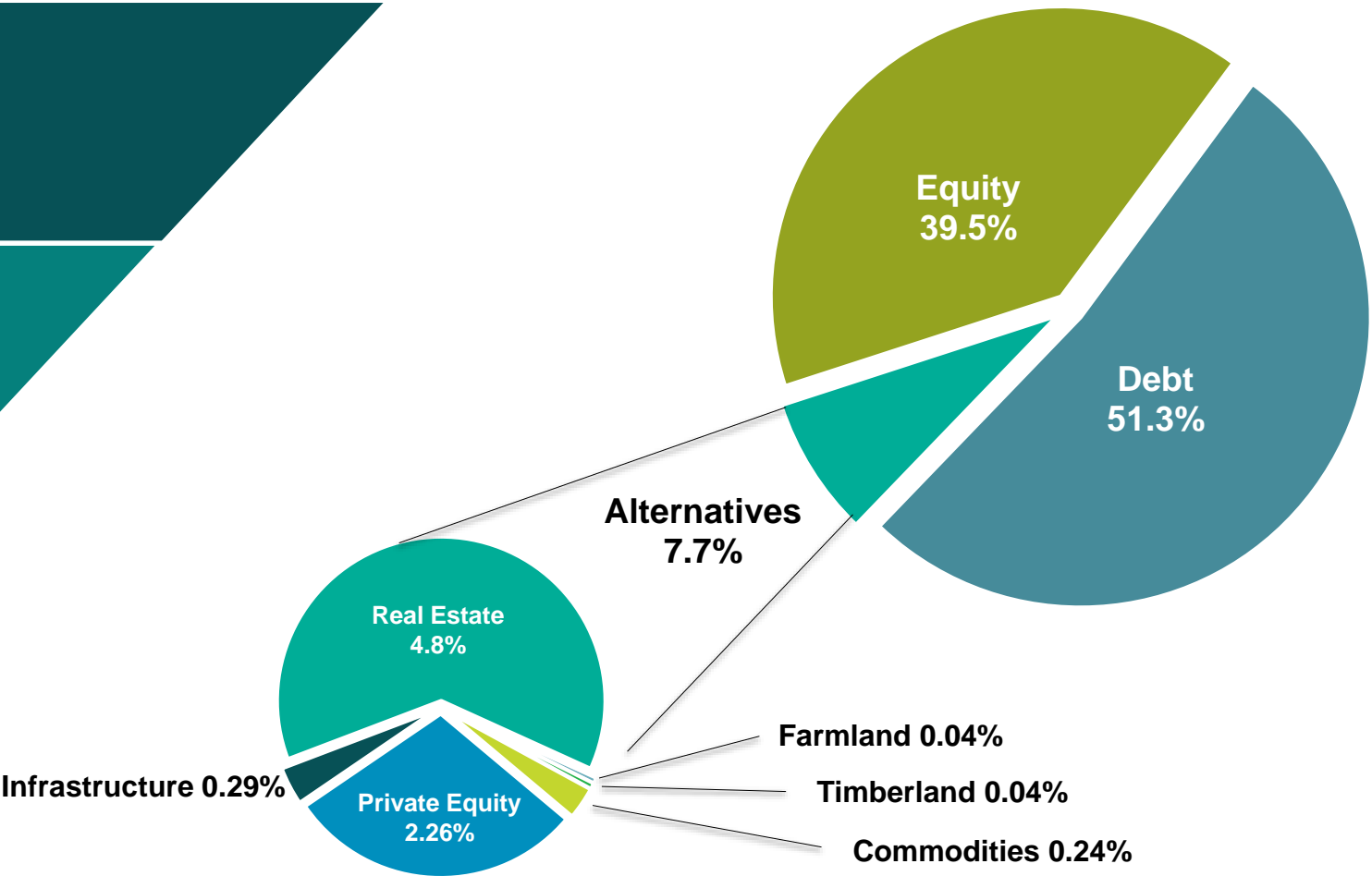
# Farmland is an untapped & nascent asset class

## Value of the farmland investment opportunity



Source: <sup>1</sup> Worldbank,  
<sup>2</sup> Savills,  
<sup>3</sup> HighQuest  
<sup>4</sup> AON

## 2019 global invested capital market: \$ 114.82 T<sup>4</sup>



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# Structural changes require significant outside investment

## Ownership and business consolidation

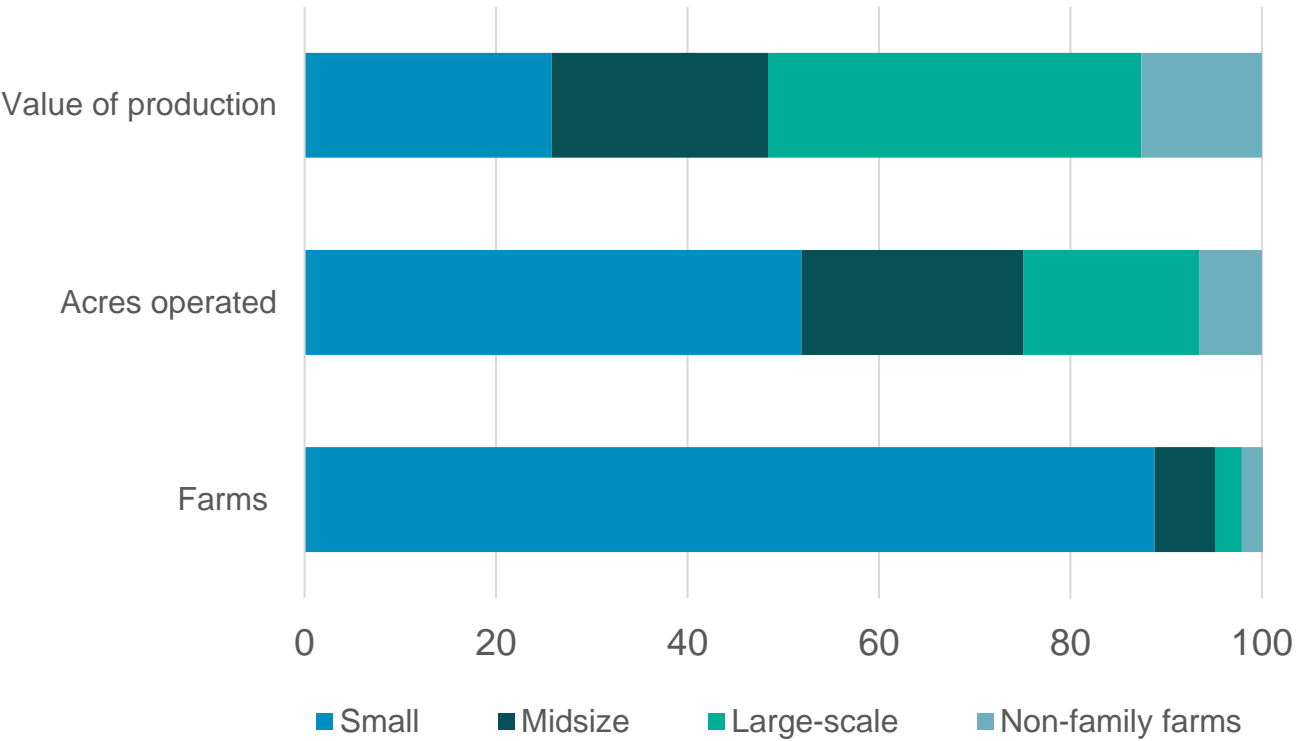
**Farmland Information Centre;** Ownership of 40 percent of the 48 states’ 991 million farm and ranch acres will change hands from 2015 to about 2035

**Farmers National Company;** Over the next five years, ten percent of the 911 million acres of agricultural land in the US will change hands. 1% per year will be sold in the open market, which equates to about 4.25 million acres per year on average available for purchase

**Aimpoint research;** 370 million acres of agricultural lands will change hands in the 48 contiguous states at least once in the 10 to 20 years ending in 2034

**Eurostat;** In 2018, 32% of farm managers in the EU were 65 years of age or more. Only 11% of farm managers in the EU were young farmers under the age of 40 years

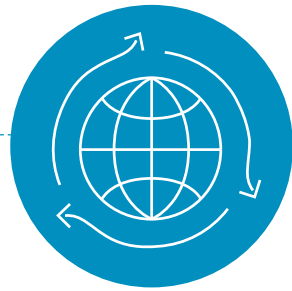
U.S. farm size: family run farms dominate the market



Source: Rabobank  
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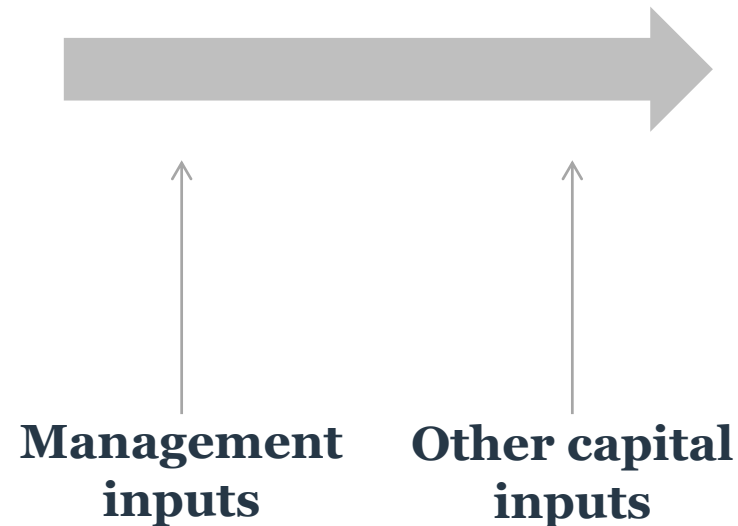
# Natural capital

Value recognition for more than just agricultural output



## Natural capital assets

Species  
Ecological communities  
Soils  
Freshwater  
Land  
Minerals  
Atmosphere  
Sub-soil assets  
Oceans  
Coasts



## Natural capital benefits

Food  
Fibre  
Freshwater (quality/quantity)  
Recreation  
Clean air  
Wildlife  
Hazard protection  
Equable climate  
Health

Source: The State of Natural Capital; Professor Dieter Helm Chairman, The Natural Capital Committee  
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# The role of agriculture in combatting climate change

## Opportunities: soil and renewables

The amount of carbon in soil is **over twice the amount** of carbon found in trees and other biomass

**40 percent of the earth's surface is used for food production**, climate-smart agriculture is a scalable solution to reduce carbon emissions and counter climate change

**REGENERATIVE OPERATION** of cropland worldwide could sequester between 0.9-1.8 t/acre CO<sub>2</sub>/annum

Since the launch of flex fuel cars in Brazil to December 2018, the production and use of **ethanol from sugar cane has reduced emissions by 523 million tons of CO<sub>2</sub> equivalent**

Source: Global Sequestration Potential of Increased Organic Carbon in Cropland Soils (Zomer, Bossio, Sommer, Verchot); Raizen  
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**“..Agriculture and land-use change are 25 percent of the greenhouse gas emission problem but potentially could be more than 25 percent of the solution..”**



# Summary: The role of institutional capital in farmland ownership

- 1 Additional source of capital relative to traditional debt
- 2 Facilitate the separation of operating businesses & capital, allowing family farms to expand
- 3 Increased liquidity options on exit
- 4 Additional option for succession planning and implementation
- 5 Enhancements to sustainability efforts

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UIF

# INVESTING IN AGRICULTURE

EDWARD B. CREEDON, CFA

DIRECTOR OF PRIVATE INVESTMENTS

# UIF'S APPROACH TO AGRICULTURE INVESTING

## Leverage University's Strategic Advantage

- Portfolio of direct farmland – approximately 15,000 acres
- Academic and research resources
- Farmland Advisory Council

## Portfolio Construction

- Holistic View
- Utilize comingled funds to balance direct exposure
- Invest across the value chain



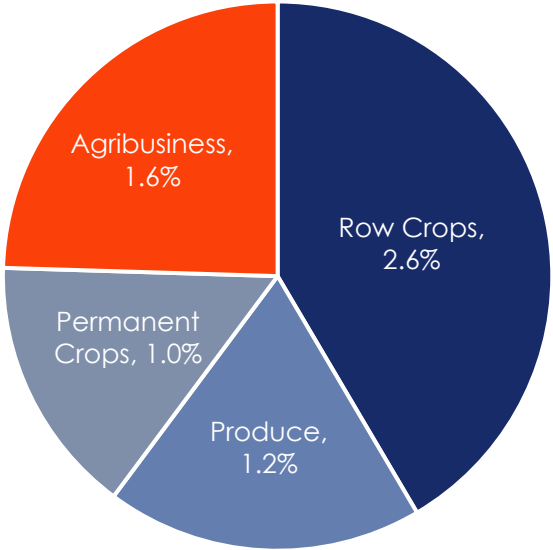


# UIF PORTFOLIO CONSTRUCTION

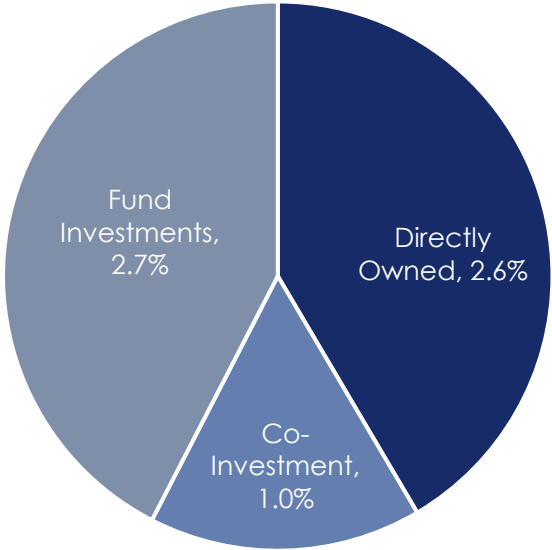


- Agriculture theme is expressed across multiple asset classes
- 6.3% of total portfolio invested in Agriculture

UIF Agriculture Investments by Type



UIF Agriculture Investments by Vehicle



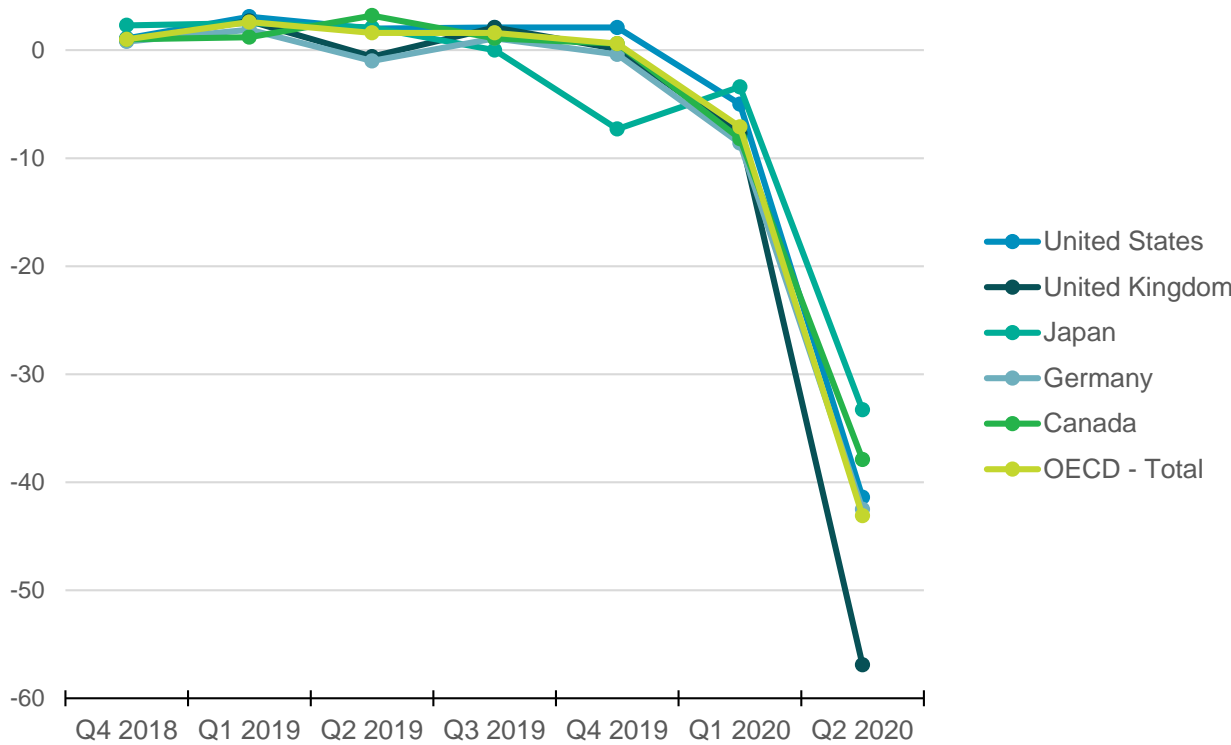
# Discussion

## COVID-19 impacts on Agriculture & Food

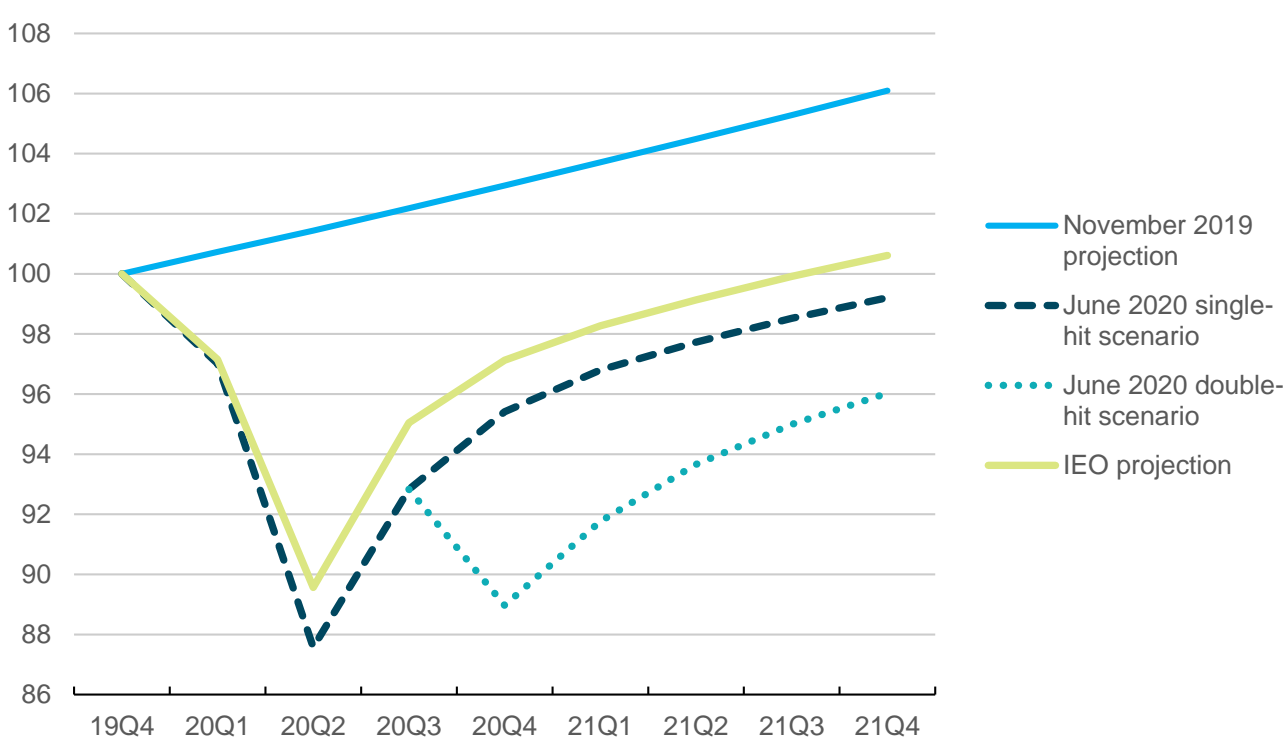
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# Current economic situation and outlook

Global GDP (% growth)



Global GDP index 2019Q4=100

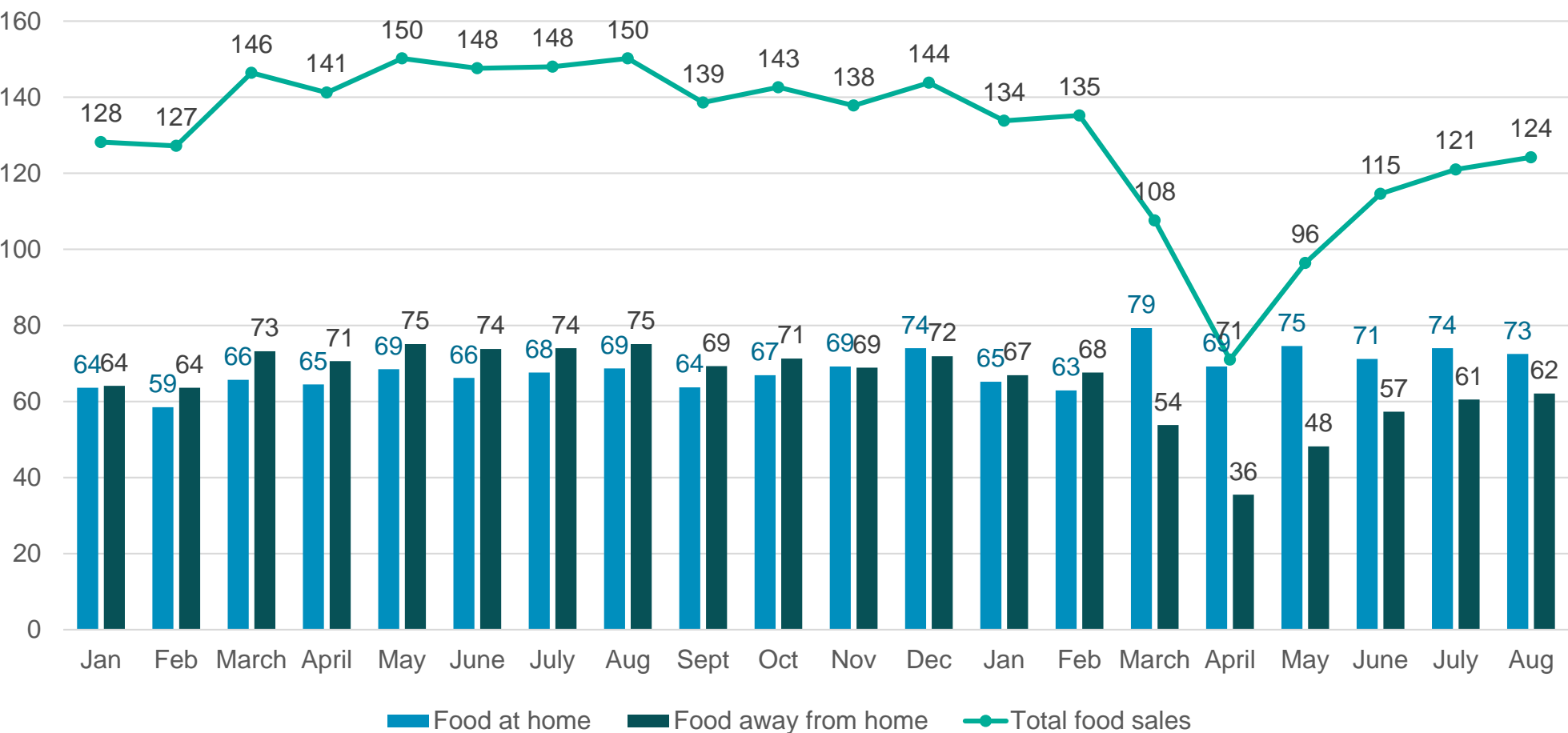


Source: OECD

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# US spending on food

\$12B less in June 2020 than in June 2019



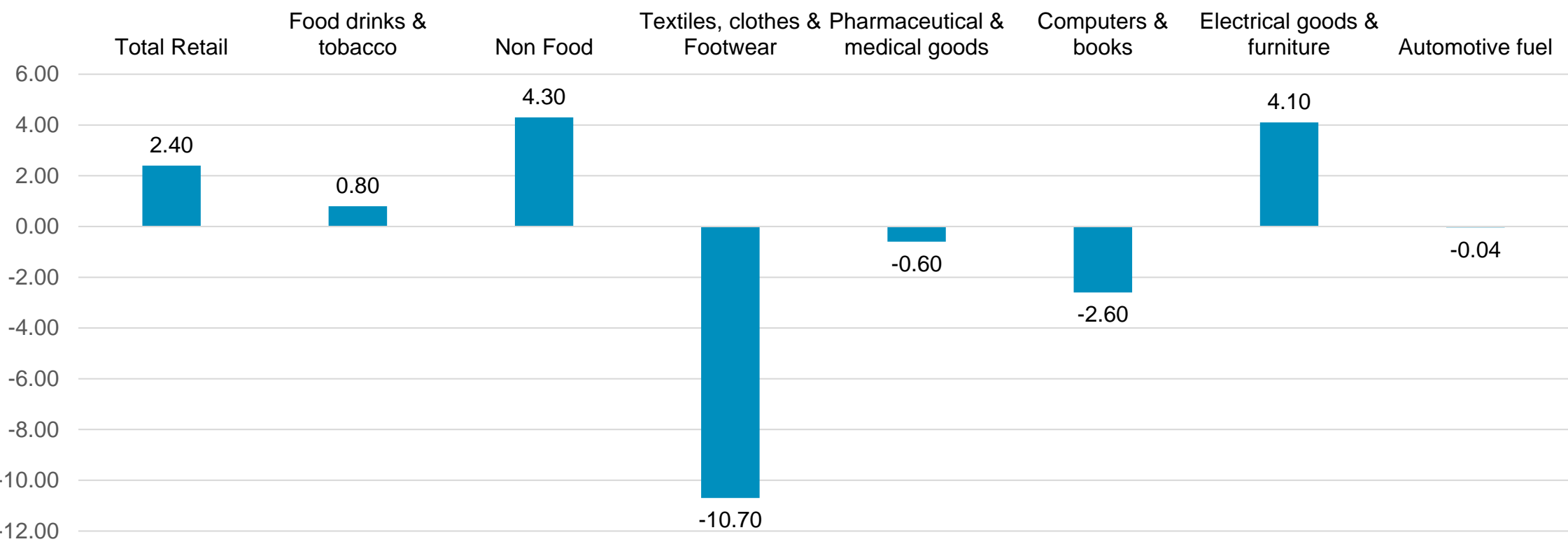
- 2019 average \$136B per month
- Early 2020 pattern as normal
- April 2020 drop in restaurant, cafeterias, sport venues by \$36B
- Rebound in “away from home” in May & June
- Higher retail store sales not enough to offset

Source: USDA, Economic Research Service (ERS) using data from ESR & Food Expenditure Series  
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# EU retail trade volume

August 2020 compared with February 2020  
(% change)

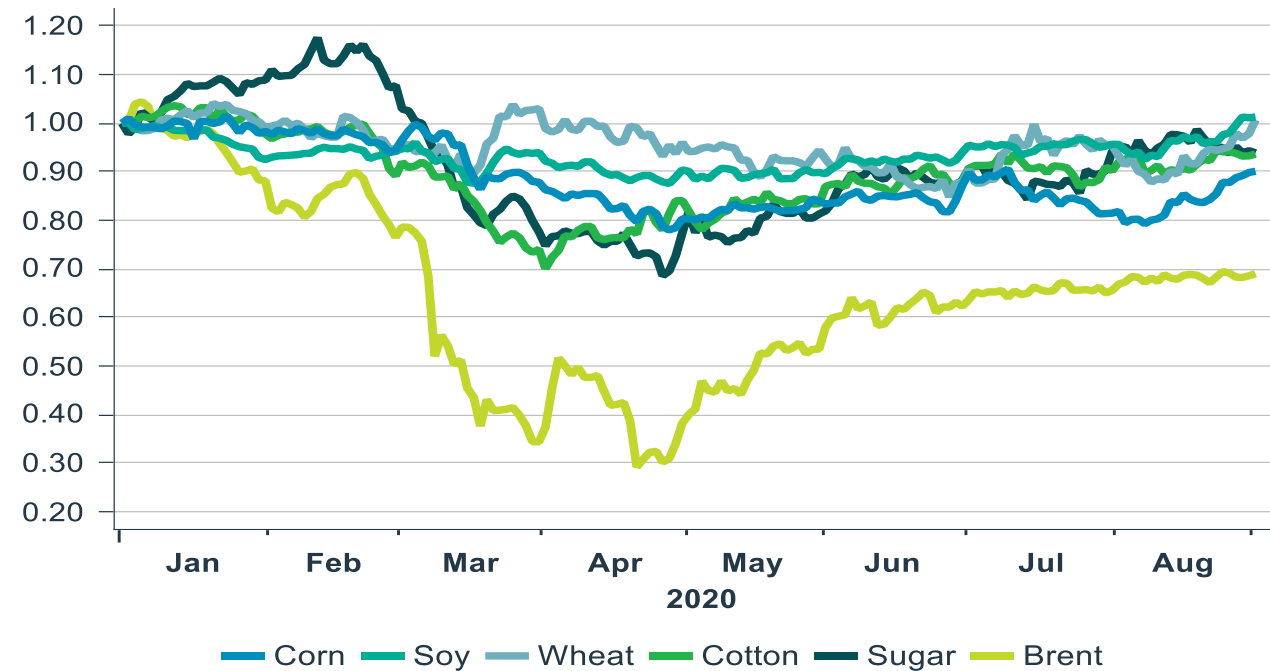


Source : [ec.europa.eu/eurostat](https://ec.europa.eu/eurostat)

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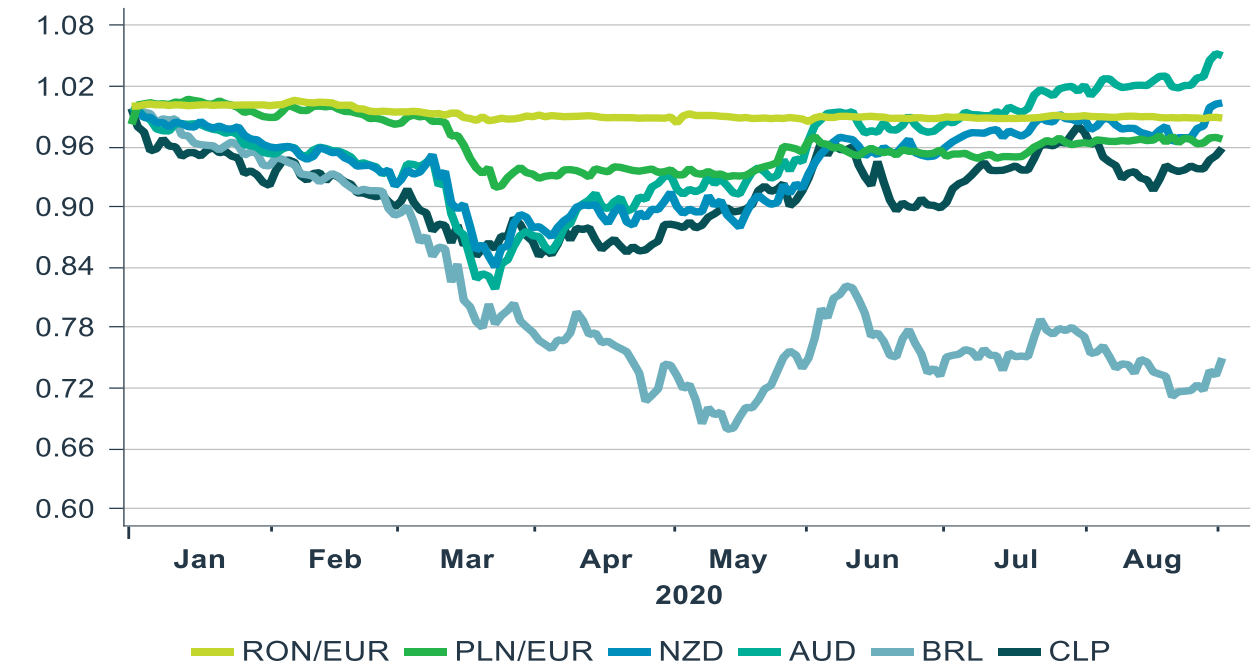
# 2020: Commodity & foreign currency movements

## YTD Commodity Indices



- The decline in oil prices put pressure on ethanol demand and impacting both corn and sugar
- Cotton prices have declined due to direct linkage with consumer activity.
- Wheat and soybean prices were more supported due to concerns around government stockpiling and export restrictions.

## YTD Currency Indices



- The US dollar rose against most currencies at the beginning of the COVID-19 crisis but most have since recovered.
- The Brazilian Real has been the hardest hit with recent political turmoil resulting in the currency falling approx. 20% YTD.

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Source: Macrobond, June 16, 2020

# Data points – farmland returns, activities, exports & demand

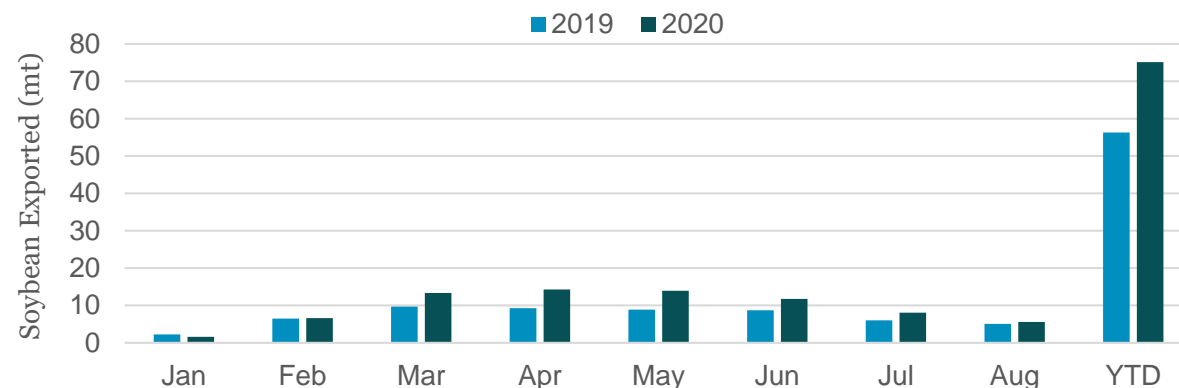
## YTD 2020 NCREIF returns: stable in volatile macro and market conditions

	Total Farmland	Row Crops	Permanent Crops
Total	1.47%	2.57%	-0.30%
Income	1.73%	2.50%	0.47%
Appreciation	-0.26%	0.06%	-0.77%

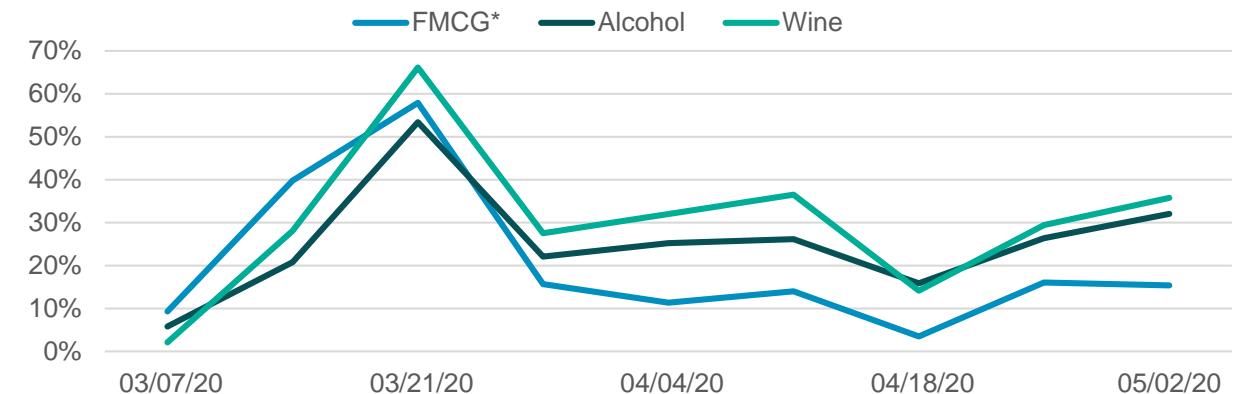
## U.S. farmers unaffected by COVID-19 restrictions

	Acres planted (mn)		Yield (bu/acre)		Production (bn bushels)	
	2019	2020*	2019	2020*	2019	2020*
Corn	81.3	82.5	167.5	178.4	13.6	14.7
Soybeans	76.1	83.1	47.4	51.9	3.6	4.3

## Brazil soybean exports: YTD exports 34% higher than 2019



## COVID-19 impact on U.S. off premise sales: wine sales are 24% higher than 2019



Source: NCREIF data to September 30, 2020, USDA, \*2020 estimates as at October 2020, ANEC data to August 31, 2020, AC Nielsen data to August 22, 2020.  
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