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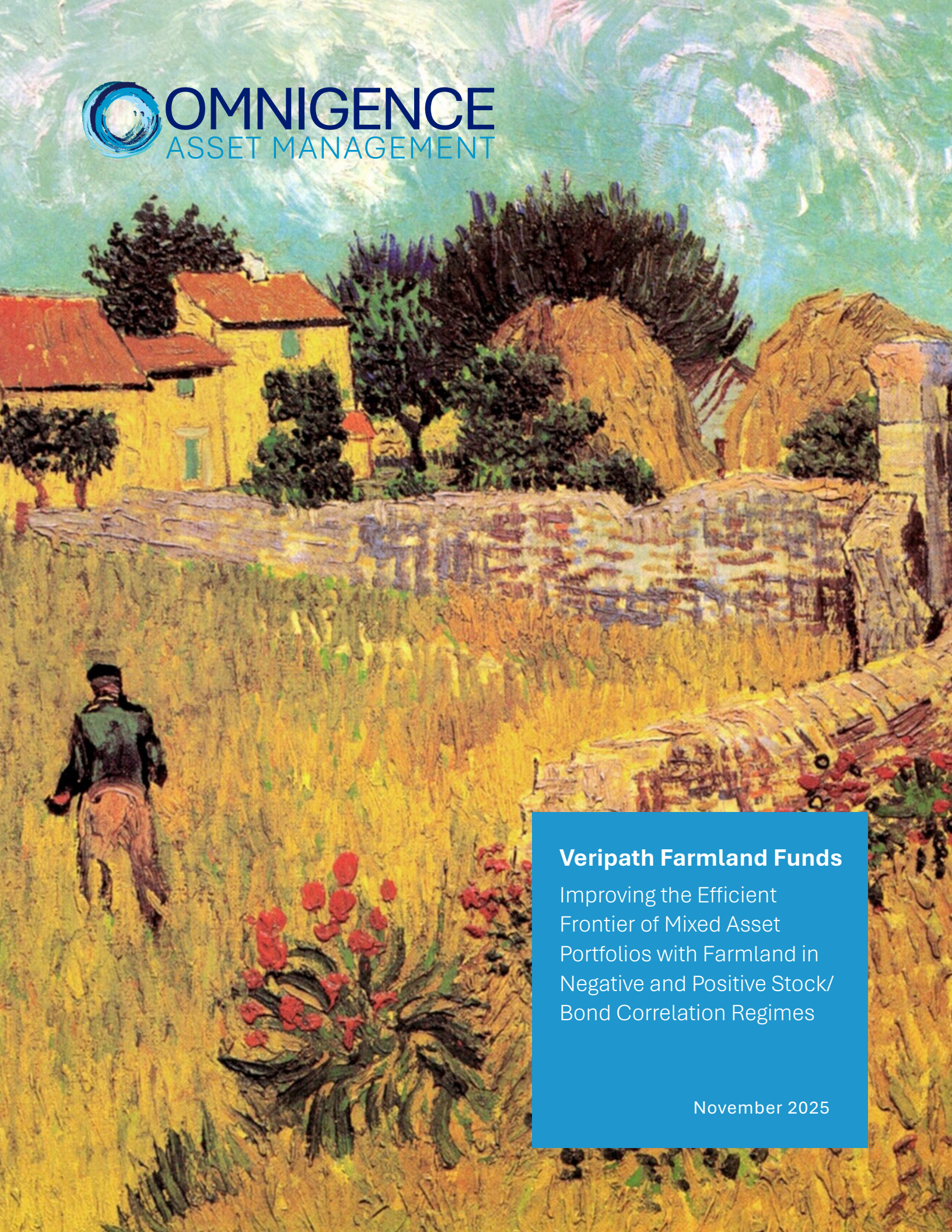

Veripath Farmland Funds

Improving the Efficient Frontier of Mixed Asset Portfolios with Farmland in Negative and Positive Stock/ Bond Correlation Regimes

November 2025

EXECUTIVE SUMMARY

In an environment characterized by economic uncertainty, Canadian row-crop farmland presents allocators with a highly liquid alternative allocation (160-million-acre market, annual turnover of approximately $30 billion and a market cap of ~$1 trillion – large portfolios can be divested on an orderly basis through all economic cycles) combined with a capacity to expand the efficient frontier in both stagflation-ary and stable macro regimes. This positions farmland as a useful all-weather component of portfolios, rather than a tactical hedge.

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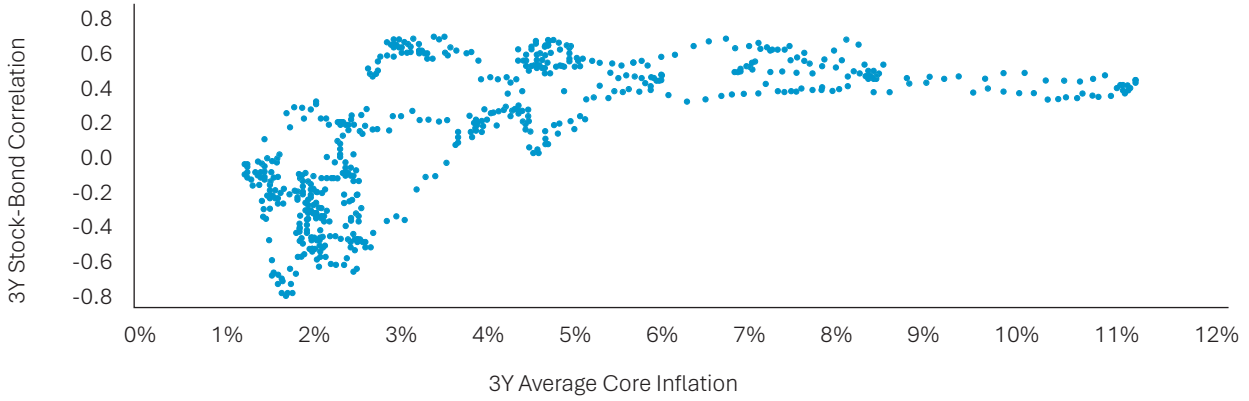
THE ROLE OF FARMLAND IN MIXED ASSET INSTITUTIONAL PORTFOLIOS

Farmland represents one of the most durable and structurally diversi-fying real-asset classes available to institutional allocators. Farmland produces return patterns that differ meaningfully from traditional assets such as public equities and fixed income. This section evalu-ates farmland's contribution to institutional portfolios across two distinct macroeconomic scenarios.

- Stagflationary/inflationary environments – inflation is above trend, growth slows, and stock-bond correlation turn positive.
- Stable macro environments – growth and inflation are stable and on trend, stocks and bonds retain their negative correlation of the last two decades.

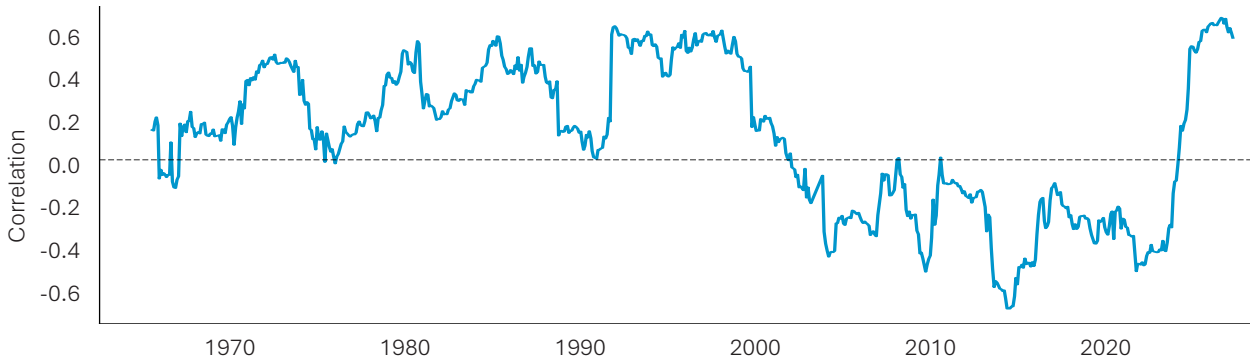
It must be noted that the possibility of an extended inversion in the negative stock bond correlation relied on in portfolio construction cannot be underestimated given that historically this relationship has more often been positive than not, even outside of periods of elevated inflation or stagflation:

Chart 1: Stock Bond Correlations Disaggregated by Inflation Rate



*Notes: SP 500 v 10-year Treasuries, GS10/*TNX pre-2002, IEF post 2002*

Chart 2: Rolling 36 Month Correlation – S&P 500 vs. US 10Y Treasuries



IMPACT OF A 10% FARMLAND ADDITION

An assumed 55% equity / 35% bond / 10% farmland portfolio was created for evaluation under both scenarios. A 5% risk-free rate is used in the stagflation scenario and 3% in the stable macro scenario.

Table 1: Effect on 60/40 of 10% Farmland Addition – Stagflation and Stable Macro Scenarios

		10% Farmland	0% Farmland
Stagflation	Return	5.28%	3.88%
	Volatility	11.77%	12.34%
	Sharpe	0.023	-0.091
Stable	Return	7.25%	6.65%
	Volatility	7.24%	7.23%
	Sharpe	0.587	0.505

In the stagflation scenario, the elevated risk-free rate suppresses Sharpe ratios across all asset mixes, however, farmland's low volatility and negative correlations mitigate risk and prevent deeper drawdowns. In the stable macro scenario, farmland significantly improves the portfolio's Sharpe ratio by lowering volatility and adding a stable return premium generating a meaningful enhancement over traditional mixes.

STAGFLATION SCENARIO

Stagflation combines the most adverse features of the economic cycle: persistent inflation, declining real growth, and a tendency to tightening monetary policy. In such periods, the traditional diversification between equities and bonds disappears. Stock-bond correlations rise into positive territory, eliminating the defensive contribution of fixed income and exposing multi-asset portfolios to simultaneous losses.

In this environment, farmland's characteristics become disproportionately valuable. Most importantly, farmland retains negative correlation to both equities and bonds at the precise moment traditional diversification fails.

Table 2: Stagflation Correlation – Return and Volatility Assumptions

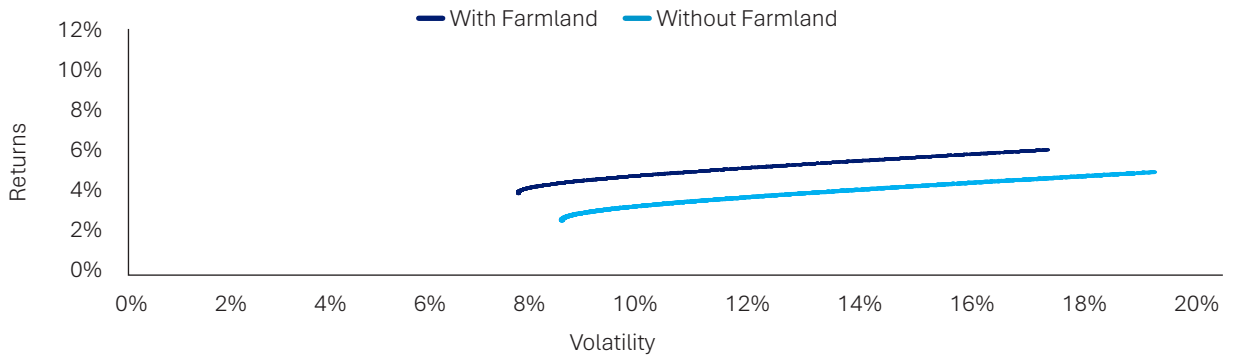
Correlation

	Stocks	Bonds	Farmland
Stocks	1.000		
Bonds	0.400	1.000	
Farmland	-0.200	-0.050	1.000

	Return	Volatility
Stocks	0.050	0.190
Bonds	0.025	0.080
Farmland	0.165	0.050

Stagflation causes a complete deterioration of traditional diversification. Equities and bonds move together (+0.40), meaning both risk assets and hedges fail simultaneously and return volatility picks up materially. Farmland's negative correlations re-introduce diversification into a broken portfolio construction framework, acting as one of the few effective hedges available.

Chart 3: Stagflation Scenario – Stock, Bond Farmland Efficient Frontier



When farmland is incorporated, the frontier shifts outward, even under elevated inflation and weakened bond hedging, demonstrating farmland's ability to improve efficiency despite poor macro conditions.

STABLE SCENARIO

In the stable scenario, inflation is controlled, growth is positive and on trend, and monetary-policy volatility is low. Under these conditions, equities and bonds maintain their negative correlation - the foundation of the traditional 60/40 portfolio. Fixed income provides protection during equity drawdowns, while equities compensate for the lower long-term returns of bonds.

Even when diversification between stocks and bonds continues to function as it has in the last two decades, farmland remains additive. It offers a return premium relative to bonds, low volatility relative to equities, and persistently low correlations to both. This combination enhances Sharpe ratios materially and improves long-term compounding through volatility reduction.

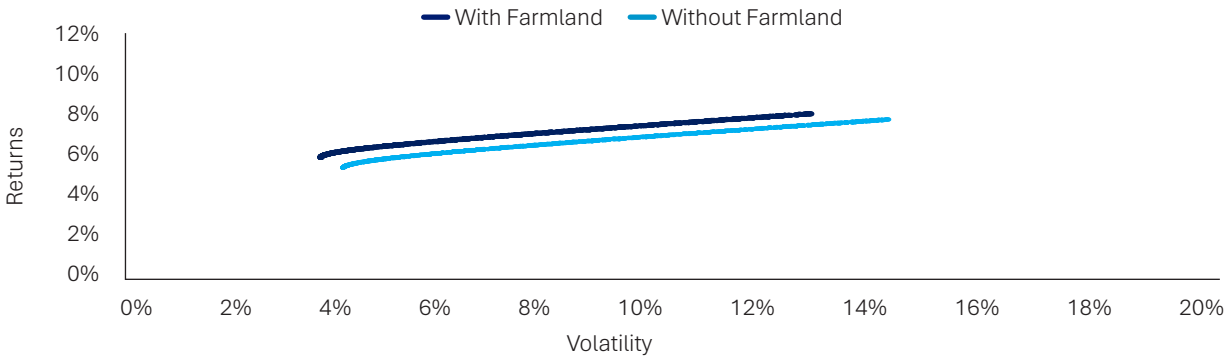
Table 3: Stable Macro Scenario – Return and Volatility Assumptions

Correlation

	Stocks	Bonds	Farmland
Stocks	1.000		
Bonds	-0.350	1.000	
Farmland	-0.100	-0.025	1.000

	Return	Volatility
Stocks	0.080	0.140
Bonds	0.050	0.050
Farmland	0.110	0.040

Chart 4: Stable Macro Scenario – Stock, Bond Farmland Efficient Frontier



The frontier in the stable macro scenario is tighter than in stagflation, but farmland still shifts the boundary outward, demonstrating risk-adjusted improvements even when the traditional diversification engine is working.

CONFIDENCE LEVELS

We also ran an analysis of the potential range of Sharpe ratio changes considering that return, correlation and volatility are more likely to operate as ranges in each scenario over time rather than the single point estimates used to produce the efficient frontier curves.

Table 4: Stagflation Scenario – Return, Volatility, Correlation Range Assumptions

	Correlation	Min	Max	Mean	SD
Bonds/Farmland		-0.3	0.2	-0.05	0.1
Bonds/Stocks		0.2	0.6	0.4	0.1
Farmland/Stocks		-0.4	0	-0.2	0.1
	Return	Min	Max	Mean	SD
Stocks		0.03	0.07	0.05	0.01
Bonds		0	0.05	0.025	0.01
Farmland		0.15	0.18	0.165	0.01
	Volatility	Min	Max	Mean	SD
Stocks		0.16	0.22	0.19	0.01
Bonds		0.06	0.10	0.08	0.01
Farmland		0.04	0.06	0.05	0.01

Table 5: Stable Macro Scenario – Return, Volatility, Correlation Range Assumptions

	Correlation	Min	Max	Mean	SD
Bonds/Farmland		-0.25	0.2	-0.025	0.1
Bonds/Stocks		-0.5	-0.2	-0.35	0.1
Farmland/Stocks		-0.3	0.1	-0.1	0.1
	Return	Min	Max	Mean	SD
Stocks		0.06	0.10	0.08	0.01
Bonds		0.04	0.06	0.05	0.01
Farmland		0.09	0.13	0.11	0.01
	Volatility	Min	Max	Mean	SD
Stocks		0.12	0.16	0.14	0.01
Bonds		0.03	0.07	0.05	0.01
Farmland		0.03	0.05	0.04	0.01

Based on the ranges of correlation, return and volatility values set out above, assuming normal distributions with the standard deviations shown in the table, we ran a monte carlo simulation sampling those ranges for 10,000 iterations. This provides a useful distribution of Sharpe ratio improvements with the attendant confidence levels as set out below.

Table 6: Stagflation Sharpe Gain Distribution

Results Summary		Percentile Distribution	
Mean	**0.1150**	Percentile	Value
Number of Trials	10000	0%	0.081
Standard error	0.0001	5%	0.097
		10%	0.101
Minimum	0.081	15%	0.104
Maximum	0.162	20%	0.105
Median	0.115	25%	0.107
Range	0.080	30%	0.109
		35%	0.110
Std. Deviation	0.011	40%	0.112
Variance	0.000	45%	0.113
		50%	0.115
Skewness	0.15	55%	0.116
Kurtosis	2.91	60%	0.118
		65%	0.119
		70%	0.121
		75%	0.122
		80%	0.124
		85%	0.127
		90%	0.129
		95%	0.134
		100%	0.162

Table 7: Stable Macro Sharpe Gain Distribution

Results Summary		Percentile Distribution	
Mean	**0.083**	Percentile	Value
Number of Trials	10000	0%	0.033
Standard error	0.000	5%	0.057
		10%	0.062
Minimum	0.033	15%	0.066
Maximum	0.148	20%	0.069
Median	0.082	25%	0.071
Range	0.115	30%	0.074
		35%	0.076
Std. Deviation	0.016	40%	0.078
Variance	0.000	45%	0.080
		50%	0.082
Skewness	0.15	55%	0.084
Kurtosis	2.78	60%	0.086
		65%	0.089
		70%	0.091
		75%	0.094
		80%	0.096
		85%	0.100
		90%	0.104
		95%	0.110
		100%	0.148

IMPLICATIONS FOR INSTITUTIONAL ALLOCATORS

Across both negative and positive stock bond correlation scenarios, farmland systematically strengthens portfolio efficiency. In stagflation, it restores diversification when equities and bonds fail simultaneously, often acting as the only asset with both inflation protection and negative correlation to financial assets. In stable macro environments, it enhances Sharpe ratios by contributing consistent real returns with exceptionally low volatility. These attributes underscore why farmland is best viewed as a strategic allocation rather than simply a tactical inflation hedge. Given the increasing likelihood of macro volatility and the possibility of an extended breakdown in the negative stock bond correlation, farmland provides allocators with a durable and essential all-weather component of long-term portfolio construction.

CONCLUSION

Canadian row-crop farmland represents a useful combination of defensive stability and growth potential, driven by consistent demand for calories and protein, underpinned by water scarcity, and enhanced by a strong value proposition in the form of mean reverting productivity adjusted pricing discounts. Veripath's data-centric, non-operated strategy, powered by its real-time TerraFIRST platform, translates these structural advantages into alpha complemented by verifiable ESG benefits. For institutional investors navigating an era of macroeconomic uncertainty, investing in this asset class via Veripath's platform may enhance portfolio efficiency, mitigate downside risks, and preserve real purchasing power across both stagflationary and stable macro regimes.

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