



SORTINO RATIOS OF CANADIAN FARMLAND

ABSTRACT:

A review of the Canadian farmland investment market over the last 30 years reveals: a farmland holding would have generated sortino ratios substantially above the ratio generated by S&P 500 over the same period.

KEYWORDS:

Canadian farmland, Alberta farmland, Saskatchewan farmland, sortino ratio.

INTRODUCTION:

Sharpe ratios for Canadian farmland over the last 30 years were substantially higher than S&P 500 however, one limitation of the Sharpe ratio is that it is based on total deviation and accordingly penalizes return for upside deviations which are beneficial for investors. Accordingly, measuring Sortino ratios for Canadian farmland provides a better indication for investors. A review of the market over the last 30 years reveals that a Canadian farmland holding would have generated Sortino ratios substantially above one for a return threshold of 0%. We used three farmland portfolio configurations, average Canadian farmland, average Saskatchewan farmland and average Alberta farmland.

DISCUSSION OF RESULTS:

Before explaining the consequence of these results let's start with an overview of the principle of the Sortino ratio as different from its more well-known sibling the Sharpe ratio. The Sortino ratio variation of the Sharpe ratio only factors in the downside, or negative volatility, rather than the total volatility used in calculating the Sharpe ratio. The theory behind the Sortino variation is that upside volatility is a plus for the investment, and it, therefore, should not be included in the risk calculation. Therefore, the Sortino ratio takes upside volatility out of the equation and uses only the downside standard deviation in its calculation instead of the total standard deviation that is used in calculating the Sharpe ratio.

Our data shows that farmland in Alberta, Saskatchewan and Canada (based on the last 30 years) can be reasonably expected to produce positive returns – i.e. it is a high-quality investment. Why do you care? You can put farmland into a portfolio and have a high likelihood of achieving portfolio targets and a low likelihood of underperformance. As a matter of fact over the last 30 years Canadian farmland in general witnessed only three down years whereas over the same period S&P 500 had nine down years.

NOTES:

The data used to derive the data series in this paper come from the Historic Farmland Values Report published by Farm Credit Canada.

SOURCE DATA AND ANALYSIS:

Year	Canada	SK	AB	S&P
1989	4.9%	0.4%	5.7%	27%
1990	-2.7%	-6.9%	-1.1%	-3%
1991	-5.4%	-9.1%	-4.6%	21%
1992	-2.1%	-3.8%	-3.2%	5%
1993	2.0%	1.6%	1.9%	10%
1994	8.5%	9.5%	10.1%	-2%
1995	10.0%	11.9%	9.6%	35%
1996	11.3%	11.0%	9.5%	24%
1997	8.0%	5.5%	7.8%	25%
1998	2.7%	0.5%	5.1%	31%
1999	0.2%	-4.8%	5.7%	9%
2000	1.5%	-2.2%	4.3%	-2%
2001	1.4%	-1.5%	4.2%	-17%
2002	5.3%	3.9%	6.4%	-22%
2003	3.8%	3.1%	4.2%	29%
2004	4.6%	1.9%	9.0%	4%
2005	3.1%	1.3%	6.1%	8%
2006	4.7%	2.1%	8.9%	12%
2007	11.6%	11.0%	17.4%	-4%
2008	11.7%	14.9%	9.1%	-40%
2009	6.6%	6.9%	4.8%	30%
2010	5.2%	5.7%	4.4%	20%
2011	14.8%	22.9%	8.7%	2%
2012	19.5%	19.7%	13.3%	14%
2013	22.1%	28.5%	12.9%	23%
2014	14.3%	18.7%	8.8%	11%
2015	10.1%	9.4%	11.6%	0%
2016	7.9%	7.5%	9.5%	9%
2017	8.4%	10.2%	7.3%	19%
2018	6.6%	7.4%	7.4%	-5%
Mean	6.7%	6.2%	6.8%	9.1%
St. Dev	6.2%	8.8%	4.6%	17.0%
Sharpe	0.60	0.37	0.83	0.36
Downside Dev.	1.2%	2.4%	1.0%	9.0%
Sortino Ratio	3.16	1.34	3.67	0.67

CONCLUSION:

Farmland in Alberta, Saskatchewan and Canada (based on the last 30 years) can be reasonably expected to meet or exceed portfolio expectations.

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