



FACTOR ANALYSIS FOR PLANS CONSTRUCTING A CANADIAN FARMLAND PORTFOLIO

ABSTRACT:

Based on the filtered results from a weighted matrix of proven return factors, a suitable portfolio of Canadian row crop farmland can be constructed for Canadian plan investors using a heavily Alberta centric approach. With allocations from Alberta (~80%), and tactical allocations subject to productivity & volatility pricing screens (<20%) to ON and QC, we believe an investor can suitably capture the superior elements of the overall Canadian farmland return profile. Particularly as productivity pricing, market size and liquidity and several other key metrics are being preferred.

KEYWORDS:

Canadian farmland, productivity adjusted land prices, pension plans, inflation, land ownership regulations, factor analysis.

INTRODUCTION:

There are many different factors that may lead a plan to allocate to farmland within their portfolios. Among them are diversification benefits, up-down return asymmetry, volatility, inflation insurance, and productivity discounts.

It is well known that farmland is a strong portfolio diversifier because it has low or negative correlation with most traditional asset classes – this is the case over both long, and perhaps more importantly, short time horizons (ie. it hedges trending and episodic risks). Farmland can also compliment an investment in real estate or infrastructure because while it is also inflation protecting, stores value and offers a stream of income, it has diversifying risk-and return drivers.

Farmland, timberland, real estate, and infrastructure are not perfectly correlated and as such are not substitutes for one another when constructing portfolios. Granted, farmland is often allocated alongside or within timberland silos. However, it is not unreasonable to expect some rotation pressure out of timber given declining demand for newsprint and, perhaps, a skew to farmland weightings given the relative value proposition.

While few plans have a formal farmland allocation because of its unique features it can be considered for

inclusion in a natural resource allocation, a real assets allocation and even within a real estate or infrastructure allocation. Plans may also want to consider using farmland as part of a liability-hedging allocation due to the fact that it has real return bond features.

Once the high-level portfolio construction details have been considered, the challenge becomes deploying capital – there are a limited number of experienced managers, and there are regulatory and market liquidity considerations. For example, in Canada farmland ownership is provincially, rather than federally regulated and therefore ownership rules vary by province. For example, Manitoba and Saskatchewan restrict institutional and foreign land ownership while British Columbia, Alberta and Ontario take a less onerous approach.

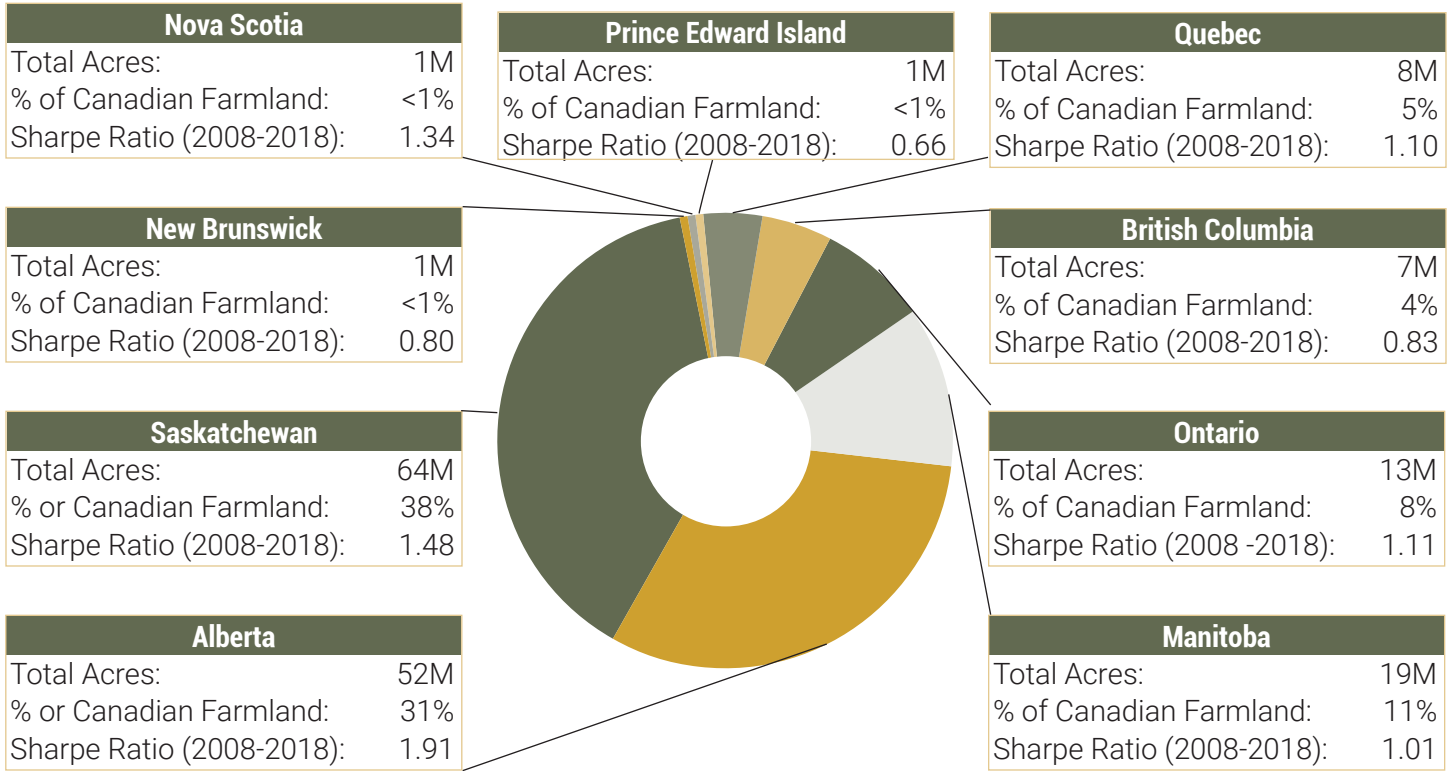
Despite the varied regulatory landscape, it is possible to navigate the various provincial frameworks and build investment structures that are acceptable to regulators and that meet investor return parameters. Having an investment manager who understands how and where to invest is important in the Canadian farmland space.

SOURCE DATA AND ANALYSIS:

Provincial Regulations – Plans Permitted?		
BRITISH COLUMBIA	Yes	No restriction on institutional or foreign ownership. Uses of land in the Agricultural Land Reserve are regulated by the Agricultural Land Commission.
ALBERTA	Yes	Canadian citizens, permanent residents, and Canadian-incorporated companies under Canadian control (51%) are not affected by institutional or foreign ownership regulations. <i>Foreign Ownership of Land Regulations, Alta Reg 160/ 1979</i>
SASKATCHEWAN	No	Non-residents and foreign entities can own up to 10 acres of Saskatchewan farmland. Entities that are partially foreign owned but controlled by Saskatchewan residents or their farming corporations can own up to 320 acres. Saskatchewan Farmland prohibit institutional farmland ownership. <i>The Saskatchewan Farm Security Act, SS 1988-89, c S-17.1, The Saskatchewan Farm Security Regulations, RRS c S-17.1 Reg 1</i>

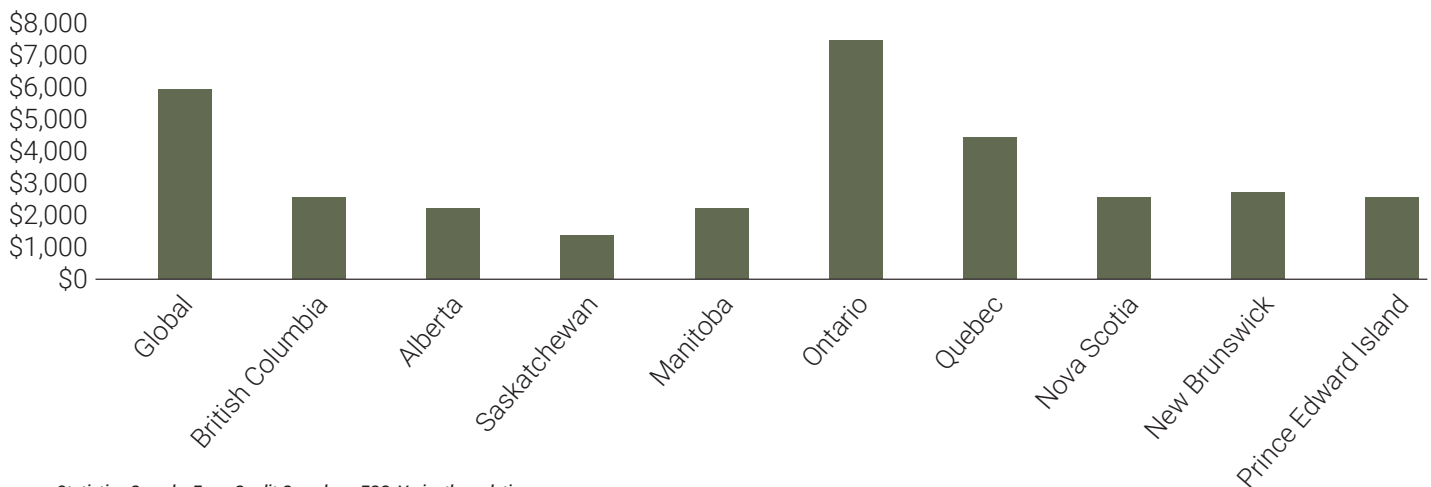
MANITOBA	No	<p>Legislation in Manitoba allows institutional and foreign persons and entities to acquire up to 40 acres of farmland unless the Manitoba farmland securities board grants an exemption or unless the farmland is purchased for the purpose of generating wind power for sale to Manitoba Hydro. Only the following persons may purchase land in Manitoba unrestricted:</p> <ul style="list-style-type: none"> • Canadian citizens and permanent residents; • corporations controlled by Canadian farmers and their families; • municipalities, local government districts, and governmental agencies; • private corporations and other entities that are 100% Canadian-owned; • individuals who establish to the satisfaction of the Manitoba Farm Lands Ownership Board that they intend to become permanent residents or Canadian citizens within two years of acquiring the interest in farmland.
ONTARIO	Yes	<p>Agricultural land-use planning in Ontario is governed by the 2005 Provincial Policy Statement, issued under the Planning Act. Neither the policy statement nor the legislation restricts investment in agriculture land in Ontario. The Minister of Agriculture is required by statute to review the policy statement every five years. At present there are no expected policy changes concerning institutional or foreign ownership of agricultural land.</p>
QUEBEC	Yes	<p>A corporation or other legal person is deemed to be a Quebec resident if a majority of shares or interests are owned by Quebec residents; a majority of its directors are resident in Quebec; and it is not directly or indirectly controlled by non-residents. In considering an application for a purchase of farmland by a non-resident, the Commission will grant an authorization if:</p> <ul style="list-style-type: none"> • the land concerned is not suitable for the cultivation of soil or the raising of livestock; or • the non-resident intends to settle in Quebec and will live in Quebec for three out of the next four years and will become a Canadian citizen or permanent resident at the end of that period. • The amendments have also introduced an annual limit on the number of hectares that can be purchased by non-residents. The Commission may only authorize 1,000 hectares of farmland to be acquired, per year, by foreign corporations or persons not intending to settle in Quebec, although it may examine additional applications.
PRINCE EDWARD ISLAND	Yes	<p>Provincial Land Protection Act. No legislation prohibiting institutional ownership.</p>
NOVA SCOTIA	Yes	<p>No legislation governing farmland ownership.</p>
NEW BRUNSWICK	Yes	<p>No legislation governing farmland ownership.</p>

Canadian Farmland Overview By Province



Sources: Statistics Canada, FCC, Veripath analytics – Risk Free Rate = 3%

Productivity Cost
Estimated CAD\$/tonne of wheat* production



Sources: Statistics Canada, Farm Credit Canada – FCC, Veripath analytics

PORTFOLIO CONSTRUCTION CONSIDERATIONS:

Raw Acre Weighted: A simplistic portfolio built purely to represent raw provincial acreage numbers would be:

Province	Percentage	Total Arable Acres
Saskatchewan	38%	64M
Alberta	31%	52M
Manitoba	11%	19M
Ontario	8%	13M
Quebec	5%	BM
B.C.	4%	7M
NS	1%	1M
NB	1%	1M
PEI	1%	1M
Total	100%	166M

Source: Statistics Canada, Farm Credit Canada – FCC, Veripath analytics

Assuming a raw acre weighted approach is not going to be followed, what other factors should Plan investors overlay in order to drive portfolio construction of Canadian farmland and what would the portfolio look like post this analysis. We have identified several key parameters which will believe have a disproportionate impact on returns and then weighted them using a matrix approach.

Hypothetical Portfolio Based on Preferred Portfolio Parameters (ex regulatory compliance): Ignoring each individual province's farmland regulatory framework our model creates the following portfolio based on our matrix (Appendix A):

Saskatchewan	43%
Alberta	34%
Manitoba	11%
Ontario	6%
Quebec	2%
British Columbia	2%

AB is 9% more heavily weighted than it would be in a simplistic raw acre weighted portfolio due to stronger productivity adjusted prices and risk adjusted returns compared to most all other provinces.

Modified Portfolio Based on Preferred Portfolio Parameters (with regulatory compliance): Layering on whether a plan can access the province in question, but using same fundamental matrix analysis, our model creates the following modified portfolio weightings (Appendix A):

Alberta	76%
Ontario	13%
Quebec	5%
BC	4%
PEI, NB, NS	2%
Total	100%

AB is now 145% more heavily weighted than it would be in a simplistic raw acre weighted portfolio and 24% more heavily weighted than in the matrix adjusted portfolio. Alberta's index weighting is a product of its stronger productivity adjusted prices and risk adjusted returns than all other provinces that meet our criteria under regulatory compliance.

This modified portfolio leaves a reasonable investable universe within Canada. How do the combined market size of AB, ON and QC compare to other popular destinations for farmland investment?

AB + ON + QC = 73M acres

(All in cultivated acres)

US	390M
Brazil	170M
Australia	120M
European Union	70M
Argentina	36M
Uruguay	2M

Source : US Department of Agriculture, Savills, Trading Economics

CONCLUSION:

We believe that constructing an Alberta centric farmland portfolio provides the same and, in many instances, superior features to following a simplistic ‘raw acre weighted’ Canadian approach. Alberta is host to one of the most diverse range of farmland soil types of any province having four distinct growing regions. Alberta is also home to 31 % of all farmland in Canada. Alberta also has one of the strongest farmland return profiles of any Canadian market over the past decade with a Sharpe Ratio of 1.91. The Alberta market is large and liquid. And finally, Alberta has a favorable regulatory environment.

DISCLAIMER

Our reports, including this paper, express our opinions which have been based, in part, upon generally available public information and research as well as upon inferences and deductions made through our due diligence, research and analytical process.

The information contained in this paper includes information from, or data derived from, public third party sources including industry publications, reports and research papers. Although this third-party information and data is believed to be reliable, neither Veripath Partners nor its agents (collectively “Veripath”) have independently verified the accuracy, currency or completeness of any of the information and data contained in this paper which is derived from such third party sources and, therefore, there is no assurance or guarantee as to the accuracy or completeness of such included information and data. Veripath and its agents hereby disclaim any liability whatsoever in respect of any third party information or data, and the results derived from our utilization of that data in our analysis.

While we have a good-faith belief in the accuracy of what we write, all such information is presented “as is,” without warranty of any kind, whether express or implied. The use made of the information and conclusions set forth in this paper is solely at the risk of the user of this information. This paper is intended only as general information presented for the convenience of the reader, and should not in any way be construed as investment or other advice whatsoever. Veripath is not registered as an investment dealer or advisor in any jurisdiction and this report does not represent investment advice of any kind. The reader should seek the advice of relevant professionals (including a registered investment professional) before making any investment decisions.

The opinions and views expressed in this paper are subject to change or modification without notice, and Veripath does not undertake to update or supplement this or any other of its reports or papers as a result of a change in opinion stated herein or otherwise.

Appendix A
Regulatory Environment (Plans Permitted)

	Weighting (0-5)	BC		AB		SK		MB		ON		QC		NS		NB		PEI	
		Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes
Average productivity adjusted wheat pricing (<\$2,400/tonne)	5	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Average productivity adjusted wheat pricing (\$2,400/tonne =< X =< \$3,500/tonne)	3	3	0	0	0	0	0	0	0	0	0	0	3	3	3	3	3	3	3
Average productivity adjusted wheat pricing (> \$3,500/tonne)	1	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0
Farmland sharpe ratio (< 1.25)	1	1	0	0	0	0	0	1	1	1	0	1	0	1	1	1	1	1	1
Farmland sharpe ratio (1.25 =< X =< 1.5)	3	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0
Farmland sharpe ratio (> 1.5)	5	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Correlation to inflation (1970s < 0.3)	3	0	3	0	0	0	0	0	0	0	3	3	0	3	0	3	0	3	3
Correlation to inflation (1970s 0.3 <= X <= 0.5)	4	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0
Correlation to inflation (1970s = > 0.5)	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0
Up/down ratio (0 down year in last 25 years)	5	0	5	0	0	0	0	5	5	5	5	5	0	0	0	0	0	0	0
Up/down ratio (1 down years in last 25 years)	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0
Up/down ratio (2 or more down years in last 25 years)	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Crop composition (field crops >70%)	5	0	5	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0
Raw Score	(A)	10	23	0	0	16	10	16	10	14	12	8	14	12	8	12	8	8	8
Raw Acres	(B)	7	52	65	19	13	8	13	8	1	1	1	1	1	1	1	1	1	1
Matrix adjusted acre weight	(A/C x B/D)	0.00	0.08	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10 (E)
Simple acre weighted portfolio (% acres)	(B/D)	4%	31%	39%	11%	8%	5%	8%	5%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Simple acre weighted portfolio (with regulations % acres)	(I)	8%	63%	0%	0%	16%	10%	16%	10%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Matrix adjusted portfolio (without regulations % acres)		2%	34%	43%	11%	6%	2%	6%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Matrix adjusted portfolio (with regulations % acres)		4%	76%	0%	0%	13%	5%	13%	5%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Over/Under weighting (with regulations)		-47%	21%	-	-	-16%	-47%	-26%	-37%	-58%	-37%	-58%	-37%	-58%	-37%	-58%	-37%	-58%	-58%
Target Market Size (millions acres)	83	7	52	0	0	13	8	13	8	1	1	1	1	1	1	1	1	1	1