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Abstract

Farm lobby groups in Canada have consistently argued that there is a farm income crisis. However, the average net worth of Canadian farm families has been two to three times the average net worth of all families. If farm incomes are so persistently low, how and why do farmers continue to farm and purchase farmland at such high prices? A discounted earning model was employed to estimate farmland value in Canada. The overall conclusion is that there is no strong evidence that Canadian farmland is overpriced, as would be expected from the low levels of net farm income.

Is Canadian Farmland Overpriced?

By Marvin J. Painter, Ph.D.

Farm lobby groups in Canada have consistently argued that there is a farm income crisis. Published statistics show relatively low average net farm incomes across all provinces. For example, average annual net farm income (using real 2006\$ for the period 1990-2006) for an average farm ranges from a low of \$6,232 in Ontario to a high of \$22,712 in Quebec. Net farm income is often portrayed as the farmer's total return, including a return to the farmer's labor and management efforts. The corresponding average annual workforce employment incomes were \$43,912 in Ontario and \$38,199 in Quebec. If net farm income is the indicator used, it does appear that farm families are receiving relatively low incomes. During the same period, the average ratio of net farm income as a percentage of farmland value ranges from a low of 0.9 percent in Ontario to a high of 5.6 percent in Quebec, indicating very low returns, especially considering that net farm income includes the farmer's wages for labor and management. With income levels this low, it would be reasonable to expect that in a competitive marketplace, farmland values would be adjusted downward to reflect low incomes.¹ However, that does not appear to be the case, which leads to the question of whether or not Canadian farmland is overpriced.



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Are farmers really as bad off as net farm income figures suggest? Is farmland overpriced as suggested by net farm income returns? Are some of the non-farm demands for farmland (hobby farming, urban and commercial development, etc.) causing farmland to be overpriced? Painter (2005b) showed that the average net worth of Canadian farm families was two to three times the average net worth of all families, in large part due to increasing and high farmland values.² Farm lobby groups continuously request more government subsidies based on low net farm income even with the significant gap between farm and non-farm family net worth. The relatively high farm net worth seems a contradiction with net farm income levels because if farm incomes are so persistently low, how and why do farmers continue to farm and purchase farmland at such high prices? The contradiction will persist as long as net farm income is used by farm lobby groups and governments as an indicator of farmland returns. This paper looks at Canadian farmland valuation by assessing the true returns to farmland instead of using net farm income and assesses the non-farm premium in farmland prices.

Background

Past studies on farmland valuation by Melichar (1979) and Alston (1986) showed that farmland values could be reasonably explained by using a discounted earning model. Melichar pointed out the importance of properly estimating and including expected earnings growth (to explain the capital gains portion of the return) and properly accounting for technological change so that a true estimate of earnings could be obtained. Alston concluded that growth in earnings, as opposed to other factors such as inflation, could explain capital gains on farmland, which supports the standard theory of valuation. Castle and Hoch (1982) indicated that valuation analysis must include expected growth in earnings and the discount rate used must not be the average debt rate but rather a risk-adjusted opportunity cost for farmland investors. Wiesensel, Schoney, and Van Kooten (1988) suggested that previous years' land prices along with current farm rents explained 86 percent of farmland values, thereby supporting the discounted earning approach. Just and Miranowski (1993) indicated that inflation, changes in real returns on capital, and farmland earnings were the major farmland value explanatory factors. Vasquez, Nelson, and Hamilton (2002) found that farmland values in Idaho are largely determined by factors that affect profitability, as opposed to

non-farm or urban pressures. Painter (2002) found that discounted farmland earnings was a good predictor of farmland values and that real growth in earnings was required to produce real growth in farmland values. Helmers, Shaik, and Johnson (2005) found that the income capitalization approach including recent changes in land values provided a good predictor of farmland values. In summary, a discounted farmland earnings model that includes expected growth is a reasonable approach to assessing farmland values.

While using the correct valuation model is important, estimating earnings and growth correctly is equally important. Farming consists of two distinct businesses: operating and managing the farm to produce grain, vegetables, meat, dairy, and other food commodities; and secondly, owning farmland real estate. Total returns (earnings) to farmers can easily be divided into two parts: operating and ownership returns. Painter (2005a) used a standard lessee-lessor approach to divide total returns into returns to farm labor and management and returns to farmland ownership for Canadian farmland. The resulting returns showed that net farm income was a very poor indicator of farmland financial performance and could not be used to explain farmland pricing. Oltmans (1995) explains that with an appreciating asset like farmland, the capital gain return means that the asset itself need produce less operating income to make it economically desirable. This in part explains why farmers continue to purchase farmland even when it cannot cash flow itself because the operating return is only part of the total return; capital gain (expected growth) is the other part and also needs to be addressed in the valuation assessment. Oltmans (2007) suggests, "Managers need to view the land ownership decision more as an investor in the land and less as a producer on the land," which implies that farmland owners need to consider all potential earnings from the land (cash as well as non-cash returns), including non-farm sources when assessing its value. Therefore, when assessing farmland valuation, it is important to consider both operational farm income as well as farmland real estate returns.

Methodology and Data

To address the question of whether Canadian farmland is overpriced, a discounted earning model was employed to estimate value for farmland in the five main agriculture producing provinces: Alberta, Saskatchewan, Manitoba,

Ontario, and Quebec. Estimated values were compared to actual values to determine whether farmland is overpriced. As well, two scenarios for the future of the agricultural sector were assessed and the potential impact on farmland values were discussed.

The discounted earnings model employed is:³

$$(1) \quad V_0 = E_0 \frac{(1+g)}{r-g}$$

where:

V_0 = the current estimated value of farmland;

E_0 = the expected annuity of future sustainable earnings to farmland ownership in current dollars;

g = the expected average real growth in sustainable earnings to farmland equity. In a perfect market, g would also be equivalent to the expected capital gain yield on farmland, assuming there are no influences on farmland value other than farmland earnings;

r = the real required return on equity investment in farmland, where r is a combination of the real risk-free rate of return (t-bills) and the risk premium required by equity investors in farmland; and

The farmland earnings multiplier ($\frac{V_0}{E_0}$) is $EM = \frac{(1+g)}{r-g}$

Substituting EM into equation (1), $V_0 = E_0 \times EM$

Data for farm income, expenses, and farmland values for each of the provinces throughout the study period (1990-2006) was derived from the provincial departments of agriculture: Alberta Agriculture, Food and Rural Development, Saskatchewan Agriculture and Food, Manitoba Agriculture and Food, Ontario Agriculture and Food, and Ministère de l'Agriculture in Quebec.⁴

Calculating Income and Return on Investment to Farmland Ownership

The total return to farmland ownership was divided into two parts: income return and capital gain return. Income return is the portion of the farm revenues or profits attributed to the land as opposed to labor and management. Capital gain return is the change from year to year in the market value of the land.

The income return to farmland in Canada was calculated using an average net lease value that could be obtained by a farmland owner for leasing out the land. The method used in this study was based on a standard crop share approach, where the land owner receives a percentage of the gross revenues produced (in this study, 17.5% of total revenue is used to calculate the gross lease revenue to the farmland owner).⁵ The farmland owner is then responsible for paying property taxes and building depreciation, which were deducted to arrive at a net lease amount or income return to farmland ownership. The annual income return per acre to farmland ownership was calculated as follows:

$$(2) \quad IR_t = LR_t - PT_t - BD_t$$

where:

IR_t = income return to farmland per acre in year t ;

LR_t = gross lease revenue per acre in year t (17.5% of Gross Farm Revenues);

PT_t = property taxes per acre in year t ;

BD_t = building depreciation per acre in year t ;

The annual income and capital gain yields for each province are calculated as follows:

$$(3) \quad IY_t = \frac{IR_t}{V_{t-1}}$$

where:

IY_t = income yield (income return on investment) per acre in year t ;

IR_t = income return to farmland per acre in year t ;

V_{t-1} = average farmland value per acre in year $t-1$.

$$(4) \quad CGY_t = \frac{V_t - V_{t-1}}{V_{t-1}}$$

where:

CGY_t = capital gain yield (capital gain return on investment) per acre in year t ;

V_t, V_{t-1} = average farmland value per acre in years t and $t-1$, respectively.

The annual total investment yield to farmland ownership, or total return on investment ROI_t , is the sum of the income and capital gain yields, calculated as follows:

$$(5) \quad ROI_t = \frac{IR_t}{V_{t-1}} + \frac{V_t - V_{t-1}}{V_{t-1}}$$

Breaking Down the Growth Component

One of the difficulties in estimating farmland values is in isolating the impact of non-farm demand. Non-farm demand includes hobby farms, urban expansion, commercial development, and any other demands for farmland that are not for agricultural production. If non-farm demand in a province is significant, it will impact the provincial average farmland value, making the value greater than expected based on farmland earnings. And, the non-farm premium on the land value is not always supported by any measurable earnings from the land, making it difficult to assess.⁷ The non-farm premium is assessed for each province by breaking down the growth component, g , into two parts; the expected growth in farmland value due to growth in lessor ownership earnings (g_f), and the expected growth in the non-farm premium due to non-farm demand (g_{nf}).

To illustrate the breakdown of g , a numerical example is used for a farmer (as opposed to a non-farm or non-commercial buyer). Suppose E_0 is \$25/acre (net lessor return), expected real growth in net lessor return is one percent, and the required real return on investment is five percent annually. Applying equation (1) we get the estimate of value, as follows:

$$V_0 = E_0 \frac{(1+g)}{r-g} = (25)(1.01)/.04 = \$25 \text{ times an EM of } 25.25 = \$631.25$$

Equation (1) can be re-written as:

$$r = \frac{E_0 (1+g)}{V} + g = \text{Income Yield} + \text{Capital Gain Yield (CG yield)}$$

Applying to the example:

$$r = \frac{25 (1.01)}{631.25} + .01 = 4\% (\text{income yield}) + 1\% (\text{CG yield}) = 5\% \text{ total yield}$$

Therefore, if the farmer paid \$631.25/acre and actually received \$25/acre income, growing at one percent per year, he would earn the required rate of return of five percent annually (4% as income yield and 1% from appreciating land value). \$631.25/acre can be referred to as the farm value where the expected farmland earnings support that value. What if the

asking farmland price is \$850/acre? From an agricultural point of view, the asking price is too high, as indicated by the expected return on investment, r :

$$r = \frac{25 (1.01)}{850} + .01 = 3\% (\text{income yield}) + 1\% (\text{CG yield}) = 4\% \text{ total yield}$$

The expected return on investment is too low, which should cause the market to lower the selling price to \$631.25.

However, if the buyer expected there would be further growth in value due to non-farm demand for the land, he may be willing to pay the asking price. In this example, the total asking price of \$850 can be divided into a farm price of \$631.25 and a non-farm premium of \$218.75. If the farm price of \$631.25 can earn a return of five percent (income yield of 4% plus CG yield of 1%) then for a total yield of five percent on the asking price of \$850, the non-farm premium of \$218.75 has to appreciate by five percent per year (it also has to earn 5%). Therefore, if the buyer expected farmland earnings growth, $g_f = 1\%$ and additionally, growth in the non-farm premium, $g_{nf} = 5\%$, then the total farmland value would be \$850.

Analysis and Discussion of Results

Table 1 illustrates average real lessee and lessor net returns per acre for the five Canadian provinces over the study period 1990–2006. Gross revenues per acre are significantly higher in eastern Canada due to higher valued crops such as vegetables, tobacco, and fruit, higher livestock revenues – in part due to supply management, and higher government subsidies (average government subsidies alone [programs] in Quebec are as high as crop and livestock revenues in Saskatchewan).⁸ The lowest gross revenues are in Saskatchewan, where farms rely heavily on relatively low-valued grain commodity production. After considering lessee expenses, net lessee returns are substantially higher in Ontario and Quebec than in western Canada. Net lessee returns are considered the farm operator's compensation for labor and management. While average real growth in net lessee returns per acre has been negative, Canadian farmers have partially offset this with positive growth in average farm size; growth in net lessee returns for the average farm has still been negative. Net lessee returns are not the earnings associated with farmland ownership, however. Continued low or negative growth in returns to lessees can lead to lessors having to accept lower farmland rents, which will impact land values. Therefore, growth in net lessee returns needs to be

considered in the estimation of farmland values. Net lessor returns per acre represent the income return to farmland ownership. They are significantly higher in Ontario and Quebec than in western Canada and all provinces have exhibited positive real growth over the study period.

Table 2 and Figure 1 compare the average yields and risk levels for farmland investments, stock markets, and T-Bills. The comparison with stock markets and T-Bills is included to assess past farmland performance in terms of risk adjusted financial market returns. In Figure 1, the Capital Market Line is drawn (not derived) using the U.S. stock market portfolio as a proxy for the market portfolio. Canadian farmland is clearly in a lower risk category than stocks, and for the most part, farmland also offers lower investment yields. During the study period in Quebec, Manitoba, and Alberta, the combination of net lessor rents and growth in land values provided farmland owners with higher yields than suggested by the capital market line relationship (higher investment yields per unit of risk compared with stock markets), implying that farmland in those provinces was undervalued, on average, during that time period. In Ontario and Saskatchewan, the farmland investment yield was below the CML, implying that farmland there was overpriced, on average, over the study period 1990-2006. While the CML-relative yields allow for past average over/undervalue assessment of farmland, it does not address current over/undervaluation or differentiate between current farm value and non-farm value or their respective investment yields.

Figure 2 compares farmland values in each province with average NLRs (net lessor returns) over the study period. The comparisons (one chart for each province) illustrate the close relationship of farmland values to NLRs and, although the earnings multiplier varies amongst provinces, it appears to be fairly stable. The charts show steady growth in NLRs and farmland values, reasonably low variance in NLRs and even less variance in farmland values.

Table 3 shows the results of the farmland valuation analysis. All of the inputs for estimating farmland value are based on the averages for the study period 1990-2006. Based on a regression trend line, the average 2006 NLR for each province is used as the mid-range estimated sustainable earnings to farmland ownership (the upper range estimate is one standard deviation

above the mid-range estimate and the lower range is one standard deviation below, which corresponds very closely to 20% and 15% crop share lease rates. The expected growth (g_p) is the average real growth in NLR over all provinces (real 1.2% per year), the assumption being that the average growth will continue in the future; and the required rate of return on investment is the real rate of return earned on farmland over the study period, averaged over all provinces (real 5.2%).⁹ Combining the growth and required return estimates produces an EM (earnings multiple) of 25.21, which is applied to all provinces.¹⁰

Table 3 shows that in both Alberta and Ontario, actual farmland prices are significantly higher than estimated value (approximately 50% higher) implying a 33 percent non-farm premium (a non-farm premium that is 33% of the total value). Saskatchewan farmland prices are very close to estimated value; however, in Quebec and Manitoba, 2006 farmland prices are 13 and 29 percent respectively below their mid-range value estimates. The implication is that based on farmland ownership earnings alone, Alberta and Ontario farmland is overpriced, in that farmland ownership earnings alone cannot provide the required return to investors. For those farmland prices to be sustainable there needs to be an expected return on the non-farm price premium equivalent to the overall required rate of return. The Canadian Farmland Values Report (Farm Credit Canada, 2007) addresses non-farm demand in Alberta and Ontario. The report refers to 2006 farmland prices in Alberta, “The strong provincial economy, driven by the oil and gas industry, continues to impact the demand for farmland. The spin-off, plus increasing optimism in the grain sector (bio-fuels demand and commodity prices) is feeding strong farmland prices.”¹¹ Land continues to be in strong demand in the urban fringe and in the corridor running from Lethbridge to Grande Prairie.” Farm Credit Canada (FCC) is suggesting a strong farm price (based on higher expected commodity prices due to growth in the bio-economy) as well as strong growth in the non-farm premium due to urban demand. For 2006 land prices in Ontario, FCC suggests a softening of the farm value but continued growth in the non-farm value by stating, “Changes in land values across Ontario suggest some softening over the past six months. Urban buyers relocating to rural areas around urban centres continues to influence land values.” The FCC report does not indicate an urban influence on farmland values

in Saskatchewan, Manitoba, or Quebec.¹² If farmland investors (farmers and/or non-farmers) expect the non-farm price premium to continue to grow, then farmland in Alberta and Ontario is not necessarily overpriced.

Based on past returns (Figure 1), it appears that farmland investors in Alberta have been earning a reasonable risk-adjusted return on total investment (farm price and non-farm premium) although the total return on investment in Ontario appears to be slightly lower than the minimum required rate, as suggested by the Capital Market Line. However, past average returns cannot be used as indicators of future returns so it really depends on investor expectations. In Saskatchewan, Manitoba, and Quebec there is no indication that farmland is overpriced. Saskatchewan and Quebec prices are reasonably close to estimated values but Manitoba farmland appears to be significantly undervalued, based on the past average farmland earnings. The FCC Farmland Values Report indicates that in 2006 there was no significant pressure on land prices in Saskatchewan or Quebec but that in Quebec “steadier income from supply-managed production helped stabilize land prices” after a year of mediocre yields and prices. For Manitoba, the report indicates that “Manitoba farmland prices are showing the strongest increase in four years,” which supports the assessment that Manitoba farmland is undervalued.

In a scenario where commodity prices are expected to remain flat even as input costs increase, net lessee returns would decrease and thus likely pressure farmland owners to lower lease rates. In that scenario, where the lower range estimates may be more appropriate, Ontario and Alberta farmland is either overpriced or has higher non-farm premiums that need to be supported by expected g_{nf} . Saskatchewan farmland is likely overpriced by about 15 percent but Manitoba and Quebec farmland would still be undervalued. In a scenario where commodity prices and farm profits are expected to rise (e.g., due to further increased demand for biofuels and low world stocks of grain commodities), the upper range estimates may be more appropriate. In that scenario, the non-farm premiums for Ontario and Alberta are reduced to 26 and 29 percent, respectively and may be undervalued. The other three provinces would be undervalued, especially Manitoba where the estimated farm value would be 59 percent higher than the actual 2006 farmland price.

Summary and Conclusions

Farm lobby groups have for decades pointed to low net farm incomes as they call for ever-increasing farm subsidies from governments. Yet, farm family net worth has risen significantly in Canada, mostly from rising farmland values, and is normally two to three times the overall average family net worth. If farm profitability is as low as suggested by net farm incomes, why do land prices continue to rise? This paper assessed Canadian farmland valuation by using true economic returns as opposed to net farm income, which captures only a portion of true farmland returns.

The results indicate that over the 1990-2006 study period, farmland in Alberta, Manitoba, and Quebec all earned investment returns that were greater than average risk-adjusted financial market returns over the same period. This implies that during that period, on average, farmland in those provinces was not overvalued and actually may have been undervalued, especially in Quebec and Manitoba. Ontario and Saskatchewan however, did earn returns lower than would be expected for their risk levels (slightly less than the risk-free return for Saskatchewan), implying that those provinces were overpriced on average.

To assess farmland values (2006), a standard discounted earnings model was used with expected growth in farmland earnings as an important component. The growth component of the model was used to assess farm value and the non-farm price premium. The actual 2006 prices for Alberta and Ontario farmland were significantly higher than the estimated farm value in those provinces. However, that does not necessarily mean they were overpriced because there appears to be a significant non-farm price premium in Ontario and Alberta due to non-farm demand for farmland. As long as investors expect that the non-farm premiums will continue to grow and thereby earn the required return on investment, the farmland may be priced correctly. In Alberta, current expectations for growth in the non-farm premium are strong because of a very strong oil-based economy. However, the Ontario economy is experiencing some weakness due to the negative impact of a high valued Canadian currency on their export manufacturing and processing sectors as well as a potential slowdown in the U.S. economy. That weakness could translate into a lowering of the non-farm premium growth, indicating that farmland is

overvalued and causing farmland prices to adjust downward. Therefore, based on farmland earnings alone, Alberta and Ontario farmland appears to be significantly overvalued. However, when the non-farm real estate component and past investment returns are considered, it is difficult to conclude that farmland prices are too high in Alberta but they may be in Ontario. Saskatchewan's estimated farmland value was very near the actual 2006 price, implying that it is not overvalued. Finally, Manitoba and Quebec farmland value estimates are significantly higher than actual 2006 prices, which implies that farmland in those provinces is undervalued, not overvalued.

The overall conclusion is that there is no strong evidence that Canadian farmland is overpriced, as would be expected from the low levels of net farm income. Net farm income is a very poor indicator of farmland financial performance and should never be used as a sole indicator for making farm policy pronouncements. When all farmland ownership earnings are considered, Manitoba and Quebec farmland appears to be undervalued; Saskatchewan farmland appears to be priced at its estimated value (even though it is low relative to other provinces); and, while Alberta and Ontario farmland is priced well above the level that can be sustained by farmland earnings, past growth in farmland prices suggests that the non-farm premiums in those provinces may be justified.

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Endnotes

- ¹ This assumes that there is not significant non-farm demand for land that affects the average farmland price.
- ² The comparison was for the provinces of Alberta, Saskatchewan, Manitoba, Ontario, and Quebec. In 2005, the average farm net worth of each of the five provinces was: Alberta \$1,254,741; Saskatchewan \$689,366; Manitoba \$856,700; Ontario \$1,145,619; Quebec \$987,472.
- ³ Expected growth is included in the model, as suggested in past studies by Melichar, Alston, Castle and Hoch, and Painter. This changes the model slightly from the shorter version $V = E/r$.
- ⁴ Other data sources that were used include Agriculture and Agri-Food Canada, Canada Grains Council, Canadian Wheat Board, Canadian Grain Commission, Canadian Transport Agency, Farm Credit Canada, and Statistics Canada.
- ⁵ 15-20 percent of gross revenues is a common crop share arrangement in North America, which compares closely with cash rents that are usually in the 5-7 percent of land values range. This estimate is based on discussions with agricultural specialists in each of the five provincial departments of agriculture.
- ⁶ The value of farmland includes the value of farm buildings which means that building depreciation is an expense associated with farmland ownership.
- ⁷ In the case of business and commercial use, there will be expected earnings from the commercial venture to assess but in the case of personal use, such as a hobby farm or personal residence, the buyers will not be looking for a cash flow from the land and expected future capital appreciation may not be a significant factor in the purchase decision.
- ⁸ The Canadian supply management system guarantees high farm prices for dairy products, eggs, chickens, and turkeys. Quebec and Ontario farmers control over 70 percent of all supply managed products in Canada.
- ⁹ Farmland investments in all provinces exhibit a very similar risk level, which implies a similar risk-adjusted discount rate for all of them.
- ¹⁰ Note that in Table 3 the numbers are rounded so some calculations may seem to be in error.
- ¹¹ Author's addition in parentheses.
- ¹² This doesn't mean there is not urban influence in those provinces, but it does seem that the urban influence is relatively small.

Table 1. Average farm lessee and lessor net returns (real 2006 \$ per acre) 1990-2006

Gross Revenues	Alberta	Sask	Manitoba	Ontario	Quebec
Crops	50.23	60.51	86.71	256.01	159.48
Livestock	81.45	22.88	78.40	329.79	450.85
Programs	14.13	13.93	18.04	35.68	82.99
Total Revenues	145.81	97.31	183.14	621.47	693.33
Lessee Return					
Rev Share (82.5%)	120.29	80.28	151.09	512.72	571.99
Lessee Expenses:					
Operating Expenses	83.6	51.46	105.68	351.38	372.08
Operating Interest	3.21	1.82	3.50	12.19	18.42
Mach Depreciation	17.65	13.48	18.93	53.14	44.56
Total Lessee Exp	104.46	66.75	128.10	416.71	435.05
Net Lessee Return	15.83	13.53	22.99	96.00	136.94
Avg Real Growth in					
Net Lessee Ret/acre	-4.8%	-4.0%	-1.4%	-3.0%	-1.1%
Lessor Return					
Rev Share (17.5%)	25.52	17.03	32.05	108.76	121.33
Lessor Expenses:					
Property Tax	2.27	3.36	3.43	12.60	15.45
Bldg Depreciation	3.57	1.17	2.05	26.96	21.00
Total Lessor Exp	5.84	4.53	5.48	39.56	36.45
Net Lessor Return	19.68	12.50	26.57	69.20	84.89
Avg Real Growth in					
Net Lessor Return	0.5%	0.2%	1.4%	1.0%	0.1%

Table 2. Average yields and risk levels for farmland investments, stock markets, and bonds (nominal yields) 1990 – 2006

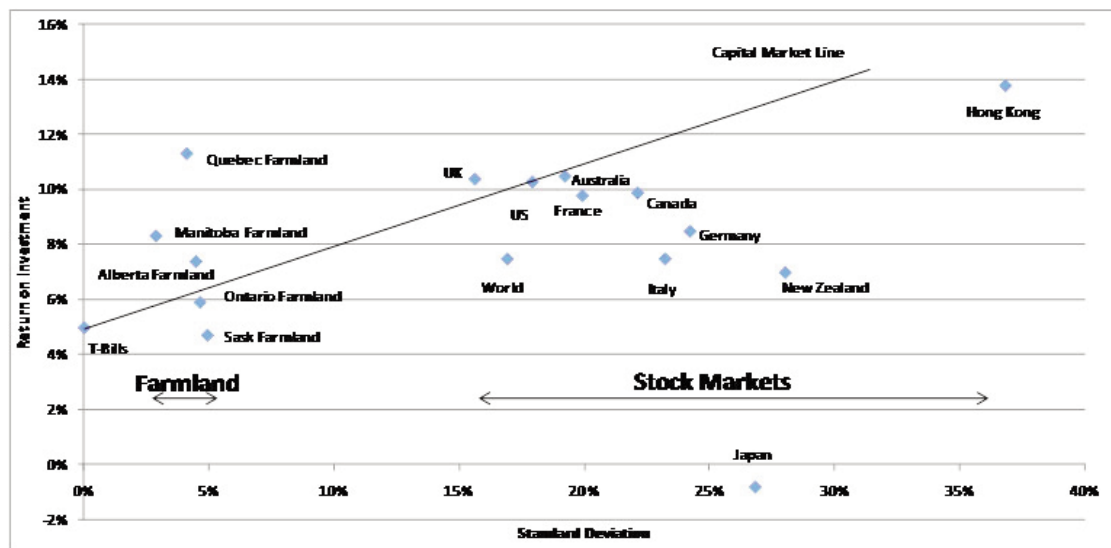
	Income/Div Yield		Cap Gain Yield		Total Yield		Coefficient Of Variation
	Avg Yield	Std Dev	Avg Yield	Std Dev	Avg Yield	Std Dev	
T-bills *	n/a	n/a	n/a	n/a	5.0%	0.0%	-
Farmland							
Alberta	2.9%	0.4%	4.5%	4.2%	7.4%	4.5%	0.60
Saskatchewan	3.5%	0.4%	1.3%	4.6%	4.7%	4.9%	1.04
Manitoba	5.0%	0.5%	3.3%	2.8%	8.3%	2.9%	0.34
Ontario	2.3%	0.2%	3.7%	4.6%	5.9%	4.6%	0.78
Quebec	5.5%	1.1%	5.8%	3.5%	11.3%	4.1%	0.36
Stock Markets							
Canada	1.8%	0.5%	8.1%	21.9%	9.9%	22.1%	2.23
Australia	3.0%	0.8%	7.5%	18.6%	10.5%	19.2%	1.83
New Zealand	4.0%	1.3%	3.1%	27.2%	7.0%	28.0%	4.00
United States	1.7%	0.6%	8.7%	17.6%	10.3%	17.9%	1.74
France	1.7%	0.6%	8.1%	19.5%	9.8%	19.9%	2.03
Germany	1.7%	0.7%	6.9%	23.7%	8.5%	24.2%	2.85
UK	3.5%	0.8%	7.0%	14.9%	10.4%	15.6%	1.50
Italy	2.1%	1.0%	5.4%	22.9%	7.5%	23.2%	3.09
Japan	0.8%	0.3%	-1.5%	26.5%	-0.8%	26.8%	n/a
Hong Kong	4.2%	1.5%	9.7%	35.6%	13.8%	36.8%	2.67
World	1.7%	0.4%	5.8%	16.6%	7.5%	16.9%	2.25

* T-bill yields are provided as a total interest investment yield and are not divided into income and capital gain yields.

Table 3. Farmland valuation assessment (2006 \$ per acre)

	Estimation Range		
	Lower	Mid	Upper
Alberta			
Average Real NLR	19.69	22.64	25.59
Farm Value Estimate	496	571	645
Actual 2006 Value	870	870	870
Non-farm Premium	374	299	225
Saskatchewan			
Average Real NLR	12.22	13.67	15.12
Farm Value Estimate	308	345	381
Actual 2006 Value	355	355	355
Non-farm Premium	47	10	-26
Manitoba			
Average Real NLR	27.72	31.88	36.04
Farm Value Estimate	699	804	909
Actual 2006 Value	573	573	573
Non-farm Premium	-126	-231	-336
Ontario			
Average Real NLR	74.44	86.48	98.53
Farm Value Estimate	1,877	2,180	2,484
Actual 2006 Value	3,518	3,518	3,518
Non-farm Premium	1,641	1,338	1,034
Quebec			
Average Real NLR	86.65	92.53	98.41
Farm Value Estimate	2,185	2,333	2,481
Actual 2006 Value	2,050	2,050	2,050
Non-farm Premium	-135	-283	-431

Figure 1. Average yields and risk for Canadian farmland, stock markets, and T-Bills (1990-2006)



* The Capital Market Line is drawn and not derived mathematically.

Figure 2. Comparison of net lessor returns and farmland values by province (1990-2006)

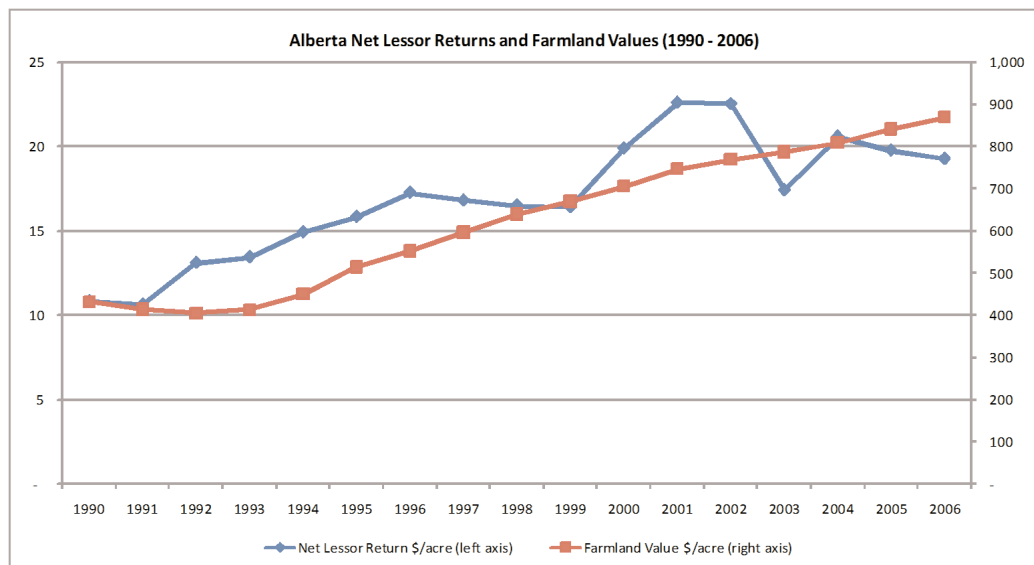


Figure 2. Comparison of net lessor returns and farmland values by province (1990-2006) (cont'd.)

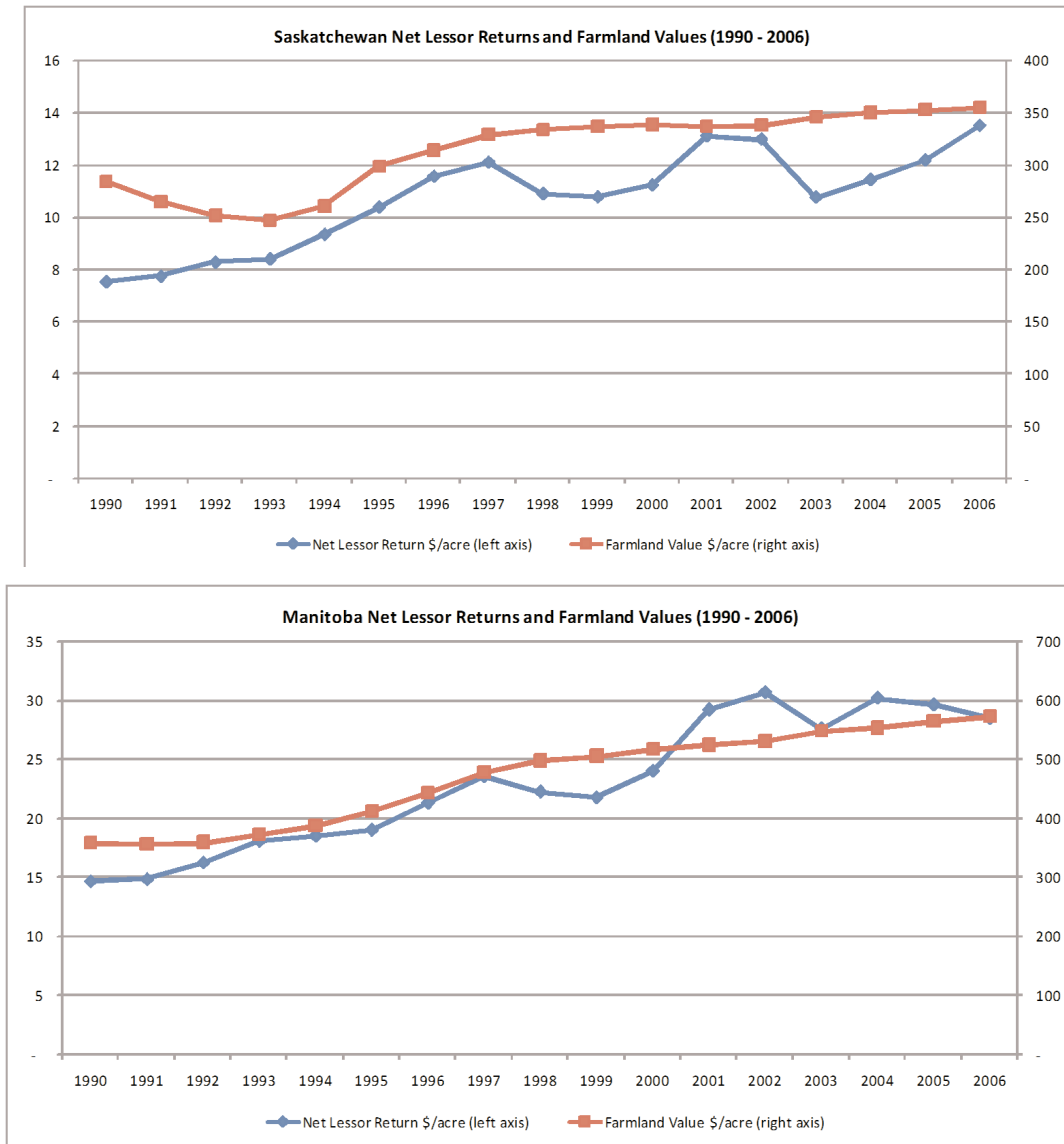


Figure 2. Comparison of net lessor returns and farmland values by province (1990-2006) (cont'd.)

