Extension Education

Farmland Price-Rent Surveys: Opportunities for Outreach and Teaching

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Abstract
Across North America, applied economists conduct annual surveys to assess local farmland prices and farmland rental rates. In this paper, we discuss the "Ontario Farmland Value and Rental Value Survey" and explain how the survey results support university outreach and teaching efforts. Similar to other surveys, the Ontario survey provides benchmark rental rates and farmland values at the county level that are beneficial for outreach purposes. In addition, the survey illuminates key economic relationships, such as the relationship between farmland values and urban development pressure. In teaching settings, the survey results allow students to assess and debate the merits of the classic capitalization formula using information regarding familiar regions.

1 Introduction

The relationship between rental rates and interest rates is a fundamental consideration in understanding the evolution of farmland prices. While interest rates and farmland values are well known and often well-reported, access to rental rate information is more limited. Consequently, universities throughout North America conduct annual surveys that monitor farmland values and rental rates (see Table 1 for examples of these surveys). In the United States, examples of these surveys include the "Purdue Farmland Values and Cash Rents Survey," conducted in Indiana (Center for Commercial Agriculture, Purdue University 2024), or the survey conducted by the Illinois Society of Professional Farm Managers and Rural Appraisers (ISPFMRA; 2023). In Ontario, the "Ontario Farmland Value and Rental Value Survey" (OFVRVS), the focus of this paper, is the only source of farmland rental rates made available on an annual basis. The OFVRVS surveys Ontario farmers and farmland owners on farmland prices and rental rates for farmland in their region (Deaton 2021). In this paper, we discuss how the OFVRVS is used to support outreach and enhance teaching outcomes.

One critical aspect of the OFVRVS is that it provides farmers and farmland owners with a benchmark for rental rates in their area. This allows survey users to understand the significant variation in farmland markets across regions. Beyond providing a benchmark rental rate for farmers and farmland owners, the survey allows for outreach regarding key economic phenomena. One example includes the well-established capitalization model, which emphasizes the economic relationship between rental rates, interest rates, and the price of farmland. Developing an understanding of this relationship is important for both outreach purposes and teaching.

Section 2 of this paper provides background on the OFVRVS. We address the following questions: When and why did the survey emerge? What methods are used to collect the information? Who presently uses the survey? The following section, Section 3, explains ways the survey is used in outreach settings to benchmark key information relevant to producers, landlords, and policy makers. Section 3 also illustrates the capacity of the survey to appreciate and assess economic fundamentals using the classic capitalization formula. Section 4 conceptualizes farmland as a dividend-bearing asset and compares its returns to other dividend-bearing stocks. This conceptualization is also useful for helping

Table 1. Examples of Farmland Value and Rent Surveys in North America.

Survey	University/ Organization	Location	Link
Ontario Farmland Value and Rental Value Survey	University of Guelph	Ontario, Canada	https://www.onfarmlandsurvey.com/
Purdue Farmland Values and Cash Rents Survey	Purdue University	Indiana, USA	https://ag.purdue.edu/department/agecon/extension/farmland-values.html
Illinois Farmland Values and Lease Trends	Illinois Society of Professional Farm Managers and Rural Appraisers	Illinois, USA	https://ispfmra.org/land-values-archive/
Nebraska Farm Real Estate Market Survey	University of Nebraska	Nebraska, USA	https://extension.unl.edu/statewide/cedar/connect-us/agricultural-farm-ranch-resources/
FINBIN – Farm Financial Database	University of Minnesota	Minnesota, USA	https://extension.umn.edu/farmland-rent-and-economics/cropland-rental-rates
Cash Rental Rates for Iowa	Iowa State University	Iowa, USA	https://www.extension.iastate.edu/agdm/wholefarm/html/c2-10.html
Western Ohio Cropland Values and Cash Rents	Ohio State University	Ohio, USA	https://farmoffice.osu.edu/farm-management-tools/farm-management-publications/cash-rents

Notes: Surveys provided in the above table are meant to provide an example of some of the farmland value and rent surveys conducted across North America. The list does not include all surveys.

survey users appreciate the relationship between farmland values and rental rates and other common forms of investment. In Section 5, we describe an in-class exercise that can be used to deepen students' appreciation of farmland rental information and key economic relationships. Finally, in Section 6, we describe some best practices for managing an extension product based on our learned experiences.

2 Background

Across Canada, 38 percent of farmland is in the rental market (Statistics Canada 2022).[1] While there are regional differences in the composition of rental markets across Canada, a similar percentage (29 percent) of farmland is rented out in Canada's most populous province of Ontario, where 40 percent of Canadians live (the majority of which live in non-rural population centers).[2] The large share of farmland in Ontario's rental market makes it even more surprising that prior to the beginning of the OFVRVS in 2016, there was no public provision of farmland rental rates at the county level in Ontario. Unlike in the United States, where the 2008 Farm Bill mandated that the National Agricultural Statistics Service (NASS) provide average annual rental rates for every U.S. County with more than 20,000 acres of cropland, Statistics Canada does not provide information to the public about Canadian farmland rental rates (U.S. Department of Agriculture 2024). The lack of publicly available data was a major reason why the University of Guelph, with financial support from the Ontario Ministry of Agriculture Food and Rural Affairs (OMAFRA), initiated the OFVRVS in 2016.[3]

From the onset of the proposed survey, a farmland study group comprising academics, government representatives, farmer organization representatives, realtors, and the Municipal Property

[1] Calculated by dividing the total land rented from both government and others by the total farmland area reported in the 2021 Census of Agriculture.

[2] This was Statistics Canada's (2023) count as of January 2023; 13.8 percent of Ontario's population resides in population centers that are considered rural (Statista Research Department 2024). There are provincial differences in the composition of the rental market in Canada, including differences in the percentage of farmland leased out by the government.

[3] Brady Deaton was the P.I. on the Grant. Steve Duff, Chief Economist of OMAFRA, played a significant role in supporting the project in a manner that would ensure ongoing surveys on an annual basis. It should be noted that the initial design of the survey was informed by earlier rental survey studies in Ontario (Bryan, Deaton, and Weersink 2015; Deaton, Lawley, and Nadella 2018).

Assessment Corporation (MPAC),[4] was assembled to help design the survey. This additional consideration of the survey design has implications for outreach, as members of this initial study group provide ongoing oversight of the survey via an annual meeting. Moreover, this group is critical for supporting responses to the survey and assisting with outreach regarding the survey results.

One major way the farmland study group contributes to the survey is by helping to establish a sample of respondents. For the 2016–2021 surveys, the survey was sent to only members of the Ontario Farmers Association (OFA). Starting with the 2022 survey round, the survey's respondent pool was expanded beyond OFA members to include members of two additional farmer-led organizations in Ontario: the National Farmers Union (NFU) and the Christian Farmers Federation of Ontario (CFFO). [8] All farm businesses in Ontario reporting at least $7,000 in gross farm revenue must register their farm business to one of the three accredited farm organizations: OFA, NFU, or CFFO. By including members of these three farm groups in the survey sample, the survey sample pool includes nearly all farm businesses in the province.

Beginning in January of each year, an initial email is sent to the respondent pool with a link to the online survey. The survey asks respondents questions about the previous year's rental rate and farmland values. Following the initial email, two additional reminder emails are sent over the span of two weeks. While the response rate varies each year, the 2023 survey recorded 1,116 respondents, implying a response rate of approximately 4 percent. The results of the survey are posted online at www.onfarmlandsurvey.com.

The OFVRVS provides valuable information beyond farmland rental rates and farmland prices. For instance, the survey also gathers information about the characteristics of each respondent, their relationship to the agricultural sector (farmland owner, active farmer, landlord, tenant, etc.) and farmland use information. Details about farmland use include the ratio of acres rented to owned, the number of landlords, and whether landlords require stipulations. A recent addition of the survey includes asking respondents about their perceptions with respect to current and future farmland prices. This subset of questions was included to gauge overall market sentiment and explore whether respondent perceptions accurately describe trends in Ontario farmland markets.

3 Outreach: Benchmarking Farmland Rental Rates

For the purposes of this paper, Extension efforts achieve an Extension product when the information provided influences the intended user's decision to act (or forbearance).[5] When, for example, new policies, or market shocks occur, farmers often rely on Extension economists to concisely communicate the implications for them and their operation (Martinez et al. 2022). In this regard, Extension programs play a crucial role in informing the decision-making process of farmers, and thriving Extension programs act as a "bridge" between universities and the agricultural community (Marshall et al. 2022).

The lack of rental information makes it difficult for Ontario farmers and farmland owners to *benchmark* their experiences, assess their situation, and alter decisions if needed. Moreover, because many farmers and landlords have investment opportunities that span across jurisdictions, the lack of information diminishes their potential to assess differences across regions. Consequently, one primary Extension product of the OFVRVS is to enhance the capacity of individuals to benchmark their personal observations of rents and land values with the survey results. Unsurprisingly, the survey results that appear to generate the highest user interest describe farmland rental rates and farmland values by region. The regions correspond with Statistics Canada's Census Division (hereafter referred to as

[4] MPAC is responsible for assessing the property values for all of Ontario. Municipalities use these assessments for property tax purposes.

[8] The OFA email list has 25,017 emails as of 2023. The CFFO has 2,976, and the NFU has 2,200.

[5] We credit the late Dr. Paxton Marshall (former extension Professor at Virginia Tech) for heavily influencing this working definition of the Extension product.

counties) boundaries. While some of the counties are technically regional municipalities, they often retain their historical description as "counties."

With respect to the OFVRVS and the importance of benchmarking, the survey results provide users with three valuable pieces of information about farmland markets in their county: median rental rate for average quality farmland, median price for average quality farmland, and the rent-to-price ratio (calculated as median rent divided by median farmland value). In outreach presentations and seminars, we explain these three metrics and allow for a discussion about them with the audience. For example, the 2023 survey published a median rental rate of $350 per acre and a median farmland value of $26,400 per acre in Huron County, resulting in a rent-to-price ratio of 1.3 percent.

By providing farmers and farmland owners with this information online and in outreach settings, users are then able to benchmark the published values against what they purchase and rent farmland for. While the published values are not designed to be used to set precise rental rates or farmland prices, they give users a gauge of where the prices they pay to rent and buy their farmland sit relative to average quality land in their county. Farmers, tenants, and landlords alike can assess their existing rental relationships according to this information and consider a host of additional issues including the quality of the farmland relative to average quality cropland.

In addition to providing rental rates and farmland values, the rent-to-price ratio is a particularly useful benchmark because it identifies a capitalization rate or "cap rate," which is used to evaluate and compare investments. The 2023 survey published cap rates ranging from 2 percent in Stormont, Dundas, and Glengarry to 0.5 percent in Northumberland. A high cap rate relative to other investments suggests the investment is viable compared to alternatives. Consequently, users can obtain this information and benchmark it against specific alternatives and prevailing interest rates. In addition, variation in cap rates illuminates important geographic differences between agricultural counties. In some cases, low cap rates are associated with urbanizing areas (e.g., Niagara) where future non-agricultural uses of farmland place upward pressure on farmland values and rental rates are relatively low. In these areas, the very low cap rates suggest that farmland rental rates alone do not accurately explain the future annual net-returns that may be associated with non-agricultural uses. In outreach settings, providing users with an explanation of the "cap rate" is useful for exploring the heterogeneity of farmland rental markets across Ontario.

The value of providing rental rate and farmland price information at the county level is apparent when comparing the reported farmland values and rental rates for a single county to other Ontario counties. To illustrate the heterogeneity in farmland markets across Ontario counties, Figure 1 provides box-whisker plots for Ontario farmland values and rental rates in 2023. Per-acre, county median rental rates (for average quality farmland) vary from $50 to $350, with the median being close to $250.[6] County farmland values at the median also vary considerably: between $8,000 and $36,000 per acre. Hence, an important takeaway is that there is tremendous variation in farmland values and rental rates across Ontario. Although the survey is not instructive on rental rates for a specific parcel, it provides respondents (members of the three accredited farm organizations) and other users with rental information about farmland in their county. In this regard, the survey is particularly beneficial for benchmarking one's individual experience of rental rates and farmland values with the county they live in.

Additionally, as discussed earlier with respect to cap rates, the survey recognizes geographic

[6] All Canadian monetary figures are in Canadian Dollars.

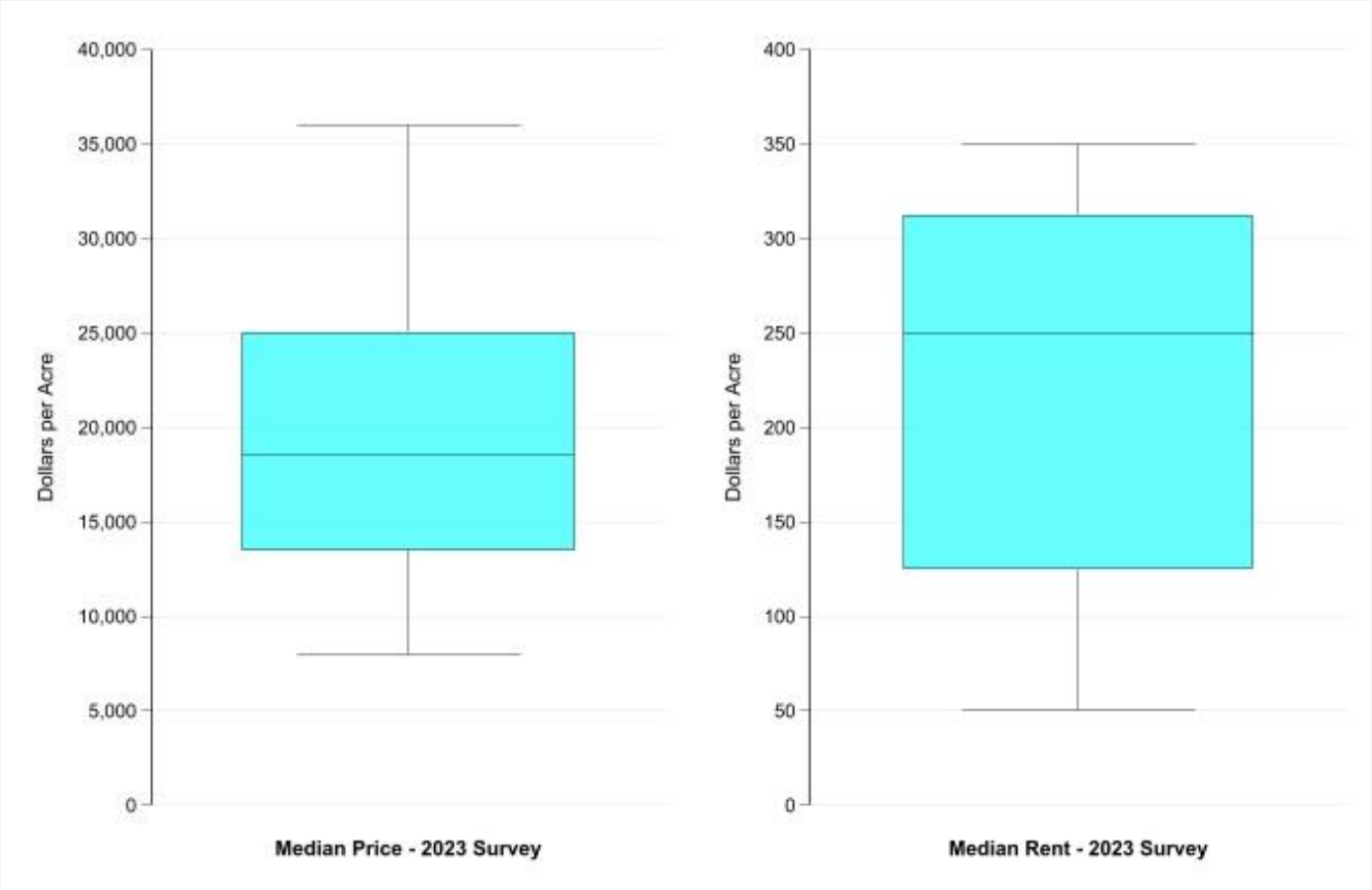

Figure 1. Median Price and Cash Rent Reported in 2023 OFVRVS.

variation in respondents' perceptions of farmland purchases. In general, in many near-urban counties, respondents view most farmland buyers as "non-farmers." For instance, Table 2 shows that respondents consider only 35 percent of farmland purchasers to be "farmers" in Niagara. Farmland parcels in Niagara are close to urban centers and have unique climate characteristics that allow for speciality fruits and vegetables to grow. This observation contrasts to Perth County, where respondents consider 100 percent of purchasers to be "farmers." Farmland in Perth County is also more likely to be used for a traditional corn-soy rotation and is more removed from urban development pressure than farmland in a county such as Niagara.

Both of the above examples allow users of the survey to benchmark their own understanding of farmland market outcomes in their region against the survey results. Importantly, the survey provides respondents with information that is not generally available. Providing this information to stakeholders is a focus of outreach efforts related to the survey. Given the significant heterogeneity in farmland market outcomes in Ontario, the OFVRVS allows survey users to annually assess their own experiences against the survey results and consider the extent to which the information warrants changed decisions.

A second Extension product relates to using information from the OFVRVS to better *appreciate and assess fundamental economic relationships* (e.g., the relationship between farmland values, rental rates, and interest rates). This is an important aspect of the OFVRVS because it allows for outreach and ongoing discussion about economic fundamentals.

For instance, in the 2023 survey, median rental rates are highest in Chatham-Kent, Huron,

Table 2. Perceptions of Farmland Purchases Made by Farmers – 2023 Survey.

Region	Perceived Percentage of Farmland Purchases Made by Farmers [*median reported*]
Algoma (District)	90% (n = 5)
Brant (Census Division)	65% (n = 6)
Bruce (County)	90% (n = 27)
Chatham-Kent (Census Division)	75% (n = 18)
Durham (Regional Municipality)	40% (n = 6)
Elgin (County)	90% (n = 21)
Essex (County)	50% (n = 12)
Grey (County)	80% (n = 11)
Haldimand (County)	73% (n = 8)
Huron (County)	88% (n = 38)
Kawartha Lakes (Census Division)	70% (n = 5)
Lambton (County)	85% (n = 26)
Lanark (County)	25% (n = 5)
Leeds and Grenville (United Counties)	70% (n = 5)
Middlesex (County)	68% (n = 30)
Niagara (Regional Municipality)	35% (n = 14)
Norfolk (County)	63% (n = 12)
Northumberland (County)	55% (n = 7)
Ottawa (Census Division)	70% (n = 13)
Oxford (County)	85% (n = 19)
Peel (Regional Municipality)[1]	8% (n = 8)
Perth (County)	100% (n = 30)
Peterborough (County)	25% (n = 11)
Prince Edward (Census Division)[2]	25% (n = 5)
Renfrew (County)	93% (n = 20)
Simcoe (County)	53% (n = 16)
Stormont, Dundas and Glengarry (United Counties)	70% (n = 17)
Wellington (County)	50% (n = 18)

[1]The mean percentage in Peel is significantly higher than the median, at approximately 17 percent.
[2]The mean percentage in Prince Edward is significantly higher than the median, at approximately 40 percent.

Middlesex, Oxford, and Perth Counties, at $350 per acre. The following equation presents a simple capitalization model where present land values are reflective of the discounted stream of future rents:

$$Present\ Land\ Value = \frac{Rental\ Rate}{Interest\ Rate} \quad (1)$$

In this simple capitalization model, if interest rates are held constant, it follows that counties with high rental rates also have relatively high land values. Consistent with expectations from the simple capitalization model, Chatham-Kent, Huron, Middlesex, Oxford, and Perth all have some of the highest reported median per-acre land values and rental rates of counties included in the survey. In this sense, the survey is useful in outreach and classroom settings because individuals are provided with empirical data to support theoretical models.

In many outreach settings, the simple capitalization model (Equation 1) can be used to explore key economic relationships. The many assumptions associated with this model—for example, the appropriate interest rate and the stability of expectations regarding rental rates and the amount of farmland remaining in farming—become important nuances to be developed. As outreach discussions become more nuanced, a more complete capitalization model can be developed and in-depth discussion about the critiques of this model can be supported by discussions drawn from the literature (see Deaton and Lawley 2022). The expanded capitalization model extends the simple capitalization (Equation 1) into two distinct pieces: the discounted returns from agricultural production and the discounted returns from future conversion of farmland to non-farm uses. This expanded capitalization model is particularly relevant in the context of Southern Ontario, where urban pressure has placed upward pressure on land values due to the potential net-returns that can be generated from developing farmland for non-agricultural uses.[7]

For example, in the 2023 survey, the county of Durham has a median reported rent of $150 per acre and median farmland values of $16,500 per acre. Assuming an interest rate of 5 percent and a rental rate of $150 per acre, Equation 1 would predict farmland values of only $3,000 per acre. This prediction leaves a large share of the reported farmland values in Durham County unexplained. Expanding the capitalization model to include returns from the future development of farmland suggests that the unexplained portion of farmland values in Durham is a function of the expected returns from alternative future uses. Given Durham's proximity to the Greater Toronto area, it is reasonable to expect that farmland valuations in Durham are influenced by their potential conversion to non-agricultural uses. Exploring the capitalization model and the relationship between farmland values and non-agricultural influences, is extremely powerful as a teaching or presentation tool. While students and producer groups may not fully appreciate the nuances of the capitalization model, they can use the survey results and relate their understanding of farmland markets in their own and nearby counties to better understand it and its implications.

A second way that the survey results can illustrate how non-agricultural influences impact farmland valuations is through an analysis of how proximity to urban areas impact farmland values. In the 2023 survey, respondents are asked to describe the amount of time it takes (without traffic) to Toronto's major airport (Pearson).[8] We plot the relationship between farmland prices and the distance to

[7] A full capitalization model, as introduced by Brueckner (1990), is provided below. See Deaton and Lawley (2022) for an in-depth discussion.

$$V_a(t) = \int_0^{t*} r_a(t)e^{-it}dt \ + \int_{t*}^{\infty} r_u(t)e^{-it}dt \ - \ Ce^{-it}$$

Where farmland values, V_a, at time t, are a function of both the discounted stream of net returns from agricultural production, r_a, and the returns from an alternative use, r_u. In this model, farmland is assumed to remain in production until time t^*, at which time it is converted to an alternative use (e.g., urban development, residential). The model also considers the cost of converting the farmland parcel to an alternative use, C. i, represents the interest rate.

[8] Pearson Airport was selected as a landmark in Toronto that respondents would be familiar with.

Pearson Airport in Figure 2.[9] Consistent with expectations, the figure shows a clear negative relationship between farmland values and the distance to Pearson Airport (i.e., farmland values decrease as the distance to Pearson increases). Figure 2 provides a very simple, yet powerful illustration of how farmland values are influenced by urban centers that is useful in both teaching and outreach settings. Once again, this result also helps to underscore the significant spatial heterogeneity in Ontario farmland markets, a consistent theme in the survey results and an important point to emphasize during outreach presentations.

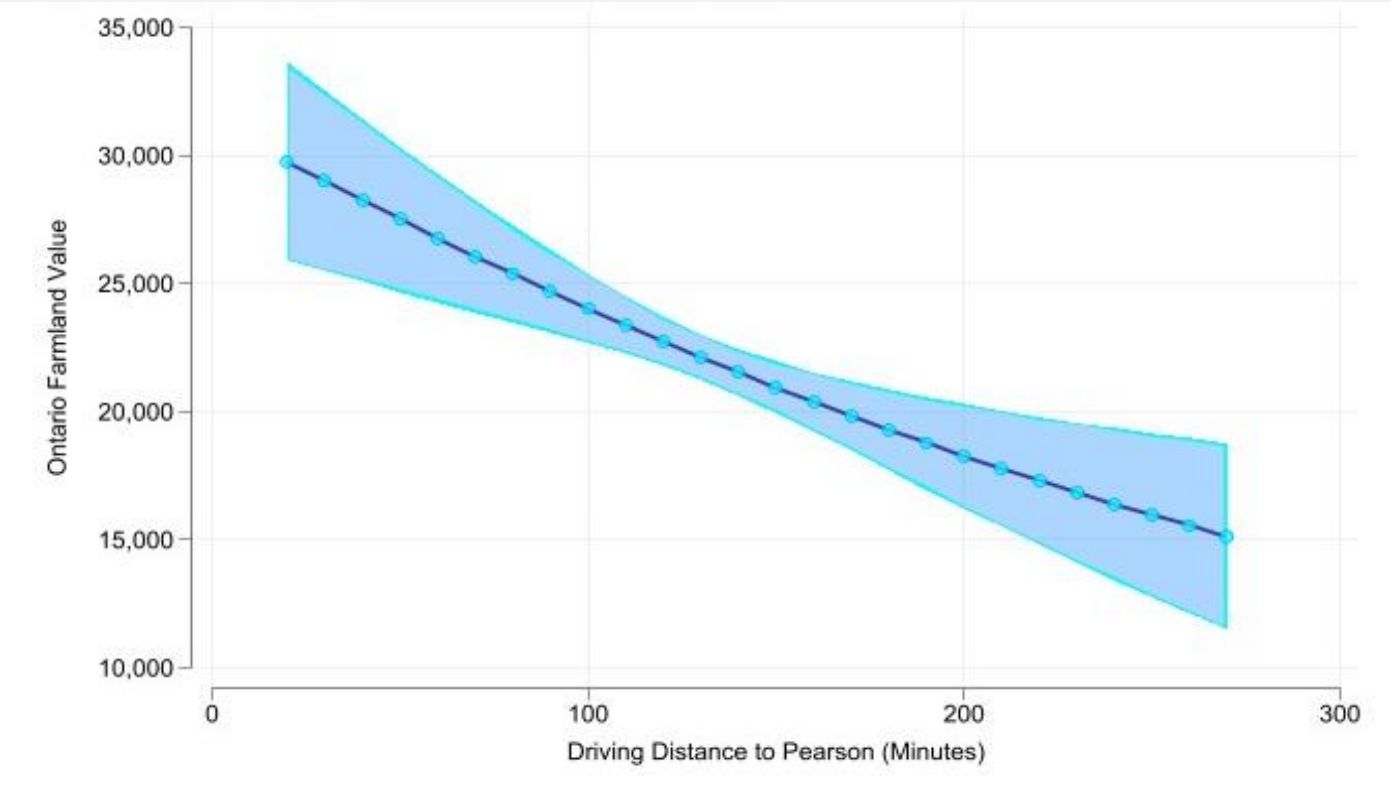

Figure 2. Farmland Value and Driving Distance to Pearson – 2023 Survey.

Anecdotally, in the section of the survey where respondents are asked to write in any comments they have about the survey, respondents often ask why a question about the distance of their farm to Pearson is included. Hence, the value of developing varying measures of urban proximity through the survey may not be self-evident. Considering this, providing outreach groups with Figure 2, which illustrates the relationship between farmland prices and proximity to Pearson Airport (one measure of urban proximity), aids understanding of urban pressure on farmland prices by anchoring farmland prices near a familiar urban point and noting how farmland prices decline as farms become increasingly remote.

4 Outreach: Conceptualizing Farmland Appreciation and Rent

Another way to help survey users grasp economic aspects of farmland prices and rental rates is to conceptualize the return to farmland as comprising an annual dividend payment (i.e., an annual rental payment) and appreciation. In this way, farmland can be conceptualized as a stock with dividend

[9] Specifically, Figure 2 plots marginal effects obtained from a regression model controlling for farmland quality, distance to large cities, and fixed effects for each county.

payments (Painter 2009). Analyzing the survey in this manner allows for an exploration of the results beyond singular per-acre values and rental rates. This also helps enhance the value of the Extension product in teaching and outreach settings.

To begin to conceptualize farmland as a dividend paying stock, we break down the return on investment into two constituent parts for each county: lease income yield and annual appreciation. We measure lease income yield as the ratio of the rental rate less property tax to the price of farmland.[10] Annualized appreciation over the seven-year period from 2016 to 2023 is calculated in the following equation:

$$\left(\frac{Price_{2023}}{Price_{2016}}\right)^{\frac{1}{7}} - 1 \qquad (2)$$

We then plot the relationship between lease-income yield and annual appreciation by county in Figure 3 and compare it to the 30-year average dividend return for the S&P 500 stock index.[11]

Figure 3 highlights a couple of important points. First, and underscoring the earlier point, returns to farmland vary considerably across the province. Lease-income yields range from less than 0.5 percent in Niagara to 1.7 percent in Norfolk. Second, while the dividend returns for the S&P 500 index were not adjusted for taxes, lease-income yields are relatively low compared with dividend returns from the S&P 500 index.

In this scenario, the S&P 500 index represents an alternative investment to investing capital in farmland. For an investor primarily interested in dividend yield, or lease-income yield, the survey results illustrate that, on average, the S&P 500 yields higher dividend returns. However, there are certain counties (e.g., Bruce, Essex, and Norfolk) where the lease-income yield is close to the 30-year average S&P 500 dividend return. This point helps to re-emphasize a recurring theme of the survey, that returns to farming vary substantially across Ontario. Interestingly, and related to an earlier point, respondents from Essex County indicated that a high share (50 percent) of farmland is being bought by "non-farmers."

Aside from the few cases discussed above, lease-income yields are low in most Ontario counties. This observation is consistent with the long-standing concern that farmland does not cash-flow well. However, compared to the S&P 500, the annual appreciation appears to be slightly higher than that of the index. The average annualization appreciation of median farmland values in the survey is 9.5 percent, compared to a 8.3 percent annualized appreciation rate of the S&P 500 over a 30-year period. In this regard, information from the OFVRVS corresponds reasonably well to the performance of other comparable financial instruments. And our experience is that this comparison is interesting in outreach and educational settings, particularly when illustrating how the returns to farmland vary geographically and compared to alternative investments.

5 Classroom Ideas

In this section, we explain how the OFVRVS is used in an undergraduate class. While we focus specifically on the applications of the survey in a fourth-year undergraduate land economics course, the underlying concepts are applicable to a variety of economic courses from the first-year level all the way to graduate classes.[12]

[10] Property tax is calculated using the average farm tax rate for certain municipalities in each county. Since the exact location of a respondent is not known, the tax rate is an approximation.

[11] The S&P 500 is an index, tracking the performance of the 500 largest companies listed on U.S. stock exchanges. It serves as a benchmark of investment performance.

[12] The land economics course referenced in this section is FARE*4290, Land Economics taught by B. James Deaton at the University of Guelph.

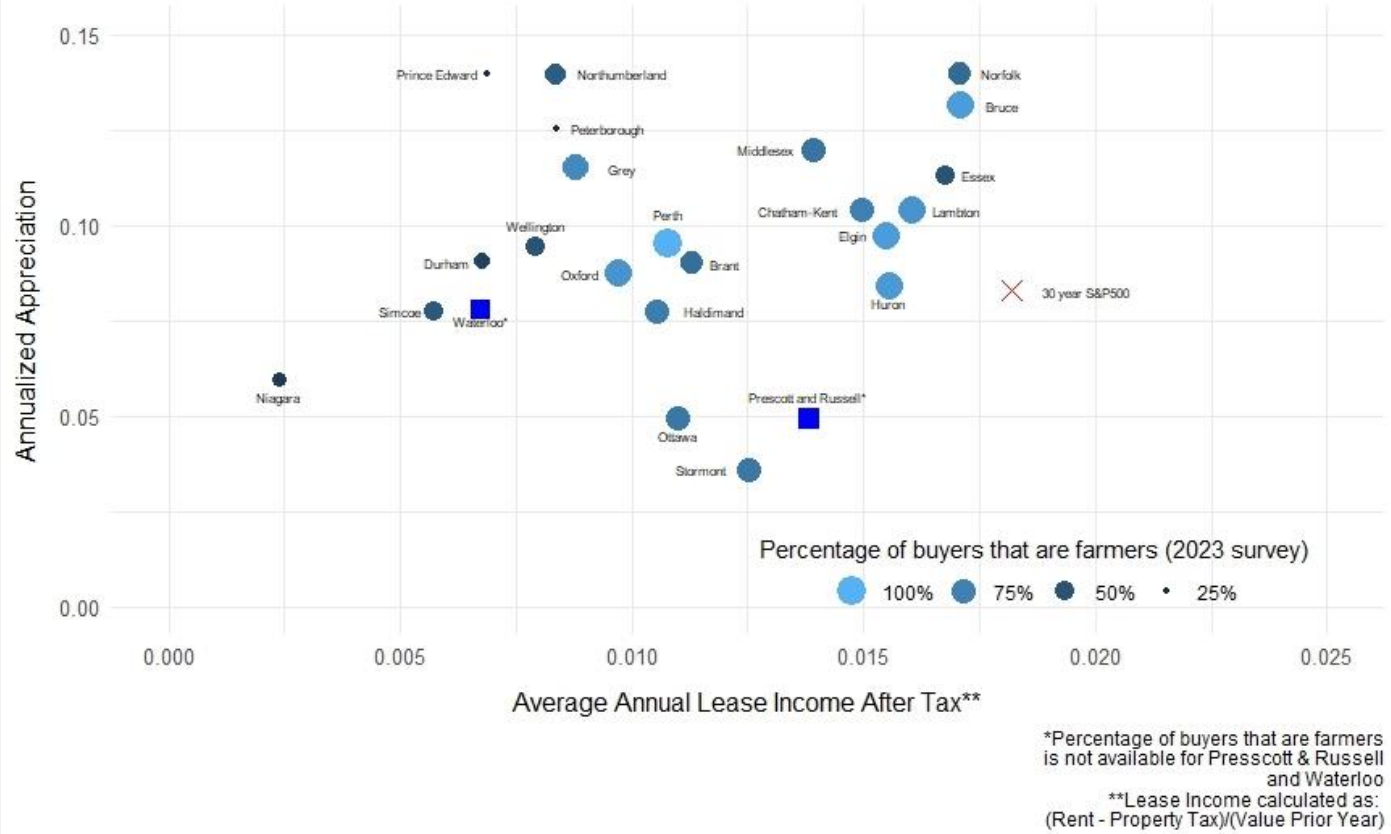

Figure 3. Farmland Appreciation and Lease Income by Southern Ontario County (2016-2023)

When the survey is first introduced in class, students start by exploring the data in the following ways: (1) exploring variation between counties, (2) applying the simple capitalization model, and (3) assessing changes in the survey over time. These points are all discussed above, and students quickly identify many of the aforementioned themes. Importantly, the survey is not introduced in the class until after students have been exposed to the theoretical models, such as the capitalization model and the hedonic property model (Rosen 1974). This way, economic theory can serve as a useful basis for assessing and discussing the survey results.

One exercise we have found useful is to ask students to pick a county that they are familiar with and assess whether they think the rent-to-price ratio is too high, too low, or just right. Many students will choose the county where they are from. For those students who are not from Ontario, we ask them to choose Wellington County, where the University of Guelph is located. While we emphasize that there is no correct answer, students should be prepared to justify their answer using the perpetuity formula or the capitalization model. We are specifically interested in their economic explanation, rather than the "correctness" of their answer. Once the exercise is explained, students are given a short period of time (5–10 minutes) to develop their argument for whether the rent-to-price ratio is too high, too low, or just right. After 5–10 minutes, an in-class discussion begins.

The in-class discussion is the crucial part of this exercise. This discussion gives students the opportunity to present their argument in an informal setting and explain their reasoning. After a student presents their argument, the rest of the class has an opportunity to critique and expand on the initial argument. Students who selected the same county can also join the discussion and argue why they agree or disagree with the student's position. Typically, the discussion begins with a simple analysis of whether

the simple capitalization model (Equation 1) accurately predicts farmland values and rental rates. However, as the discussion unfolds, the class begins exploring topics such as selection of the interest rate, urban effects, personal observations, etc. We also discuss limitations of the survey, and students often make their own suggestions about future survey questions. In this regard, the discussion allows students to begin to think about their own research questions and how they can attempt to answer them.

6 Survey Best Practices

In this final section, we will provide a series of "best practices" for managing an Extension survey such as the OFVRVS. These best practices were developed as a direct result of our learned experiences through managing the survey over the past several years. The primary objective of this section is to provide Extension economists, particularly those early in their career, with suggestions and guidelines for developing and managing similar surveys.

As previously discussed, a key component of the OFVRVS is the farmland study group assembled to help design the survey and assist with outreach. Since the study group includes representatives from Ontario's three farm organizations (the intended outreach targets), the study group provides valuable insights into how to expand the reach and impact of the survey. An important aspect of the study group is that the group meets annually to discuss the previous year survey results and any proposed changes to the upcoming survey. This meeting allows the survey to be continually reviewed and encourages a thoughtful discussion regarding ways it can be improved.

A second aspect of the OFVRVS that has allowed the survey to be successful over the years is the careful attention paid to data management. The survey has its own website (https://www.onfarmlandsurvey.com/) with current and past survey results, as well as an aggregated report. Additionally, all annual reports and a data set containing yearly median prices and rents for each county is securely stored on the Borealis data repository (https://borealisdata.ca/dataset.xhtml?persistentId=doi:10.5683/SP2/HW6LFD). As numerous graduate students and research assistants have worked on the project, processes related to data collection, data cleaning, and report writing are clearly outlined to ensure continuity when individuals transition onto and off the project. This has allowed for consistency between different survey iterations and timely publication releases.

A final element related to the management of the OFVRVS is the considerable emphasis placed on the Extension product. As previous sections have emphasized, a core principle of the OFVRVS is to provide benchmark farmland values and rental rates for Ontario farmers and farmland owners. When considering changes to the survey, this primary purpose is kept in mind to help ensure that the survey continues to provide information that helps inform the decision-making process of its intended users. Extension products and surveys in other regions should regularly reflect on whether their design process and objectives are aligned with the needs of their constituents.

When designing and managing a similar survey in another region, there will certainly be differences and context-specific nuances that are required. These differences are important to consider when designing your own Extension product or survey because they will help create a better Extension product for the target group. The best practices outlined in this section are meant to provide broad themes to consider when designing similar surveys, or even Extension products in general, in other areas. To summarize, the OFVRVS makes it a priority to meet with a farmland study group to discuss the design of the survey, carefully manages data and survey results, and focuses on designing the survey in a way to emphasize the Extension product.

7 Conclusion

The OFVRVS provides landlords, tenants, and other constituents with the ability to benchmark their own observations and better understand the extent to which these accord with key economic considerations. As publicly available information on farmland rental rates in Ontario is scarce, the OFVRVS represents a valuable Extension product to producers, students, and other Extension stakeholders. The examples provided in this article reflect some of the ways we use the survey to enhance outreach and teaching outcomes. Going forward, we hope these examples support an ongoing effort to develop a template for communicating results from farmland value and rental surveys in both teaching and outreach settings.

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