

Do Farmland Ownership Patterns Explain Variation in Farmland Rental Rates?¹

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Executive Summary

Thirty-two percent of farmland in Ontario is rented (Statistics Canada, 2006). Conventionally rental rates are expected to vary across parcels depending on a host of factors – e.g., land quality, location, and crop prices – that contribute to expected revenue associated with a parcel's use. Here, we empirically examine two additional factors that characterize the land rental market and may explain variation in rental rates: 1) land ownership characteristics (e.g., is the landowner actively involved in farming?) and 2) the relationship (social capital) between the landowner and the tenant. A survey of farmers in southern and western Ontario was conducted during the months of June to August 2010. This report provides a description of our survey and the results.

Our survey of 240 farmers indicated that they own approximately 65% of the farm land they operate on in south-western Ontario. Our survey of farmers enabled us to group land owners who rent out farmland into the following categories: : active farmers, widow(er)s, retired farmers, individuals or families who use the land as a place of residence, private owner investors, investment companies, and governments (federal, provincial or municipal). The most important category of landowners who rent land to farmers (in terms of number rental properties) was identified as “families or individuals who primarily use the land as a place of residence.” Seventy-six percent of contracts are oral and 78% of rental contracts are cash based. The remaining 22% of contracts are either crop share or cost share contracts. Properties have been rented for an average of 11 years. Regression analysis identified land quality and farm background as variables that influence rental rates. The quality (e.g., social capital) of relationships between the tenant and the landlord (as characterized by the tenant) did not appear to influence rental rates.

1. Introduction

In Canada, according to Statistics Canada (2006), approximately 38% of farmland is rented or leased to others. In Ontario, 32% of farmland is being rented or leased from others. Census divisions near Ontario's urban areas, specifically York, Halton and Peel, have 50% of agricultural lands being rented, while some regions have less than 20% of land rented (Statistics Canada, 2006). Since 1971, the total area rented in Ontario has increased by nearly 26% (Statistics Canada, 2009).

The heterogeneity in landlords, as well as tenants, could potentially alter the contract terms for farmland rental arrangements. Several studies have examined the influence of tenant and landlord characteristics on agricultural contracts (see Allen & Lueck 1992, Fukunaga & Huffman 2009, Patterson, Hanson & Robison 2000 for example). None of the above studies were completed in the Canadian context.

Two notable studies of agricultural land rental, in Ontario, have been conducted. Bryant and Fielding (1980) examined the impacts of increased non-farmer ownership on agriculture. In their study 25% of farmers rented land from rural non-farmer owners, 5% from absentee private landowners, 40% from retired farmers or the widow of a farmer, and over 50% of farmers indicated they rented some land from companies or corporations (Bryant & Fielding, 1980). van Vuuren and Ketchabaw (1994), provided insight into agricultural rental in the major agricultural regions of Ontario. In their study, oral contracts paid 81% as much as written contracts. Their study also found that local landlords charge a higher rental rate than non-local landlords. The number of years the plot was rented also had a significant negative influence on the rental rate. The relationship between the landlord and tenant was not found to have a significant influence on the rental rate.

The importance of farmland rental to agriculture in Ontario, as well as the close-knit nature of farm communities suggests that social capital may have an important influence on farmland rental

markets. While examining agricultural land rental in Nebraska and South Dakota, Allen & Lueck (1992) found that most tenants and landlords had pre-existing relationships before entering into a rental agreement. If the same holds true in southern Ontario, and landlord and tenants have relationships, then the impact of those relationships is of interest to both tenant farmers and their landlords. Specifically, the determination of the agricultural land rental rate could be a point of contention if one party takes advantage of the other. The agricultural land rental market is thus distinct from most other markets because of the close knit relationships within the agricultural community surrounding farmland (Allen & Lueck, 1992).

Understanding agricultural land rental is important for several reasons. Since a portion of agricultural income support accrues to land, evaluating the effectiveness and equity of agricultural policy requires a firm grasp of agricultural land rental given the large amount of land rented. Tenants and landlords can also benefit from an increased grasp of the farmland rental market. Finally, determining why rental rates vary across similar plots of land would also be beneficial to all parties involved in land rental.

In summary, the previous literature emphasizes the following: (1) lack of agreement in the empirical literature regarding the importance of relationships in influencing transactions in the agricultural sector; (2) Ontario farmland landlords can be characterized in a variety of ways (e.g., widow, absentee landlord, etc.) and their relationships may influence rental rates; (3) conventional economic theory (Kirwan 2009) has not been able to adequately explain farmland rental rates in the United States. This report will address aspects of the aforementioned literature by examining the effect that relationships and participant heterogeneity may have on farmland rental rates.

The primary objectives of this research were to: (1) Characterize farmland owners; (2) Examine the extent of non-farmer ownership of farmland in south-western Ontario; (3) Assess the impact of

tenant and landlord characteristics on the agricultural rental rate; and (4) Create a basic understanding of farmland rental in Southern Ontario.

2. Methods

Between June and September 2010 a telephone and internet survey was conducted on farmers in the Southern and Western Ontario Census Regions. These locations are illustrated in **Figure 2.1** and **Figure 2.2**. The universe of farmers from which our sample was drawn came from a list compiled by Ipsos-Forward Research <<http://www.ipsos-na.com/>>. The Ipsos database is a collection of farmers' phone numbers gathered over several years from farm trade shows and classified advertisements. Farmers who agreed to participate and rented properties from more than two landlords were directed to an online version of the survey. The online version of the survey was the same as the telephone survey but allowed managers of larger farm operations to complete it at their convenience.

From this data base we contacted 837 farmers. Five-hundred and one agreed to participate in the survey: a response rate of approximately 60%. Of these 501 survey responders, 333 were renters (approximately 66%). All 333 renter-respondents provided some information but only 240 of the 333 renters completed the survey for parcels rented and land owner characteristics. Of the completed surveys, 26% were completed on line and 74% were completed on the phone.

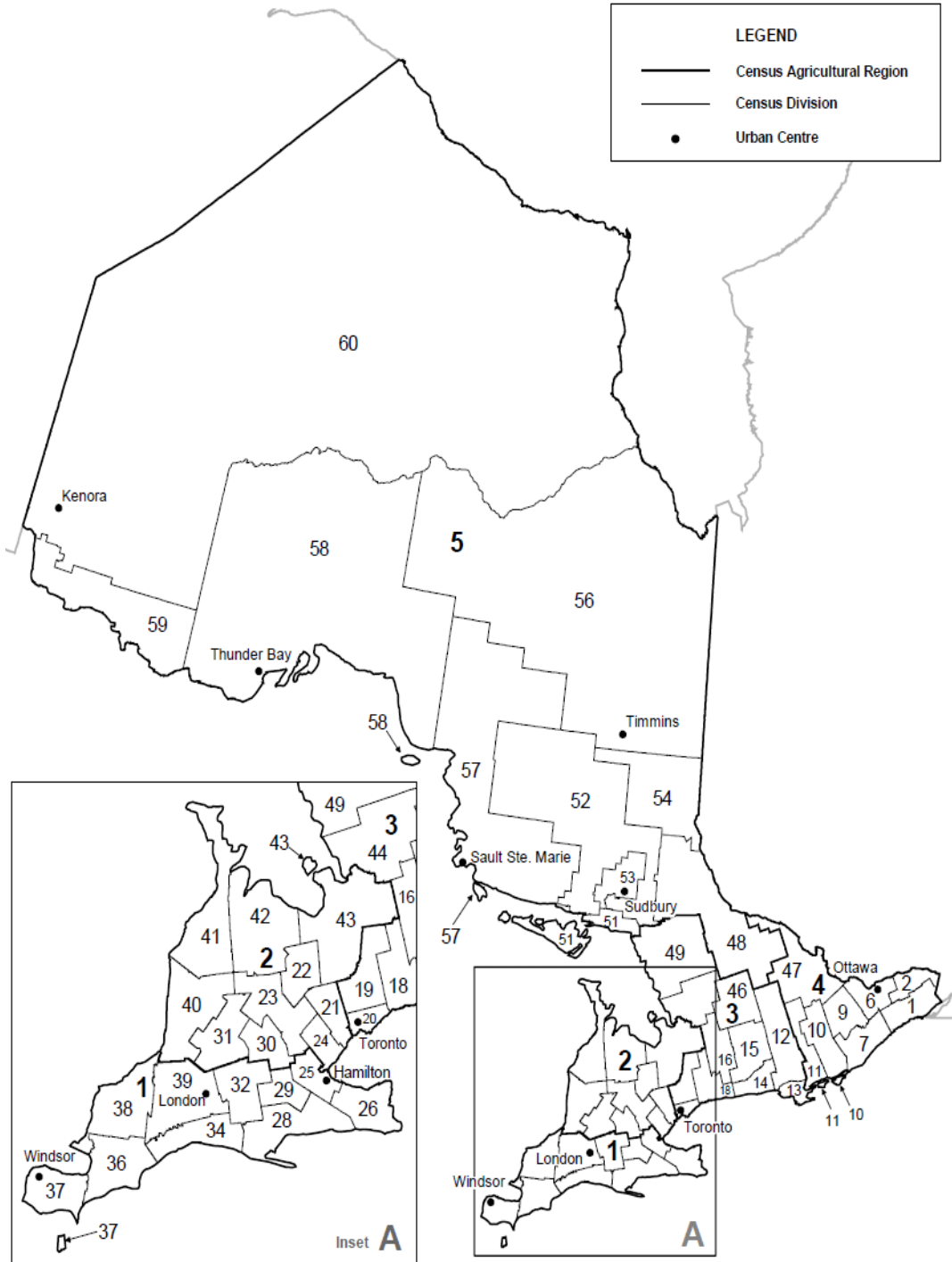
The survey gathered information on farmer respondents and their farm operations. Second, information was gathered about the person they rented land from. Moreover, the farmer respondent was asked to characterize his or her relationships with landowner. The survey asked each respondent to categorize the landlord in the following ways: (1) active farmers; (2) retired farmers (3) the spouse of a deceased farmer; (4) an individual or family who is using the land as a place of residence; (5) non-farmer owner investor; (6) a company or cooperation who purchases farmland as a form of investment; (6)

government; or (7) other. Additional survey questions were designed to capture information on the rental properties in question, including land quality, location and rental rates. Detailed information was collected for the largest rental property rented from each landlord (for up to five landlords for each survey respondent). A total of 509 rental contracts were examined. Of the subsample of 240 respondents who qualified and completed the survey the average number of rental properties was 2.89 with a minimum of 1 and a maximum of 70 properties rented by the farmer.

Figure 2.1: Map of Ontario Census Regions and Divisions

Ontario

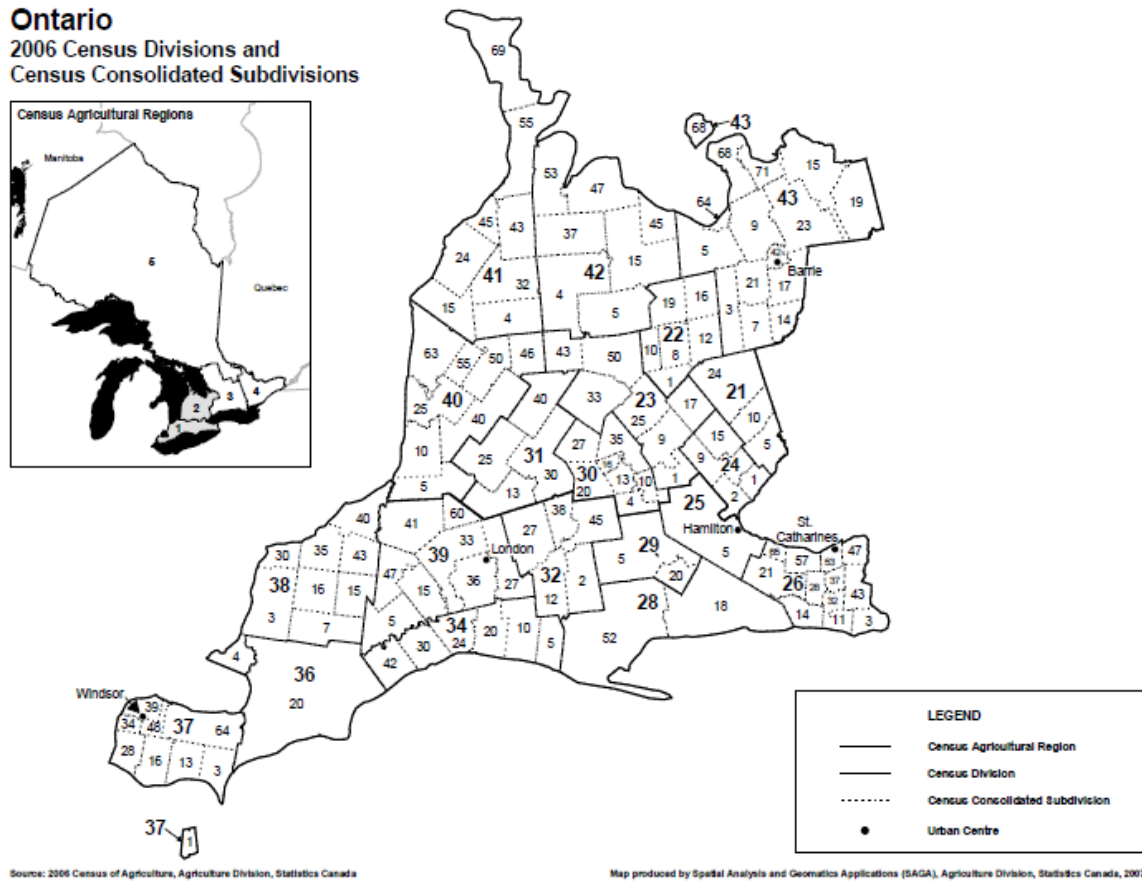
2006 Census Agricultural Regions and Census Divisions



Source: 2006 Census of Agriculture, Agriculture Division, Statistics Canada

Map produced by Spatial Analysis and Geomatics Applications (SAGA), Agriculture Division, Statistics Canada, 2007

Figure 2.1: Detailed Map of Southern and Western Ontario Census Regions



3.0 Results

The data are summarized in two ways. First, we summarize information about the farmers who were surveyed. Second, we examine farmers' perception of their landlords and attributes property being rented. Finally, results from regression analysis will be presented in order to examine the impact of participant characteristics and relationships on agricultural land rental rates.

3.1 Summary by Respondent

As displayed in **Table 3.1**, of the respondents who answered the preliminary questions, the average age was 58.5 years old, compared to 52.6 for Ontario estimated by Statistics Canada in 2006 (Statistics

Canada, 2006). The average number of acres farmed by respondents was 459 acres and 66% indicated they rented land.

Table 3.1: Summary of Respondent Age, Total Acres and Rent Proportion

	Obs	Mean	Std. Dev.**	Min	Max
Age	501	58.52	11.22	23	90
Total acres	501	459.20	617.61	1	8000
Rent*	501	0.66	0.47	0	1

* 1 indicates the farmer rents land while 0 indicates they do not.

** Standard Deviation

A comparison of respondents who rented land to those who did not is presented in **Table 3.2**. The average age of farmers renting land in our sample is 57 years, which is statistically significantly younger than those who do not rent. In addition, farmers who rent land have significantly more total acres farmed than those who do not. This is an expected result, as renting land is a way for farmers to expand production without bearing the full cost of land acquisition (Bryant & Fielding, 1980).

Table 3.2: Comparison of Mean Age and Acres Farmed of Farmers who Rent

Group	Obs	Age	Acres Farmed.
Do Not Rent	168	60.85	180.49
Rent	333	57.35	599.80
combined	501	58.52	459.20
difference		3.50	-419.32
degrees of freedom =	499		
t=		3.331	-7.57
Pr(T > t)=		0.0009	0.0000

Table 3.3: Proportion of Farmers who Rent by Gross Farm Sales

Gross Farm Sales	Obs	Rental Proportion	Std. Dev.	Min	Max
Less than \$10,000	25	0.160	0.374	0	1
\$10,000 to \$50,000	86	0.326	0.471	0	1
\$50,000 to \$100,000	87	0.575	0.497	0	1
\$100,000 to \$250,000	125	0.784	0.413	0	1
\$250,000 to \$500,000	88	0.830	0.378	0	1
\$500,000 to \$1,000,000	44	0.955	0.211	0	1
Greater than 1 million	33	0.970	0.174	0	1
Not Comfortable	13	0.462	0.519	0	1

Table 3.3 indicates that farmers with higher gross farm sales were more likely to rent land. Only 16% of farmers earning less than \$10,000 a year in farm sales rent land, while 97% of farmers with sales over \$1 million rent land. In the sample 5.1% of farms have gross farm revenue of less than \$10,000, 17.6% from \$10,000 to \$50,000, 17.8% from \$50,000 to \$100,000, 25.6% \$100,000 to \$250,000, 18% from \$250,000 to \$500,000, 9% from \$500,000 to \$1,000,000 and 6.8% greater than \$1,000,000 in gross farm sales. This can be compared to census data which indicate, for a similar ordering of income categories as above, the following: 18.9%, 31%, 13%, 16.3%, 11.3%, 5.8% and 3.8% for south-western Ontario farmers (Statistics Canada, 2006). This supports the earlier point that our dataset is biased towards farm operations with higher gross farm sales.

Table 3.4: Mean Acres Rented by Gross Farm Sales

Gross Farm Sales	Obs	Mean	Std. Dev.	Min	Max
Less than \$10,000	4	62.00	19.04	50	90
\$10,000 to \$50,000	28	93.82	93.14	1	450
\$50,000 to \$100,000	50	124.24	114.62	18	600
\$100,000 to \$250,000	98	192.03	221.20	2	1100
\$250,000 to \$500,000	73	276.51	322.30	3	2000
\$500,000 to just under 1 million	42	401.86	499.30	18	2500
Greater than 1 million	31	574.32	673.15	44	2900
Not Comfortable	6	130.00	80.25	40	250

Of those farmers who rent land, it is expected that farmers with higher gross farm sales rent more acreage on average. **Table 3.4** shows that this trend holds, with acreage rented steadily increasing with farm gross sales. **Table 3.5** shows the mean age of farmers by gross farm sales. There is no clear trend between income and age.

Table 3.5: Mean Age of Farmers by Gross Farm Sales

Gross Farm Sales	Obs	Mean	Std. Dev.	Min	Max
Less than \$10,000	25	58.76	12.96	27	87
\$10,000 to \$50,000	87	60.85	12.34	27	90
\$50,000 to \$100,000	87	60.80	11.03	33	85
\$100,000 to \$250,000	125	59.18	10.25	23	84
\$250,000 to \$500,000	88	55.49	9.89	25	82
\$500,000 to \$1,000,000	44	52.73	9.47	36	79
Greater than 1 million	33	56.55	10.89	26	78
Not Comfortable	13	66.62	12.58	41	87

3.2 Data Summarization by Rental Property

Detailed information on 509 rental transactions was collected from the subsample of 240 respondents who qualified to continue with the survey. **Table 3.6** provides information on contract characteristics and cash rental rates by relationship and landlord location and information. Seventy-six percent of contracts are oral and 78% of rental contracts are cash based. The remaining 22% of contracts are either crop share or cost share contracts. Properties have been rented for an average of 11 years. There is also a large range in the acreage of the largest property of the landlord, which is the one for which extensive detail was collected, including rental rate data.

Table 3.6: Summary Statistics for Farmland Rental Transactions

Characteristic	Mean	Std. Dev.	Min	Max	Obs
<i>Contract Characteristics</i>					
Acres of Largest Property	65.07	57.37	1	925	509
Years Renting Property	11.38	9.08	0	50	509
Contract Type (Oral=1)	0.76	0.43	0	1	509
<i>Cash Rent by Region</i>					
Southern	115.54	70.75	0	300	181
Western	100.55	62.70	0	300	212
<i>Cash Rent by Relationship between Tenant & Landlord</i>					
Family	115.84	61.49	0	220	57
Close Friend	90.00	67.39	10	220	12
Friend	113.07	99.43	0	600	82
Acquaintance	117.28	65.83	0	300	141
No relation	100.11	82.4	0	500	103
<i>Cash Rent by Landlord Location</i>					
Live On Land	110.58	67.29	0	300	262
Live In County	101.76	60.33	0	250	63
Domestic	99.98	67.11	1	260	56
Foreign	90.45	81.25	10	225	11
<i>Cash Rent by Landlord Information on Rental Market</i>					
Very Well	129.19	72.94	0	300	95
Well	113.97	63.3	0	300	148
Somewhat	85.49	58.13	7	300	102
Poorly	97.31	55.57	10	200	26
Uninformed	77.22	83.13	0	300	17

The median rental rates in Southern and Western Ontario in 2008 according to the Farm Financial Survey are \$150 and \$95 (unweighted) (Statistics Canada, 2008). Compared to our estimates in **Table 3.6**, the Statistics Canada estimate for Southern Ontario is higher, and the estimate for Western Ontario is approximately the same. The median cash rental rates for Southern and Western Ontario in the sample are \$110 and \$100/acre respectively. **Table 3.7** contains the mean and standard deviation of the rental rates for each county in the survey for all of the cash rental and crop share contracts. Counties with higher productivity generally have higher rental rates. The lowest rates are generally in the most urbanized areas.

Table 3.7: County Mean and Standard Deviations of Rental Rates

	Cash Rental (Number)	Cash Rental Rate (\$/acre) (Std. Dev.)	Crop Share (Number)	Crop Share % (% to landlord) (Std. Dev.)
Brant	13	95.38 (49.22)	0	-
Bruce	19	96.89 (55.20)	1	50 (-)
Chatam	20	154.30 (57.70)	16	38.00 (4.69)
Dufferin	3	51.67 (27.54)	0	-
Elgin	21	109.29 (32.26)	7	29.14 (4.01)
Essex	11	147.73 (67.50)	13	32.38 (2.72)
Grey	32	51.40 (54.32)	2	17.5 (3.54)
Haldimand	14	105.86 (96.01)	1	30 (-)
Halton	5	33.60 (27.11)	0	-
Hamilton	9	59.44 (27.09)	0	-
Huron	43	128.53 (48.86)	3	44.33 (9.81)
Lambton	18	127.50 (62.29)	6	37.33 (6.77)
Middlesex	20	141.25 (55.60)	11	28.82 (13.32)
Niagara	16	32.19 (10.32)	0	-
Oxford	30	168.30 (51.05)	0	-
Peel	1	15 (-)	1	50 (-)
Perth	54	153.61 (43.96)	1	50 (-)
Simcoe	13	58.31 (51.74)	2	20 (7.07)
Waterloo	14	98.57 (49.16)	1	22 (-)
Wellington	26	60.85 (28.43)	1	40 (-)

Examining the number of contracts characterized by different relationship type shows that most land is rented from landlords whom the tenant considers having either no relationship with or being an acquaintance. Only 14.5% is rented from family members, and 24.0% is rented from friends or close friends. The average rental rate charged by family members (\$115.84/acre) is slightly lower than that charged by acquaintances (\$117.28/acre) and is higher than all the other relationship categories.

Information on landlord location, relative to the rental plot was also collected. **Table 3.6** demonstrates that 67% of the landlords live on the rental plot in question, with another 16% living in the same county. Further, only 3% of the owners are considered foreign by their tenants. The mean rental

rate charged by these landlords ranges from \$90.45/acre for foreign owners, to \$110.58 for those landlords who live on the rental plot.

Respondents to the questionnaire gave their perspective on the landlord information position regarding land rental rates in their area. Landlords were classified as very well informed, well informed, somewhat well informed, poorly informed or uninformed. **Table 3.6** shows that very few landlords are poorly informed, or uninformed (10%), while nearly 90% are somewhat informed to very well informed. Also, landlords who are very well informed on average charge a higher rental rate, \$129.19/acre, than uninformed landlords who charge on average \$77.22/acre.

Farmland rental transactions have now been examined, but who the landlords are is generally unknown. Our data suggests that farmers (survey respondents) own 65% of the farm land they operate on in south-western Ontario. **Table 3.8** shows farm land ownership by landlord type. Examining the percentage of rental properties in **Table 3.8** demonstrates active farmers play a surprisingly large role in the rental market, with both widow(ers) and retired farmers playing a large part in terms of the percentage of rental properties with cash rental rates. However, it seems that the most important category of landowners who rent land to farmers in terms of number rental properties are families or individuals who use the land as a place of residence. This category makes up 36% of the supply of rental properties. Taking into account all acres surveyed, including those properties for which detailed information was not collected, the area controlled by families living on the land diminishes to 24% of the rental acres, presumably because they own smaller properties (55 acre average). Also, the percent controlled by active farmers, retired farmers and widow(ers) increases slightly to 13, 24 and 9% respectively.

Table 3.8: Landlord Categorization and Cash Rental Rates

Landlord Category	Rental Properties		Cash Rental Rate (\$/acre)			
	Number	Share	Mean	Std. Dev.	Min	Max

Active Farmer	41	10.43%	125.93	61.63	0	250
Retired Farmer	76	19.34%	110.47	67.91	0	250
Widow(er)	29	7.38%	137.07	57.52	0	250
Family On Land	141	35.88%	102.36	68.45	0	300
Owner Investor	62	15.78%	97.19	65.40	0	300
Investment Company	20	5.09%	105.00	64.30	30	260
Government	8	2.04%	61.25	69.68	10	225
Other	15	3.82%	108.00	64.50	30	250

Table 3.8 also presents data on the mean rental rates charged by individuals in these different landlord categories. Widow(er)s charge the highest rental rate at \$137.07/acre, and governments the least at \$61.25/acre. Active farmers and retired farmers also seem to charge more than other landlord categories. It is also interesting to note that 5 of the 8 landlord categories have a minimum rental rate observation of zero.

Table 3.9 further explores the relationship between landlord category and the degree to which they were informed about the rental market. All active farmers, who are landlords, were thought to be at least somewhat informed regarding local rental rates. Widow(er)s are the group with the lowest percentage of very well informed landlords yet command the highest mean rental rate an acre. Very few landlords of any category are uninformed, with the most uninformed landlord categories being families who live on the land, owner investors, and investment companies.

Table 3.9: Landlord Categories and Information States (Percentage)

	Very Well	Well	Somewhat	Poorly	Uninformed
Active Farmer	44.64%	48.21%	7.14%	0.00%	0.00%
Retired Farmer	25.71%	47.62%	20.95%	1.90%	2.86%
Widow(er)	11.63%	48.84%	27.91%	9.30%	2.33%
Family On Land	21.18%	30.59%	33.53%	7.65%	5.88%
Owner Investor	18.75%	38.75%	26.25%	11.25%	3.75%
Investment Company	39.13%	13.04%	34.78%	8.70%	4.35%
Government	25.00%	37.50%	37.50%	0.00%	0.00%
Other	14.29%	28.57%	47.62%	4.76%	4.76%

3.3 Regression Analysis

This section provides results from the regression analysis used to determine the influence of various factors on land rental rates, with the definitions for the variables used in the analysis presented in **Table 3.10**¹. The dependant variable is the log of the cash rental rate. The percent change in the dependant variable equals one-hundred times the coefficient times the change in the independent variable for log-level variables (Wooldridge, 2006, p. 49). In the regression analysis only cash rental rates between 1 and 500 dollars per acre are examined. Robust standard errors are utilized because of the presence of heteroskedasticity.

¹ Further regression analysis and details are available in the Master's thesis by Bryan (2011).

Table 3.10: Variable Definitions for Variables used in Regression Analysis

Variable	Definition:
<i>Social Capital</i>	
fam	dummy variable: 1 if tenant is in landlords family
frien	dummy variable: 1 if tenant classified landlord as a friend or close friend
acquaint	dummy variable: 1 if tenant classified landlord as an acquaintance
norelate	dummy variable: 1 if tenant had no relationship with the landlord
<i>Land Characteristics</i>	
highLQ	dummy variable: 1 if the tenant classified land as excellent, very good or good land quality compared to other land in the area
lowLQ	dummy variable: 1 if the tenant classified land as poor or very poor compare to other land in the area
<i>Tenant Characteristics</i>	
inc1	tenant gross farm sales <\$10000
inc2	tenant gross farm sales \$10000-500000
inc3	tenant gross farm sales \$50000-100000
inc4	tenant gross farm sales \$100000-250000
inc5	tenant gross farm sales \$250000-500000
inc6	tenant gross farm sales \$500000-1000000
inc7	tenant gross farm sales > 1000000
yearborn	year in which tenant was born
nm	dummy variable: 1 if tenant rents land (not necessarily this plot) for nutrient management purposes
<i>Landlord Characteristics</i>	
farmback	landlord was classified as an active farmer, a retired farmer or the spouse of a deceased farmer by the tenant
locall	landlord lives on or in the same county as the rental plot
<i>Other</i>	
years	number of years rental plot has been rented
oral	contract is oral

Table 3.11: Regression Results OLS Robust Standard Errors

Variable	Relationships & Participant Characteristics
<i>Relationships</i>	
fam	0.147 (0.110)
frien	0.065 (0.104)
acquaint ^A	0.138 (0.100)
<i>Land Characteristics</i>	
highLQ	0.338 *** (0.098)
<i>Tenant Characteristics</i>	
inc3	-0.035 (0.200)
inc4	0.088 (0.196)
inc5	0.174 (0.186)
inc6	0.115 (0.197)
inc7	0.232 (0.191)
yearborn	0.002 (0.003)
nm	-0.154 ** (0.077)
<i>Landlord Characteristics</i>	
farmback	0.128 * (0.067)
Locall	-0.024 (0.101)
Other	
Years	-0.010 *** (0.004)
oral	-0.160 ** (0.065)
<i>Counties^C</i>	
Brant	0.486 * (0.260)
Bruce	0.399 * (0.238)
Chatam	0.638 ** (0.291)
Elgin	0.532 ** (0.226)
Essex	0.969 *** (0.289)
Grey	-0.335 (0.259)
Haldimand	0.321 (0.289)
Halton	-0.506 (0.310)
Hamilton	0.011 (0.276)
Huron	0.765 *** (0.224)
Lambton	0.715 *** (0.227)
Middlesex	0.956 (0.218)
Niagara	-0.639 *** (0.228)
Oxford	1.075 *** (0.227)
Peel	-0.760 *** (0.241)
Perth	0.929 (0.219)
Simcoe	-0.080 (0.292)
Waterloo	0.439 * (0.239)
Wellington	0.090 (0.251)
Intercept	0.033 (5.010)
R-Squared	0.5554
* , ** , *** - significant at the 90, 95 & 99% confidence intervals respectively	
^A No relationship excluded	
^B Poorly informed and uninformed excluded	
^C Dufferin County excluded	
Observations= 377	

Table 3.11 presents the results from the regression analysis and can be used to assess the impact of participant characteristics and relationships on the agricultural land rental rate. From this analysis it does not appear that the relationship between the tenant and the landlord affects the cash rental rate. None of the relationship categories paid significantly more than the tenant with no relationship with the landlord. Further, these are jointly insignificant.

If the tenant rents any land for nutrient management purposes they pay significantly less rent, possibly because of the value of organic matter application to the landowner. The gross farm sales of the tenant are jointly significant at the 90% confidence interval. As tenant gross farm sales increase so does the rental

rate. This could reflect an increased willingness to pay of the tenant as they gain economies of scale. The landlord characteristics also seem to impact the rental rate. If the landlord came from a farm background (i.e. an active farmer, retired farmer, or spouse of a deceased farmer) the tenant paid significantly more for land rental than if the landlord was not of a farm background.

Relationships are embedded within the “other” category of variables as well. The longer the relationship and the existence of an oral contract (as opposed to a written), the lower the rental rate. This is consistent with previous studies and reflects the value of long-term relationships in setting the rental rate.

A significant factor influencing cash rental rate is the quality of the land. Increases in land productivity enhance the potential revenue from the property and thus the value the tenant is willing to pay for the land parcel. Also consistent with land quality, is the location of the parcel. Counties with higher heat units than Dufferin county (and thus higher potential yields) tend to have higher rental rates.

4.0 Conclusions

Agricultural land rental is an important aspect to farming in Ontario and it is understudied across Canada. To overcome this challenge, farmers in south-western Ontario were contacted and data collected on themselves and their operations. This included characteristics of land which they rent, such land quality, location, crops grown and expected yields. A unique aspect of the survey was the information obtained on the nature of the farmland rental contract, information about the landlord, and the relationship between the landlords and the tenants.

The surveyed farmers own 65% of the farmland they operate. Younger farmers and those with larger operations were more likely to rent farmland. The rented farmland is largely controlled by

retired farmers and families who live on the land but are not involved in farming. Foreign owners only control 3% of land which is rented. Finally, in southern Ontario the dominant form of the farmland rental contract is a fixed rate contract. Nearly 80% of rental contracts are cash rents with the other contracts involving some form of crop share between landlord and tenant. The contracts also tend to be simple oral contracts as opposed to written, detailed contracts.

The agricultural land rental rate in south-western Ontario is determined largely by factors that influence the revenue stream that can be generated from the land parcel. Increases in land quality and heat units increase the rental rate. In addition, the use of the rental unit to dispose of organic manure by the tenant decreases the necessary cash rent due to the enhancement in soil quality associated with the manure application. However, in addition to the typical economic factors, landlord and tenant characteristics also influence the rental rate. Landowners with a farming background tend to charge more likely due to greater knowledge of the land and agricultural markets. The rates tends to decline with the length of the relationship and the simplicity of the contract (oral as opposed to written). The result implies that relationships may affect market transactions and also suggest that potential worries about non-local ownership of farmland maybe offset by lower rental rates.

Bibliography

- Allen, D. W., & Lueck, D. (1992). The "Back Forty" on a Handshake: Specific Assets, Reputation and the Structure of Farmland Contracts. *Journal of Law, Economics, & Organization* , 8 (2), 366-376.
- Allen, D., & Lueck, D. (1992). Contract Choice in Modern Agriculture: Cash Rent versus Cropshare. *Journal of Law and Economics* , 35 (2), 397-426.
- Andarawewa, A. B. (1969). Tenure Patterns and the Commercialization of Canadian Agriculture. *Canadian Journal of Agricultural Economics* , 17 (1), 110-120.
- Bryant, C. R., & Fielding, G. A. (1980). Agricultural Change and Farmland Rental in an Urbanising Environment: Waterloo Region, Southern Ontario. *Cahiers de géographie du Québec* , 24, 277-298.
- Fukunaga, K., & Huffman, W. E. (2009). The Role of Risk and Transaction Costs in Contract Design: Evidence from farmland lease contracts in U.S. Agriculture. *American Journal of Agricultural Economics* , 91 (1), 237-249.
- Kirwan, B. E. (2009). The incidence of U.S. Agricultural Subsidies on Farmland Rental Rates (Kirwan, 2009). *Journal of Political Economy* , 117 (1), 138-164.
- Paterson, B. J., Hanson, S. D., & Robison, L. J. (2000). Characteristics of Farmland Leasing in the North Central United States. *Journal of the American Society of Farm Managers and Rural Appraisers* , 63 (1), 72-82.
- Statistics Canada. (2006). *Census of Agriculture, 2006 [Canada]: Farm Data and Farm Operator Data, Initial Release [Excel files]*. Ottawa, Ontario: Statistics Canada.
- Statistics Canada. (2008). *Farm Financial Survey*. Ottawa: Statistics Canada.
- Statistics Canada. (2009, 01 23). *Selected Historical Data from the Census of Agriculture*. Retrieved 03 19, 2010, from <http://www.statcan.gc.ca/pub/95-632-x/95-632-x2007000-eng.htm>
- van Vuuren, W., & Ketchabaw, E. H. (1994). *A Hedonic Study of Agricultural Land Rent in Southwestern Ontario*. University of Guelph, Department of Agricultural Economics and Business. Guelph: University of Guelph.
- VanDijk, M. (2010, February 11). Survey Consultation. (J. Bryan, Interviewer) Guelph, Ontario, Canada.
- Wooldridge, J. M. (2006). *Introductory Econometrics A Modern Approach* (Third Edition ed.). Thompson Learning.