

PART TIME FARMING IN MANITOBA

A Thesis
Presented to
the Faculty of Graduate Studies
University of Manitoba

In Partial Fulfillment
of the Requirements for the Degree
Doctor of Philosophy

by
Alexander John Walter Pursaga

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FACULTY OF GRADUATE STUDIES

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BY

Alexander John Walter Pursaga

**A Thesis/Practicum submitted to the Faculty of Graduate Studies of The University
of Manitoba in partial fulfillment of the requirements of the degree
of**

DOCTOR OF PHILOSOPHY

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Abstract:

Part Time Farming in Manitoba

Part time farmers have long been a factor in the development of agriculture in Manitoba, yet working on the farm and off the farm has been officially discouraged by federal tax statutes, while at the same time the province has been encouraging the creation of more jobs in rural, and primarily farming, communities. This study makes use of a utility maximization approach to modeling part time farming behavior and applies this model to data derived from the Census responses of Manitoba farmers in 1986 and 1991.

The impact of a differential tax rate for on farm income and off farm income is modeled as well as the impact of output prices, autonomous transfers, general price levels and factor input prices, and the impact of the off farm wage. The comparative statics are calculated and a series of policy elasticities are computed for each policy instrument defined above.

The data support the use of a logarithmic form of estimation in which the Cobb Douglas functional form is applied to both utility and production. In addition, constant returns to scale is assumed which, while removing some of the reaction conditions from the analysis, enables the direct testing of the model with the data available.

The data support the use of estimated relationships for policy interpretations. The theoretical signs of the comparative static analysis and the reduced form of the model generally confirm the theoretically expected signs, but also indicate that shifts in utility function parameters may well explain the behavior of part time farmers in Manitoba inasmuch as the production function parameters are found to be stable.

The results of this analysis suggest that factor prices and output prices have considerable impact in adjusting the level of off farm effort as does the level of the off farm wage rate. In addition, the tax differential policy can be effective under certain conditions, but if utility function parameters change the effect may dissipate.

It is concluded that the policy of using the taxation system to discourage part time activity may need to be revisited and reconsidered as this analysis shows that it can have variable effects and even be counterproductive if other, less controllable policies are in place. Moreover, there are grounds to suggest that encouragement of part time farming is a useful policy target independently.

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Above all, this work is a reflection of the economic issues faced by sixteen part time framers in Manitoba whose responses to the Census of Canada provided the basis for this work and the issues that it raises.

Chapter 1

Part Time Farming in Manitoba

1.1 Introduction

Agriculture has often been seen as an essential industry, to be protected in order to ensure a stable supply of food from which a nation might draw a strong and committed populace. As such, agricultural policies designed to support prices, make up for income shortfalls and provide support services to farmers are quite common. In Canada, as part of this process, a series of financial tools, including accelerated depreciation, tax exemptions, and allowance of "special" deductions, have been developed to protect the sector from external financial forces. The avowed purpose of these programs is to provide special status and consideration to farmers in order that farm incomes are maintained and expanded. Government policy attempts to safeguard farm incomes against the need to augment these incomes with part time off farm work. Given the existence of these "safeguards", it may be considered unwise, irrational and even contentious for a farmer to be involved in part time off farm work.

In establishing this "special" status for agriculture, the government has also sought to isolate agriculture from interaction with other sectors. The avowed fear has been that this special status would be seen as an advantage for those not primarily involved in agriculture in order to avoid paying taxes. Thus protecting the special status of agriculture has led government to curtail these benefits

through various policies, but primarily through a differential tax system in which nominal rates are the same but the level of deductions are based upon bureaucratic determination.

In the middle of this struggle, a great technological shift in farming has taken place. The shift has introduced increased horsepower in machinery, specialized regimes in fertilizers, pesticides and herbicides, and advanced management techniques in production, marketing and finance. All of these have operated to make farming more capital intensive and land expansive, but less labor intensive. The result has been a serious and protracted decline in rural populations. In response many governments, mostly provincial, are actively involved in rural development initiatives in which the practice is to entice or induce businesses to locate in rural areas and hire local labor. These policies may include special tax concessions for the investors of capital, advertising and promotion assistance, and even special considerations under certain laws relating to labor standards. Regardless of the nature of these programs, they must all compete for labor in the local labor market and therefore are at least, in theory, drawing farmers into off farm activity.

This inherent multilevel and multi-policy dilemma suggests that a behavioral interpretation of pluriactivity is valuable not only for agricultural policy management but also for the setting of overall social and public policy priorities.

There are two types of pluriactives involved in agriculture. The first is the hobby farmer who uses the tax status of farming as an attempt to avoid taxes and the other is the part time farmer who is a farmer first, and an employee only secondarily, and whose distinctive behaviors are rarely studied. To the extent that the part time farmer is caught up in the efforts to protect the special status afforded to agriculture, the part time farmer will be a target of enforcement of the protective devices that secure and guard the special status of agriculture.

This thesis will look at the behavior of part time farmers in Manitoba in the light of a number of apparent controversies that surround those who choose to farm as a primary occupation and to work off the farm as well. This is an especially important choice as the *Income Tax Act* has within it a provision that mitigates against the choice of off farm work by farmers. Specifically, part time farmers run the risk of losing the ability to deduct losses from farming from their income and therefore are liable for a larger tax bill than those who choose to remain as full time farmers. In addition, eligibility for certain farm assistance programs is restricted to those deemed to be *bona fide* farmers. In Manitoba a part time farmer is not eligible to rent Crown land and is restricted from receiving benefits from certain disaster relief programs.

Although this “protection” has often been viewed as a good thing, it has rarely if ever been examined in terms of the policy itself and whether farmers are acting rationally if they work part time off of the farm. It is the task of this

research to provide a theoretical foundation upon which to evaluate these claims.

1.2 Systemic Changes in Agriculture

In order to understand the role and significance of part time farming, the financial structure of agriculture is important. In the case of the average Manitoba farm, there has been a shift in asset composition from long term assets to more short term assets. The average Manitoba farmer had 13.67% of total assets in current form with 22.85% as intermediate assets in 1980. This represented 36.52% in shorter term assets. By 1993 this had shifted and current assets were held at 17.40% with intermediate assets at 31.27%. This amounted to 48.67% of total assets in 1993. Over this period, long term assets were reduced from 63.47% to 49.92% of total assets. This shift did not result in a major change in the overall level of assets. Over the period 1989-1993, the long term assets actually rose while the long term trend (1980-1993) was for a persistent decline. This pattern suggests that farm finances were restructured during this period, a trend which has persisted.

Non-farm assets have become a larger factor in the period since 1989 rising to 2.8% of total assets in 1991 and falling to 1.4% in 1993. Prior to the 1989 level of .07% there was no recorded non-farm capital in the overall farm accounting structure. In aggregate this represented \$301,484,400 in 1991 and reflects the impact of agricultural held capital placed in other sectors of the

economy beginning in the late 1980's and extending into the 1990's. The implication is that capital diversification in terms of investments made by agricultural investors off the farm in non-farm assets, is increasing.

For the period from 1989-1993, for the average Manitoba farm, while wages from non-farm income (off farm work for the operator) rose by 57.78%, other non-farm income sources (primarily off farm income from other family members as well as income earned from non-farm sources including capital gains on non-farm assets) were rising even faster (102.38%) than direct government payments (13.87%). While pension income increased by 30.00%, interest earned dropped by 15.00% over this period. Non-farm income rose from 40.52% of total farm income to 43.37% in 1993, while government support dropped from 36.87% to 29.83%. At the same time, market income rose from 22.60% to 27.12%.

If government support can be assumed to be linked to market performance, such that increasing support in a decreasing market is indicative of the "safety net" posture of those programs, then the data suggest that off farm earnings replaced about one third of the income share released by the relative decline in government support. In this transition, the average annual farm operator wage from part time activity rose from \$9,380.00 in 1989 to \$14,800.00 in 1993 while actual market returns to the same farm rose from \$8,400.00 in 1989 to \$14,100.00 in 1993. This suggests that in both 1989 and 1993 more income was earned off the farm than on the farm.

In Manitoba, part time farming is a formidable force in the financial structure of the average farm and appears to be part of a process in which agricultural linkages are extending beyond the traditional sectors.

1.3 Types of Part Time Farmers

Initially it may be suspected that part time farmers are in some way inferior to full time farmers given that there is a vast reservoir of public policy dedicated to the maintenance and enhancement of farm incomes. If these policies and programs are truly effective, then only the irrational agent who does not maximize the benefits of agricultural programs or those who are either entering or exiting agriculture would be involved in part time activity. Alternatively, if the part time farmer is balancing the benefits of the potential returns to his stock of capital, then the full time farmer will be missing the potential income and personal gratification that would be due to his or her skills and experience if they were marketed beyond the farm gate. The mere existence of part time farming activity suggests that either the full time farmer or the part time farmer is acting in a significantly different and hence noteworthy fashion. The prevalence of part time farming in Manitoba and its persistence suggest that this behavior is fundamental and therefore worthy of investigation.

There are several sets of circumstances under which a part time farmer may actually be using the off farm activity in order to shore up agricultural production. Some farmers may be working off the farm in order to augment

income. This group would seek income opportunities off the farm that brought benefits that would otherwise be unavailable. These benefits might include employer vested pension plans, dental coverage, and employer funded travel. In these cases the pluriactivity is income dependent and appropriate policies would focus on producer and / or input price stability and manipulation. This is the general purview of agricultural policy.

Another group of farmers may be considered to be “driven” to part time farming. For this group their household time and their farm time are highly extended and the harder that they work, the more difficult life appears to be for them. These situations may be brought on by drought, flood or unfair market practices. The essential point is that farmers who become part time farmers under circumstances such as these, may well find off farm work as a pathway to leaving agriculture altogether. Under these circumstances, price policies are not likely to be effective and some sort of social help is warranted either to assist in relocation or to bail out the operator. In this situation social goals that relate to overall food security and the need to keep farmers actively engaged in agriculture are important concerns. This kind of situation would fall into the realm of social policy.

Agricultural policy and social policy need not be adversarial, but appear to have had significant, but different, effects on the structure of agriculture in Canada and the United States. As Freshwater and Reimer (1995, pp.220-221) have noted:

...our preliminary analysis leads us to suggest that differences in U.S. and Canadian social and economic policies result in a bias in the United States in favor of large commercial farms and farms where off farm income is an ancillary source of income in the United States. In Canada, socioeconomic policy is biased in favor of smaller full time farms and limited resource farm families.

While social and economic programs are important in studies of changes in structure in a single nation, they are particularly significant in international comparisons. Harmonization of trade policy in conjunction with unacceptably high government and consumer outlays is leading to pressures to dismantle existing commodity based farm supports. If alternative forms of support for farm families are to be provided, one approach is to ensure that existing social and economic policies provide adequate protection.

These conclusions may arise more from the price policy focus of United States agricultural policy as opposed to the multifaceted Canadian approach. However, it is clear that in the United States, the scope for part time farming as a means of augmenting income is much larger, whereas in Canada part time activity is more generally focused on survival.

While there is reason to be concerned about the interaction between agricultural and social policy there is also an investment interpretation that is worthy of consideration. It may well be possible that part time farmers are neither augmenting income nor struggling to survive. Indeed they may well be seeking to improve their farming practices by working off the farm.

One situation exists in which farmers work off the farm in order to accumulate experience and training so that they can undertake new enterprises.

On these farms, the part time activity can be used to improve the technology of the entire farming operation such as through the development of computer skills, the implementation of new management practices, and the development of mechanical skills. Extension work and formal training may be most appropriate under these conditions.

Finally, some part time farmers may be involved in off farm effort because they are lacking farming skills and are therefore overly dependent on factor inputs. Production practices may be wasteful and management may be inappropriate. In these cases research and development policies that are focused on production improvement may be more useful than the other components of agricultural policy.

Essentially the part time farmer then is also caught in a dilemma to the extent that off farm work involves taking a tax risk that could result in all of the gains of off farm income being removed or reduced in the taxation process. Thus the tax risk is a real and pressing danger for all part time farmers regardless of their motivation.

Conceptually the impact of pluriactivity is a barometer of the overall health and stability of agricultural activity. Further analysis is necessary in order to provide guidelines for more judicious policy application.

1.4 The Analytic Plan

The thesis of this study is that part time farmers are rational agents maximizing the return to their efforts by judiciously working both on and off the farm in order to raise income. It is assumed that farm income enables, if not empowers, utility for the operator, and by extension, for the entire family. In this approach all farmers have the primary objective to raise incomes from whatever source and with whatever techniques that are available to them. Therefore, this decision to work off the farm is primarily the result of the balancing of income sources for which analytic policy analysis can be used to guide the administration of agricultural policy. This guidance is crucial as the current situation is typified by a crossing of dilemmas. On the one hand, the government wishes to protect agriculture, while on the other hand, the farmer wishes to protect income levels in order to maintain his lifestyle. Both use traditional methods of supporting their objectives and yet rational pursuit of these objectives can lead to conflicting messages. The diligent administration of taxation policy can be seen as treating part time farmers as felons, while those who work off the farm may be seen as testimony to the ineffectiveness of agricultural policy. Either may be true or both may be false, or there may be various combinations of motivation. Thus for part time farmers to be viewed differently requires that detailed examination of part time behavior be pursued.

In the next chapter a brief review of the various approaches that have

been taken to part time framing will be presented in order to gain a perspective on what an alternative view might be. This view will be one that is neither academic, historical, or legal, but rather one that approaches the question as a choice made by rational individuals. In the following chapter, a model based on rational economic objectives, in this case utility maximization, will be developed and the comparative static results defined in terms of operational conditions that face a representative agent. In Chapter 4, the model will be set for estimation and the data will be reviewed. Also in this chapter, the policy elasticities will be analyzed and the policy implications will be drawn out. In the final chapter, the analytic thrust of this research will be drawn to conclusion and evaluated in terms of operational response that could be taken to the part time farmer. Much of what will have been analyzed is the product of a singular clause in federal tax statutes that may be well served if it is revisited. Additional research avenues will also be suggested.

Chapter 2

Review of the Literature

2.1 Perspectives on Part Time Farming

Part time farming has come to be known by several different names and has been the focus of considerable debate. To some the issue of part time farming represents pluriactivity or multiple job holding. To others the allocation of effort to more than one occupation represents moonlighting or skimming. When the special status of agriculture is involved, the part time farmer is sometimes seen as a drain on the agricultural policy system and at other times seen as a harbinger of essential skills that are necessary for rural stability and development. This study has no pretensions of resolving this debate, but no study of this issue would be complete without acknowledging these prevalent beliefs.

2.2 Academic Perspectives

Paarlberg (1974 , p.3.) argues that full time farmers are the focal point of the “agrarian creed” which itself is a further subset of the larger “agrarian ideology”. This agricultural fundamentalism stands on the premise that agriculture is a basic preoccupation of mankind and that rural life is morally superior to urban life. Part time farmers are seen by some as deviants and the continuation of this activity is seen as a basic threat to democracy. Numerous agricultural and fiscal policies have been predicated on this interpretation with

specific exclusions from benefits for part time farmers or others not considered to be *bona fide* farmers.

Due to this philosophical basis, many accusations have been leveled at part time farming activity which have summarily been refuted. Ahearn and Lee (1991) have argued against the assertion that part time farmers are a weak link in the food security chain of developed countries such as the United States. Carol Kramner (1990) has rebuked the notion that part time farmers lower the safety and quality of food products. Kada (1980) has shown that part time farming activity has no appreciable impact on the quality of farm family life in Japan or in the United States.

These larger scale accusations are readily refuted, but there are potential small scale impacts that can be demonstrated and may result in inefficient resource use.

Findeis, Lass, and Halberg (1991, p.26) contend that a farmer will reduce effort and the use of factor inputs on the farm in pursuing a second income. This approach does not include transactions costs involved in securing off farm employment such as travel time or the costs associated with certification needed to perform the tasks that constitute the off farm job. Krishnan (1990, pp.362-367) has shown that family structure as well as transactions costs may have a bearing on part time activity. In this approach, leisure includes at home chores. Given that skills may be unevenly distributed within the farming sector across

individuals, there may well be institutional limitations to seeking off farm employment as well as those imposed by geography and family structure. In a market in which employers compete for the skills of workers, such family pressures may force employers to carry additional search costs and possibly to bid up wages in the local community. (Helmberger and Chavras, 1996, pp. 22-23).

The traditional method of modeling the part time allocation decision focuses on factors germane to the agricultural operator or household, and has been most prominently developed by Wallace Huffman (1991). This approach treats the operator and spouse as one decision unit that combine their time available to maximize utility. Children and other unattached individuals in the household, such as the elderly, are ignored both as sources of effort and as potential burdens on the total supply of effort. Therefore children helping with chores which expands the productivity of the farm are neglected. Similarly the needs of children and other inactives for care and nurturing is also neglected as a potential stumbling block for the productive effort of either parent. The restrictions include both time and budget constraints. In the time constraint, all time is assumed to be allocated either to home time, on farm work, or off farm employment. The budget constraint includes net farm income, off farm income, autonomous income and the expenditures made by the household on commercial goods. The transactions costs involved in pursuing the off farm work are

included. Using a production function that transforms time, human capital, and household characteristics into farm output and off farm work, the Kuhn-Tucker conditions are used to generate a sequential solution. The supply of labor and farm inputs are set first. This is done by solving for the demand functions for farm effort and factor inputs and then utilizing the first order conditions and the equilibrium value of the off farm wage. The farm production function is then solved with these preset levels to determine the level of farm production. The budget constraint is evaluated to determine the demand for home time and for commercial goods. The first order conditions are then used to solve for the values of home time or leisure and purchased consumption goods. The final supply function for off farm labor is solved by substitution into the time constraint (Huffman, 1991, pp.256-258).

The model is then solved for the time worked off the farm as the dependent variable when the solution variables are all entered. The reduced form of the model is estimated when the off farm hours are set to zero and the off farm wage is then interpreted as the dependent variable and also as the reservation wage when there is no off farm work. The reservation wage is that wage that will encourage the first hour of off farm work. This model is recursive if there is any off farm activity (Bewley, 1986). The participation decisions are modeled using a PROBIT technique and the final supply equation is modeled using a suitable flexible functional form (Sumner, 1991). In it's reduced form the model is

estimated using the observed wage as the dependent variable for a semi-logarithmic functional form.

There have been a great many applications of this model (Sumner 1982, Gould and Saupe, 1989 Huffman and Lange 1989, Lass and Gempeshaw 1992). Most recently, Huffman and Evenson (2001) have used the reduced form of this model to evaluate United States structural changes and have concluded that part time farming is a major factor in structural change and that public agricultural support programs essentially make no difference to the part time farmer.

Kimhi (2000) has also indicated that part time farmers are not necessarily preparing to exit agriculture, as taking a full time job off the farm is unlikely to result in farm exit behavior amongst Israelis. However, Weiss (1997) had found that an increase in the off farm wage increases the likelihood of working off the farm, but a decrease does not necessarily mean that the part time farmer will move back towards full time farming.

These models require that the time constraint be used as the last step in the estimation procedure and the allocation of time for each household participant is made without regard to the internal demands on time made by other family members. The contention is that time is the governor of the system to the extent that time spent on the farm plus time spent off the farm must equal the total time available and that the residual is time available for family responsibilities, leisure, and rest. Any transaction time spent in traveling to and from an off farm job or in