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DAIRY FARM HOUSEHOLD SURVIVAL STRATEGIES IN MICHIGAN'S THUMB REGION

By

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ABSTRACT

DAIRY FARM HOUSEHOLD SURVIVAL STRATEGIES
IN MICHIGAN'S THUMB REGION

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Dairy farm households respond to their unique access to capital, family labor, and land within a matrix of local constraints. Prior research on dairying has focused on dairy activities mainly as a function of cow numbers or acreage; however, these categorization schemes privilege certain structural aspects of the family farm over others. I explore alternative categorization typologies based on a longitudinal study of dairy farms in Michigan's thumb region. Possible alternatives for understanding the confluential organization of farm family household and farm business are analyses based on milk check dependency and family labor utilization. These alternative typologies suggest that a number of household, land, and capital factors influence the size of the farm, particularly in cow numbers, rather than the other way around. We should place greater emphasis on creating multiple typologies to better convey the diversity of farm family experiences, particularly in research utilized to inform policy makers.

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Introduction

Farm businesses and the farm family households that operate them are interdependent, with the character of each influenced by the other. There are many ways that families can relate to their farm enterprise, and modifications that can be made to the farm enterprise so that it might better articulate with the resources and needs of a farming family. How do we take account of this great diversity in how farm businesses and farm households are interrelated in their organizational structure within a particular farming sector like dairying?

Individual dairy operations are not socially isolated entities; they are closely associated, and inextricably linked, with family households, local community contexts, a particular marketing and collection system, a labor environment, a climatological region: a virtual web of interconnecting opportunities and constraints (see also Carlin & Saupe, 1993; Goldschmidt, 1946). So how do we comprehensively study the range of organizational types of dairies in order to look at these opportunities and constraints in a manner that can produce timely information without unduly reducing the experiences of dairy farm producers to a single mean or median figure meant to be indicative of the whole range of experience?

In many agricultural studies, size or scale of operation is the primary variable used in creating a typology for analyzing variations within an industry. However, I will explore other variables which suggest viable alternative categorization schemes which help make sense of the confluential organizations of farms and farm family

households. There is probably good reason to focus on size as a major organizational variable, as it can indicate indirectly the level of capitalization, help in estimating total farm income, as well as total farm labor requirements, etc. Certainly size does matter, but is it the only reasonable structural indicator of the organization of farms, and in particular, family dairy farms?

While farm size in acres indicates capitalization level to a degree (some farms rent more land than they own), what it really indicates is a certain perspective on the part of the farm household, as they have chosen to work a certain quantity of land, given their goals for the farm within the set of contextual constraints. Given the nature of the data gathered in this study, it is impossible to talk about the results without aggregating information, but in aggregating, assumptions are made that the variety represented is either not important (raw aggregates), or important within some sort of categorization scheme. I will construct categorization schemes which do not depend on size or scale of operation as an explanatory variable.

This longitudinal study focuses on Deckerville, a single dairy farming community in Michigan's agriculturally dependent thumb region. My aim is to take account of the range of household and farm level organizational variations within a single context of essentially similar macro-level opportunities and constraints. This range of adaptations serves to highlight how the fortunes of farm and family are tied together over time, within the conditions of a locality. While the particular range of micro-level adaptations to the macro-structure in this dairying community cannot be assumed to be indicative of the dairy industry on a national or even state-wide level,

it can be seen as suggesting directions for future research as well as issues for consideration by policy makers.

Active, surviving dairy farms are allocating family resources within local constraints to meet the needs of both farm and household units. I seek to understand how the goals and organizational characteristics of the farm household and the farm operation are interrelated within a particular context (as suggested in Evans & Ilbery, 1992: Flora, 1981: Janssen et al, 1993: Schulman & Cotten, 1991).

Within my study community, dairy farm families are organized in many different ways. I will consider especially what I regard as some of the dominant organizational variables and which, I hypothesize, are influential in establishing the distinctive organizational characteristics of these family dairy farms. I'll consider especially: differing uses of available family labor; practices of hiring non-family labor; mixing dairying with other agricultural enterprises; and jointly operating a dairy with another related household. Through a series of analytic typologies based on structural variables, I develop an understanding of how the means of production (focusing especially on land and labor) are utilized differently by farm families with disparate resources at various life stages.

Defining family farms can be exceedingly difficult, and might not make sense, given the small percentage of farmland that is operated by non-family corporations in the United States today (Perez, 1994). For my purposes, a family farm is an agricultural enterprise where ownership and managerial responsibilities are both combined within a kinship grouping of one or more households, and at least

some of the operating labor is provided by family members. Given this definition, all of the dairy farms within my study area are family farms.

Families, and family based businesses, be they farms or other enterprises, fulfill many needs. Given that I am interested in how family dairy farms organize and utilize family resources, I will assume that the primary focus of a family dairy will be economic survival, while recognizing that a family might persist in dairy farming even when it is uneconomic to do so, for non-economic reasons. Additionally, I assume that these families have some reason to operate a dairy and will attempt to find a way of organizing their resources that makes it economically feasible to do so.

In the selected study site, Deckerville, Michigan, an agriculturally dependent community, dairying is still very much a family affair where management decisions are made by family members and not hired managers, as it is in much of the Midwest, given the historical land settlement patterns (Friedberger, 1988: Neth, 1995). As a family operation, the organization and allocation of family resources to dairying, to other agricultural enterprises, and to outside employment reflects the situation of the family as well as the situation of the dairy (Evans & Ilbery, 1992: Janssen et al, 1993: Neth, 1995: Schulman & Cotten, 1991). Furthermore, farms operated as family businesses must be assumed to be attempting to provide an adequate level of income to fulfill the needs and wants of the household, through a strategy dependent upon the available resources of that family unit.

How have Deckerville dairy operators adapted to their local conditions since 1988? Some have stopped dairying, others expanded. Some have hired more non-family help, while some have sold out. Others have sought off-farm work in addition

to operating a dairy. All of these variations in their approaches to the economic uncertainty and vacillations of the dairy industry can be referred to as "adaptive strategies" (Moen & Wethington, 1992: Pile , 1991). Given the close relationship of the dairy enterprise with the organization of the household in this community of family farms, these farm adaptive strategies can also be considered as household survival strategies. Farm household survival strategies refer to the changing allocation of variable family resources within the constraints of agricultural production, off-farm and other job opportunities, and the desires of individual members to meet material and other needs of the farm, the household, and the individuals of which these are composed (Gasson & Winter, 1992: Redclift, 1986: Schwarzweller & Clay, 1991). As such, household survival strategies can be indicated by structural components of the dairy farm, i.e. size and mix of land holdings, off-farm employment activities, on-farm hired labor, investment in capital inputs, changes in herd size, etc. My study seeks to specify some of the various ways that dairy farm families in Deckerville organize and allocate their household resources in particular household/farm survival strategies based on a pointed set of structural indicators.

The Problem

In Deckerville, where soils are good and land used for dairying could alternatively be used for cash crop production, using size or scale alone to indicate the organization of the dairy is problematic. For example, a majority of dairy farmers there also produce some cash crops for sale. What structural variable will we use to indicate size/scale of the operation? If we divide operations on the basis of the total number of cows on a farm, we might miss the true size of the farming operation, particularly if it is also heavily involved in cash crop production. If we instead base categories of size of operation on the total number of acres operated as a single farm, we might classify as "large" farms milking only thirty cows. The question becomes, if we rely on a size categorization, whether or not we are classifying the size of the dairy or the size of the farm in acres.

This problem of choosing how to measure size and scale can best be illustrated by presenting three Deckerville cases for consideration. In our study, one farm owns and operates 760 acres, but only has 32 cows (lactating and dry). While this farm is operating a dairy, it is obviously qualitatively different from a neighboring farm operated by an individual on 98 acres and milking 22 cows seasonally, as well as qualitatively different in its organizational structure from another farm on 820 acres, running a herd of 375 cows, with five hired hands; but, depending on how we form our categories, the first farm could be classified with either the obviously small dairy, or with the obviously large dairy.

Tables I & II give overviews of the differences between two different categorization schemes. Table I shows gives a breakdown of relevant organizational characteristics when we divide farms into categories based on acreage operated (regardless of whether or not production from the land feeds dairy stock), and Table II show the numbers for these same organizational variables for a categorization scheme based on total number of cows. Table I splits farms into small, medium and large categories where the acreage ranges are respectively: less than 250 acres managed, 250-500 acres managed, and more than 500 acres managed. Table II gives a preliminary classification of dairies as small, medium and large, based on the total number of dairy cows (milking and dry) on the farm is used to make these observations. Herd size classifications are based on those divisions made in the 1988 study (Schwarzweller, 1992), where small farm had 45 or fewer cows, a medium farm had 46 to 80 cows, and a large farm had more than 70 milk cows.

The two different categorizations give very different pictures of what is happening in Deckerville, and neither gives a clear indication of the likelihood of takeover. For example, in Table I, we find that half of large farms are operated by more than one household. Coupled with the age of the operator, and the expectations of children taking over, these would seem to be the farms that are most likely to be passed on to the next generation. These farms are also the least dependent on income from milk sales, and the least likely to have someone working off farm. Almost half of small farms are not likely to be passed on to the next generation. However in Table II, we find that large dairies are the most dependent on income from milk sales, and are composed more often than other size dairies of single households,

TABLE I - STRUCTURAL VARIABLES BY ACREAGE SIZE CLASSIFICATIONS

TABLE I

Structural Variables by Acreage Size Classifications

	All	Small <250	Medium 250-500	Large >500
	n=57	n=15	n=22	n=20
Herd Size:				
mean	83.1	48.9	80.5	111.5
median	70.0	38	73.5	81
range	12-375	12-98	26-275	32-375
# of Households				
single	71.9%	86.7%	81.8%	50%
multiple	28.1%	13.3%	18.1%	50%
Total Farm Work Equivalents				
range	1.0-8.65	1-4.15	1.4-5.25	2.6-8.65
Age of Lead Operator				
median	46	42	45.5	49.5
Household Member(s) Works Off-Farm	37.5%	53.3%	36.4%	25%
Acres Managed				
mean	380	170.8	356.8	731.8
median	439	194	363.5	737.5
range	6-1030	6-240	255-480	510-1030
% Income from Milk Sales				
mean	84%	92.7%	88.1%	71.5%
median	90%	95%	90%	75%
range	33%-100%	70-95	70-100	33-95
Ten Year Survival Expectation				
positive	63.2%	60%	63.6%	65%
maybe	17.5%	20%	18.2%	15%
negative	19.3%	20%	18.2%	20%
Children Takeover Likely				
yes	33.3%	13.3%	31.8%	50%
maybe	42.1%	40%	54.5%	30%
no	24.6%	46.7%	31.8%	20%

TABLE II - STRUCTURAL VARIABLES BY HERD SIZE CLASSIFICATIONS

TABLE II

Structural Variables by Herd Size Classifications

	All n=57	Small <45 n=18	Medium 45-79 n=21	Large >79 n=18
Herd Size:				
mean	83.1	32.9	68.1	150.7
median	70.0	35.0	70.0	117.5
range	12-375	12-44	48-80	82-375
# of Households				
single	71.9%	72%	62%	83%
multiple	28.1%	28%	38%	17%
Total Farm Work Equivalents				
range	1.0-8.7	1-3.9	1.75-5.37	2.5-8.65
Age of Lead Operator				
median	46	42	48	45
Household Member(s) Works Off-Farm	37.5%	66.7%	28.6%	16.7%
Acres Managed				
mean	380	291	441.9	584.9
median	439	267.5	403	547.5
range	6-1030	6-760	160-1030	205-1000
% Income from Milk Sales				
mean	84%	82.2%	82%	87.4%
median	90%	85%	90%	90%
range	33%-100%	33-100	50-98	60-95
Ten Year Survival Expectation				
positive	63.2%	50%	57%	83%
maybe	17.5%	33%	10%	11%
negative	19.3%	17%	33%	6%
Children Takeover Likely				
yes	33.3%	28%	33%	39%
maybe	42.1%	33%	48%	44%
no	24.6%	39%	19%	17%

which contradicts the findings for large acreage farms. While large dairies are still the least likely to have a member of an operator household employed off-farm, they are not so clearly expected to be taken over by children, which might indicate in part that a majority of these farmers are in a particular life stage, having recently taken over the farm and are busy raising young children. It is apparent that size does mean something: if the farm has considerable acreage, it likely will persist as some type of farm, is probably in the midst of a transition, and the household(s) do not depend exclusively on milk for agricultural income; if a farm has many cows, it is likely operated by a single household that is highly dependent on milk sales for its income, but the family farm's outlook for the future is mixed.

In spite of the difficulties with each of these classifications, at times I will rely on these categorizations in order to be able to process the information as has been done before, and to illustrate certain limitations in various approaches to expectations of farm continuation. In so doing, I will favor the categorization based on the total number of cows, milking and dry, in a given dairy operation because I am interested in the farm and family as a dairy and how it persists in milking cows.

Methods of Research

Study Site

In 1988, the Deckerville school district in Sanilac County was chosen by as the site for a research project sponsored by the Michigan Agricultural Extension Service. Information was collected on the composition of dairy farm households, structure of the dairy business, adoption of various technologies, and the plans and expectations of the dairy operators. This region is very dependent on agriculture and Sanilac County has the largest concentration of dairy farms in the state. The Deckerville dairy farming community reflects rather closely the general structure of dairies in Michigan, as determined by a 1987 statewide survey (Schwarzweller, 1992). The original case study in 1988 was meant to supplement information obtained in this large statewide survey with in-depth information on the structure of dairying in one community deeply involved in the industry.

Deckerville's good soils grow excellent cash crops and dairy forage. Warm, humid summers with long days and comparatively moderate winter conditions, due to the location near Lake Huron, give Sanilac County a comparative climatic advantage for dairy production. The proximity to the Detroit and Flint markets provides geographic primacy in the Detroit Metropolitan milkshed to Deckerville and other dairying communities in Sanilac County, and the lower Thumb region in general.

While close to Detroit, Deckerville is far enough away to not be experiencing a large influx in population seeking to escape the city. As a result, agricultural use, rather than residential development, basically determines land values. However, the agricultural value of the land is high compared to other areas in the state with poorer quality soils.

Today, dairy farmers in the region have multiple milk marketing options, including MMPA (Michigan Milk Producers Association), NFO (National Farmers Organization) and Lansing Dairy. While MMPA predominates, farmers are not locked into a monopolistic marketing situation. Within these different marketing options, the final price received by a farmer varies little and is at base supported by the Federal Milk Marketing Orders (Benson, 1995).

In the summer of 1995, our research team returned to Deckerville, to re-survey these dairies and to gather information on the changing structure of local dairy operations. Our field work coincided with another statewide mail survey of Michigan dairy farmers. In short, we sought to follow up the earlier pair of studies in order to develop a picture of how dairy farms had responded to the changing pressures and opportunities available to them.

Field Work Procedures

To identify the target population, we began with a map of the Deckerville school district. A Sanilac County plat map and a listing of dairy operations licensed by the state, obtained from the Detroit milk marketing administration, allowed pinpointing of dairies within the district. All operators were notified by mail of our

impending arrival prior to the commencement of our study. Additionally, through information gathered on-farm interviews, we were able to find former dairy operators who had relocated, as well as new dairies that had opened after the list of dairies inspected in the spring of 1995 was compiled.

In order to gather our information, we interviewed, either in person or by phone, the principle operator or spouse of the principle operator for all dairies which were operating in 1988 and for all dairies which were operating in 1995. Either alone or with a co-interviewer, I interviewed approximately seventy five percent of these farmers. Through diligent effort, we were able to obtain information on all of the former and current dairy operators in the region[1]. Fourteen dairies which were operating in 1988 had ceased operations. Three new operations had started up, and 54 continuous operations were re-surveyed, for a total of 57 operating dairies and 14 closed out dairies. In 1988, the Deckerville school district had to 68 dairies. In 1994, only 57 dairies were operating within the district, a reduction of about 16 %.

In all interviews, some information was estimated by the operators, indicating perhaps how they view their operation, or to present an image as particularly successful farmers. In a few cases, the numbers reported are less than reliable, particularly in terms of herd averages. I have tried not to depend on

[1] In the course of our interviews, we encountered some cases where extracting information presented particular challenges. For example, several of the farms are operated by Mennonites. We found that when our female interviewers spoke with the women, they were able to easily obtain the requested information. However, when the same interviewers spoke with male Mennonite farmers, the interviews were somewhat more difficult and attitudinal information about plans for the future and opinions regarding various technologies were not forthcoming. Nonetheless, we feel the information we were able to extract is, on the whole, accurate.

variables with obvious reporting problems in considering the farm/household organizational structure of individual farms.

Due to early confusion on the part of several of the interviewers, information gathered on the presence of other stock on the farm must be considered unreliable, due to inconsistencies in the understandings of the definition of dairy steers as non-dairy stock. This information is not utilized in this study. Other measures of non-milk agricultural income are available that make this information redundant.

Definitions

We measured farm labor inputs in terms of "work year equivalents", as in the original 1988 study. The same guidelines were used to estimate work year equivalents for all household and hired employees, be they seasonal, part-time or full-time, kin or non-kin. The baseline work equivalent for a full-time farm worker (40 or more hours per week, fifty weeks a year) is 1.00. Labor performed by youths under 16 is discounted by a factor of 20 percent per year of age under 16, so that work performed by children under 11 was not included in the computation of farm work equivalents (For more information on the original construction on work year equivalents, see Schwarzweller, 1992).

All coding of work year equivalents was performed by one person to ensure conceptual uniformity and consistency of measurement procedures within the 1995 survey. Given that the same guidelines were used for constructing work year equivalents in 1995 as for 1988, work year equivalents at both points in time are considered as generally equivalent. The primary investigator for both research

projects verified the consistency of the equivalencies constructed for 1995 as comparable with those constructed in 1988.

For the purposes of this study, we were interested in the total number of households were involved as operator-managers and/or owners of the dairy. We define households as literally discrete living quarters - adult children living at home with their parents, while often involved in managerial decisions on the farm, were not counted as additional households. One reason households are preferred, as opposed to the number of operators/managers, is that the costs associated with maintaining a separate residence, even if it is constructed on the farm on already owned land, presents an expense much higher than the cost of meeting the needs of an additional person living within an already occupied residence.

An owner household has some financial stock in the operation and may or may not be involved in making daily operating decisions. An operator household is directly involved, on a daily basis, in making decisions regarding the operation of the dairy or farm as a entire unit. Farms with multiple operator households often split primary responsibility for certain duties; i.e. one operator household is primarily responsible for growing forage and other crops, another operator household is primarily responsible for dairy barn operations. All of these multiple operator households, even if primary responsibilities are split, will be considered dairy operator households.

If one family owns and operates the dairy, we refer to it as a single household operation; if two or more households are involved in managing the operation, it is a multiple household operation. Multiple household operations might consist of two or

more owner/operator households, or of one owner/operator household and one or more additional operator households, and so on. Farm families arrange these managerial and ownership responsibilities, as well as financial disbursement, in myriad idiosyncratic ways which make further specification more confusing than enlightening.

Closing Dairy Operations

Deckerville dairy farm families have adopted a number of different patterns of allocating their farm/family resources of land, labor and capital, in order to perpetuate the household and recreate daily life. In Deckerville, four main options were observed: quitting dairying, working off-farm and continuing to dairy, dairying with primarily family labor, dairying depending on hired labor. Within each of these main options there are variations, particularly in terms of diversification through cash cropping or beef production to reduce dependency on agricultural income received from the sale of fluid milk. To understand these patterns, I devise categories that allow me to focus on the various configurations of land and labor use, as they are tied to available household resources and the local context. What are the particular variables which indicate the range of management experiences of the farmers in each of these four major categories?

The variables that I believe are indicative of the various patterns of resource existence and allocation include: herd size; number of partner households; age of the lead operator; off-farm employment of one or more adult member of a partner household; percentage of farm income from milk sales; total managed acreage; and expectations for survival in the next ten years. Herd size and acreage indicate to some degree the utilization of capital resources, as well as the overall scope of the operation; milk check dependency suggests how deeply specialized a farm is as a dairy. The age of the lead operator, the likelihood of a takeover and the number of

households involved indicate approximately the life cycle stage of the farm, as well as how many households depend, at least in part, on the dairy for income. Survival expectation suggests the lead operator's assessment of whether or not the dairy will persist over time, an important indicator of the likelihood of closure. Whether or not a farm has a partner household member employed off-farm suggests alternate income and cash flow, as well as says something about the quantity of labor available to the dairy, or the extent to which the households supply more labor than is necessary to operate the dairy at a certain level.

The age of the operator and the total number of households involved in the operation are important variables indicating how likely a dairy is to perpetuate itself over time. Survival expectations provide an impetus for different types of resource allocation: for instance, if I know none of my children are interested in the farm, I will probably not make major capital investments or buy additional land, especially as I approach the age of retirement. How do I know that these variables are important considerations for allocating family resources on the farm? Between 1988 and 1995 fourteen dairies in Deckerville ceased operations, and several are currently in the process of closing out. By examining local cases of dairy closure and its precipitating causes, the importance of interested progeny, total number of involved households, and age of the operator in affecting the character and continuation of the dairy becomes apparent. Through contrast, this will allow me a better understanding of the strategies that farm families are using to keep their dairies open.

Closing Small & Medium Dairies - 80 or fewer cows

Of the 67 original dairies, 14 closed. Thirteen of these dairies were surveyed in 1988. Seven of the dairies that closed were small in 1988; three were medium sized; four were classified as large dairies. This suggests that perhaps the size of a dairy does matter in some way, and we should be concerned with the future of small dairy farms.

In nine cases of closure of small or medium sized dairies, the principle operators either died, retired completely, or quit dairying and now rely upon cash cropping for income. Five of these nine dairies had children or other family members who could have been brought into the dairy operation, but who, for various reasons, were not interested and had not been eased into the operation as a partner at an earlier time. For three dairies, there were no close kin to bring in. One operation had brought in a son as a partner, but the partnership broke up. When this happened, the father retired completely from farming.

Of the ten small and medium dairies that closed, only one operator continued in full-time employment. This individual does cash crop farming part time on the land that used to support the dairy while simultaneously holding full time off-farm employment. He closed primarily due to financial reasons, as he found dairying to not be profitable in his situation. As an able bodied middle age male, he was able to find off-farm employment which was more profitable than dairying and to supplement that with part-time cash cropping.

Age is an important factor in terms of the timing of closing the dairy in these cases. But in six cases, declining heath was stated as a primary factor in determining

dairy closure. Although declining health might often be expected to occur in conjunction with increasing age, it cannot be assumed that this is always the case. One dairy farmer died, and his widow closed the dairy. A secondary factor in the timing of the closure for three dairies were financial needs that created demands to re-deploy their capital, often related to the health problems of the lead operators; however, the lack of interested kin played a role in all but one of the closures. This suggests that the dominant correlates of closure of small and medium dairies are age, declining health, and particularly the lack of a partner or family member to takeover the dairy, rather than leaving the market strictly because smaller farms are not profitable. By considering age, multi-operator status, and takeover expectations, we should be able to get a sense of where a current dairy is in its life stage.

Closing Large Dairies - 81 or more cows

Four dairies which had more than 80 cows in 1988 had closed by 1995. The circumstances surrounding closure in three of these cases were different than those for the small or medium sized dairies. In three of the four cases, the dairies had multiple operators or partners. In the one case of individual owner/operatorship, the dairy farmer's failing health led to a hospitalization and made it difficult for him to oversee his operation. Even though the operation was large, his son was not interested in the dairy, so the farmer retired and closed his dairy operation. This closure mirrors what was observed in the small and medium sized closed dairies.

In the other three large dairy closure cases, a catastrophic event acted as a catalyst which led to the closure of the dairy. The propensity for farmers to have

accidents and the size of a farmer's operation might have a relationship (see Perrow, 1984). In these cases, the injury or death of an partner operator caused an unexpected financial hardship which contributed to the closing of the dairy. Due to the size of these farms, when one partner was disabled or died, the remaining partner(s) would have had to hire help to replace the labor of the unavailable partner. This, combined with the costs associated with the catastrophic event, makes it difficult to continue dairying. These former large dairy operators all are employed full time, several of them in non-dairy farming enterprises.

Expectations in 1988

Expectations of survival likely play a role in a farm family's determination of how to best invest their resources. By comparing expectations of closed dairies while operating in 1988 with those dairies from 1988 that are still in operation, we can see how well farmers predict the future of their farms, as well as how they behave, given their expectations for farm survival. Of the closed dairies, 36.4% of the operators expected to close. Only 5.6% of operators who were producing milk in 1995 expressed an expectation of impending closure in 1988. None of the closed dairies were expecting to increase their herds; 25% of the currently operating dairies surveyed in 1988 were expecting to increase. This indicates that these closed dairies were not at all expansionary, and suggests that a decision had earlier been made regarding operating capacity and the likelihood of the dairy being taken over by a family member. This gives further evidence of the importance of kinship in perpetuating dairies in this area.

Age, an especially important factor in the closing of smaller dairies, provides evidence of where these farms were in the life cycle of the operator family, as does the total number of households involved in the operation. In 1988, the median age of the male lead operator was 58.5 years for dairies closed by 1995, much older than the 44 years of those dairies surveyed in 1988 that were still operating in 1995. More closed dairies were operated by a single family, 84.6%, than by family partnerships. For farms operating in both 1988 and 1995, only 63.2% were single family operations in 1988. This makes sense when we consider how few of the operators of closed dairies expected a family member to takeover the operation. By considering the age of the lead operator, in conjunction with the number of operator households and the expectations for survival, we can identify those farms which are in the midst of organizing their resources in order to perpetuate the farm.

Dairies close out for a number of reasons; of these, the lack of someone to take over the operation seems key. This is so for small and medium size dairies, where age and health, combined with a lack of an interested son, daughter or other family member, became factors in the timing of the closure decision. Had someone been interested, it seems likely that the farm would have experienced a generational transfer instead of a closure at this point. In fact, twenty seven of the farms operating in 1995 had undergone some sort of operator and/or ownership transition since 1988.

While it appears that smaller farms are less able to interest family members in becoming involved, dairy size alone does not appear to determine the likelihood of closure. For instance, one large dairy did not interest an otherwise available child, for whatever reasons. In a few cases, a generational transition or sale failed, which led

to closure of the dairy, so interest alone might not be able to overcome the managerial and personality difficulties of a family operated dairy farm (Friedberger, 1988; Gasson & Errington, 1993; Neth, 1993). Size appears to be a complicating factor, not directly indicative of the likelihood of transition. It seems rather that dairy closures are more complex than just a "disappearing middle" or the "demise of the small family farm". Within family farm transitions obviously play a huge role in determining what happens to dairy farms in Deckerville, whatever the size of the operation.

Even dairies in partnership situations with younger operators are in danger of closing out in the event of an unforeseen catastrophe. The fortunes of farm and family are very closely linked, and it might be impossible to separate the two in the Deckerville area. So, age, health, the likelihood of a generational transfer, and the financial resources to be able to persist should accidents occur which require replacing household labor with hired labor all seem to be the dominant correlates of the farms which closed out. Expectations for survival and takeover indicate the mindset of an operator, which likely influences managerial decisions regarding the allocation of land, labor, and capital. Size acts as a possible indirect indicator, and might be related to the ability of the older generation to interest the younger in perpetuating a smaller, less prestigious operation, with lower levels of operating income.

Alternative Categorization Typologies

If we consider the prior discussion of Tables I and II, we see that relying on size categories doesn't really allow us to understand very completely the organizational confluence of farm and family on dairy farms in Deckerville. Certainly it does not adequately account for dairy closures, nor does it indicate a family's expectation of farm survival. In the earlier example as well as in Tables I and II, regardless of how we classify the dairies/farms by size, we don't have an adequate understanding of the dependency of the farm on income from the biweekly milk check. This study asked farmers to estimate the percent of farm income generated annually from fluid milk sales. Farms varied tremendously, earning anywhere from 33 to 100% of their total farm incomes from milk sales, regardless of herd size. This variation suggests the first alternative categorization typology.

The Milk Dependency Typology

One alternative to describing these dairy farms as small, medium or large, in acreage or in number of cows, is to consider them as more or less dependent upon income produced through the sale of fluid milk. The discussion regarding the problem of classifying dairies by size for analysis suggests this alternative as a possible third path, categorizing farms in terms of their dependency on the bimonthly milk check as a percentage of total farm income, instead of on total acres managed or total cows. A colleague has remarked that those dairy farmers who are substantially

diversified into crop or beef production have not yet decided whether they want to be dairies, i.e., they are not committed to dairying. So, it would seem that the extent to which a particular farm specializes in dairying is a major indicator of its organizational structure, that is, given the specific familial and locality constraints.

In Deckerville, dairying specialization is very high. Thirty four farms receive 90% or more of their farm income from their milk checks. Nearly sixty percent of the dairies are highly dependent on their bimonthly milk check as their dominant primary farm income source. While milk sales percent represents how dependent a farm is on the sales of its dairy product, it doesn't indicate whether a farm has income generated through off-farm employment by a household member. Milk check dependency alone is not a good indicator of the total income of the household, but it does suggest to what extent a farm is committed to and dependent upon dairying. Table III indicates the percentage of farm income that is derived from milk sales, split into three categories: less than 70%, 70% to 89%, and 90% or more.

While the range of dependency on the milk check is high, relatively few farms operate a dairy as only one of several major sources of farm income. Only seven farms operate dairies and receive less than 70% of their farm income from milk sales. A middle group of fifteen dairies receives a modest income from non-dairy on-farm agricultural pursuits, with the milk check supplying 70 to 89% of their farm income. The largest group are definitely specialized dairy operations, earning 90 to 100% of their farm income through the sale of fluid milk. Those farms which are less dependent on milk for their agricultural income can be seen having diverse sources of agricultural income.

TABLE III - STRUCTURAL ASPECTS OF THE DAIRY BY

MILK CHECK DEPENDENCY

TABLE III

STRUCTURAL ASPECTS OF THE DAIRY BY MILK CHECK DEPENDENCY

	n= 7 <70%	n= 15 70%<X<90%	n= 34 >89%
Farm Size:			
small: <45 cows	28.6%	46.6%	26.5%
medium: 45<X<80 cows	57.1%	26.7%	35.3%
large: > 80 cows	14.3%	26.7%	38.2%
# of Households			
single	42.9%	73.3%	76.5%
multiple	57.1%	26.7%	24.5%
Total Farm Work Equivalents			
range	2.6-5.37	1.4-3.14	1-8.65
Acres Managed			
mean	698.6	539.8	340.6
median	650	434	310
range	510-1030	160-1000	6-940
Age of Lead Operator			
median	51	52	42
Household Member(s) Works Off-Farm	28.6%	33.3%	41.2%
Ten Year Survival Expectation			
positive	42.9%	60%	67.6%
maybe	28.6%	26.7%	11.8%
negative	28.6%	13.3%	20.6%
Children Takeover Likely			
yes	42.9%	53.3%	20.6%
maybe	42.9%	13.3%	55.9%
no	14.3%	33.3%	23.5%

While the number of farms that have diversified their agricultural production is small, many of these farms are multiple household operations. We surmise that many of these farms are in a generational transition. While their survival as dairies in the next ten years is not certain, these operations will likely still be farmed in some fashion by a family member. Possibly the diversification of production serves to attract family members into the operation, or perhaps the operation is diversified in order to better support more households, since these farms are also the least likely to have someone employed off-farm. Regardless of the sequence, the production of milk as one of several main sources of agricultural income indicates a unique type of farm in the Deckerville area; one that is unique for its diversification rather than for the size of its dairy operation.

While farms with alternative agricultural production are not very likely to have someone employed off-farm, dairies that are highly dependent on milk as their main source of agricultural income are more likely to have a family member working off the farm, particularly when they consist of more than one household. The more dependent a farm is on its milk check, it seems, the more likely there is someone working off farm, particularly if there are multiple households engaged in operating the farm. In these cases, given the capital and land resources of the farm and family, that there is either a need for more income than the farm can produce, or there is more family labor than the farm can employ. Therefore, off-farm employment might also be a dominate correlate of the confluence of farm and family, especially when considered in conjunction with milk dependency.

Some type of diversification seems to be a dominate correlate of multi-household farms, whether it be through diversification of agricultural production or through off-farm employment. Such diversification might allow pressures of intra-familial management to be somewhat relieved through alternate spheres of influence and regions for the expression of personal power. Furthermore, diversifying the products of a farm can be seen as a form of hedging against uncertainty in any single market. Thornton (1994) writes, "dairy farm households who have opportunities for outside employment use off-farm work to buffer agricultural income shocks that arise from exogenous changes in prices and policy actions." Given the distinct state of legislative uncertainty in dairying, and all farming for that matter, I would expect a great deal of hedging by farmers in those regions where alternative land usage and/or employment opportunities exist.

While both agricultural diversification and off-farm work can be seen as forms of hedging during times of uncertainty, both of these activities also seem to have a relation to the number of operator households involved and to one another. Relatively few farms pursue a strategy of triangulation, that is, cropping and/or livestock production combined with the off-farm employment of an adult member of an operator household. Perhaps there is a relationship about the type of resources available to partner households and the type of hedging they prefer. The differences in land farmed suggest resource scarcity and capital limitations on the choice of strategic options; a family farm with less land is better off to hire out its excess labor rather than hire in the quantity of extra land necessary to earn a larger percent of its farm income from non-dairy sources. This is possibly due to two things: the

relatively high values and rent costs of land in the area, as well as to the general unavailability of additional arable land not currently in production (some good land has been made unavailable due to government soil conservation programs); and the availability of reasonably good paying jobs within commuting distance. In other words, farm families with larger capital holdings are less inclined to proletarianize a member of an operator household as a wage laborer, indicating an almost Marxian stratification within the dairy industry itself, as suggested in Gladwin & Zulauf (1989).

The importance of dependency on milk sales as a percentage of total farm income becomes relevant when considering both off-farm labor and number of households, as well as acreage owned, so that we see farms are not pursuing a strategy of triangulation of resource allocation (land for cropping, dairying, and off-farm employment), but rather they are using strategies of duality; of cropping and dairying, or of dairying and working off-farm. This suggests that there are further sorts of limitations on the different allocations of resources a family can choose, indicated by the values of the variables of milk dependency, off-farm labor, total number of households, and owned acreage.

The Labor Categorization Typology

Dairying is a labor intensive enterprise, and in Deckerville, the majority of labor employed on dairy farms is either from the lead operator's household, from a partner operator's household, or somehow related to a partner household. Perez wrote, "The degree of specialization in dairy farming in most of the traditional milk-

producing States, particularly in the Northeast and Upper Midwest regions, can be linked to the availability of family labor" (1994, p.9).

This emphasis on labor, and who does the work (hired vs. family), has been cited in various definitions of family farms (Gasson & Errington, 1993). When a farm family member works off-farm, family labor available for dairy production and other agricultural production is reduced, assuming that the individual was willing to engage in some dairy work prior to seeking employment off-farm. If the farm is small enough, this has little or no impact on the hiring of labor. When a farm is large and someone works off-farm, generally labor must be hired to substitute for this potential family labor which is otherwise engaged (for whatever reasons). If a farm is large, and no one works off-farm, there might still exist a need to hire supplemental labor. Whether or not a farm hires help will be in some way dependent on the overall size of the operation (whether it be dairy or cropping or livestock production), as well as dependent on the total number of households and individuals within partnered and related households available to provide family labor. A typology based on hiring non-kin labor and on the occurrence of off-farm employment for a primary family member might well illustrate differences in the organizational structure of a farm.

How might it do this? Well, having hired help, particularly non-kin hired help, indicates a need for a higher level of management skills and bookkeeping responsibilities, as we were often told, "good hired help is hard to find", and hard to keep. Working off-farm indicates that there is non-farm cash flow into a family, which may or may not supplement the farm, but which certainly contributes to the

well-being of the family. The availability of non-farm income to farm and family, as well as not needing to spend money hiring labor, might contribute to the ability of a farm to persist in times of crisis or great uncertainty, as we saw some former large dairies were unable to do.

Dairy farmers, almost by definition, have to be full-time, year-round farmers, regardless of the size of the operation. Dairy husbandry requires an extensive, perpetual labor commitment, regardless of the status of a cow as in milk or dry. The proliferation of research on dry cow management alone serves to emphasize the continual management and labor required to successfully operate a dairy (see Byers, 1994; Hogan et al, 1994; Moss, 1988).

Additionally, many Deckerville dairies hire at least some help, either on a temporary seasonal basis, or as regular full and part time workers. While dairy farms vary radically in terms of scale of operation, none can truly be called a part time farm in that the time required to operate a dairy at any level of commercial production will require essentially 40 hours over the course of a seven day week. Apparently, labor availability and the allocation of labor resources, both family and non-kin, provide particular sorts of constraints on dairy farms and certain patterns of utilization of these labor resources that are relevant, just as there are relevancies to the patterns of capital utilization as seen when focusing on classification by herd size or acreage.

Furthermore, research into off-farm employment by all agricultural operators and scale of operations (Fassinger & Schwarzweller, 1982) has indicated that off-farm employment of the female spouse is correlated with larger farm size. The same does not appear to hold true for dairy operations, in Deckerville or in Utah

(Thornton, 1994). This suggests that the additional element of partner household member non-farm employment needs to be explored as a possible structural indicator of the farm/family organizational confluence, as well as suggests a need for a greater elaboration of off-farm employment by dairy farm operator households. While other research has found a gendered aspect to this, I have not explored it fully within this study, due to the fact that male operators from only six farms work off-farm. In line with these earlier studies, all six of these sending farms are small to medium in terms of both cows and acreage. In Deckerville, this occurs, with only one exception, in farms with multiple operator households.

Oftentimes, kin labor is hired as a preliminary to bringing an individual into the operation as a partner, as several operators expressed. It is not uncommon for an adult child to be given a full time salary for her work on the farm, generally with the understanding that the child will eventually become a full partner in the operation, pending her continued interest. Parents often continue to work on the dairy after "retiring" and handing control of the operation to their offspring; in order to draw social security, there are limits to the amount of compensation they can receive for their active labor participation on the dairy. However, we classify these individuals as "hired" if they receive some cash compensation but do not participate as a managing partner in the dairy operation. Rarely does a non-kin hired hand become a partner on an operation, although they might be given the opportunity to buy out an operator should no relative be interested. Therefore, distinguishing between kin and non-kin hired labor becomes important to understanding the labor

utilization of a dairy farm, as does assessing the articulation of labor hiring practices and operator off-farm employment practices.

For determining the dependency of farm on family labor, we figured the non-kin work equivalents per farm[2]. Clusters in non-kin hired work equivalents per farm are observable in the data. This is not unexpected, given the widespread practice of hiring temporary help, generally teens to help with haying, in a region notable for the preponderance of moderately large acreage family farms. Forty Deckerville dairies hired no more than .50 non-kin work equivalents; seventeen dairies hired more than .50 non-kin work equivalents.

This hired help can be considered either as supplemental help or substitute help; that is, supplemental help is the amount of labor necessary to operate a farm at a given level beyond the amount that the household is willing and/or able to provide, and substitute help is necessary labor hired to replace the potential family labor left unfilled when a member of an operator household works off-farm. Also, a farm with enough operator households might have excess household labor which is not needed to operate the dairy, in which case off-farm employment does not detract resources from the operation of the family business. A farm in this position might still choose to hire labor occasionally, possibly to perform those tasks the operators find distasteful, or merely as relief during vacations or other brief work stoppages.

By considering the presence of hired labor in conjunction with whether or not an adult in any operator household works off farm, four interesting arrangements of

[2] 1 non-kin hired work equivalent equals 40 hours per week, 50 weeks a year, performed by individuals not related by blood or marriage to an operator household.

TABLE IV - STRUCTURAL VARIABLES BY EMPLOYMENT AND LABOR KINSHIP CLASSIFICATIONS

TABLE IV

Structural Variables by Employment and Labor Kinship Classifications

	Supplemental Labor nonkin we > .50 no off-farm work n = 12	Family Labor Capacity nonkin we < .51 no off-farm work n = 24	Excess Family Labor nonkin we < .51 1 or more off n = 16	Substitute/ Supplemental nonkin we > .50 1 or more off n = 5
Herd Size				
mean	163.8	65.6	40.4	109.6
median	137.5	67.5	35	83
range	74 - 375	32 - 105	12 - 80	60 - 210
Age of Lead Operator				
median	45	49	43.5	42
# of households				
single	67%	79%	56%	100%
multiple	33%	21%	44%	0
Total Farm Work Equivalents				
range	3.54 - 8.65	1.66 - 3.92	1.00 - 3.80	2.50 - 6.85
Acres Managed				
mean	589.3	440.6	301.3	516.4
median	592.5	414.5	247.5	452
range	194 - 1030	120 - 800	6 - 960	320 - 940
% Income from Milk Sales				
mean	84.2%	81.4%	86.4%	85%
median	90%	90%	92.5%	92.5%
range	50% - 95%	33% - 98%	50% - 100%	60% - 95%
Ten Year Survival Expectations				
positive	83%	67%	44%	60%
maybe	8%	21%	19%	20%
negative	8%	13%	38%	20%
Children Takeover Likely				
yes	50%	38%	19%	20%
maybe	50%	46%	31%	40%
no	0	17%	50%	40%

labor allocation can be considered. I call these four arrangements: Supplemental Labor Farms, Family Labor Capacity Farms, Excess Family Labor Farms, and Substitute/Supplemental Labor Farms. However, we must never assume that family labor employed off-farm would be willing to be employed on-farm to any degree. Any family member might refuse to participate in the farm business, but if all decide to not participate, a cessation of farm activities results. Off-farm employment of a household operator does not necessarily contribute to the economic well-being of the farm; however, I presume that some economic benefits devolve to the family or household. What is important in assessing this confluence of farm and family, is recognizing the implications of off-farm employment on dairy farm persistence and as a strategy for coping with an uncertain future. Employment, like farm production diversification, is a form of hedging against shocks and uncertainties.

Supplemental Labor Farms - Net Labor Buyers

I now consider farms which hire much non-kin labor, and where no operator adult member of the household works off-farm (see Table III). These farms operate at a scale beyond the willing and able labor resources of the operator households and consequently must hire supplemental labor. They are essentially large dairies with large land holdings and high labor requirements, which expect, without exception, that some family member will likely takeover the farm as a dairy. These farmers have an expansionist orientation; they have made major capital improvements in the past seven years, and plan to continue doing so. The lead operators of these farms are generally middle-aged, with children not yet old enough to brought in as partner

operators, but with the expectation that one or more of the children will eventually take over the farm. Only a third of the supplemental labor farms are operated by multiple households; this can be attributed to the age of the lead operator, i.e. the children are too young to become full partners. More of these farms will likely become multiple household farms in the next ten years. Furthermore, several of these farms have only recently completed a generational transition. Of all the family farms observed, supplemental labor farms appear to be the most secure in their future, but they are among the most vulnerable to changes in the availability and cost of labor.

Family Labor Capacity Farms - Not in Labor Market

A different type of farm also does not have any adult operator household members working off-farm, but they are not hiring notable quantities of non-kin additional labor. They are operating at capacity, fully utilizing available family labor resources, without incurring the costs of hiring non-kin employees. According to Perez (1994), we should expect to find these farms to be less diversified than farms with less available family labor, and more specialized as dairies. This is not the case: these farms are the most diversified into other agricultural enterprises. Operating at high levels of uncertainty for the future, they have made some capital investments in the recent past, and expect to make some more non-major investments. They have enough land available to diversify; yet, by not increasing the herd to consume the capacity of the land, they have limited their capital investment and improved their protection from market fluxuation in any one product. Through diversification and refraining from investing their capital too intensively in a singular option, they might

be financially the best prepared of all dairy farms in Deckerville to cope with uncertainty. These farmers are hedging their agricultural bets.

Excess Family Labor Farms- Net Labor Sellers

Excess Family Labor farms also do not hire much non-kin labor, but at least one adult member of an operator household works off-farm. These farms can be seen as having excess family labor; that is, more family labor than is needed to operate the farm at its current size. Not only do they not need to hire workers to replace family labor employed off-farm, they have so much family labor that it is likely that they need the off-farm income in order to maintain all operator households. As a group, they are the smallest dairies, and yet have the highest proportion of multiple operator households. They are also the most dependent on family labor, and the most dependent on their milk checks for farm income. Even though these are small dairies, dependent on their milk check, there are signs that at least some of these will persist, given the number of multiple partners and the fact that the off-farm income might help protect these farmers from temporary crises. These families have decided that, within the constraints of land availability, the best strategy for their households is off-farm employment for some family members. Because they are not fully investing their family labor resources in the farm, they have less need to diversify their agricultural income source as a hedge against uncertainty. Their hedge is wage employment.

Substitute/Supplemental Labor Farms - Labor Sellers & Labor Buyers

Not all farm family members are interested in working on the dairy. In five cases of large dairies, the wife works off-farm. Even with the addition of her full-time labor, the farm would need to hire additional help, so they are net labor buyers. However, the amount of hired labor would be smaller if the wife's labor was utilized on farm. This certainly indicates that there are non-economic decisions at play in deciding whether or not to work off-farm, as seems to be consistent with findings on women's off-farm work and farm size when not controlling for agricultural sector (Fassinger, 1980; Fassinger & Schwarzweller, 1982).

It is interesting to consider the suggestion by Thornton (1994) in regards to his findings that a negative relation exists between dairy farm size and off-farm wage employment by members of an operator household: "Indeed, these farms may derive non-pecuniary benefits from involvement in self-employment agricultural activities and therefore choose to make the bulk of their income, work, and leisure adjustments through alterations in wage employment." However, the converse seems at least occasionally true: the existence of these five large farms where someone works off-farm suggests that individuals might derive extra-pecuniary benefits from involvement in off-farm wage labor. In fact, one of these farm wives stated that she would "go nuts" without her part-time off-farm employment, as she was a "city girl", who has made it a point to expose her daughters to city life and urban cultural activities.

Labor resources and the allocation of these resources on and off-farm indicate how dairy farms utilize their available resources within the context of available land

and the costs of capital improvements during an uncertain period in order to perpetuate the farm and family. Decisions are made, probably relating to income needs, available land holdings, and personal desires, that influence the structure of a dairy farm and provide limitations to the potential scope of an operation. Families with many resources developed and plowed into the farm and willing to hire non-family labor expect takeovers and predict survival of the dairy. Families with non-farm employment have invested fewer of their resources on the farm as the source of economic survival and express greater insecurity about the future of the farm. Analysis by size alone does not illustrate the extent to which decisions operators make about utilizing family labor sources on or off-farm structures the range of probable expansion decisions and the likelihood of perpetuation of the farm and dairy.

Children and Takeovers - The Future of the Dairy

The presence of progeny interested in taking over the farm decreases the likelihood of closure of a dairy. However, these periods of transition, when a dairy might be called upon to support an additional household or two, create a situation where the dairy's labor resources often outstrip the capacity of the available land and capital to employ that labor. When more than one household is being supported by the farm, the financial position of the farm becomes precarious, due to the increased pressure upon the its resources. Thus, it is important to note how the presence or absence of multiple households might create a situation where resources must be allocated differently in order to assure the continuance of the farm. In understanding the organizational characteristics of family dairy farms, variables which indicate the likely occurrence of transition or its actual occurrence are probably the age of the operator, the likelihood of progeny being brought into the operation, and the number of operator households involved in the operation. Off -farm employment and milk dependency indicate a dairy farm family's household survival strategy during the transition period: they make choices regarding land use, labor employment and capital investment in managing their resources during times of increased demand on farm income.

Operator Transitions

In the seven years from 1988 to 1995, we observed three major types of changes in the people who are operating the dairies. Twenty two of the dairy operations experienced an operator change. These were often accompanied by changes in ownership; occasionally ownership change did not affect who was in charge of the dairy. Five dairies are persistent partnerships, that is, the dairy has not changed hands between 1988 and 1995. These multiple household operations, if generational rather than sibling partnerships, can be seen as transitions in process, which have yet to mature.

Generational transfers are completed when the father no longer participates in the day to day operation and management of the dairy. He might still help out around the farm, but he is no longer involved in major decision making. A total of nine dairies completed generational transfers between 1988 and 1995, of which two are small, two are medium, and five are large. While bigger dairies have been more successful during the past seven years in completing transitions, seven dairies initiated transitions during this period; only one of these farms is a large dairy. Without this longitudinal information on the initiation of partnerships, bigger dairies would seem to be better, in terms of attracting the younger generation.

A non-generational transition occurs when an operator who is not the father departs the dairy or when a dairy is sold outside the family. These are often generationally unexpected. The father normally leaves the business when he reaches a certain age, preferring to retire or at least to hand over the daily operations to a son or other partner. When a son or other relative leaves for reasons other than

retirement, the dairy undergoes a non-generational transition. Seven dairies (1 small, 3 medium and 3 large) experienced non-generational transitions from 1988 to 1995.

These operator and ownership transitions are major factors in the life cycle of the dairy farm/family operation. The presence or absence of a younger generation willing to take over plays a major role in determining whether or not a dairy farm goes out of business or persists or is sold, as well as affects the structure of the allocation of capital, land, and labor resources. The process of transition represents a time of extreme financial strain on a dairy, and in the sixteen cases where a dairy is operated by multiple partners, 43.8% of the farms have someone working off-farm. For single household dairies, only 32.5% of farms have someone employed off-farm. Multiple household dairies are also less likely to be heavily dependent upon their milk check: 50% receive less than 90% of their farm income from dairying. For single household farms, only 35% of farms receive less than 90% of their agricultural income from dairying. This further reinforces the notion that multiple household farms, with their greater labor availability and greater demand for income, chose to allocate their excess labor to diversify their sources of income, rather than just expand the dairy in order to employ this extra labor. How they choose to allocate that labor in agricultural diversification or off-farm employment is in part determined by access to additional land, as well as the availability of off-farm jobs.

Obviously dairy farms must attract the next generation, either from within the family or outside, in order to maintain continuity. Periods of intra-familial transition strain the capacity of a farm to survive as a viable enterprise of that family, given the available household resources and increased income demands. When farms are trying

to secure their future, they tend to hedge and diversify their sources of income, either agriculturally in off-farm wage employment. While larger farms seem to be more likely to entice family members to join the operation, it is the organization of family resources of land and labor which allow these farms to be transferred from generation to generation successfully, regardless of the size of the farm. Structural variables of size, age of the operator, milk dependency, number of involved households, off-farm employment, and the likelihood of takeover by progeny all serve to help identify the various patterns of resource allocation which are being utilized by Deckerville dairy farmers in their farm and household survival strategies.

Concluding Remarks

By considering the web of experiences within which a dairy locality is enmeshed and considering the various existing household/farm/labor relations, I have constructed a set of alternative typologies to facilitate my exploration of how dairy farm families in one area utilize their resources to sustain the associated households. Commonly used categorization schemes that focus on number of cows or total farm acres are inadequate for exploring how families structure their agricultural activities and non-agricultural employment. These categorizations give mixed evidence of a relationship between size and farm perpetuation that cannot be understood in this context. However, when alternate categorization schemes are introduced, the relationship between age of operator, farm labor organizational structure, and the likelihood of takeover, suggest a life cycle in family farm operations which is based on the differential utilization over time of available capital resources, family labor, off-farm employment opportunities, and availability of arable land. This suggests that the categories we use to analyze a phenomenon circumscribe the set of relations which might emerge as relevant.

Analysis by size of operation hides the amount of hedging going on, and the different possible motivations for such hedging. In my analysis, farmers seem to be hedging their bets, reducing their risk exposure, rather than increasing the size of their operations. Diversification in income source, either through off-farm work or through farm production diversification, seems to develop at some point during the

course of a generational transition. Since generational transitions are how dairy farms tend to perpetuate themselves, federal and state policies need to ensure that opportunities for diversification are widely available during times of generational transition on individual farms. Policy formulators need to be aware of this diversification of risk on the part of farmers, which at least in part can probably be attributed to regulatory and market uncertainty, and take strides to address those rural issues which might allow farmers to hedge more easily, such as expanding off-farm employment opportunities, ensuring reasonable wages, promoting alternative land uses and conservation practices, or activating set-aside land during intra-familial transition periods. Educational support for agricultural labor training, promotion of farm labor as an attractive career choice, and government funded benefit programs (such as universal health insurance) might improve the availability and quality of labor for those farms with hired help.

Even in Deckerville, land is generally less available than jobs and it requires a capital investment, restricting the opportunities for diversification for farm families with less access to land. Imagine if land used for dairying could not be used efficiently for other agricultural production, if there were few opportunities for off-farm employment, and that most of those jobs were seasonal and/or low-paying, but the legislative conditions were the same, and the governmental regulations the same, the uncertainties were all the same, but the circumstances in which the farm family had to reproduce its daily life offered fewer opportunities for hedging? This might be the case in the Upper Peninsula of Michigan. Further research in a region less amenable to other types of farming, with fewer opportunities for off-farm

employment, might yield good information about how farm families organize their collective resources to survive in such situations, as well as suggest further needs which policy should address. The result is a picture of dairies under strain, yet fortunate enough to be located in a region where alternate land uses and off-farm employment opportunities exist. Given these opportunities, dairy farms in Deckerville are hedging their bets in the confluential organization of farm and household, particularly those farms which are currently in the process of transferring the farm to the next generation. This indicates a general sense of pragmatism in a community which is fortunate enough to have other avenues available to secure some financial certainty.

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