An analysis of three common sweat equity arrangements in family farm succession planning

by

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B.S., University of Wisconsin-River Falls, 2011

A THESIS

Submitted in partial fulfillment of the requirements

for the degree

MASTER OF AGRIBUSINESS

Department of Agricultural Economics

College of Agriculture

KANSAS STATE UNIVERSITY

Manhattan, Kansas

2022

Approved by:

Major Professor
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ABSTRACT

Approximately 84% of assets on U.S. farms are represented in land ownership. Land values have dramatically increased over the past 50 years, while commodity price trends have paled in comparison. As farmers look to retire and successfully transition their farms to the next generation, it may be necessary to rely on sweat equity to compensate a returning heir as sufficient cash may not be available in any given year. Sweat equity can be defined as a scenario in which an on-farm heir is paid below-market rates for work in the business. Instead of cash, compensation can be in the form of assets or commodities. While there is plenty of research and resources available on-farm estate and succession planning, there is not a lot of emphasis on sweat equity arrangements. How can a retiring farmer and heir set up an agreement to ensure that the heir's unpaid efforts will be compensated fairly when the family farm transitions? Three simulation farms are created using Kansas Farm Management Association data regarding farm income, expenses, debt, and family living expenses. Three sweat equity arrangements are applied to each farm to determine which arrangements provide the highest cash and sweat equity values to ensure the success of each farm for both the retiring generation and the returning heir. Results found all three scenarios to be successful for each farm, with the arrangement that the heir receiving a percentage of the total net income to be the most successful. The arrangement of the retiring generation providing an annual salary to the returning heir also provided profitable results. While providing the least amount of cash savings, an arrangement to pay the returning heir hourly was also a feasible option.

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ACKNOWLEDGMENTS

The author wishes to acknowledge the Kansas State University Masters of Agribusiness program staff and faculty, namely Deborah Kohl, Mary (Bowen) Sullivan, Sarah Tortella, and Dr. Allen Featherstone. In addition, the author would like to recognize fellow MAB cohort students for their support throughout this program.

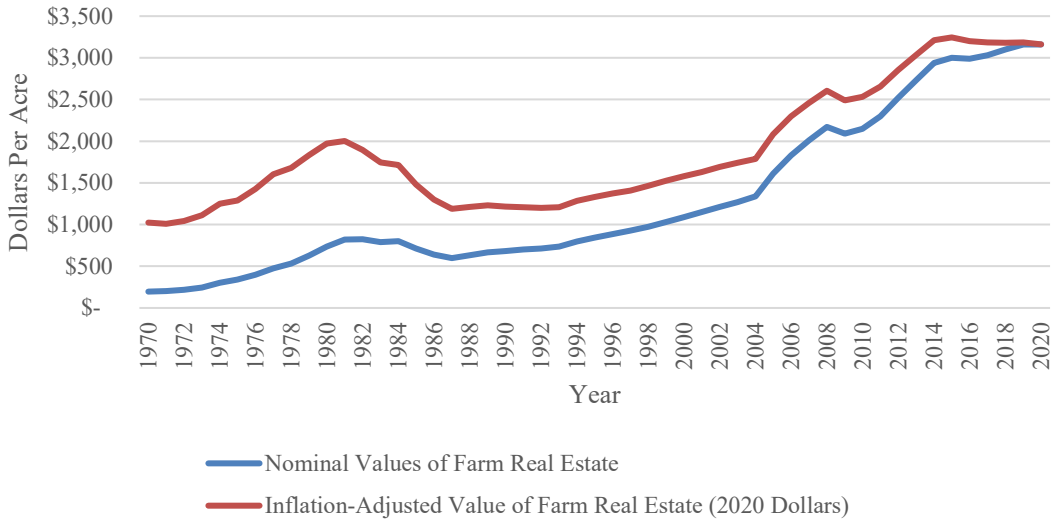
The author would also like to thank her advising professor, Dr. Gregg Hadley, for his time, mentorship, and patience. She would also like to thank her thesis committee of Dr. Dan O'Brien, Dr. Rich Llewelyn, and Robin Reid. She has appreciated their guidance and support throughout the thesis process.

Of course, the author would like to thank her family, without whom she wouldn't be here. Specifically, to her parents, David and Deborah, who taught her to always keep going no matter what challenges lie ahead. And especially to her other half, Mike, who has been her biggest supporter since Day One and always accepted the time commitment involved in a master's degree.

CHAPTER I: INTRODUCTION

Many farmers dream of passing their operation to their children someday. The farming landscape has changed significantly over the past several decades and taking over the family operation is not as simple as it used to be. According to the USDA Economic Research Service (2020), inflation-adjusted farmland values have more than tripled since 1970 (Figure 1.1).

Figure 1.1: Average U.S. Farm Real Estate Value, Nominal and Inflation-Adjusted 1970-2020



Land ownership represents about 84% of assets on U.S. farms (Langemeier 2017). While land traditionally gains value over time, commodities are subject to volatility in their respective markets. Many farmers rely on their farm equity for their retirement and may not be able to gift it to their heirs who may be interested in taking over the farm. These heirs can struggle in securing and later paying off loans if they must purchase the farm from the retiring generation at the time of transition. With volatile commodity markets, farm income may not always support competitive wages on the farm in any given year. One way to

address this is for the heir to work his or her way into ownership of the farm, a concept known as sweat equity.

As defined by Michael Langemeier, Associate Director for the Center for Commercial Agriculture at Purdue University (2017), "sweat equity arises in part when an on-farm heir is paid less than their true opportunity cost to work for the business." This could result in the farm heirs receiving more assets in the form of land, equipment, animals, and/or buildings to compensate (Kirkpatrick, Schlesser, et al. 2021). A strategy such as this can ensure the success of the farm as it transitions to the next generation, but also needs to be done in a way to ensure success for the family and the farm.

Dr. Dave Goeller, retired Deputy Director of the North Central Risk Management Education Center at the University of Nebraska, provides a sweat equity example that oftentimes strikes a little too close to home for farmers: A local farmer in his 60s calls him to discuss a transition plan for the farm. Goeller, assuming the farmer is looking to plan for this farmer and his son in his late 30s, quickly finds out that the caller is actually the son; the father in his 90s still owns and manages the farm. Every day, the son and grandson go to the farm to receive direction from the grandfather. The grandfather isn't particularly interested in setting up any sort of transition plan, so the son, who has worked on the farm for decades is scrambling to protect himself and his family.

Unfortunately, the grandfather passes away a few months later with no real plan in place to ensure the success of the family farm. The son finds out that there is a will; a standard arrangement that splits the farm equally between all eight children. The son is the only one who returned to the farm and worked for a reduced wage in exchange for the promise that "someday this will be yours". The other heirs aren't willing to give up their

inheritance. The farm cannot cash flow the purchase, so the land ends up being sold to a neighbor. The son has no savings, no retirement, and now no home as he resided on a farm property. The grandson must start over in his career to care for his family as he also worked full-time on the farm (2013)

Plenty of farmers hear this story and can relate to experiences of their own or that of a neighbor. Even so, only about 30% of farmers have a written estate plan, let alone a full succession plan (Freese 2020). An estate plan merely covers the transition of asset ownership. It should define Who, What, and When. A succession plan addresses the transition of management. In addition to the Who, What, and When, it should include Where, Why, and How. As described by Goeller, it "involves a comprehensive long-term business plan and an in-depth outline of the timing regarding the transition of each part of the farming business" (2013). This is where sweat equity arrangements are explored and defined. In the hustle of day-to-day operations, estate and succession planning oftentimes falls into something that will get done 'later', but sometimes 'later' comes too late.

1.1 Research Question

Farms will transfer with or without a plan. If the farm family does not have a plan documented, the farm may not transition in the desired manner. The fact that so few farms have a full succession plan in place is a concern. While there is plenty of research and resources available on farm estate and succession planning, there is not a lot of emphasis on sweat equity arrangements. How can a retiring farmer and heir set up an agreement to ensure that the heir's unpaid efforts will be compensated fairly when the family farm transitions?

1.2 Research Objectives

The objective of this research is to determine the value of sweat equity based on arrangements made when the heir returns to the farm. It will be focused on providing resources for those at the beginning of their farming career to determine feasible strategies and determine a sweat equity value available at the time of anticipated farm transfer.

The research will consist of the following:

1. Develop three simulation farms based on typical Kansas agricultural operations
2. Identify three different sweat equity strategies to apply to each simulation farm
3. Use these results to compare which strategies work best with each farm type

1.3 Significance of Study

This research is important to farm families looking to transition their operations successfully to the next generation through a sweat equity arrangement. One of the few constants in life is change, whether it be anticipated or completely unexpected. Proper sweat equity valuations in succession planning can ensure the interests of the farm, as well as all stakeholders, are protected. Since no two farms are alike, no two transition plans can be the same. Despite the multitude of factors involved, Grahame, et al. provide two goals for successful transitioning that will apply to every farm: “secure the farm’s financial viability and transition the farm in such a way to make everyone happy” (2018).

1.4 Outline of Thesis

The opening chapter has provided a background of the research problem, listing the importance of not only succession plans for farms but fairly assessing sweat equity for returning heirs who have already put years of work into increasing the net worth of the

operations. A Literature Review in Chapter 2 highlights the need for these conversations as well as outlines different sweat equity strategies and arrangements. The data and methods used for this research are presented in Chapter 3. Results from each strategy used on each simulation farm are listed in Chapter 4. Finally, conclusions, discussion, and future opportunities regarding this research are in Chapter 5.

CHAPTER II: LITERATURE REVIEW

This chapter is separated into five sections. The first focuses on farmers making the initial decision to retire. The next section addresses the transition planning process and making sure the farm can successfully continue for multiple generations. The third section addresses the topic of splitting assets among heirs. Next, the need for sweat equity instead of regular compensation is discussed. Finally, three sweat equity arrangements are proposed.

2.1 A Retired Farmer?

According to USDA data, the average age of the American farmer in 2017 was 57.5 years (2019). This is up from 2007 with the average age at 54.9 (2009). As Kirkpatrick (2013) reports, determining the average retirement age of farmers is difficult as many "retire *to* farming", meaning many farmers continue to work and receive income off the farm after transitioning out of the primary management and labor responsibilities. The decision of a farmer to retire, whether partially or fully, can also be influenced by the Social Security benefits, which are dependent on age and have restrictions on external income.

Kirkpatrick also found that the top three goals of farmers in transfer planning were, the "long-term viability of the farm for the next generation, providing financial security for the older generation, and …keeping the farm or farmland in the family" (2013). This shows that naming, as well as properly preparing, a successor should also be a top priority. This is not always the case. There can be an unwillingness to 'let go' from the older generation as they have worked many years to build the farm and net worth to its current state. Many farmers depend on this daily work and management as their identity and fear a loss once this transition happens (Kirkpatrick 2013). When both generations can work together to

develop a transition plan, which needs to include a value on the sweat equity put in by each generation, they can help alleviate this barrier, but it does require full, unhampered communication on both sides.

2.2 Making Farm Succession Successful

In the K-State Research in Extension article "Transition Planning: 12 Steps to Keep the Family Farming", Jones, Schurle, and Hund break down what retiring and prospective generations need to do to successfully transition the farm from one generation to the next (2012). The very first step in any transition process needs to be recognizing what matters most to all stakeholders involved. While farm transitions are a business decision, there are plenty of emotions involved. Holding on to these feelings upfront can lead to issues later, so everyone must openly communicate.

One major pitfall is the expectation that the next generation will run the farm just as the previous generation did (Jones, Schurle and Hund 2012). This is not always effective as management strategies need to be continuously updated. With this, the retiring generation needs to start taking a step back and allowing the succeeding generation to make more decisions. If this is a situation where the retiring generation isn't fully retiring, the farm may need to grow to accommodate additional members on the farm, and external lines of income may even become necessary.

This is the time to start having heavy conversations relating to estate and retirement planning. The article emphasizes that estate planning is not just for the retiring generation-every stakeholder on the farm should have something in place (Jones, Schurle and Hund 2012). The unexpected can happen at any time, and the farm may not be able to survive an unexpected loss without proper planning.

If an estate plan is not in place, and there is a mix of on-farm heirs and off-farm heirs, the operation could be in jeopardy if both parents pass away. It's likely the assets will be divided equally among the surviving heirs, whether they have been involved in the farm or not (Ferrell, Jones and Hobbs 2021). This could be detrimental to the operation; a single farm may be functional, but multiple, smaller farms may not be successful. The on-farm heirs may not be able to afford to purchase the assets from the off-farm heirs, risking the sweat equity they've worked for over the years should the off-farm heirs decide to sell their portion of the inheritance.

2.3 Fair Isn't Always Equal

Research has found that dividing farm assets equally among on-farm and off-farm heirs is the most common transition method (Reed 2017). This is oftentimes intentional but can also be the result of a lack of a plan. In fact, a survey of Iowa farmers in 2006 found that 40% of farmers felt that dividing assets equally was the best plan (Ferrell, Jones and Hobbs 2021). Many states have laws that distribute assets equally in absence of a will. The strategy of dividing all assets equally between farm heirs is not likely to allow the farm to succeed beyond the transition (Reed 2017).

On-farm heirs are more likely to view the assets as parts of a whole, needing to stay together to keep the farm successful. Off-farm heirs are more likely to view the assets as an opportunity to receive a cash value in the short-term (Ferrell, Jones and Hobbs 2021). If the heirs aren't all aware of the value of the assets beyond the cash value, it will be difficult for them to work together for the best interest of the farm while also protecting their own interests. Off-farm heirs may or may not fully comprehend what is necessary to keep a farm running and may not be aware of the investments made by the on-farm siblings

into assets that grew the parents' net worth. The on-farm siblings could be poised to either effectively re-purchase assets or lose their equity by walking away from the operation.

Of course, interpersonal relationships are always at play. The off-farm heirs may want to start being involved in management decisions that clash with the on-farm heirs or the off-farm heirs may be interested in selling to the highest bidder, which may not be a sibling (Ferrell, Jones and Hobbs 2021). These differing viewpoints can make it difficult to keep the farm as one successful unit and can wipe out the investments of time, energy, and money the on-farm heirs had invested over the years.

Reed (2017) found that many farm families are not familiar with other transition options available that can fit their individual needs. No two farms are the same, so no two succession plans can be expected to be the same. Instead of encouraging, this can be daunting and lead to inaction or a plan that doesn't properly address the unique needs of the farm and stakeholders. If dividing equally is the least successful option, it may become less common as more families accept that transition planning is essential to the success of their operations. Reed examined alternatives to the 'fair is equal' concept. Of the five strategies studied, the strategy with the lowest probability of success was simply splitting down the middle while the two strategies valuing sweat equity had the highest probability of success (Reed 2017).

2.4 Valuing Sweat Equity

Similar to the Langemeier definition in the introduction of this paper, Grahame, et al. define sweat equity as an issue that arises when "an on-farm heir receives payment at a below-market rate, and the farm business grows in size due to an on-farm heir's below-market labors" (2018). While the farm may not be able to pay a market value in cash, an investment in the farm can help compensate on-farm heirs for their labor, knowledge, and

management as it contributed to the overall success and growth of the farm. In turn, there is an expectation that the on-farm heir will receive a return on this investment someday.

With this arrangement, there need to be clear expectations on both sides (Grahame, et al. 2018). There need to be up-front conversations regarding which family will own which assets, and at which time will the property and management transfers happen. Treating an on-farm heir as free labor on a farm that is not profitable will potentially lead to failure for the farm and the stakeholders.

If a concrete number is placed on the value brought to the farm by the on-farm heir, an equitable strategy can appear fairer to all heirs. As Goeller proposes, one needs to know the value of the farm when the on-farm heir joined the farm and the value of the farm when the transition is being made. The difference is ideally going to be a growth, in which the on-farm heir participated. A percentage of this growth needs to be assessed for each operator during this time (2022). Once the numbers have been calculated and made available to all stakeholders, dividing the assets equitably, not necessarily equally, can be easier with fewer concerns about conflict.

2.5 Sweat Equity Proposals

Many sweat equity arrangements exist, and one could find it difficult to find any two that are the same. There are many arrangements commonly seen when looking at sweat equity agreements in family farm transition, including percentage-based, salary, and hourly. Percentage agreements are common as they allow the returning generation to start small and learn about farm management. As their contributions grow, so does their percentage of the net returns of the farm. Secondly, some farmers looking to retire might have to compete with the salary of an off-farm heir to entice the heir to return to the farm. Since farms don't have the cash flow every year to provide this, non-cash compensation becomes part of the

package. A third common arrangement would be an hourly wage agreement. Like the salary agreement, the heir will receive compensation based on their specific labor and management decisions on the farm.

2.5.1 Percentage Agreement

One common sweat equity strategy is to split the income and expenses on a percentage basis. In the dairy industry, sharemilking is a popular concept in New Zealand and Australia and has gained popularity in the United States (Tranel 2004). The concept is based on the capital-intensive entry to farming and helping younger farmers gain equity from experienced farmers looking to retire. Typically, these arrangements start with a small percentage of the milk check in exchange for their labor while learning management strategies, which also allows the younger generation to understand the risk and volatility of agriculture. As time moves on, so does the percentage of ownership and income. While this strategy was specific to dairy farming, it can easily be applied to other types of agricultural operations.

Challenges with this strategy include determining who owns which assets and where the responsibilities lay on various expenses. Also, as time goes on, both parties need to agree on a fair sliding scale of ownership and income. Tranel proposes a beginning strategy of 75% of the proceeds going to the owner and 25% of the proceeds to the sharemilker (1997). As decision-making shifts to the sharemilker, the percentage can increase, giving the sharemilker a higher incentive and more responsibility for the success of their decisions.

2.5.2 Salary Agreement

Langemeier discusses the idea of a farmer enticing an heir to come back to the farm by offering a compensation package comparable to the heir's corporate salary (2017).

Given that farms are subject to market variability and net worth on the farm is tied to assets more so than cash, it could be difficult for a farm to offer a full cash salary. There is the opportunity, however, to offer a livable salary in the form of cash and provide the remainder in other compensation, such as commodities, living expenses, and/or investment in the farm itself. Even though the heir is not receiving the same cash as they would in a corporate-type job, the appreciation in assets and net worth over time in the farm could compete and potentially overcome in the long run while the heir has a guarantee of financial stability when committing to the farm.

There are challenges to this strategy, however. Since agriculture is heavily market-based, there needs to be an incentive for the heir to make good management decisions and put in the physical effort to continue making the farm a profitable business that has assets that can appreciate. While farming is a business, it also ends up being a lifestyle. If an owner must rely on this strategy to entice the heir back to the farm, this may be a sign that the heir is not as interested as the owner hopes, potentially decreasing the long-term success of the farm. Langemeier emphasizes that if the farm cannot cashflow a livable salary, perhaps the farm is not at a point to accept the transition and it is best to not encourage a family member to return at this time (2017).

2.5.3 Hourly Agreement

A third sweat equity strategy could be the older generation paying the younger generation an hourly wage. This provides an opportunity for the younger generation to learn in a real environment and see the impact of their time on the farm in their compensation. As their contributions grow, both in time and quality of labor and decisions, their compensation and ability to invest the cash back into the operation can increase, as well.

One challenge with this strategy is determining a fair hourly wage for the younger generation that the older generation can afford in cash each year. Compensation needs to provide a livable wage, not a reduced rate with a promise of future ownership. As John Baker emphasizes, “Compensation should equal contribution” (Tucker 2021). This wage should increase regularly with the increases in the standard of living costs as well as with increases in contributions. Like the salary agreement, feasibility needs to be addressed before entering any long-term arrangement. If cash flow cannot support a livable wage, perhaps it’s time for the farm to discuss if it can transition past the current generation and what the best option for the land, assets, and family may be. Passing down the family farm needs to be just as much of a financial decision as it is an emotional one.

CHAPTER III: DATA AND METHODS

This chapter discusses the data and methods used to build three simulation operations and set up three sweat equity arrangements. It is organized into four sections: the first section is the data used; the second presents the summary of the simulation farms; the third discusses the sweat equity arrangements; the fourth section provides the financial data for each farm independent of applying the sweat equity arrangements.

3.1 Data

This research used Kansas Farm Management Association (KFMA) data available for the years 2008 to 2020 to run economic simulations analyzing sweat equity investments and returns. Based on the average age of the American farmer in 2008 of 58 years old, this was set up as a 12-year simulation that will represent the beginning of a transition to the end with the farmer scaling back to retirement at 70 years of age. Economic simulations are beneficial as they are cost-effective and relatively risk-free opportunities to run 'what-if' analyses in a sped-up environment. While simulations are extremely useful tools, these tools are only as strong as the information used to create them. The simulation builder needs to consider all aspects impacting the outcome before relying on the results of any simulation.

3.2 Summary of Simulation Farms

Data provided by the KFMA Whole-Farm Analysis were used to develop simulation farms upon which to create a 12-year analysis. Three farms were developed for this simulation: a dairy farm, a crop farm, and a cow-calf operation with a cash-crop enterprise. All three farms are set up as sole proprietorships. Each scenario has a parent generation (Owner) and a returning child (Heir).

3.2.1 Assets and Liabilities

Before the simulation farm and income/expense data were determined, assets and liabilities were considered. Using the 2008 Net Worth value for each respective farm, an annual asset appreciation of 7.6% was calculated based on National Agricultural Statistics Service (NASS) Quick Stats data analyzing Kansas farm property values from 2008-2012. Total liabilities in 2008 were used to determine a one-time loan created for each simulation. An annual percentage rate of 7.5% for 12 years was factored into a monthly rate of 0.625% for 180 months. Current Liabilities for each year were determined by the sum of principal payments for the given year. Non-Current Liabilities were determined by the remaining balance on December 31st of the prior year.

3.2.2 Expense Ratios

Since the focus of this research is to ensure a successful transition of each farm, the financial data from the High-Profit section of the State Profit Thirds KFMA Enterprise Reports of each respective simulation farm type was used to focus on farms that are currently successful and most likely to survive into transition. To maintain clarity and prevent additional variables, operation size does not change throughout the simulations.

The Operating Expense Ratio (OER) was calculated with the following equation:

$$\textbf{OER}=\frac{\textbf{(Total Expenses-Interest Expense-Depreciation Expense)}}{\textbf{Gross Income}}$$

To determine Gross Income, Total Expenses, and Total Depreciation, respective KFMA data from Top Third operations were scaled back to the value per unit (head or acre) and then scaled up based on the 2008 operation size. Total Interest was based on the interest paid off the prior year in an amortization table built for the loan of each case farm.

- The top third profit data was not available for dairy farms for each year researched, so the OER was calculated based on KFMA Total Expense, KFMA Income Expense, and KFMA Deprecation Expense over KFMA Gross Income obtained from the Whole-Farm Analysis Reports. This value was then taken by 0.9 to factor in the top 90% of herds.
- The crop operation factored in the Top Third for each corn, soybeans, and wheat, and each crop was multiplied by the percentage of each crop for each year, building the rotation.
- The beef operation was split 50:50 between the beef and the crop enterprises of the farm. Each of the beef and crop enterprises was based on the respective Top Third sectors. The crop aspect was based on corn, soybeans, and wheat, and each crop was multiplied by the percentage of each crop for each year, building the rotation.

The Depreciation Expense Ratio (DER) was built for each farm in 2008, and that value was used for each year in the simulation.

$$\textbf{DER} = \frac{\textbf{Total Depreciation Expense}}{\textbf{Gross Income}}$$

The Interest Expense Ratio (IER) was calculated for each year on each farm using the interest data from the amortization schedule built for each respective farm.

$$\textbf{IER} = \frac{\textbf{Total Interest Expense}}{\textbf{Gross Income}}$$

The OER, DER, and IER were used to determine the Net Income Percent:

Net Income Percent =1-(OER+DER+IER)

The Net Income Percent was multiplied by Gross Income to get Net Income:

Net Income= Net Income Percent * Gross Income

3.2.3 Family Living Expenses

Once the farm financials were analyzed, Family Living Expenses and Tax values for each of the Heir and Owner generations were determined by the simulation farm's family size and age using KFMA Family Living Expense Reports. Non-Farm Income values for 2008 were also built off KFMA data based on family size and age, but the remaining years used a 3% standard of living increase from the prior year. If both members of a couple are employed off the farm, each will earn the same value for their pay in this simulation. Heir labor hours were determined using Center for Farm Financial Management (CFFM) values regarding labor hours per unit per year. Values used include 39.6 hours/cow/year for dairy, 2 hours/acre/year for row crops, and 6.9 hours/cow/year for beef cattle (2021).

Off-farm employment for the heir was also considered as all heirs start the simulation with an off-farm job. All heirs in the Salary arrangement scenario leave their off-farm employment at the beginning of the simulation. For the Percentage and Hourly arrangements, a sliding scale was assessed to determine if the heir was working off the farm full-time (<1399 hours), three-quarter time (1400-1799 hours), or half-time (1800-1999 hours). Once the heir reaches 2,000 labor hours in a year on the farm, that heir will leave their job to work on the farm full-time.

Labor Hours= Heir Portion*Operation Size* CFFM Hours/Unit/Year

This provided information necessary to set up another formula to show what the heir can save and reinvest each year.

Heir Savings and Reinvestment= Heir Farm Income + NonFarm Income - Taxes - Family Living Expenses

Owner family living expenses were also based on the size and age of each family. Like the Heir Non-Farm pay, Owner Non-Farm pay for 2008 was calculated on KFMA Family Living Expense Reports and a 3% standard of living increase was applied to each subsequent year.

Owner Savings and Reinvestment= Owner Net Income + NonFarm Income - Living Expenses – Taxes – Heir Salary/Wages

3.2.4 Savings and Investment

Once the net income was determined and family living expenses and taxes were deducted, the remaining income needed to be delegated. Twenty percent went into savings once all farm and family living expenses were paid. An interest rate of 5% was used for anything saved during this 12-year simulation, including savings, money market, and stock market accounts. If expenses exceeded income, this negative amount is represented in the annual savings and was deducted from the total savings for this simulation. The remainder was invested back into the farm.

Since sweat equity is the 'unpaid' portion representing farm growth, the net worth in 2008 was subtracted from 2020 to represent total farm growth and multiplied by the average percentage in the Percentage Agreement or divided by 2 to represent the contributions from both the owner and heir for the Salary Agreement and Hourly Agreement. The total amount the heir reinvested was subtracted, and the sweat equity value remains.

3.3 Sweat Equity Arrangements

Three sweat equity arrangements will be studied in this research: a percentage agreement, and salary agreement, and an hourly agreement. Various experts in the industry, including extension agents and farm analysts, were interviewed to determine the

practicality of each strategy proposed. When researching and selecting strategies, the selections had to meet one of two criteria:

1) Is this something currently happening in the field?

2) If not, is it realistic to propose?

The three sweat equity farm scenarios were built and compared against the KFMA Whole-Farm Analysis historical data from 2008 to 2020 to see how proposed sweat equity arrangements would have resulted. When assessing pay rates, competency levels described by Roehl and Herbel with KFMA were used:

> **"Level 1:** Employees who are either very new to the farm or have no advanced skills. They are, for example, individuals who are given their tasks by another person and then perform miscellaneous jobs that require no previous training or experience
>
> **Level 2:** Very specialized individuals who perform anywhere from one to many tasks which require training. Although these employees may make personal decisions such as the order in which to perform certain tasks, they do not have the authority to make decisions relating to their job responsibilities, area of production, or coworkers. As a result, he/she has no supervisory authority.
>
> **Level 3:** Employees who are very skilled in at least one specified area. These employees may make decisions related to his or her area of expertise and may administer those decisions through other employees, therefore giving a Level 3 employee some supervisory capacity. However, this person's decision-making authority does not extend into other areas of the operation.
>
> **Level 4:** Because of his or her exceptional skill level, this person is in a position to make decisions that impact entire areas of the operation. Many employees could have to carry out those decisions, giving this person a potentially large supervisory authority.
>
> **Level 5:** Level Five employees are the most skilled and qualified full-time employees with a farm. They have complete supervisory authority and the most decision-making authority given to any full-time employee" (2009).

With the years of experience and responsibilities going to the heir, all will start as Level 4 employees and move to Level 5 when they are responsible for more than 50% of the farm's labor and management.

3.3.1 Percentage Agreement

The Percentage Agreement begins in 2008 with the owner being responsible for 75% of the income and expenses while the heir is responsible for the remaining 25%. This initial 25% will be put towards living expenses and savings as well as the opportunity to invest back into the farm with the purchase of assets, such as replacement calves, equipment, or land. This percentage will grow over time for the returning generation as skills and contributions increase and result in the retiring farmer being responsible for 25% of the income and expenses in 2020 while the heir has moved up to 75%.

3.3.2 Salary Agreement

The Salary Agreement will be an arrangement between the owner and the heir to provide a compensation package competitive to the heir's current corporate salary for the heir to join the farm full-time. As it can be difficult for a farm to pay a returning heir a full salary in cash only each year, assets can sometimes be provided to compensate.

In 2008, a Level 4 Full-Time (>1800 hours) employee received a salary of $32,636 (Roehl and Herbel 2009). By 2020, the Level 4 value was $43,047, an approximate increase of 3% per year (KFMA 2020). As the Level 5 value was at $52,045 in 2020, this value was scaled back by 3% from 2020 to 2014, representing a move from Level 4 to Level 5 compensation. The remaining portion of the compensation can come from housing expenses, which were approximately $13,000 in 2008, based on the KFMA Whole-Farm Summary of Family Living Expenses. The respective values provided by KFMA data were used for each subsequent year.

3.3.3 Hourly Agreement

The Hourly Agreement will be an arrangement between the owner and the heir to provide training and management experience on an hourly basis. This hourly wage will be based on KFMA data for part-time and full-time employees. In 2008, a Level 4 Full Time (>1800 hours) employee received a wage of $14.93 per hour. By 2020, the Level 4 value was $18.46 hourly, an increase of approximately 2% per year. Like the percentage agreement, this portion will start with the heir at 25% responsibility for the operation and grow during the transition period to show the increase in management decisions and farm operation responsibility. Instead of basing compensation on the overall net income, pay will be based on the hours dedicated to the operation.

3.4 Simulation Farms

Once each farm was built, a representative family was created to use for the narrative of each simulation. These narratives introduce the families, discuss the background of the farm and the decisions being made when bringing the next generation back to the farm, and exemplify what many farms may face when discussing family farm transitions and the role sweat equity plays.

3.4.1 The Swiss Family

Steve and Sue Swiss started their dairy farm in 1973 when Steve was 23 years old. Now, in 2008, Steve is 58 and Sue is 56. Their daughter, Sheri, and son-in-law, Grant Guernsey, are interested in taking over the farm when Steve and Sue retire. Sheri is 31 years old with two children, Gina (7) and Greyson (5). Steve and Sue also have a son, Scott (29), who is not involved in the farm.

The farm consists of 120 cows and a net worth of $819,903. There is a current loan of $310,253. Steve and Sue both work on the farm, and Sue also has off-farm employment

as a CPA, which has seasonal demand. Sheri and Grant have regularly helped on the farm during these busy times. Grant also works off-farm as an agronomist. Their total nonfarm income is $72,339 after taxes.

After several years working as a service writer at the local implement dealer, Sheri has decided she would like to eventually come back to the farm. Steve, Sue, and Sheri decide that with near record-high milk prices in 2007, this is a great opportunity to ease Sheri's family into the operation while allowing Steve and Sue to slowly step back towards retirement. Thankfully, Steve and Sue have had a successful run in their operation and can assist Sheri and Grant in their transition and investment in the farm. Steve and Sue are starting to age and want to retire when Steve is 70. The initial arrangement is for Sheri to continue working while contributing to daily chores and all calf management decisions while Grant continues to help as needed.

Unfortunately, 2009 is a tough year for dairy prices. Despite this, the farm brings in a net income of $63,575 to draw down their debt and cover their family expenses while the farm's worth appreciates to $917,430. Markets begin to recover with a 2011 net income of $125,899, and the farm's net worth of $1,135,344.

Prices continue to increase through 2014, proving a net income of $262,331 and the farm's net worth grows to $1,528,522. Markets take a downward turn in 2016 with a net income of $47,109. This is not enough to cover family living expenses for either household, but off-farm income and prior success allow each household to continue in the operation. Prices slowly recover through 2019, which sees a healthy increase in milk price, allowing for a net income of $107,304.

It is now 2020, Steve is 70 and ready to retire to farming. Sue is 68 and looking to dial back on her tax preparation responsibilities. They will continue to be available on the farm, but Sheri is the primary operator. The farm's net worth is $2,629,442. Sheri and Grant's children are now 19, and 17. The children's contributions to the farm have helped keep the farm profitable, and they will soon be able to decide if this is something they want to do in their career, just as their parents did 12 short years ago.

Table 3.1: Swiss Family Dairy Financials 2008-2020

Year	Gross Inc	Total Exp	Int Exp	Dep Exp	90% OER	DER	IER	Net Income %	Net Income
2020	$510,344	$343,065	$6,144	$63,579	53.81%	7.47%	0.72%	38.01%	**$193,969**
2019	$411,635	$349,511	$8,188	$52,454	65.15%	7.47%	1.31%	26.07%	**$107,304**
2018	$327,092	$310,835	$10,084	$52,531	72.00%	7.47%	1.92%	18.62%	**$60,901**
2017	$392,507	$322,473	$11,844	$50,210	62.81%	7.47%	2.08%	27.64%	**$108,499**
2016	$328,600	$322,915	$13,477	$52,206	75.45%	7.47%	2.75%	14.34%	**$47,109**
2015	$453,019	$372,288	$14,992	$48,431	63.98%	7.47%	2.51%	26.04%	**$117,976**
2014	$655,077	$414,897	$16,399	$40,624	50.26%	7.47%	2.23%	40.05%	**$262,332**
2013	$396,762	$321,809	$17,704	$38,469	62.93%	7.47%	3.67%	25.94%	**$102,909**
2012	$407,614	$340,220	$18,915	$33,728	65.84%	7.47%	4.12%	22.57%	**$91,985**
2011	$445,054	$337,510	$20,038	$28,738	59.85%	7.47%	4.39%	28.29%	**$125,899**
2010	$394,103	$326,658	$21,081	$31,319	64.79%	7.47%	4.94%	22.80%	**$89,875**
2009	$360,164	$323,230	$22,049	$32,435	69.27%	7.47%	5.61%	17.65%	**$63,575**
2008	$455,633	$367,324	$21,002	$34,025	65.84%	7.47%	4.61%	22.09%	**$118,632**

3.4.2 The Milo Family

Michael and Mary Milo started their crop operation in 1973 when Michael was 23 years old. Now, in 2008, Michael is 58 and Mary is 56. Their son, Matt, and daughter-in-law, Angie, are interested in taking over the farm when Michael and Mary retire. Matt is 32 years old with two children, Max (3) and Maria (1). Michael and Mary also have a daughter, Margo (29), who is not involved in the farm.

The farm consists of 1,600 acres total, rotating between corn, soybeans, and wheat, and is worth $843,782 with a current outstanding loan of $367,285. Michael is fully employed by the farm, while Mary is employed as a commodity merchant. They have a

nonfarm income of $53,610. Matt works at the local feed mill while Angie works off the farm as a high school ag teacher. Their total nonfarm income is $72,339 after taxes.

With the recent ethanol boom, Matt feels as though this is a good time to get started in the crop business. He has always helped during busy times on the farm but wants to make a real commitment, which may require leaving his full-time employment. Michael and Mary are excited their son is ready to join them on the farm and allow them to start planning for retirement. In addition to the regular help Matt has provided in the past, he will now be involved in more decisions, including managing the maintenance schedule for the shop.

Matt is correct to anticipate that crop prices will continue to ride a high. In 2012, the farm makes a net income of $204,746 while the net worth appreciates to $1,317,935. The tables begin to turn in 2013, and 2014 results in a total farm net income of $40,251 while 2015 ends up being worse at $(32,228). Thankfully, since the farm has been successful in recent years, both families can cover farm inputs and family living expenses and the farm is worth $1,779,073 at the end of 2015. After a few rough years, prices begin to increase again in 2018 with a net income of $98,236.

It is now 2020, and Michael is ready to retire to farming. Mary is 68 and looking forward to retirement soon, as well. Matt is now the primary operator. The farm's net worth is $2,807,306. Matt and Angie's children are now 15 and 13, and their contributions to the farm continue to grow. They will soon be able to determine if this operation is something they want to continue, just as their parents did 12 short years ago.

Table 3.2: Milo Family Acres Financials 2008-2020

Year	Gross Inc	Total Exp	Int Exp	Dep Exp	OER	DER	IER	Net Income %	Net Income
2020	$616,415	$504,419	$7,273	$41,713	72.66%	5.52%	1.18%	20.65%	**$127,269**
2019	$637,665	$517,581	$9,693	$42,869	71.59%	5.52%	1.52%	21.37%	**$136,282**
2018	$573,000	$488,316	$11,938	$44,804	75.25%	5.52%	2.08%	17.14%	**$98,236**
2017	$513,483	$460,021	$14,021	$41,245	78.68%	5.52%	2.73%	13.07%	**$67,123**
2016	$485,484	$454,206	$15,954	$45,973	81.01%	5.52%	3.29%	10.19%	**$49,471**
2015	$459,156	$512,154	$17,748	$51,389	97.64%	5.52%	3.87%	(7.02)%	**$(32,228)**
2014	$519,371	$494,762	$19,413	$51,066	82.99%	5.52%	3.74%	7.75%	**$40,251**
2013	$683,308	$517,749	$20,958	$51,236	66.20%	5.52%	3.07%	25.21%	**$172,292**
2012	$691,532	$487,860	$22,391	$46,789	61.64%	5.52%	3.24%	29.61%	**$204,746**
2011	$708,660	$483,677	$23,722	$42,554	57.75%	5.52%	3.35%	33.39%	**$236,586**
2010	$598,468	$409,698	$24,956	$42,408	56.77%	5.52%	4.17%	33.54%	**$200,747**
2009	$536,098	$392,311	$26,102	$34,576	62.00%	5.52%	4.87%	27.62%	**$148,048**
2008	$577,061	$382,453	$24,862	$31,843	56.55%	5.52%	4.31%	33.62%	**$194,015**

3.4.3 The Charolais Family

Curtiss and Cathy Charolais started their crop operation in 1973 when Curtis was 23 years old. Now, in 2008, Curtiss is 58 and Cathy is 56. Their daughter, Christa, and son-in-law, Alex Angus, are interested in taking over the farm when Curtiss and Cathy retire. Christa is 35 years old with one child, Avery (11). Curtiss and Cathy also have a daughter, Carmen (29), and a son, Carl (26), neither of which are involved in the farm.

The farm consists of 144 beef cows and 1041 acres total, rotating between corn, soybeans, and wheat, with a loan of $86,783. The farm is worth $437,887. Curtiss is fully employed by the farm, while Cathy works off-farm as a nurse, with a nonfarm income of $53,610. Christa works off-farm as an ag extension agent, and Alex continues his work as an AI technician. Their total nonfarm income is $72,339 after taxes.

Both Christa and Alex plan to continue in their respective careers but want to commit to the farm. Curtiss and Cathy are excited Christa and Alex are looking to take on larger roles, as this will help them step towards retirement and spend more time with their grandchildren. Alex will oversee the breeding and genetics program while Christa will take a lead in the shop with equipment maintenance.

The first six years of this arrangement provide some side income of approximately $100,000 each year. The farm's net worth grows to $751,648 during this time. Unfortunately, 2015 proves to be a tough year with a net income of a mere $1,595. Since Cathy, Christa, and Alex all have income streams off the farm, they can continue to cover their personal and farm expenses during this time. The last six years of this simulation don't reach the income levels of the first few years, but by 2020, the farm's net worth is now $1,238,917. Curtiss is ready to retire, and Cathy is making plans to retire herself. Avery is now 23 and has continued to work on the family farm while settling into her career in marketing for a local agricultural cooperative.

Table 3.3: Charolais Family Farms Financials 2008-2020

Year	Gross Inc	Total Exp	Int Exp	Dep Exp	OER	DER	IER	Net Income %	Net Income
2020	$373,726	$305,824	$1,102	$27,140	74.27%	4.75%	0.15%	20.83%	**$69,196**
2019	$318,069	$258,170	$1,719	$27,892	71.86%	4.75%	0.27%	23.12%	**$54,585**
2018	$283,909	$241,950	$2,290	$29,151	74.15%	4.75%	0.40%	20.70%	**$60,290**
2017	$237,888	$213,121	$2,821	$26,835	77.12%	4.75%	0.59%	17.53%	**$48,802**
2016	$227,858	$213,178	$3,313	$29,911	78.98%	4.75%	0.73%	15.54%	**$12,251**
2015	$270,199	$301,386	$3,770	$33,435	97.77%	4.75%	0.70%	-3.22%	**$1,595**
2014	$250,889	$239,001	$4,194	$33,225	80.35%	4.75%	0.84%	14.06%	**$121,527**
2013	$375,171	$284,270	$4,587	$33,335	65.66%	4.75%	0.61%	28.97%	**$108,720**
2012	$384,144	$271,005	$4,952	$30,442	61.33%	4.75%	0.64%	33.27%	**$132,815**
2011	$434,205	$296,355	$5,291	$27,687	60.66%	4.75%	0.61%	33.98%	**$183,639**
2010	$328,416	$224,827	$5,605	$27,591	58.35%	4.75%	0.85%	36.04%	**$144,475**
2009	$316,910	$231,911	$5,897	$22,496	64.22%	4.75%	0.93%	30.10%	**$90,141**
2008	$435,937	$288,921	$6,167	$20,718	60.11%	4.75%	0.71%	34.43%	**$149,374**

3.5 Assessment of Sweat Equity Agreements

Each sweat equity arrangement will be applied to each farm to determine the final value at the end of the 12-year model. Should either the Heir or the Owner generation reach a Total Savings value of less than or equal to zero, the simulation for that arrangement on that farm will be considered a failure, and the simulation will not continue for additional years. The overall success of the farm is dependent on the success of both generations.

The final analysis of the success of each arrangement on each farm will be determined by a sum of the Total Savings, Total Reinvestment, and Total Sweat Equity for the Heir. The arrangement with the highest value will be deemed the best arrangement for each farm while the arrangement with the lowest value will be deemed the least successful arrangement. The arrangement that is determined to be the best for most farms will be considered the best overall arrangement in this simulation.

CHAPTER IV: RESULTS

This chapter provides the results of each simulation. First, the percentage agreement will be analyzed on the Swiss Family, the Milo Family, and then the Charolais Family. Then, the Salary Agreement will be analyzed for the Swiss Family, the Milo Family, and then the Charolais Family. Finally, the Hourly Agreement will be analyzed for the Swiss Family, the Milo Family, and then the Charolais Family.

4.1 Percentage Agreement

4.1.1 The Swiss Family

Steve, Sue, Sheri, and Grant sit down and decide Sheri will receive 25% of the total net income of the farm in the first year instead of the hourly rate she and Grant each received prior. Steve and Sue will then increase Sheri's percentage by about 4.2% each year to compensate for the increased labor and management decisions as the parents start to take a step back each year. This allows Sheri to grow in this role while still having access to her parents' knowledge and experiences.

At the end of 2008, Sheri and Grant put $5,091 in savings and reinvest $20,363 into the farm. Even with the tough dairy economy in 2009, they can still save $6,182 and reinvest $24,728 during that year. The turnaround in market prices in 2011 allows them to save $9,260 and reinvest $37,040. Sheri's off-farm job has allowed her to make great investments in the farm, but it's time for her to focus all her time on the operation. As Sheri leaves her job and switches to full-time employment on the farm at the end of 2013, she's able to save $13,872 and reinvest an impressive $55,489 throughout 2014. Ag markets take a turn again in 2016, and Sheri is not able to save or reinvest in the farm after paying for family living expenses and taxes but had $57,809 in savings and reinvested a total of $213,832 since the beginning of this transition. Markets continue to be rough through 2019,

but 2020 sees improvement, allowing Sheri to start saving and reinvesting in the farm again.

Table 4.1: Swiss Family Dairy Heir Percentage Agreement 2008-2020

Year	Net Inc	Heir %	Heir NI	NonFarm Inc	Household Exp	Annual Savings	Total Savings	Annual Reinvest	Total Reinvest
2020	$193,969	75%	$124,314	$62,863	$87,400	$17,323	**$94,374**	$69,292	**$324,862**
2019	$107,304	71%	$64,940	$61,032	$87,656	$6,594	**$73,381**	$26,375	**$255,570**
2018	$60,901	67%	$34,683	$59,255	$99,322	$(4,160)	**$63,607**	$-	**$229,195**
2017	$108,499	63%	$57,917	$57,529	$89,428	$3,841	**$64,540**	$15,363	**$229,195**
2016	$47,109	59%	$23,465	$55,853	$87,987	$(8,669)	**$57,809**	$-	**$213,832**
2015	$117,976	54%	$54,552	$54,226	$90,216	$2,429	**$63,312**	$9,716	**$213,832**
2014	$262,332	50%	$111,937	$52,647	$82,053	$13,872	**$57,984**	$55,489	**$204,116**
2013	$102,909	46%	$40,238	$67,487	$74,418	$6,661	**$42,011**	$26,645	**$148,627**
2012	$91,985	42%	$32,682	$65,521	$79,440	$3,753	**$33,666**	$15,011	**$121,981**
2011	$125,899	38%	$40,237	$71,330	$65,267	$9,260	**$28,489**	$37,040	**$106,970**
2010	$89,875	33%	$25,515	$69,252	$63,720	$6,210	**$18,313**	$24,838	**$69,930**
2009	$63,575	29%	$15,779	$74,509	$59,378	$6,182	**$11,528**	$24,728	**$45,092**
2008	$118,632	25%	$25,209	$72,339	$65,294	$5,091	**$5,091**	$20,363	**$20,363**

During 2020, Sheri can reinvest another $69,292 for a total reinvestment of $324,862 during this transition period. The total farm net worth started at $819,903 and is now $2,629,442. During this 12-year simulation, the farm's net worth increases by $1,809,540, of which $908,389 is attributed to Sheri's contributions. Given her investment of $324,862, her sweat equity is worth $583,527.

Table 4.2 Swiss Family Dairy Percentage Agreement Sweat Equity

Total Change in Farm Net Worth	$1,809,540
Heir Contribution	$908,389
Total Heir Reinvestment	$342,862
Total Sweat Equity	**$583,527**

While it's an adjustment for everyone, the first year of this arrangement works well for Steve and Sue, who can save $14,103 and reinvest $56,411. 2009 proves to be challenging for the dairy industry, but they are still able to set aside $8,674 and reinvest $34,696. Steve and Sue begin to get a taste of retirement in 2015 as they are now responsible for less than half of the dairy, which allows them to spend more time with their

grandchildren on and off the farm. Up until this point in the transition, they're able to save a total of $105,074 and reinvest $352,231. 2016 is another tough year in the dairy industry, as Steve and Sue can only set aside $3,348 and reinvest $13,393. As they're working towards retirement, they've intended to reinvest less into the farm as time goes on. As 2020 arrives, Steve and Sue have saved a total of $168,591 to put towards the retirement they've been saving for during their career and have invested $479,385 back into the farm.

Table 4.3: Swiss Family Dairy Owner Percentage Agreement 2008-2020

Year	Net Inc	Owner %	Owner NI	NonFarm Inc	Household Exp	Annual Savings	Total Savings	Annual Reinvest	Total Reinvest
2020	$193,969	25%	$41,084	$76,435	$67,861	$10,113	**$168,591**	$40,451	**$479,385**
2019	$107,304	29%	$26,608	$74,209	$70,767	$6,251	**$150,932**	$25,004	**$438,934**
2018	$60,901	33%	$17,304	$72,047	$68,468	$4,333	**$137,791**	$17,334	**$413,930**
2017	$108,499	37%	$34,751	$69,949	$65,542	$7,743	**$127,103**	$30,971	**$396,596**
2016	$47,109	41%	$16,792	$67,912	$68,723	$3,348	**$113,676**	$13,393	**$365,624**
2015	$117,976	46%	$46,319	$65,934	$66,380	$9,056	**$105,074**	$36,225	**$352,231**
2014	$262,332	50%	$112,482	$64,013	$70,004	$18,398	**$91,446**	$73,592	**$316,006**
2013	$102,909	54%	$47,847	$62,149	$68,925	$8,092	**$69,569**	$32,367	**$242,414**
2012	$91,985	58%	$46,094	$60,339	$66,040	$7,961	**$58,550**	$31,843	**$210,047**
2011	$125,899	62%	$67,641	$58,581	$60,333	$11,434	**$48,180**	$45,735	**$178,204**
2010	$89,875	67%	$51,537	$56,875	$56,050	$10,341	**$34,996**	$41,362	**$132,469**
2009	$63,575	71%	$38,755	$55,218	$50,108	$8,674	**$23,482**	$34,696	**$91,107**
2008	$118,632	75%	$76,606	$53,610	$49,827	$14,103	**$14,103**	$56,411	**$56,411**

4.1.2 The Milo Family

Michael, Mary, Matt, and Angie sit down and decide Matt will receive 25% of the total net income of the farm in the first year instead of the hourly rate Matt received prior. Michael and Mary will then increase Matt's percentage by about 4.2% each year to compensate for the increased labor and management decisions as the parents start to take a step back each year. This allows Matt to grow in this role while still having access to his parents' knowledge and experiences.

At the end of 2008, Matt and Angie put $13,602 in savings and reinvest $54,406. As market prices start to slide in 2013, Matt is still able to save $11,755 and reinvest $47,018. Ag markets take a downward turn again in 2015, and Matt is not able to save or

reinvest as he needs to dip into savings to cover expenses. Despite this, he has saved $94,633 and reinvested $338,382 since the beginning of this transition. Even so, Matt feels it's time to leave his off-farm job and commit to the farm as it's taking more of his time and attention in 2017. Unfortunately, markets continue to be rough through 2019, but 2020 sees improvement, allowing Matt to start reinvesting in the farm again.

Table 4.4: Milo Family Acres Heir Percentage Agreement 2008-2020

Year	Net Inc	Heir %	Heir NI	NonFarm Inc	Household Exp	Savings	Total Savings	Heir Reinvest	Total Reinvest
2020	$127,269	75%	$95,961	$62,863	$90,592	$9,424	**$159,725**	$43,070	**$481,045**
2019	$136,282	71%	$97,033	$61,032	$103,940	$6,556	**$143,144**	$31,656	**$443,348**
2018	$98,236	67%	$65,818	$59,255	$71,509	$9,133	**$130,084**	$34,953	**$417,126**
2017	$67,123	63%	$42,153	$57,529	$71,168	$4,438	**$115,192**	$17,753	**$380,594**
2016	$49,471	59%	$28,990	$73,745	$67,813	$6,115	**$105,479**	$24,459	**$362,841**
2015	$(32,228)	54%	$(17,532)	$71,597	$73,365	$(10,615)	**$94,633**	$-	**$338,382**
2014	$40,251	50%	$20,206	$77,944	$82,053	$2,613	**$100,236**	$10,453	**$338,382**
2013	$172,292	46%	$79,254	$75,674	$74,418	$12,139	**$92,974**	$54,898	**$327,929**
2012	$204,746	42%	$85,584	$73,470	$79,440	$13,233	**$76,985**	$53,421	**$279,372**
2011	$236,586	38%	$88,956	$79,047	$65,267	$16,099	**$60,716**	$71,514	**$226,439**
2010	$200,747	33%	$67,049	$76,744	$57,965	$15,154	**$42,492**	$60,617	**$162,042**
2009	$148,048	29%	$43,230	$74,509	$52,482	$11,755	**$26,036**	$47,018	**$101,425**
2008	$194,015	25%	$48,504	$72,339	$45,559	$13,602	**$13,602**	$54,406	**$54,406**

During 2020, Matt can reinvest another $9,424 for a total savings of $159,502 and total reinvestment of $481,045 during this transition period. The total farm net worth started at $843,782 and is now $2,807,306. During this 12-year simulation, the farm's net worth increases by $1,963.524, of which $985,689 is attributed to Matt's contributions. Given his investment of $481,405, his sweat equity ends up being $504,644.

Table 4.5 Milo Family Acres Percentage Agreement Sweat Equity

Total Change in Farm Net Worth	$1,963,524
Heir Contribution	$985,689
Total Heir Reinvestment	$481,045
Total Sweat Equity	**$504,644**

The first year of this arrangement works well for the Milo Family. Michael and Mary can get the additional help they've been needing around the farm and already are

seeing some improvements on the property. With this, they can save $22,583 and reinvest $90,333. Michael and Mary begin to get a taste of retirement in 2015 as they are now responsible for less than half of the crops, which allows them to spend more time with their grandchildren on and off the farm. Unfortunately, 2015 happens to be a down year for grains, so they must dip into their savings to cover their family living expenses and cannot reinvest this year. Up until this point in the transition, they're able to save a total of $136,234 and reinvest $442,704. As they're working towards retirement, they've intended to reinvest less into the farm as time goes on. As 2020 arrives, Michael and Mary have set aside a total of $206,296 to put towards the retirement they've been saving for during their career and have invested $562,057 back into the farm.

Table 4.6: Milo Family Acres Owner Percentage Agreement 2008-2020

Year	Net Inc	Owner %	Owner NI	NonFarm Inc	Household Exp	Annual Savings	Total Savings	Owner Reinvest	Total Reinvest
2020	$127,269	25%	$26,956	$76,435	$67,861	$7,225	**$206,296**	$28,900	**$562,057**
2019	$136,282	29%	$33,794	$74,209	$70,767	$7,596	**$189,591**	$30,385	**$533,157**
2018	$98,236	33%	$27,912	$72,047	$68,468	$6,421	**$173,329**	$25,686	**$502,772**
2017	$67,123	37%	$21,499	$69,949	$65,542	$5,276	**$158,959**	$21,104	**$477,086**
2016	$49,471	41%	$17,634	$67,912	$68,723	$3,319	**$146,365**	$13,278	**$455,982**
2015	$(32,228)	46%	$(12,653)	$65,934	$66,380	$(15,142)	**$136,234**	$-	**$442,704**
2014	$40,251	50%	$17,259	$64,013	$70,004	$11,047	**$144,168**	$-	**$442,704**
2013	$172,292	54%	$80,105	$62,149	$68,925	$12,600	**$126,782**	$50,401	**$442,704**
2012	$204,746	58%	$102,599	$60,339	$66,040	$16,734	**$108,744**	$66,936	**$392,303**
2011	$236,586	62%	$127,109	$58,581	$60,333	$21,794	**$87,629**	$87,176	**$325,367**
2010	$200,747	67%	$115,113	$56,875	$56,050	$20,220	**$62,700**	$80,878	**$238,190**
2009	$148,048	71%	$90,248	$55,218	$50,108	$16,745	**$40,457**	$66,979	**$157,312**
2008	$194,015	75%	$125,285	$53,610	$49,827	$22,583	**$22,583**	$90,333	**$90,333**

4.1.3 The Charolais Family

Curtiss, Cathy, Christa, and Alex sit down and decide Christa and Alex will receive 25% of the total net income of the farm in the first year instead of the hourly rate she and Grant each received prior. Steve and Sue will then increase their percentage by about 4.2% each year to compensate for the increased labor and management decisions as the parents

start to take a step back each year. This allows them to grow in this role while still having access to her parents' knowledge and experiences.

At the end of 2008, Christa and Alex set aside $7,757 in savings and reinvest $31,030. Even with the tough economy in 2009, they can still save $7,501 and reinvest $30,003 during that year. The turnaround in market prices in 2011 allows them to set aside $12,7859 and reinvest $31,837. Both the crop and beef markets hit record lows in 2015, which requires them to pull $2,555 out of savings to cover expenses, but they've already saved $75,612 and reinvested $265,133 total by this point. As Christa leaves her job and switches to full-time employment on the farm at the end of 2018, they are only able to reinvest $5,267 as she needs to pay self-employment taxes and family living expenses continue to increase. Markets continue to be rough through 2019, but 2020 sees improvement, allowing Christa and Alex to start reinvesting in the farm again.

Table 4.7: Charolais Family Farms Heir Percentage Agreement 2008-2020

Year	Net Inc	Heir %	Heir NI	NonFarm Inc	Household Exp	Savings	Total Savings	Heir Reinvest	Total Reinvest
2020	$69,196	75%	$52,174	$62,863	$67,861	$8,183	**$120,968**	$32,732	**$367,678**
2019	$54,585	71%	$38,865	$61,032	$70,767	$4,893	**$107,414**	$19,573	**$334,946**
2018	$60,290	67%	$40,394	$59,255	$68,468	$5,267	**$97,639**	$21,067	**$315,373**
2017	$48,802	63%	$30,648	$75,957	$65,542	$7,293	**$87,973**	$29,173	**$294,306**
2016	$12,251	59%	$7,179	$73,745	$82,761	$(2,555)	**$76,838**	$-	**$265,133**
2015	$1,595	54%	$867	$80,282	$86,192	$(5,129)	**$75,612**	$-	**$265,133**
2014	$121,527	50%	$61,006	$77,944	$89,102	$8,140	**$76,896**	$32,558	**$265,133**
2013	$108,720	46%	$50,011	$75,674	$78,388	$7,959	**$65,483**	$31,837	**$232,575**
2012	$132,815	42%	$55,517	$81,418	$71,811	$11,359	**$54,784**	$45,437	**$200,739**
2011	$183,639	38%	$69,048	$79,047	$73,943	$12,759	**$41,357**	$51,036	**$155,301**
2010	$144,475	33%	$48,254	$76,744	$63,720	$10,808	**$27,237**	$43,233	**$104,266**
2009	$90,141	29%	$26,321	$74,509	$59,378	$7,501	**$15,646**	$30,003	**$61,033**
2008	$149,374	25%	$37,344	$72,339	$65,294	$7,757	**$7,757**	$31,030	**$31,030**

In 2020, Christa and Alex reinvest another $32,732 for a total reinvestment of $367,678 during this transition period. The total farm net worth started at $437,887 and is now $1,238,917. During this 12-year simulation, the farm's net worth increases by

$801,030, of which $400,515 is attributed to Christa and Alex's contributions. Given their investment of $367,678, their sweat equity is $32,837.

Table 4.8 Charolais Family Farms Percentage Agreement Sweat Equity

Total Change in Farm Net Worth	$801,030
Heir Contribution	$400,515
Total Heir Reinvestment	$367,678
Total Sweat Equity	**$32,837**

The first year of this arrangement works well for the Charolais and Angus Families. Curtiss and Cathy can get the additional help they've been needing around the farm and already are seeing some improvements on the property. With this, they can save $17,561 and reinvest $70,245. Curtiss and Cathy begin to get a taste of retirement in 2015 as they are now responsible for less than half of the operation, which allows them to spend more time with their grandchildren on and off the farm. Unfortunately, 2015 happens to be a down year for both beef and grains, so they must dip into their savings to cover their family living expenses and cannot reinvest this year. Up until this point in the transition, they're able to save a total of $106,639 and reinvest $341,678. As they're working towards retirement, they've intended to reinvest less into the farm as time goes on. As 2020 arrives, Curtiss and Cathy have set aside a total of $169,172 to put towards the retirement they've been saving for during their career and have invested $396,497 back into the farm.

Table 4.9: Charolais Family Farms Owner Percentage Agreement 2008-2020

Year	Net Inc	Owner %	Owner NI	NonFarm Inc	Household Exp	Annual Savings	Total Savings	Annual Reinvest	Total Reinvest
2020	$69,196	25%	$17,022	$76,435	$67,861	$4,711	**$169,172**	$18,843	**$396,497**
2019	$54,585	29%	$15,721	$74,209	$70,767	$17,276	**$156,630**	$-	**$377,654**
2018	$60,290	33%	$19,896	$72,047	$68,468	$4,217	**$132,718**	$16,870	**$377,654**
2017	$48,802	37%	$18,155	$69,949	$65,542	$4,077	**$122,381**	$16,306	**$360,784**
2016	$12,251	41%	$5,072	$67,912	$68,723	$700	**$112,671**	$2,800	**$344,477**
2015	$1,595	46%	$727	$65,934	$66,380	$42	**$106,639**	$166	**$341,678**
2014	$121,527	50%	$60,520	$64,013	$70,004	$7,880	**$101,522**	$31,519	**$341,511**
2013	$108,720	54%	$58,709	$62,149	$68,925	$7,451	**$89,183**	$29,804	**$309,992**
2012	$132,815	58%	$77,298	$60,339	$66,040	$10,454	**$77,840**	$41,818	**$280,188**
2011	$183,639	62%	$114,591	$58,581	$60,333	$16,838	**$64,176**	$67,353	**$238,370**
2010	$144,475	67%	$96,220	$56,875	$56,050	$14,598	**$45,084**	$58,392	**$171,017**
2009	$90,141	71%	$63,820	$55,218	$50,108	$10,595	**$29,034**	$42,380	**$112,625**
2008	$149,374	75%	$112,031	$53,610	$49,827	$17,561	**$17,561**	$70,245	**$70,245**

4.2 Salary Agreement

4.2.1 The Swiss Family

Steve, Sue, Sheri, and Grant sit down and decide Sheri will receive compensation equivalent to her current salary. Since the farm can't promise this amount of liquid cash will be available each year, Sheri's family will live in a home owned by the farm to reduce family living expenses.

At the end of 2008, Sheri and Grant set aside $3,965 for savings and reinvest $15,860. The salary agreement is already showing value in 2009 with the tough dairy economy as they can still save $5,861 and reinvest $23,444. 2016 is another rough year in the industry, and the salary allows Sheri and Grant to save $5,731 and reinvest $22,923.

Table 4.10: Swiss Family Dairy Heir Salary Agreement 2008-2020

Year	Heir Salary	NonFarm Inc	Household Exp	Annual Savings	Total Savings	Annual Reinvest	Total Reinvest
2020	$52,045	$62,863	$72,809	$7,171	**$100,795**	$28,683	**$300,778**
2019	$50,529	$61,032	$70,025	$7,095	**$89,166**	$28,378	**$272,095**
2018	$49,057	$59,255	$75,744	$5,336	**$78,164**	$21,345	**$243,717**
2017	$47,629	$57,529	$69,446	$5,999	**$69,359**	$23,997	**$222,372**
2016	$46,241	$55,853	$66,504	$5,731	**$60,343**	$22,923	**$198,375**
2015	$44,894	$54,226	$61,078	$6,262	**$52,012**	$25,047	**$175,452**
2014	$43,587	$52,647	$57,856	$5,583	**$43,571**	$22,332	**$150,405**
2013	$37,834	$51,114	$55,890	$5,477	**$36,179**	$21,906	**$128,073**
2012	$36,732	$49,625	$56,762	$4,817	**$29,241**	$19,268	**$106,167**
2011	$35,662	$48,179	$50,032	$5,692	**$23,261**	$22,768	**$86,899**
2010	$34,624	$46,776	$45,172	$6,207	**$16,732**	$24,827	**$64,131**
2009	$33,615	$45,414	$44,682	$5,861	**$10,024**	$23,444	**$39,303**
2008	$32,636	$44,091	$52,007	$3,965	**$3,965**	$15,860	**$15,860**

At the end of 2020, Sheri saved $100,795 and reinvested $300,778 during this transition period. The total farm net worth started at $819,903 and is now $2,629,442. During this 12-year simulation, the farm's net worth increased by $1,809,540, half of which ($904,770) is attributed to Sheri's contributions. Given her investment of $300,778, her sweat equity is worth $603,992.

Table 4.11 Swiss Family Dairy Salary Agreement Sweat Equity

Total Change in Farm Net Worth	$1,809,540
Heir Contribution	$904,770
Total Heir Reinvestment	$300,778
Total Sweat Equity	**$603,992**

While it's an adjustment for everyone, the first year of this arrangement works well for Steve and Sue, who can save $12,024 and reinvest $48,096. 2009 proves to be challenging for the dairy industry, and unfortunately, Steve and Sue can only set aside $3,835 and reinvest $15,341. Steve and Sue begin to get a taste of retirement in 2015 as they are now responsible for less than half of the dairy, which allows them to spend more time with their grandchildren on and off the farm. Up until this point in the transition, they're able to save a total of $9,579 and reinvest $38,318. 2016 is another tough year in the dairy industry, and Steve and Sue's expenses exceed their income, requiring them to dip into their savings, which they can do due to prior success. As they're working towards retirement, they've intended to reinvest less into the farm as time goes on. As 2020 arrives, Steve and Sue have saved a total of $161,493 to put towards the retirement they've been saving for during their career and have invested $507,558 back into the farm.

Table 4.12: Swiss Family Dairy Owner Salary Agreement 2008-2020

Year	Net Inc	NonFarm Inc	Household Exp	Heir Salary	Annual Savings	Total Savings	Annual Reinvest	Total Reinvest
2020	$62,863	$76,435	$88,679	$52,045	$22,668	$161,493	$90,671	**$507,558**
2019	$61,032	$74,209	$93,111	$50,529	$8,393	$132,215	$33,570	**$416,888**
2018	$59,255	$72,047	$86,811	$49,057	$1,444	$117,926	$5,778	**$383,318**
2017	$57,529	$69,949	$82,539	$47,629	$8,640	$110,935	$34,559	**$377,540**
2016	$55,853	$67,912	$85,931	$46,241	$(6,822)	$97,424	$-	**$342,981**
2015	$54,226	$65,934	$88,281	$44,894	$9,579	$99,282	$38,318	**$342,981**
2014	$52,647	$64,013	$94,769	$43,587	$30,358	$85,431	$121,431	**$304,663**
2013	$51,114	$62,149	$93,491	$37,834	$6,514	$52,450	$26,057	**$183,233**
2012	$49,625	$60,339	$87,044	$36,732	$5,311	$43,749	$21,244	**$157,176**
2011	$48,179	$58,581	$76,452	$35,662	$11,402	$36,607	$45,608	**$135,931**
2010	$46,776	$56,875	$69,831	$34,624	$6,721	$24,005	$26,886	**$90,323**
2009	$45,414	$55,218	$66,148	$33,615	$3,835	$16,461	$15,341	**$63,438**
2008	$44,091	$53,610	$62,984	$32,636	$12,024	$12,024	$48,096	**$48,096**

4.2.2 The Milo Family

Michael, Mary, Matt, and Angie sit down and decide Matt will receive compensation equivalent to his current salary. Since the farm can't promise this amount of liquid cash will be available each year, Matt's family will live in a home owned by the farm to reduce family living expenses.

At the end of 2008, Matt sets aside $7,135 for savings and reinvests $29,260. Investments slowly decrease as family living expenses continue to rise. Taxes and family living costs each see a hike in 2012, but Matt continues to save $4,817 and reinvest $19,268.

Table 4.13: Milo Family Acres Heir Salary Agreement 2008-2020

Year	Heir Salary	NonFarm Inc	Household Exp	Annual Savings	Total Savings	Annual Reinvest	Total Reinvest
2020	$52,045	$62,863	$67,234	$8,286	**$123,385**	$33,143	**$368,820**
2019	$50,529	$61,032	$77,038	$5,692	**$109,618**	$22,768	**$335,677**
2018	$49,057	$59,255	$53,431	$9,799	**$98,978**	$39,195	**$312,909**
2017	$47,629	$57,529	$53,038	$9,281	**$84,932**	$37,123	**$273,713**
2016	$46,241	$55,853	$49,874	$9,057	**$72,049**	$36,227	**$236,590**
2015	$44,894	$54,226	$55,694	$7,339	**$59,992**	$29,354	**$200,363**
2014	$43,587	$52,647	$57,856	$6,368	**$50,147**	$25,472	**$171,009**
2013	$37,834	$51,114	$55,890	$5,477	**$41,694**	$21,906	**$145,537**
2012	$36,732	$49,625	$56,762	$4,817	**$34,493**	$19,268	**$123,631**
2011	$35,662	$48,179	$50,032	$5,692	**$28,263**	$22,768	**$104,363**
2010	$34,624	$46,776	$45,520	$6,137	**$21,496**	$24,549	**$81,595**
2009	$33,615	$45,414	$39,254	$6,947	**$14,627**	$27,786	**$57,046**
2008	$32,636	$44,091	$35,257	$7,315	**$7,315**	$29,260	**$29,260**

At the end of 2020, Matt saved $123,385 and reinvested $368,820 during this transition period. The total farm net worth started at $843,782 and is now $2,807,306. During this 12-year simulation, the farm's net worth increased by $1,963,524, half of which, $985,689, is attributed to Matt's contributions. Given his investment of $366,82, his sweat equity is worth $612,942.

Table 4.14 Milo Family Acres Salary Agreement Sweat Equity

Total Change in Farm Net Worth	$1,963,524
Heir Contribution	$981,762
Total Heir Reinvestment	$368,820
Total Sweat Equity	**$612,942**

The first year of this arrangement works well for the Milo Family. Michael and Mary can get the additional help they've been needing around the farm and already are seeing some improvements on the property. With this, they can save $22,168 and reinvest $88,670. Over the next five years, they set aside a total of $140,160 and reinvest $493,614. Things take a turn for the worst in 2014 when expenses outweigh income by $10,747 and $69,590 in 2015, which they can cover with prior savings. While things start to improve in 2016, they still need to take $104 out of savings to cover expenses, which means they don't reinvest for three years. Thankfully, due to prior success on the farm, this is a short-term setback as they had savings from which to pull. Things start to turn around in 2017 as Michael and Mary save $1,424 and reinvest $5,696. These aren't large numbers, but they are a welcome sight to the farm's financials. Things slowly improve through 2020, allowing a total savings of $125,985 and total reinvestment of $616,236.

Table 4.15: Milo Family Acres Owner Salary Agreement 2008-2020

Year	Net Inc	NonFarm Inc	Household Exp	Heir Salary	Annual Savings	Total Savings	Annual Reinvest	Total Reinvest
2020	$127,269	$76,435	$67,861	$52,045	$11,160	**$125,985**	$44,639	**$616,236**
2019	$136,282	$74,209	$70,767	$50,529	$11,843	**$109,357**	$47,370	**$571,597**
2018	$98,236	$72,047	$68,468	$49,057	$6,229	**$92,871**	$24,917	**$524,227**
2017	$67,123	$69,949	$65,542	$42,583	$1,424	**$82,516**	$5,696	**$499,310**
2016	$49,471	$67,912	$68,723	$41,342	$(104)	**$77,231**	$-	**$493,614**
2015	$(32,228)	$65,934	$66,380	$40,138	$(69,590)	**$73,652**	$-	**$493,614**
2014	$40,251	$64,013	$70,004	$38,969	$(10,747)	**$136,421**	$-	**$493,614**
2013	$172,292	$62,149	$68,925	$37,834	$15,888	**$140,160**	$63,552	**$493,614**
2012	$204,746	$60,339	$66,040	$36,732	$20,997	**$118,354**	$83,987	**$430,062**
2011	$236,586	$58,581	$60,333	$35,662	$26,586	**$92,721**	$106,342	**$346,075**
2010	$200,747	$56,875	$56,050	$34,624	$22,148	**$62,986**	$88,591	**$239,733**
2009	$148,048	$55,218	$50,108	$33,615	$15,618	**$38,894**	$62,472	**$151,142**
2008	$194,015	$53,610	$49,827	$32,636	$22,168	**$22,168**	$88,670	**$88,670**

4.2.3 The Charolais Family

Curtiss, Cathy, Christa, and Alex sit down and decide Christa and Alex will receive compensation equivalent to her current salary. Since the farm can't promise this amount of liquid cash will be available each year, Christa and Alex's family will live in a home owned by the farm to reduce family living expenses.

At the end of 2008, Christa and Alex set aside $3,965 in savings and reinvest $15,860. The salary arrangement provides value already in the second year as the ag economy goes into a downturn. They can save $5,861 and reinvest $23,444 during that year. Both the crop and beef markets hit record lows in 2015, which further exemplifies the benefit of a salary and allows them to save $3,991 and reinvest $15,965. The final year allows them to save $10,793 and reinvest $43,172.

Table 4.16: Charolais Family Farms Heir Salary Agreement 2008-2020

Year	Heir Salary	NonFarm Inc	Household Exp	Annual Savings	Total Savings	Heir Reinvest	Total Reinvest
2020	$52,045	$62,863	$54,698	$10,793	**$111,041**	$43,172	**$342,521**
2019	$50,529	$61,032	$56,691	$9,761	**$95,474**	$39,046	**$299,349**
2018	$43,860	$59,255	$55,305	$9,424	**$81,631**	$37,696	**$260,303**
2017	$42,583	$57,529	$52,646	$9,359	**$68,769**	$37,437	**$222,607**
2016	$41,342	$55,853	$69,689	$5,094	**$56,581**	$20,375	**$185,170**
2015	$40,138	$54,226	$68,387	$4,800	**$49,035**	$19,200	**$164,795**
2014	$38,969	$52,647	$60,594	$5,820	**$42,129**	$23,281	**$145,595**
2013	$37,834	$51,114	$55,785	$5,498	**$34,579**	$21,990	**$122,314**
2012	$36,732	$49,625	$55,756	$5,018	**$27,697**	$20,073	**$100,324**
2011	$35,662	$48,179	$58,342	$4,030	**$21,599**	$16,120	**$80,251**
2010	$34,624	$46,776	$45,172	$6,207	**$16,732**	$24,827	**$64,131**
2009	$33,615	$45,414	$44,682	$5,861	**$10,024**	$23,444	**$39,303**
2008	$32,636	$44,091	$52,007	$3,965	**$3,965**	$15,860	**$15,860**

At the end of 2020, Christa and Alex saved $111,041 and reinvested $342,521 during this transition period. The total farm net worth started at $437,887 and is now $1,238,917. During this 12-year simulation, the farm's net worth increased by $801,030, half of which, $400,515, is attributed to Christa and Alex's contributions. Given their investment of $342,521, their sweat equity is worth $57,995.

Table 4.17 Charolais Family Farms Salary Agreement Sweat Equity

Total Change in Farm Net Worth	$801,030
Heir Contribution	$400,515
Total Heir Reinvestment	$342,521
Total Sweat Equity	**$57,995**

The first year of this arrangement works well for the Charolais and Angus Families. Curtiss and Cathy can get the additional help they've been needing around the farm and already are seeing some improvements on the property. With this, they can save $16,636 and reinvest $66,542. Curtiss and Cathy begin to get a taste of retirement in 2015 as they are now responsible for less than half of the operation, which allows them to spend more time with their grandchildren on and off the farm. Unfortunately, 2015 happens to be a down year for both beef and grains, so they must dip into their savings to cover their

expenses by $39,150 They will need to rely on savings again for $31,741 in 2016. With this, they are not able to reinvest in the farm but can continue since their prior success on the farm provided the savings. Cash flow continues to be slow until 2020 when Curtiss and Cathy can set aside $3,484 and reinvest $13,938. Throughout this time, they've saved a total of $61,456 but have reinvested a total of $369,954.

Table 4.18: Charolais Family Farms Owner Salary Agreement 2008-2020

Year	Net Inc	NonFarm Inc	Household Exp	Heir Salary	Annual Savings	Total Savings	Annual Reinvest	Total Reinvest
2020	$69,196	$76,435	$88,679	$52,045	$3,484	**$61,456**	$13,938	**$369,954**
2019	$54,585	$74,209	$93,111	$50,529	$948	**$55,211**	$-	**$356,016**
2018	$60,290	$72,047	$86,811	$49,057	$1,515	**$51,680**	$6,061	**$356,016**
2017	$48,802	$69,949	$82,539	$42,583	$4,770	**$47,775**	$-	**$349,955**
2016	$12,251	$67,912	$85,931	$41,342	$(31,741)	**$40,957**	$-	**$349,955**
2015	$1,595	$65,934	$88,281	$40,138	$(39,150)	**$69,236**	$-	**$349,955**
2014	$121,527	$64,013	$94,769	$38,969	$9,237	**$103,224**	$36,948	**$349,955**
2013	$108,720	$62,149	$93,491	$37,834	$7,386	**$89,512**	$29,544	**$313,007**
2012	$132,815	$60,339	$87,044	$36,732	$11,436	**$78,215**	$45,742	**$283,463**
2011	$183,639	$58,581	$76,452	$35,662	$20,063	**$63,600**	$80,252	**$237,721**
2010	$144,475	$56,875	$69,831	$34,624	$14,911	**$41,463**	$59,646	**$157,469**
2009	$90,141	$55,218	$66,148	$33,615	$7,820	**$25,288**	$31,281	**$97,823**
2008	$149,374	$53,610	$62,984	$32,636	$16,636	**$16,636**	$66,542	**$66,542**

4.3 Hourly Agreement

4.3.1 The Swiss Family

Steve, Sue, Sheri, and Grant sit down and decide Sheri earns an hourly wage for her time during this transition arrangement. This wage rate will be based on the KFMA Employee Wage Rates and Compensation on Kansas Farms survey results for a Level 4 employee and will increase by 2% each year. She will be responsible for 25% of the labor and management of the herd in the first year, which will increase by about 4% each year. When she is ready to join the farm full-time, her wage will be based on the Level 5 wage rate, which will also increase annually by 2%.

At the end of 2008, Sheri and Grant put $8,299 in savings and reinvest $33,195 into the farm. The next year proves to be tough for the dairy economy, but this wage agreement

helps support Sheri as she is just beginning her dairy career. As Sheri leaves her job and switches to full-time employment on the farm at the end of 2013, she's still able to save $352 and reinvest $1,408 throughout 2014. As costs continue to increase in 2015, Sheri is not able to save or reinvest in the farm after paying for family living expenses and taxes but had $41,677 in savings and reinvested a total of $134,905 since the beginning of this transition. Navigating this transition continues to be challenging through 2018, but 2019 sees improvement, allowing Sheri to start saving and reinvesting in the farm again.

Table 4.19: Swiss Family Dairy Heir Hourly Wage Agreement 2008-2020

Year	Net Inc	Heir Wages	NonFarm Inc	Household Exp	Annual Savings	Total Savings	Annual Reinvest	Total Reinvest
2020	$193,969	$72,705	$62,019	$87,400	$6,008	**$69,246**	$24,032	**$195,449**
2019	$107,304	$66,655	$57,416	$87,656	$4,780	**$60,227**	$19,122	**$171,417**
2018	$60,901	$60,897	$52,970	$99,322	$1,309	**$52,806**	$5,237	**$152,295**
2017	$108,499	$55,417	$48,676	$89,428	$1,895	**$49,045**	$7,580	**$147,059**
2016	$47,109	$50,204	$44,530	$87,987	$1,143	**$44,904**	$4,573	**$139,479**
2015	$117,976	$45,249	$40,527	$90,216	$(1,541)	**$41,677**	$-	**$134,905**
2014	$262,332	$40,539	$36,665	$82,053	$352	**$41,160**	$1,408	**$134,905**
2013	$102,909	$34,585	$32,939	$74,418	$4,213	**$38,865**	$16,854	**$133,498**
2012	$91,985	$30,512	$29,344	$79,440	$2,205	**$33,002**	$8,819	**$116,644**
2011	$125,899	$26,647	$25,878	$65,267	$5,612	**$29,330**	$22,448	**$107,825**
2010	$89,875	$22,981	$22,537	$63,720	$5,163	**$22,589**	$20,653	**$85,377**
2009	$63,575	$19,506	$19,317	$52,482	$7,882	**$16,596**	$31,530	**$64,725**
2008	$118,632	$16,348	$16,348	$45,559	$8,299	**$8,299**	$33,195	**$33,195**

During 2020, Sheri can reinvest another $24,032 for a total reinvestment of $195,449 during this transition period. The total farm net worth started at $819,903 and is now $2,629,442. During this 12-year simulation, the farm's net worth increases by $1,809,540, of which $908,389 is attributed to Sheri's contributions. Given her investment of $195,449, her sweat equity is worth $709,321.

Table 4.20 Swiss Family Dairy Hourly Agreement Sweat Equity

Total Change in Farm Net Worth	$1,809,540
Heir Contribution	$904,770
Total Heir Reinvestment	$195,449
Total Sweat Equity	**$709,321**

While it's an adjustment for everyone, the first year of this arrangement works well for Steve and Sue, who can save $15,282 and reinvest $61,127. 2009 proves to be challenging for the dairy industry, but they are still able to set aside $6,695 and reinvest $26,780. Steve and Sue begin to get a taste of retirement in 2015 as they are now responsible for less than half of the dairy, which allows them to spend more time with their grandchildren on and off the farm. Up until this point in the transition, they're able to save a total of $116,357 and reinvest $396,306. 2016 is another tough year in the dairy industry, as Steve and Sue aren't able to put anything aside for savings or reinvestment. As they're working towards retirement, they've intended to reinvest less into the farm as time goes on. As 2020 arrives, Steve and Sue have saved a total of $168,661 to put towards the retirement they've been saving for during their career and have invested $528,050 back into the farm.

Table 4.21: Swiss Family Dairy Owner Hourly Wage Agreement 2008-2020

Year	Net Inc	Heir Wages	NonFarm Inc	Household Exp	Annual Savings	Total Savings	Annual Reinvest	Total Reinvest
2020	$193,969	$62,019	$76,435	$67,861	$19,570	**$168,661**	$78,281	$528,050
2019	$107,304	$57,416	$74,209	$70,767	$5,945	**$141,991**	$23,779	$449,769
2018	$60,901	$52,970	$72,047	$68,468	$(1,887)	**$129,568**	$-	$425,990
2017	$108,499	$48,676	$69,949	$65,542	$7,421	**$125,196**	$29,685	$425,990
2016	$47,109	$44,530	$67,912	$68,723	$(10,009)	**$112,166**	$-	$396,306
2015	$117,976	$40,527	$65,934	$66,380	$9,502	**$116,357**	$38,007	$396,306
2014	$262,332	$36,665	$64,013	$70,004	$30,819	**$101,767**	$123,274	$358,299
2013	$102,909	$32,939	$62,149	$68,925	$7,493	**$67,570**	$29,973	$235,025
2012	$91,985	$29,344	$60,339	$66,040	$6,789	**$57,216**	$27,154	$205,052
2011	$125,899	$25,878	$58,581	$60,333	$13,359	**$48,026**	$53,435	$177,897
2010	$89,875	$22,537	$56,875	$56,050	$9,139	**$33,017**	$36,555	$124,462
2009	$63,575	$19,317	$55,218	$50,108	$6,695	**$22,741**	$26,780	$87,907
2008	$118,632	$16,348	$53,610	$49,827	$15,282	**$15,282**	$61,127	$61,127

4.3.2 The Milo Family

Michael, Mary, Matt, and Angie sit down and decide Matt will earn an hourly wage for his time during this transition arrangement. This wage rate will be based on the KFMA Employee Wage Rates and Compensation on Kansas Farms survey results for a Level 4

employee and will increase by 2% each year. He will be responsible for 25% of the labor and management of the operation in the first year, which will increase by about 4% each year. When he is ready to join the farm full-time, her wage will be based on the Level 5 wage rate, which will also increase annually by 2%.

At the end of 2008, Matt and Angie put $7,386 in savings and reinvest $29,546 into the farm. The next year proves to be tough for the ag economy, but this wage agreement helps support Matt as he is just beginning his career on the farm. As Matt leaves his job and switches to full-time employment on the farm at the end of 2017, he's still able to save $3,583 and reinvest $14,332. As costs continue to increase, Matt and Angie have to be adaptable to continue saving and reinvesting, and they're able to set aside $2,495 and reinvest $9,980 in 2020.

Table 4.22: Milo Family Acres Heir Hourly Wage Agreement 2008-2020

Year	Net Inc	Heir Wages	NonFarm Inc	Household Exp	Annual Savings	Total Savings	Annual Reinvest	Total Reinvest
2020	$127,269	$45,686	$62,863	$90,592	$2,495	**$84,182**	$9,980	**$250,874**
2019	$136,282	$42,295	$61,032	$103,940	$(5,688)	**$77,797**	$-	**$240,894**
2018	$98,236	$39,020	$59,255	$71,509	$4,417	**$79,510**	$17,667	**$240,894**
2017	$67,123	$35,857	$57,529	$71,168	$3,583	**$71,517**	$14,332	**$223,227**
2016	$49,471	$32,803	$55,853	$67,813	$6,763	**$64,699**	$27,051	**$208,896**
2015	$(32,228)	$29,855	$54,226	$73,365	$6,459	**$55,177**	$25,835	**$181,844**
2014	$40,251	$27,009	$52,647	$82,053	$3,770	**$46,399**	$15,079	**$156,009**
2013	$172,292	$24,264	102,227	$74,418	$4,376	**$40,599**	$17,504	**$140,930**
2012	$204,746	$21,617	$99,250	$79,440	$4,070	**$34,498**	$16,282	**$123,425**
2011	$236,586	$19,063	$96,359	$65,267	$5,997	**$28,979**	$23,987	**$107,143**
2010	$200,747	$16,602	$93,552	$57,965	$6,578	**$21,887**	$26,313	**$83,157**
2009	$148,048	$14,230	$90,827	$52,482	$6,824	**$14,580**	$27,298	**$56,844**
2008	$194,015	$11,944	$88,182	$45,559	$7,386	**$7,386**	$29,546	**$29,546**

By 2020, Matt's reinvestments total $250,874 during this transition period. The total farm net worth started at $819,903 and is now $2,629,442. During this 12-year simulation, the farm's net worth increases by $1,809,540, of which $908,389 is attributed to Matt's contributions. Given his investment of $250,874, his sweat equity is worth $730,888.

Table 4.23 Milo Family Acres Hourly Agreement Sweat Equity

Total Change in Farm Net Worth	$1,809,540
Heir Contribution	$908,389
Total Heir Reinvestment	$250,874
Total Sweat Equity	**$730,888**

While it's an adjustment for everyone, the first year of this arrangement works well for Curtiss and Cathy, who can save $26,306 and reinvest $105,224. 2009 proves to be challenging for the ag industry, but they are still able to set aside $19,495 and reinvest $77,98. Curtiss and Cathy begin to get a taste of retirement in 2014 as they are now responsible for less than half of the operation, which allows them to spend more time with their grandchildren on and off the farm. Up until this point in the transition, they're able to save a total of $173,281 but are not able to contribute to savings or reinvestments this year as expenses exceed income by $59,306. Thankfully, their prior successes allow them to cover these expenses and continue in the operation. As they're working towards retirement, they've intended to reinvest less into the farm as time goes on. As 2020 arrives, Curtiss and Cathy have saved a total of $197,323 to put towards the retirement they've been saving for during their career and have invested $735,783 back into the farm.

Table 4.24: Milo Family Acres Owner Hourly Wage Agreement 2008-2020

Year	Net Inc	Heir Wages	NonFarm Inc	Household Exp	Annual Savings	Total Savings	Annual Reinvest	Total Reinvest
2020	$127,269	$45,686	$76,435	$67,861	$12,432	**$197,323**	$49,726	**$735,783**
2019	$136,282	$42,295	$74,209	$70,767	$13,489	**$176,087**	$53,957	**$686,057**
2018	$98,236	$39,020	$72,047	$68,468	$8,237	**$154,855**	$32,947	**$632,100**
2017	$67,123	$35,857	$69,949	$65,542	$3,778	**$139,636**	$15,114	**$599,153**
2016	$49,471	$32,803	$67,912	$68,723	$1,687	**$129,389**	$6,749	**$584,040**
2015	$(32,228)	$29,855	$65,934	$66,380	$(59,306)	**$121,620**	$-	**$577,291**
2014	$40,251	$27,009	$64,013	$70,004	$243	**$172,311**	$970	**$577,291**
2013	$172,292	$24,264	$62,149	$68,925	$18,602	**$163,875**	$74,408	**$576,320**
2012	$204,746	$21,617	$60,339	$66,040	$24,020	**$138,355**	$96,079	**$501,913**
2011	$236,586	$19,063	$58,581	$60,333	$29,905	**$108,891**	$119,621	**$405,834**
2010	$200,747	$16,602	$56,875	$56,050	$25,752	**$75,224**	$103,008	**$286,212**
2009	$148,048	$14,230	$55,218	$50,108	$19,495	**$47,116**	$77,980	**$183,204**
2008	$194,015	$11,944	$53,610	$49,827	$26,306	**$26,306**	$105,224	**$105,224**

4.3.3 The Charolais Family

Curtiss, Cathy, Christa, and Alex sit down and decide Christa will earn an hourly wage for her time during this transition arrangement. This wage rate will be based on the KFMA Employee Wage Rates and Compensation on Kansas Farms survey results for a Level 4 employee and will increase by 2% each year. She will be responsible for 25% of the labor and management of the operation in the first year, which will increase by about 4% each year. When she is ready to join the farm full-time, her wage will be based on the Level 5 wage rate, which will also increase annually by 2%.

At the end of 2008, Christa and Alex put $3,361 in savings and reinvest $13,442 into the farm. The next year proves to be tough for the ag economy, but this wage agreement helps support Matt as he is just beginning his career on the farm. As Christa leaves her job and switches to full-time employment on the farm at the end of 2016, she's still able to save $3,556 and reinvest $14,226. As costs continue to increase, Christa and Alex have to be adaptable to continue saving and reinvesting, and they're able to set aside $6,729 and reinvest $26,914 in 2020.

Table 4.25: Charolais Family Farms Heir Hourly Agreement 2008-2020

Year	Net Inc	Heir Wages	NonFarm Inc	Household Exp	Annual Savings	Total Savings	Annual Reinvest	Total Reinvest
2020	$69,196	$43,910	$62,863	$67,861	$6,729	**$77,709**	$26,914	**$230,524**
2019	$54,585	$40,651	$61,032	$70,767	$5,208	**$67,600**	$20,831	**$203,609**
2018	$60,290	$37,503	$59,254	$68,468	$4,758	**$59,421**	$19,031	**$182,779**
2017	$48,802	$34,463	$57,528	$65,542	$4,463	**$52,060**	$17,851	**$163,747**
2016	$12,251	$31,527	$73,745	$82,761	$3,556	**$45,331**	$14,226	**$145,896**
2015	$1,595	$28,694	$80,282	$86,192	$3,696	**$39,785**	$14,784	**$131,670**
2014	$121,527	$25,959	$77,944	$89,102	$2,182	**$34,371**	$8,726	**$116,886**
2013	$108,720	$23,321	$75,673	$78,388	$3,422	**$30,656**	$13,687	**$108,160**
2012	$132,815	$20,776	$81,418	$71,811	$5,453	**$25,938**	$21,814	**$94,473**
2011	$183,639	$18,322	$79,046	$73,943	$4,136	**$19,509**	$16,542	**$72,659**
2010	$144,475	$15,956	$76,744	$63,720	$5,317	**$14,641**	$21,270	**$56,117**
2009	$90,141	$13,676	$74,509	$59,378	$5,351	**$8,880**	$21,405	**$34,847**
2008	$149,374	$11,480	$72,339	$65,294	$3,361	**$3,361**	$13,442	**$13,442**

In 2020, Christa can reinvest another $26,914 for a total reinvestment of $230,524 during this transition period. The total farm net worth started at $437,887 and is now $1,238,917 During this 12-year simulation, the farm's net worth increased by $801,030, of which $400,515 is attributed to Christa's contributions. Given her investment of $230,524, her sweat equity is worth $169,991.

Table 4.26 Charolais Family Farms Hourly Agreement Sweat Equity

Total Change in Farm Net Worth	$801,030
Heir Contribution	$400,515
Total Heir Reinvestment	$230,524
Total Sweat Equity	**$169,991**

While it's an adjustment for everyone, the first year of this arrangement works well for Curtiss and Cathy, who can save $20,867 and reinvest $83,467. 2009 proves to be challenging for the industry, but they are still able to set aside $11,808 and reinvest $47,232. Curtiss and Cathy begin to get a taste of retirement in 2015 as they are now responsible for less than half of the operation, which allows them to spend more time with their grandchildren on and off the farm. Up until this point in the transition, they're able to save a total of $131,705 and reinvest $446,419. 2016 is another tough year in the industry, as Curtiss and Cathy have to rely on savings to cover $27,705. 2017 is only slightly better as they still need to pull $21,313 from savings. As they're working towards retirement, they've intended to reinvest less into the farm as time goes on. As 2020 arrives, Curtiss and Cathy have saved a total of $125,620 to put towards the retirement they've been saving for during their career and have invested $485,2463 back into the farm.

Table 4.27: Charolais Family Farms Owner Hourly Agreement 2008-2020

Year	Net Inc	Heir Wages	NonFarm Inc	Household Exp	Annual Savings	Total Savings	Annual Reinvest	Total Reinvest
2020	$69,196	$43,910	$76,435	$67,861	$3,727	**$125,620**	$14,910	**$485,246**
2019	$54,585	$40,651	$74,209	$70,767	$1,073	**$116,088**	$4,294	**$470,336**
2018	$60,290	$37,503	$72,047	$68,468	$2,620	**$109,538**	$10,482	**$466,042**
2017	$48,802	$34,463	$69,949	$65,542	$2,285	**$101,826**	$9,141	**$455,560**
2016	$12,251	$31,527	$67,912	$68,723	$(21,313)	**$94,801**	$-	**$446,419**
2015	$1,595	$28,694	$65,934	$66,380	$(27,705)	**$110,585**	$-	**$446,419**
2014	$121,527	$25,959	$64,013	$70,004	$11,839	**$131,705**	$47,356	**$446,419**
2013	$108,720	$23,321	$62,149	$68,925	$10,289	**$114,158**	$41,154	**$399,064**
2012	$132,815	$20,776	$60,339	$66,040	$14,627	**$98,923**	$58,507	**$357,909**
2011	$183,639	$18,322	$58,581	$60,333	$23,531	**$80,282**	$94,124	**$299,402**
2010	$144,475	$15,956	$56,875	$56,050	$18,645	**$54,049**	$74,579	**$205,278**
2009	$90,141	$13,676	$55,218	$50,108	$11,808	**$33,718**	$47,232	**$130,699**
2008	$149,374	$11,480	$53,610	$49,827	$20,867	**$20,867**	$83,467	**$83,467**

4.4 Comparisons

A condensed summary of the findings is listed below. The results compared were the Total Savings, Total Reinvestment, and Sweat Equity for each of the Heir and Owner generations. Since neither the Owner nor the Heir generation saw their Total Savings amount reach zero, each arrangement for each farm was considered successful for the full 12-year model.

4.4.1 The Swiss Family

For the Swiss Family, the Salary Arrangement was the best, but by a slim margin. When comparing the full value received, the Salary Agreement proved to be the best option with a total value of $1,005,565, including the Savings value of $100,795. The total value of the Percentage Agreement was $1,002,762, a difference of $2,803 when compared to the total value of the Salary Agreement. The Hourly Agreement was $974,016, which lagged the Percentage Agreement by $28,746. The Hourly Agreement also provided much less in Savings at the end of the transition period, resulting in $69,246.

Table 4.28: Swiss Family Dairy Sweat Equity Agreement Results

Agreement	Savings	Reinvest	Sweat Equity	Total
Percentage	$94,374	$324,862	$583,527	$1,002,762
Salary	$100,795	$300,778	$603,992	**$1,005,565**
Hourly	$69,246	$195,449	$709,321	$ 974,016

4.4.2 The Milo Family

The Milo Family benefits the most when using the Percentage Agreement, which resulted in $1,145,414. The Percentage Agreement also resulted in the highest Savings value at $159,725. When comparing the Percentage Agreement to the Salary Agreement in the overall sweat equity calculation, the Salary agreement's total value was $1,105,147, showing the Percentage Agreement was better by $40,267. The Hourly Agreement's total value was $1,065,944, behind the Salary agreement by $39,203. The Hourly Agreement also resulted in the lowest Savings value, which was $84,182, a difference of $75,543 when compared to the Percentage Agreement.

Table 4.29: Milo Family Acres Sweat Equity Agreement Results

Agreement	Savings	Reinvest	Sweat Equity	Total
Percentage	$159,725	$481,045	$504,644	**$1,145,414**
Salary	$123,385	$368,820	$612,942	$1,105,147
Hourly	$84,182	$250,874	$730,888	$1,065,944

4.4.3 The Charolais Family

The Charolais Family also saw the most success when using the Percentage Agreement, which saw a total value of $521,483. The Savings value was also the highest at $120,968. The Salary Arrangement was also effective with a total value of $511,556, a difference of $9,927. The Hourly Agreement also saw success but had the lowest total value of $478,224, which is $33,332 less than the Salary Agreement. The Savings value was also the lowest at $77,709, which is $43,259 less than the Savings value of the Percentage Agreement.

Table 4.30: Charolais Family Farms Sweat Equity Agreement Results

Agreement	Savings	Reinvest	Sweat Equity	Total
Percentage	$120,968	$367,678	$32,837	**$521,483**
Salary	$111,041	$342,521	$57,995	$511,556
Hourly	$77,709	$230,524	$169,991	$478,224

CHAPTER V: CONCLUSION AND DISCUSSION

This final chapter contains the three remaining sections of the research. The first is the discussion of the results and findings. The second focuses on the limitations of the study. Finally, opportunities for future research based on what was discovered in this research are shared.

5.1 Conclusions

A condensed summary of the findings is listed below. The results compared for discussion were the Total Savings, Total Reinvestment, and Sweat Equity of the Heir generation. Since neither the Owner nor the Heir generation saw their Total Savings amount reach zero, each arrangement for each farm was considered successful for the full 12-year model.

The Percentage Agreement was overall the most successful for all three farms when evaluating both the Heir and Owner generations. Not only did this provide the most successful combined financial results, but it allows the returning Heir generation to slowly learn and take on more responsibilities each year while seeing the impact of their decision-making on the bottom line of the farm. When the farm is successful, both the Heir and Owner generations see the success.

The Salary Agreement was the next successful arrangement. This allowed the Heir generation to employ someone full-time to learn the best practices for the farm while also earning a guaranteed living salary and receiving housing to compensate for cash that the farm may not be able to provide in any given year. Between this salary and the spouse's income, there is no need for additional off-farm employment to compete for the time and attention the farm requires. The Owner generation, however, must cover these wages and

housing expenses regardless of the success of the farm, with no cap on their risk. The Heir generation does eventually see risk should the farm become unprofitable.

The Hourly Agreement was the least successful. The returning heir doesn't necessarily see their impacts on the farm, and their time on the farm competes for wages that can be earned off-farm. Like the Salary Agreement, the Owner generation needs to pay whether there is farm income or not. If there are not sufficient savings to sustain this, the farm could be at risk.

5.2 Discussion

No two transition plans will be the same, but as stated earlier by Graeme, et al., all successful farm transitions must focus on ensuring the financial future of the operation while also making sure everyone involved is happy (2018). This requires effective communication and appropriate, timely compensation.

In the end, whether someone is an employee or a family member, one must pay a worker what they are worth. Of course, if work is unpaid, it shouldn't be left undocumented. Any commitments made must be realistic while providing a reasonable lifestyle for each generation on the farm. If it's not possible to envision at the beginning of the discussions, perhaps succession is not a viable option. Other plans, whether it be downsizing or a complete sale, may need to be made to ensure financial stability for those who have worked on the farm.

5.3 Limitations

This research relied on second-hand data, which can have limitations. While KFMA data is compiled consistently by analysts to prevent bias, the purposes behind the data collection would not necessarily be the same as the research objectives in this

research. There is always the opportunity for some assumptions and biases to be made from reading second-hand data.

This project used 12 years of reported data, but it is impossible to know which farms may have been dropped or added each year from KFMA reporting, as well as shifts between demographic data used in this research, such as age groups, farm types, and family living data. Since Top Third data was also used for some of the simulations, it's unlikely that every farm in the Top Third sector of any given year was in the Top Third sector of every year used in these simulations.

These simulations were built in the interest of using the fewest number of variables possible to reduce fluctuations and bias. Because of this, these simulations might not represent certain farm situations as no two farms are alike, and the factors studied may not apply to some reading this research to make decisions for their own operations. Using figures from a diverse data set can result in averages that aren't representative of any of the individuals studied. Simulations were also built using some factors that are currently happening in the field while also making some proposals that might not be commonly seen.

When setting up a simulation, decisions need to be made, which can lead to assumptions being necessary. In this simulation, all farms were successful to the end of the 12-year model. All family members on each farm remained on the farm, eliminating the risk of death, divorce, or departure of any members of either generation. Also, there were no external factors impacting the financial success of the farm, such as medical bills, legal action, or external debts. Since the research was focused on the impacts of the transition arrangements, respective farm sizes did not change throughout the simulation. To ensure

financial stability for each household, at least one family member of each generation maintained off-farm employment.

5.4 Future Research Opportunities

As with any research, many questions arose that didn't fit the simulation, but are excellent opportunities for further research. The first would be to simply dig deeper into the individual sweat equity proposals used. Since only one type of each arrangement was applied, there are several research opportunities to compare different iterations of each proposal. There are plenty of other factors an heir must consider when deciding to return to the farm, whether part-time or full career change, including benefits packages offered by companies that farms may not be able to provide. With this, it's common for a spouse to work off the farm, but what are the career implications for that spouse to agree to live on or near the farm compared to the location of the job in that spouse's field?

5.4.1 Simulation Models

The proposals for sweat equity agreements are up to the discretion of the researcher, and there are countless strategies to study. Since this research was looking at a broad view of various arrangements, only one proposal of each type was used. However, there is plenty of opportunities to compare different proposals within one arrangement type. With this research focusing on the impact of different arrangements, the families were set up to be rather similar with one heir returning in their early 30s. This provided work experience that would likely transfer to different pay rates and families that required higher living expenses than an heir returning to the farm in their late teens or early 20s. Research can be done to study the impacts of returning to the farm at different stages in life along with varying numbers of on-farm and off-farm heirs.

In addition to the strategies themselves, a sensitivity analysis could be done on the proportion of the increase in farm net worth attributed to the heir. Like any organization, different individuals contribute at different levels. Farms are not exempt from this and could benefit from an analysis laying out expectations of contribution for a proportion of farm value in return.

5.4.2 Sweat Equity: Opportunity vs Risk

While it can be argued that a higher sweat equity value is better as it represents more ownership, this ownership can only be recognized if it's properly agreed upon and documented for all stakeholders. If this is not recognized, a higher sweat equity value can represent more risk as the returning heir has unpaid efforts that might not be actualized, especially if the farm is simply divided equally without full acknowledgment of the returning heir's time, efforts, and reinvestments. This can potentially put this heir in a position to purchase assets already owned as part of this sweat equity. Life doesn't go according to plan. Farmers of any generation looking to enter a sweat equity arrangement would benefit from research and case studies comparing what was agreed upon and what occurred.

5.4.3 The Opportunity Cost of an Off-Farm Job…On the Farm

Many farming families rely on at least one family member working off the farm, not only for the cash flow but for the insurance and other benefits that can be costly for the farm to provide. Few farms are going to be within commuting distance of metro areas, so job opportunities are going to be limited. With this, the overall potential career growth of an on-farm family member with an off-farm job can be stunted compared to someone who does not have a geographical anchor. Advancing technology and increasing internet access

in rural areas continue to balance the field between rural and urban career paths, but there continues to be a gap.

5.5 Further Analysis: Fair Vs Equal

Any discussion on sweat equity in farm transitions is likely to include an analysis of the concepts of being fair vs being equal. An underlying assumption is that both the owner generation and all heirs, not just the returning heir, should have this discussion before any analysis is done. Effective communication early in the transition process will lead to a more successful succession.

All sweat equity agreements used in this research proved to be better than dividing the farm equally among the owner's children. As discussed in the Literature Review, when using an "Equal" strategy, where all assets are divided equally among children, instead of a "Fair" strategy, where the on-farm heirs receive additional compensation to credit their unpaid labors on the farm, the on-farm heir can risk losing their reinvestments and equity. Since the change in farm net value wasn't impacted by the sweat equity arrangements, only one comparison needs to be done per farm.

As noted in the Literature Review, this calculation is done in three parts. First, the starting farm net value is equally split among the children. Second, the on-farm heir's reinvestment and sweat equity are credited back to the on-farm heir. Last, the remaining value is also equally split among the children.

Table 5.1: Fair Vs Equal Comparison Simulation Farms

Farm	Farm Beg Net Worth	Farm End Net Worth	Net Worth Change	Owner # Children	Equal Value	Sweat Equity	On-Farm Heir Risk
Swiss	$819,903	$2,629,442	$1,809,540	2	$1,314,721	$1,767,106	$452,385
Milo	$843,782	$2,807,306	$1,963,524	2	$1,403,653	$1,894,534	$490,881
Charolais	$437,887	$1,238,917	$801,030	3	$412,972	$679,982	$267,010

When considering the full reinvestment and sweat equity values as ‘fair’ to the heir, Sheri Guernsey at Swiss Dairy could lose up to $452,385 in value when compared to the farm value simply split in half, or the ‘equal’ value. Matt Milo at Milo Family Acres could lose up to $490,881 in value, and Christa Charolais at Charolais Family Farms could lose up to $267,010 in value. Since no two farms are the same and no two transition plans can be the same, these fair vs equal valuations will vary across farms, as well. However, the concept remains the same: all stakeholders need to understand and agree on the impacts made by unpaid labor on the farm by a returning heir to make everyone involved happy and ensure a successful transition.

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