

Structural Considerations for Machinery Cooperatives

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Abstract

Machinery ownership and operating costs represent a major farm expense. In response, many producers have formed machinery cooperatives or other machinery sharing ventures. Machinery sharing allows producers to spread costs over more acres, achieving economies of scale and access newer, more efficient and technologically advanced equipment, saving labor. A number of authors have explored the potential benefits and the structural considerations for joint machinery ownership arrangements. However these studies have not compared the cooperative structure with other business forms. This study examines the potential advantages of organizing a machinery sharing arrangement as a cooperative. Structural considerations for machinery sharing cooperatives are also examined.

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Introduction

The fixed and operating costs associated with agricultural machinery represent a major expense category for most producers. Machinery costs typically represent 20-30% of the total production costs for corn and soybeans (Weness). The necessity of spreading equipment costs over increased acreage and the scale economies of larger equipment have been a driving force behind the trends in increasing farm size. A consequence of this issue is that small producers are unable to achieve the maximum efficiencies in machinery expenses. More efficient and technologically advanced equipment also hold higher purchase prices, making these improvements very costly to producers. The capital investment requirements for emerging technologies such as global positioning system guidance, automatic steering and/or boom control, variable rate application, and no-till equipment limit the access by smaller scale producers.

A number of studies have examined the potential cost savings from joint machinery ownership. Harris and Fulton found an average expected machinery cost savings of 35% per acre more for a small grain farm in Saskatchewan that jointly owned a piece of equipment with at least two other farms rather than individual ownership. A study in Sweden examined cost savings in a region where weather variability limited the available days of operation (Toro and Hansson). Even with high variability of timeliness costs, Swedish farmers that were members of a machinery cooperative still experienced cost savings in excess of 15% over the time period studied. Long and Kenkel examined potential cost savings from machinery sharing among Southern Plains grain farmers. Their results indicated that a five member machinery sharing cooperative could generate

cost savings of up to 41%. The authors also examine available field time constraints and determined that the 5 member cooperative could complete operations for all participants within the field time historically available in most regions.

There are a wide range of options for machinery sharing and joint machinery ownership ranging from informal partnerships, contractual arrangements, limited liability companies and cooperative corporations. Machinery cooperatives have been successful in Europe and in Canada. Harris and Fulton document over 13,000 machinery cooperatives in France and 50 in Quebec. Producers in the Mid-West region of the US are increasingly examining machinery sharing. Anecdotal evidence suggests that US producers are more likely to organize these ventures as limited liability companies.

A number of authors have explored the potential benefits and the structural considerations for joint machinery ownership arrangements. However these studies have not addressed the question as to whether the cooperative structure provides any unique advantages for machinery sharing ventures relative to other business forms. This study examines the potential advantages of organizing a machinery sharing arrangement as a cooperative. Structural considerations for machinery sharing cooperatives are also examined.

Options for Machinery Sharing

Machinery sharing arrangements may be simple involving only a single piece of equipment or be complex involving entire complements of equipment. Some arrangements which were originally established for machinery sharing have expanded to encompass joint purchase of inputs, collective decision making on operations and pooled marketing of products. These arrangements become a combined farming philosophy

where the participants manage the collective farm lands as if they were a single operation.

Some machinery sharing structures also combine machinery operating labor among the participants. Incorporating labor sharing into a machinery sharing venture can help to alleviate a shortage of qualified operators. Some labor sharing arrangements allow participants to pay or receive remuneration from other participants when they provide a disproportionate share of the operating labor. These arrangements can provide a mechanism for a member to trade “sweat equity” for operating costs or investment. Labor sharing arrangements may also allow participants to specialize in operating particular equipment or in repair and maintenance which may increase efficiency and reduce repair expense.

Informal Structures

The simplest form of machinery sharing is when two or more producers agree to trade access to currently owned equipment. Two or more producers may also decide to jointly purchase equipment on the basis of an informal agreement. Participants typically divide the purchase price in proportion to projected usage and agree on some procedure to split repair and maintenance costs. The partners may have an understanding as to how scheduling, maintenance and other issues will be handled or may simply work through issues as they occur. Arrangements may be made for split billing of operating expenses or the partners may make periodic deposits into a bank account set up to handle expenses.

The obvious disadvantage of informal agreements is that there is no structure to fall back on if the participants disagree on operational issues or cost allocations.

Participants also run the risk that another member will be unwilling or unable to meet their payment obligations. Producers sharing equipment under formal or informal partnership are also potentially liable for the actions of the other partners. Because there is no structure to limit liability to the machinery assets, an injured party could place a claim against the participants' overall farm assets.

Contractual Agreement

Machinery sharing can also be structured as a formal partnership defined by a written contractual agreement (Hofstrand). As in most financial transactions, the written agreement helps to assure that all parties have the same understanding of the venture's operation and provides a framework for operation. The formal agreement typically specifies how investment costs, depreciation and expenses are allocated. It may also define operating policies such as how usage will be scheduled, where the equipment will be housed and maintenance procedures. Machinery sharing contracts may also specify dissolution procedures and methods for determining buyout prices. Because a contractual agreement establishes a partnership the liabilities arising from the machinery operation can put the total assets of all partners at risk.

Limited Liability Company

A more robust structure for machinery sharing can be developed by establishing a separate legal entity which purchases and owns the equipment. These ventures are often structured as limited liability companies (LLCs). An LLC is a unique, and very popular, business form that combines the limited liability features of a corporation with the pass through taxation of a partnership. The LLC business form is very flexible with most of the structure defined in the operating agreement. A machinery sharing LLC would

generally specify governance by a board of managers consisting of the participant/investors. The entity may or may not hire an operation manager or other employees. The operating agreement of the LLC specifies the exact structure of the venture and the system for allocating income and expenses. Typically, the entity owns the machinery and finances the funds needed in excess of the equity contributions. The LLC receives fees from the members and deduct operating expenses, interest and depreciation associated with the equipment. The resulting profit or loss is passed on to the member's tax return.

Machinery Cooperatives

The cooperative corporation is also a logical business structure for joint machinery ownership. Most agricultural producers are familiar with the governance and equity retirement systems used by agricultural cooperatives. The basic structure of a cooperative in which investment and benefits are proportional to usage is appropriate for machinery sharing. Farm equipment cooperatives have been common in Europe and Canada for many years. These entities loosely translated as "Cooperatives for the Utilization of Machinery Agricultural" (CUMA) have been very successful in reducing machinery costs and increasing smaller producers' access to equipment. Some of these entities are structured to share a compliment of equipment among the members. However many CUMAs are structured with separate equipment pools for specific pieces of equipment.

Most machinery cooperatives operate as closed cooperatives. After the initial formation, additional members are admitted only upon approval of the board of directors. In order to join an equipment pool a member is required to purchase a given number of

investment shares which provides the equity investment for the equipment purchase. The member also signs a usage commitment for a specified period of time, usually 3 to 5 years. The time period typically matches the financing period for the equipment. As they use the equipment the members pay a fee at an agreed upon hourly or per/acre rate. The cooperative's net income in excess of expenses is distributed to members in proportion to usage. The machinery cooperative may also be involved with training on machinery usage and maintenance. Some cooperatives also have mechanisms for sharing labor among participants.

Advantages of the Cooperative Business Form for Machinery Sharing

The LLC has evolved to become the default business form for small business and agriculture. The LLC is a very flexible business form so it is difficult to make definitive comparisons with the cooperative form. Some possible advantages for the cooperative form relate to capital accounts, exit and valuation mechanism, and the operation of multiple equipment pools and/or labor sharing. Limited Liabilities and machinery cooperatives both have limitations in the ability to use expense recapture provisions (Section 179) for new equipment purchase. The cooperative taxation structure may provide a slight advantage in taking advantage of Section 179 benefits but it does not appear to be significant.

The basic purpose of a machinery sharing entity is to distribute the fixed and variable costs of machinery ownership and operation on to the participants on a pre-determined basis. However, most participants desire a structure where the usage fees allow for sufficient accumulation of capital to allow equipment to be replaced on a predetermined schedule. This avoids a capital call from the business and provides the

participant with a predictable cash outlay. Many producers are also reluctant to sell their existing equipment compliments unless they are assured that the machinery sharing venture is structured with an appropriate replacement cycle. The amount of capital that must be accumulated depends upon the replacement cycle, the inflation rate for equipment and the actual economic depreciation (trade in value) of the current equipment. The process of accumulating capital and tracking claims against the capital becomes more complex when new participants enter an existing machinery venture or when multiple equipment pools are created.

The cooperative structure provides a logical mechanism for the business to accumulate and track additional paid in capital. The cooperative can set usage fees in excess of the amount of anticipated costs. The cooperative business would deduct machinery operating costs, interest, depreciation and one-time expense allowances against its operating fee income. The cooperative would then issued qualified stock along with the mandated 20% cash patronage refund, eliminating tax liability at the cooperative level. The qualified refunds would be taxable to the member, serving as a partial offset of the tax deductible usage fees charged by the cooperative. The net effect is a non-deductible contribution by the members to the capital pool, a result no more or less favorable than contributions by an LLC.

The cooperative could also hold funds as unallocated reserves or issue cash patronage refunds. However these options defeat the purpose of accumulating capital and tracking the member's positions. A cooperative operating multiple equipment pools can track profits for the individual pools. Thus, a producer participating in a pool with

higher fees relative to the machinery operation costs would receive a higher amount of stock.

Closely associated with the issue of capital accumulation are the issues of member exit and ownership valuation. The individual member's claim is impacted by their initial equity investment and the change in market value (economic depreciation) of the machinery assets. Common buy-out provisions for a joint machinery partnership include the use of an outside appraiser or bid-purchase provisions where one partner establishes a price and the other has the right to purchase the share or sell their share at the established price (Hofstrand). Valuation becomes more complex when the venture is on-going because capital is accumulated because exiting members also have a claim on a portion of the capital reserve account. Allowing exiting members to remove equity also challenges the financial stability of the venture.

The cooperative structure provides some advantages in valuation and transfer of equity. As mentioned, a machinery cooperative can issue allocated equity to track the member's claim from single or multiple equipment pools. An LLC machinery venture can establish a capital account for machinery replacement. However the LLC must also essentially recreate the cooperative's method of tracking claims against the capital pool. The value of a machinery cooperative member's stock, which includes initial capital stock and additional allocated equity, therefore provides a benchmark for the value of the member's interest.

Allowing a member to exit a machinery venture and recapture their equity investment obviously threatens the financial stability of the venture. The machinery venture must locate a new member to replace the investment, delay the payment for the

equity, or absorb the cash flow and equity decline. The cooperative structure at least partially addresses these challenges. The accumulated stock value provides a starting point for exit value. Potentially, the member could find another producer to purchase their stock with no impact on the cooperative's finance. Alternatively, the cooperative could revolve the stock over a period of years, protecting the cooperative's stability. These alternatives are obviously also open to a LLC venture. However, once again the LLC must create these mechanism in the operating agreement and explain the structure to the participants.

Machinery sharing ventures, like other producer owned ventures, often begin with a limited focus and subsequently expand their scope of operation. For example, producers forming a successful venture to share ownership of planting equipment might decide to expand the project to include sprayers or harvest equipments. The venture may then be approached by potential members who are only interested in one aspect of the machinery compliment. The creation of multiple equipment pools is therefore a natural evolution for a sustained machinery sharing venture.

Labor sharing is also a natural evolution for a machinery sharing venture. Most farm operations suffer from a lack of skilled labor. Labor limitations have been one of the driving forces behind the increase in the scale and technology of machinery. Labor and operation issues are also one of the driving forces behind machinery sharing ventures. It is not uncommon for the venture to include some specialization of labor. Participants may specialize by operating one piece of equipment or in maintenance operations. Labor sharing also addresses field operation scheduling which is one of largest challenge of a machinery sharing venture. For example, one member of a hay

machinery sharing cooperative could manage hay cutting operations. This tends to eliminate the issue of “who cuts hay first” since presumably, the logistics of the mowing operations are operating in a logical manner. Once again, labor sharing arrangements can be built into either an LLC or cooperative structure. However it fits particularly well in the cooperative business model which is also used as a structure for worker-owned businesses. Labor inputs can essentially simply become another patronage pool.

Production sharing can also be part of the evolution for a machinery sharing venture. Regardless of the mechanisms to allocate equipment usage, the timeliness of field operations may impact the realized crop value. While the machinery sharing ventures may reduce the overall cost of equipment, the participant capturing the most timely operation obviously receives the greatest benefit. This conflict is eliminated if the participants pool both machinery use and production. Production pooling generally requires a relatively homogeneous group of producers, for example, corn farmers with similar yield potential. The resulting operation is similar to how a large scale custom operator might management the multiple operations.

The cooperative business structure which allocates earning in proportion to business volume is obviously uniquely appropriate for production pooling. The shift from machinery sharing to production pooling would obviously require restructuring for either an LLC or cooperative. However, the cooperative structure would facilitate the transition.

Tax issues impact virtually also business structures. Both the LLC and cooperative model result in a pass through taxation that essentially transfers the operating, depreciation and interest expenses from machinery ownership and operation to

the machinery sharing participants. Current tax policy allows farm businesses and other businesses to directly expense a portion of equipment purchase in the purchase year. This expense recapture provision, contained in Section 179 of the tax code, currently allows a \$150,000 expense deduction. The deduction reduces the depreciable basis of the equipment. The Section 179 provision is available only on new equipment purchases. The provision also phases out for firms purchasing more than \$500,000 of equipment in the given tax year. The business must also have sufficient net income to take advantages of the expense. In other words, the Section 179 provision cannot be used to create an operating loss carry forward.

Section 179 tax provisions present a potential disadvantage to the joint ownership of machinery. Farmers jointly purchasing over \$500,000 of equipment begin to lose the present value advantages of the immediate expense recapture. LLC or cooperative machinery sharing ventures operating within the \$500,000 limit can capture the Section 179 benefits at the business level. However, the venture must generate sufficient income during the year of equipment purchase to offset the expense deduction. This can be accomplished by increasing usage fees during the recapture year. A machinery cooperative could also increase taxable income by issuing non-qualified stock. Simulations with the machinery cooperative feasibility software created by Oklahoma State University indicates that the shift to non-qualified stock cannot, by itself, create sufficient taxable income to offset the Section 179 deduction. While a structure where a machinery cooperative charges a consistent machinery usage fee and manages the Section 179 requirements through patronage allocation, that option does appear to be feasible.

Summary

Numerous studies have examined the potential cost savings from joint machinery ownership and discussed the logistic and structural issues. Both the LLC and the cooperative business model are viable long-term options for machinery sharing ventures. The cooperative model provides some natural mechanism to accumulate capital, track ownership and facilitate the valuation and transfer of ownership. The cooperative model also facilitates expansion into multiple equipment pools, labor sharing or production pooling. There does not appear to be any significant tax advantages or disadvantages to either business form.

The original question posed in this paper was whether there is an advantage or disadvantage to structuring a machinery sharing venture as a cooperative as opposed to an LLC. The discussion of structure issues inherent to machinery ventures suggest that the cooperative model is a very appropriate structure for a machinery sharing venture. All of the structural elements available to a cooperative could be captured through a carefully structured LLC. The major advantage of the cooperative structure is that it may allow the venture to expand with less restructuring. Producers' familiarity with the cooperative structure may also be an advantage.

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