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Transaction costs and the property rights approach to the theory of the firm

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ABSTRACT

The standard property rights approach is focused on ex ante investment incentives, while there are no transaction costs that might restrain ex post negotiations. We explore the implications of such transaction costs. Prominent conclusions of the property rights theory may be overturned: A party may have stronger investment incentives when a non-investing party is the owner, and joint ownership can be the uniquely optimal ownership structure. Intuitively, an ownership structure that is unattractive in the standard model may now be desirable, because it implies large gains from trade, such that the parties are more inclined to incur the transaction costs.
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1. Introduction

Why are integrated firms sometimes more successful than non-integrated firms, while in other instances the opposite holds true? Under which circumstances are joint ventures a recommendable governance structure? In the past three decades, questions along these lines have often been discussed by contract theorists in the context of the property rights approach to the theory of the firm, which has been developed in the pathbreaking contributions by Grossman and Hart (1986), Hart and Moore (1990), and Hart (1995).[1]

Consider a seller (A) and a buyer (B) of an intermediate product. Should the seller own the relevant physical assets that are needed to produce the intermediate good (non-integration) or should the buyer be the owner (integration)? Might joint ownership, such that both parties have veto power over the use of the assets, be a good idea? The property rights approach is focused on the role of non-contractible investments that a party can make in its human capital (say, at some initial date 0). After the investments are sunk, collaboration between the parties becomes contractible and negotiations may occur (we will

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[1] See Segal and Whinston (2012) for a recent literature review. A very crisp summary of the literature is provided by Hart (2011).

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refer to the negotiation phase as date 2). In the standard property rights model it is assumed that once the investments are sunk there are no relevant transaction costs, such that in line with the Coase Theorem negotiations always lead to an ex post efficient agreement. Specifically, the parties divide the attainable surplus from collaboration according to the Nash bargaining solution, where the threatpoint is determined by the ownership structure. Asset ownership improves a party's bargaining position and hence its incentives to invest. Prominent insights of the property rights theory are that (i) if only one party has a relevant investment decision, then this party should be the owner, and (ii) joint asset ownership is never optimal.

In the present paper, we extend the standard property rights model by explicitly taking into account transaction costs that may restrain the parties from reaching an efficient agreement at date 2. Following an insightful paper by Anderlini and Felli (2006), we model transaction costs in the most straightforward way that one might imagine. Specifically, at date 1 both parties simultaneously and independently have to decide whether to incur the relevant transaction costs before the negotiations can take place. The negotiation phase (date 2) is reached only if both parties pay their respective transaction costs.[2] If at least one of the parties decides not to incur its transaction costs such that the negotiations do not start or if the negotiations do not lead to an agreement, then each party gets its default payoff only. It turns out that in the presence of transaction costs, some of the main conclusions of the property rights theory may be overturned. In particular, (i) ownership by the non-investing party and (ii) joint ownership can be optimal.

In the first step, let us assume that there is no investment decision to be made. In line with the standard property rights approach, let the default payoffs depend on the ownership structure as follows. Suppose that the seller is the sole owner (A-ownership). Even if no agreement is reached, the seller can make a positive profit (say, α). Since she owns the necessary assets, she can produce the intermediate good and use it herself to produce a final good. Yet, in the absence of the buyer's human capital (i.e., the buyer's specific abilities to produce the final good), her profit will be smaller than the date-2 surplus that the parties could generate together (which we denote by V). Since the buyer has no access to the necessary assets, he makes zero profits when no agreement is reached. Next, consider sole ownership by the buyer (B-ownership). If no agreement is reached, the buyer can produce the intermediate good himself, because he has access to the assets. Yet, the buyer lacks the seller's specific knowledge, hence the buyer's profit (say, β) will be smaller than the surplus that the parties could realize by collaboration. As the seller has no access to the assets, she makes zero profits. Finally, suppose that there is joint ownership, such that each party has veto power over the use of the assets. Since no party can use the asset without the other parties' consent, in this case the default payoffs of both parties are zero.

If the negotiation stage is reached, suppose that bargaining leads to the regular Nash bargaining solution; i.e., each party gets its default payoff plus half of the gains from trade (where the gains from trade equal the collaboration surplus V minus the sum of the default payoffs). At date 1, a party is willing to incur its transaction costs only if they are smaller than half of the gains from trade. Clearly, if the transaction costs are so large that negotiations will never occur, the optimal ownership structure is the one that leads to the largest sum of the default payoffs. Without loss of generality, let us suppose that $\alpha > \beta$, such that A-ownership is the uniquely optimal ownership structure for large transaction costs. It is now interesting to note that for small transaction costs, B-ownership may be better than A-ownership, and joint ownership may be uniquely optimal. The reason is that the gains from trade are larger in the case of B-ownership (and even more so in the case of joint ownership) than they are in the case of A-ownership, so the parties are actually least inclined to pay their transaction costs in the case of A-ownership. Specifically, the optimality of B-ownership or joint ownership requires that (in the wording of Anderlini and Felli, 2006) there is a 'mismatch' between the distribution of the surplus (50:50 in the case of the regular Nash bargaining solution) and the distribution of the transaction costs (i.e., the two parties must have different transaction costs).[3] Yet, such a 'mismatch' is not a prerequisite for the optimality of B-ownership or joint ownership once we allow for investments.

In our full-fledged model, party A first can decide how much to invest in its human capital (date 0). Following the literature on the property rights approach, we assume that the investment increases the collaboration surplus more than party A's default payoff.[4] After the investment is sunk, each party decides whether to incur its respective transaction cost (date 1). Finally, if both parties have paid their transaction costs, negotiations take place (date 2). In the standard property rights model (i.e., if there were no transaction costs), A-ownership would be the uniquely optimal ownership structure, as it would maximize party A's incentives to invest. Yet, we will show that in the presence of transaction costs, party A's investment may well be larger under B-ownership and under joint ownership. Intuitively, the fact that B-ownership and in particular joint ownership are so unattractive when no agreement is reached implies that paying the transaction costs may be an equilibrium outcome under these ownership structures, even when under A-ownership the negotiation phase would not be reached. Hence, B-ownership and joint ownership may prevent ex post inefficiencies and provide stronger

[2] As discussed in detail by Anderlini and Felli (2006), the transaction costs may be interpreted as the time spent 'preparing' for the negotiations. For instance, the parties need to conceive of a suitable language to describe the states of nature, they must collect information about the legal environment, they need to spend time arranging a way to meet, etc.

[3] The reason is that when both parties have the same transaction costs, under A-ownership both parties can recoup their transaction costs whenever their sum is smaller than $V-\alpha$; i.e., whenever reaching an agreement is efficient. Thus, B-ownership or joint ownership cannot be strictly better than A-ownership, because A-ownership already yields the largest attainable total surplus, regardless of whether or not an agreement is reached.

[4] Specifically, the collaboration surplus now is $V \cdot (1+I)$, while party A's default payoff under A-ownership is $\alpha \cdot (1+I)$, where I is the investment level chosen by party A.

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