The hold-up problem in a repeated relationship

Marco A. Castaneda

Department of Economics, University of Kentucky, United States

Received 24 August 2004; accepted 9 November 2005
Available online 19 January 2006

Abstract

Much of the literature on what determines the scope of operations of a producer has centered on the “hold-up problem”. The standard results indicate the hold-up problem may lead to suboptimal investments, and therefore integration may improve the organization of production. In this paper, we consider a repeated relationship with durable investments and show the possibility of integration improves the choice of investments and there is no integration in equilibrium. The equilibrium contract is non-exclusive, in order to allow the buyer to choose integration in later periods. We derive this result in the presence of very simple and incomplete contracts.

© 2005 Elsevier B.V. All rights reserved.

JEL classification: D23; L22

Keywords: Hold-up problem; Outside options; Exclusive contracts; Vertical integration

1. Introduction

The question of what determines the scope of operations of a producer remains one of “the central question in the economics of organization” (Holmstrom and Roberts, 1998). Moreover, the problem of relationship-specific investments and incomplete contracts has attracted considerable attention, and much of the literature on what determines the scope of operations of a producer has centered on the “hold-up problem”.1 The standard results in the literature indicate the hold-up problem may lead to suboptimal investments in a relationship. Therefore,

1 For a survey of the literature on incomplete contracts and the hold-up problem, see Schmitz (2001). The nature of the hold-up problem is illustrated in Holmstrom (1982) in the context of team production. In particular, if investments are non-contractible and team members share the surplus, then it is impossible for all team members to receive at the margin the full contribution form their investments.
Williamson (1985), Klein (1988) and others have suggested that integration of production processes may improve the organization of production. The conclusion that integration may be necessary to improve the choice of investments has been challenged by a number of results, which show that relatively simple mechanisms can implement the optimal investments. For instance, Aghion et al. (1994) have shown the underinvestment problem can be solved if renegotiation design is possible. In addition, Noldeke and Schmidt (1995) use a particular renegotiation procedure and show simple option contracts can solve the hold-up problem. As discussed in Edlin and Reichelstein (1996) and Che and Hausch (1999), an important property of the previous mechanisms is the allocation of all the bargaining power to one party. These mechanisms are rarely seen in practice and may not work if the parties can renegotiate the mechanism.

In addition, the empirical evidence suggests that (i) the hold-up problem does not necessarily lead to integration and (ii) relationships can be governed by simple and incomplete contracts, with no particular renegotiation mechanisms. For instance, the pattern of relations in the Japanese automobile industry is well documented and provides a well-known instance of successful relationships governed by remarkably simple and incomplete contracts (Holmstrom and Roberts, 1998). An important element in the pattern of relationships in the Japanese automobile industry is the repeated nature of the interaction. In particular, contracts are generally for 1 year, with no guarantee the supplier will have the business in later periods.

In this paper, we consider the standard model of a buyer and a seller of an intermediate input in which the seller undertakes an investment to reduce the subsequent costs of production. The model is similar to Edlin and Reichelstein (1996), but with some important differences. In particular, we consider (i) a repeated relationship with a durable investment and (ii) we include the choice of organization of production in the model. Hence, in contrast to Halonen (2002) and Baker et al. (2002), who use repeated games to look at the incentives provided by reputational concerns, in our model investments are made only once. In addition, we assume the buyer has the option to integrate and produce the intermediate input internally. This option is costly but allows the buyer to make the desired investments.2

This model of a repeated relationship will allow us to investigate (i) whether an exclusive contract may be necessary to protect the investments of the seller as suggested in the literature3 or (ii) whether the possibility of integration in later periods may provide additional incentives for the seller to make the appropriate investments. In this model, reputation does not provide any additional incentives because the investments are made only once. However, if the seller underinvests, then the buyer may be able to exit the relationship if the contract is non-exclusive. As discussed in Segal and Whinston (2000), the literature contains little formal analysis of exclusive contracts, and therefore, the analysis in this paper provides an important contribution to the literature.

The main results of the paper indicate the possibility of integration improves the choice of investments and integration does not occur in equilibrium.4 We derive this result in the presence

2 This interpretation of integration is more closely related to the transaction cost theory (Williamson, 1985). In the property rights theory (Hart, 1995), integration is characterized only in terms of the ownership of assets, and hence the investments in question are always made by the seller. In addition, see Grossman and Hart (1986) and Hart and Moore (1990).

3 For instance, see Klein (1988).

4 Segal and Whinston (2000) make the observation that non-exclusive contracts may improve investment incentives when bargaining with outside options, but they do not analyze this situation.
دریافت فوری متن کامل مقاله

امکان دانلود نسخه تمام متن مقالات انگلیسی
امکان دانلود نسخه ترجمه شده مقالات
پذیرش سفارش ترجمه تخصصی
امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
امکان دانلود رایگان ۲ صفحه اول هر مقاله
امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
دانلود فوری مقاله پس از پرداخت آنلاین
پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات