On the role of sunk costs and asset specificity in outsourcing decisions: a research note

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Abstract

The accounting literature has argued that firms overengage in outsourcing because they tend to ignore the transaction costs involved in buying services from external suppliers. A field experiment with managers of health care organizations shows that decision makers are actually quite sensitive to the asset specificity associated with the “buy” option in an outsourcing decision. However, they also appear inappropriately sensitive to the sunk costs inherent in most real-life outsourcing decisions, and may actually underengage in outsourcing. Prior commitment to internal procurement systematically reduced the willingness to outsource, relative to a pure “make or buy” scenario. © 1999 Elsevier Science Ltd. All rights reserved.

1. Introduction

Efficient firms allocate their own resources to those activities within the value chain for which they enjoy a comparative advantage over competitors (Shank & Govindarajan, 1992). Other activities are increasingly being outsourced to external suppliers. Outsourcing often involves important production cost savings relative to internal production because outside suppliers can aggregate demand, which enables them to benefit from economies of scale, smoother production schedules and centralization of expertise. Management accountants play an important role in the decision whether to “make” or “buy” an activity because it requires an accurate analysis of the relevant costs associated with both options.

Optimal choices between continued internal production and a switch to market procurement of an activity require more than mere consideration of production cost differences. According to transaction cost economics, the degree of asset specificity is an important consideration in the outsourcing decision. Outsourcing is only desirable when expected governance and coordination costs resulting from asset specific investments in the relationship with the future supplier are lower than the production cost advantage that the supplier may bring (Chalos, 1995). Because transaction costs are often difficult to specify and estimate, many authors in accounting warn against head-over-heels commitment to outsourcing. Case studies (Drtina, 1994; Lacity, Willcocks & Feeny 1996) have suggested that decision makers within firms
overemphasize production cost advantages of outsourcing and underestimate the role of transaction costs. However, little or no systematic research has investigated the incorporation of transaction costs in outsourcing decisions.

Even less documented is an intuitively important factor that may discourage outsourcing when it would be normatively appropriate. In practice, outsourcing is not a make-or-buy decision, but involves a switch from internal production to external procurement. Although the past investments in internal production are sunk and should be irrelevant, the act of giving up the corresponding assets is very salient to the manager. If managers are unable to ignore these sunk costs, they may engage in outsourcing to a lesser extent than would be normatively appropriate (Ghosh, 1995). To our knowledge there have been no empirical studies investigating the inherent sunk cost aspect of outsourcing decisions.

“Good” outsourcing decisions require that decision makers are appropriately sensitive to asset specific investments, and appropriately insensitive to sunk costs. In this paper we experimentally investigate the extent to which sophisticated decision makers consider sunk costs and asset specificity while choosing between internal production and outsourcing of a component of the firm’s value chain. Section 2 introduces the transaction cost economics approach to vertical integration where anticipated asset specificity determines a firm’s optimal degree of vertical integration (Williamson, 1989). The third section deals with the sunk cost bias and describes its potential impact on the outsourcing decision. Section 4 outlines our experimental design and results. The last section offers a general discussion and directions for future research.

2. Transaction cost economics approach to outsourcing

Accounting norms and standard economic theory prescribe a forward looking perspective for outsourcing decisions. The decision whether or not to outsource an activity should be based on a comparison of the available “make” and “buy” options on the basis of expected future cash flows. Within this general prescriptive framework transaction cost economics emphasizes that transactions should occur in the market only when this is more efficient than internal production (Anderson & Weitz, 1986; Lieberman, 1991; Lyons, 1995).

Specific assets are specialized to the exchange between buyer and seller rather than being usable for other purposes without losing value. For example, if outsourcing part of the production process requires the outsourcing firm to invest in dedicated transportation equipment, this investment is asset specific if it can not be used for other purposes. Investments that can be put to other use without costs are not asset specific.

While current production cost advantages of external procurement are relatively easy to specify on the basis of given information, future costs associated with asset specificity are not. They are due to potential opportunistic behavior of the supplier. At the time of the decision, it is not known whether the partner in the transaction will behave opportunistically. These costs can be made more tangible by designing and enforcing contracts between the parties, but even then the associated dollar costs are hard to specify. From a transaction cost economics point of view, we can generate the hypothesis that the intention to outsource is lower in the presence of asset specificity.

3. Sunk cost bias in outsourcing decisions

In all cases where future cash flows favor the external supplier, outsourcing would be optimal. From a normative point of view, the mere fact that the firm is currently “making” the activity for which outsourcing is contemplated, should be irrelevant. Outsourcing—or vertical de-integration—decisions are normatively equivalent to vertical integration decisions. Any historical investments in a current “make” activity are to be treated as sunk costs. These costs were incurred in the past, are not changed by today’s alternative actions, and should therefore be ignored. Only future and relevant cash flows should be taken into account.
Research in psychology, however, demonstrates that individual decision makers are not immune to sunk cost biases (Arkes & Blumer, 1985). Sensitivity to sunk costs often leads to perseverance or even escalation of normatively inappropriate courses of action. These effects have been shown in tasks that are related to various business functions (Bazerman, Beekun & Schoorman, 1982; Drummond, 1994; Garland & Newport, 1991; Staw, 1976, 1981; Staw & Ross, 1978). In each case the mere existence of prior investment (in money or in time) interferes with the consideration and adoption of alternative courses of action, with which the manager would be normatively better off.

We propose that most—if not all—outsourcing decisions are threatened by this bias. While outsourcing decisions should only take into account anticipated costs and revenues of the make and buy options, current “make” activities have usually been the result of considerable prior investments. If a parallel with sunk cost biases in other business decisions exists, we should observe more reluctance to choose for outsourcing than for choosing the same “buy” option when no prior investment has taken place, even if relevant accounting information would prescribe the choice for outsourcing in either case. This means that we can generate the hypothesis that the presence of a sunk historical investment in the current “make” activity reduces the likelihood of opting for outsourcing.

Research into the sunk cost aspect of vertical integration decisions is rare, and to our knowledge there are no empirical studies investigating its role in outsourcing decisions. In one study that is related to our concerns, Whyte (1994) found an influence of sunk costs in vertical integration decisions. In his study decision makers assumed the role of the general manager of a manufacturing company, and had to evaluate the possibility of acquiring a distributor of the firm’s products. The key manipulation was whether prior transaction specific investments had been made by the manufacturer into the relationship with the distributor. Whyte (1994) demonstrated that such sunk costs considerably increase the likelihood that the manufacturer decides to integrate vertically even if normative analysis would favor the preservation of the current governance structure. In Whyte’s study, sunk costs and asset specificity coincided. Our own research investigates exactly the opposite problem. We study the impact of sunk cost on the decision to de-integrate. In outsourcing, asset specificity and sunk costs are dissociated: asset specificity is forward looking and should be taken into account; prior investments in internal production are backward looking and should not.

Past research into sunk cost biases in managerial decision making can be used to identify potential reasons for the reluctance to engage in outsourcing. First, it has been recognized that the inclusion of sunk costs in a decision can result from information asymmetry within an organization where middle managers possess privately held information and have an incentive to shirk (Harrell & Harrison, 1994; Harrison & Harrell, 1993; Kanodia, Bushman & Dickhout 1989). Outsourcing decisions may be postponed for similar reasons: managers may have an incentive to withhold or distort information that would favor outsourcing, thereby threatening their own power base within the organization.

Other research suggests a number of reasons for postponing outsourcing that are based on the individual psychology of the decision maker. One common explanation is based on the fact that outsourcing constitutes a discontinuation of policy. Managers who have been responsible for these past “make” decisions may avoid outsourcing, merely because it would create the appearance that they are trying to correct for a prior mistake. They would be reluctant to create such an impression, either because they see it to as a threat to their perceived competence by the other members of the organization (Brockner, Rubin & Lang, 1981; Fox & Staw, 1979), or even because it would constitute a threat to their self esteem. Support for this latter hypothesis is found in studies finding a larger sunk cost bias when the decision maker believes he was responsible for the past investments (Bazerman, Guiiano & Appelman, 1984; Brockner, 1992; Chenhall & Morris, 1991; Staw, 1976). Similar motivations may underlie the reluctance to outsource when a decision maker has been responsible for starting internal production in a previous period. A different motivational
explanation was provided by Arkes and Blumer (1985). Some of their empirical results could not be explained by the desire to appear consistent with prior decisions. For example, participants in one of their studies massively preferred to eat a pizza for which they paid $5 rather than an identical pizza that had cost them only $3. The authors formulated the hypothesis that many sunk cost biases may be explained by the mere desire not to be wasteful.

Our objective in this study is to test whether “make or buy” decisions are biased towards internal production when the buy option is presented as a choice for outsourcing. We do this by comparing preferences for make and buy options, keeping relevant accounting information constant, while experimentally manipulating whether asset specificity is present in the decision scenario, and whether the current choice has been preceded by a prior decision in favor of internal production.

4. Experiment

The experimental scenarios contained two orthogonal experimental manipulations. A first manipulation involved the antecedents of outsourcing as suggested by transaction cost economics. For half of the respondents, the scenario specified the requirement of asset specific investments associated with the outsourcing option. Orthogonal to the asset specificity manipulation half of the participants were told that in-house production would be a continuation of an existing activity (sunk cost condition), while others were said that is was a new activity (make or buy condition).

The scenarios control for rational explanations of the sunk cost bias. The decision maker in the study was the only “player”. Motivation to shirk or social justification were therefore excluded as an explanation. Also, information about the decision alternatives was constructed such that outsourcing had unambiguous production cost advantages. To the extent that only production costs are taken into account, outsourcing would be the rationally optimal choice under all circumstances (cf. Northcraft & Wolfe, 1984). We carefully avoided decision scenarios in which the sunk costs would explicitly involve past investments in people. Personnel decisions are extremely complex and are determined by an interplay of efficiency considerations and norms about ethical responsibility (Drummond, 1994).

4.1. Participants

One-hundred and fifty-six managers of Belgian hospitals and rest homes were presented with a scenario in which they had to make a decision regarding the outsourcing of patient catering to an external catering company. In order to ensure a high level of interest in the problem, we sent out a questionnaire to managers who had already outsourced some activities, or who were actively considering the outsourcing of non-medical activities such as catering and cleaning. This information had been collected for other research purposes. We received one hundred and three usable answers. The average experience of the respondents in the sector was 14.33 years (S.D. = 8.45). On average they had been employed by their current organization for 10.17 years (S.D. = 6.79).

4.2. Decision task and procedure

Respondents were randomly assigned to one of four experimental scenarios involving a hypothetical choice between internal production or outsourcing of patient meal preparation. The first scenario was a control condition in which neither asset specificity or sunk cost were an issue. The net present value of cash flows related to future internal preparation was BEF 75 000 000. An external company proposed to prepare and sell the meals for BEF 65 000 000 and to employ the current kitchen personnel of the hospital. The quality of the meals would remain the same. Warming-up the externally produced meals on-site would require an investment of BEF 9 000 000. This investment was not asset specific, since it could also be used for warming up internally prepared meals or meals of other external catering companies.

The second scenario was identical to the first, except that the investment for the warming up
process was made asset specific. The scenario mentioned that in the event of a switch to another caterer the BEF 9,000,000 investment would be lost.

In scenarios 3 and 4 we introduced sunk costs. The managers were told that 2 years before the current decision their organization invested in new kitchen equipment for a total of BEF 35,000,000. This investment would be lost with a switch to external production. No other use of the installation was possible and it could not be sold. Table 1 gives an overview of the different scenarios in our first study.

4.3. Dependent variable

After reading the scenario, the managers had two alternatives to choose from. They could either decide to produce the patient meals internally (make option), or outsource the activity to an external catering company (buy option).

4.4. Results

The binary choice data were analyzed by logistic regression. The proportions of respondents opting for outsourcing in each of the four experimental conditions are represented in Table 2.

As expected, we found that, relative to the control scenario, both the anticipation of asset specific investments and the presence of sunk costs reduced the likelihood of outsourcing. The analysis revealed main effects for both asset specificity (Wald $X^2(1) = 7.13; p < 0.01$) and sunk costs (Wald $X^2(1) = 5.85; p < 0.02$). These effects are additive, as the interaction was not significant ($X^2 < 1$). Additional analyses with health care and organizational experience as covariates yielded identical results. Neither of the covariates was statistically related to our dependent measure.

5. Discussion

These results suggest that the warnings in the management accounting literature against “head-over-heels” outsourcing may be exaggerated. Managers do take into account transaction costs, at least when they are explicitly specified. Quite rationally, they were more reluctant to opt for outsourcing if the outsourcing option was associated with asset specific investments. Future research will have to address to what extent this sensitivity can be reconciled with the warnings emanating from case study research. In practice, the salience of future transaction costs may vary, and follow-up research should address the generalizability of our findings across levels of salience of the transaction cost information.

In contrast to any normative model, participants in our studies also considered sunk costs in the outsourcing decision, even when opportunistic

Table 1
Summary of the data available to the subjects in Experiment 1

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Make option</th>
<th>Buy option</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scenario 1</td>
<td>Production cost: BEF 75,000,000</td>
<td>Purchasing price: BEF 65,000,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Investment (not asset specific): BEF 9,000,000</td>
</tr>
<tr>
<td>Scenario 2</td>
<td>Production cost: BEF 75,000,000</td>
<td>Purchasing price: BEF 65,000,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Asset specific investment: BEF 9,000,000</td>
</tr>
<tr>
<td>Scenario 3</td>
<td>Production cost: BEF 75,000,000 Sunk investment: BEF 35,000,000</td>
<td>Purchasing price: BEF 65,000,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Investment (not asset specific): BEF 9,000,000</td>
</tr>
<tr>
<td>Scenario 4</td>
<td>Production cost: BEF 75,000,000 Sunk investment: BEF 35,000,000</td>
<td>Purchasing price: BEF 65,000,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Asset specific investment: BEF 9,000,000</td>
</tr>
</tbody>
</table>

Table 2
Experiment 1: percentage of participants opting for outsourcing

<table>
<thead>
<tr>
<th>No sunk cost</th>
<th>Sunk cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>No anticipated transaction cost</td>
<td>59.3%</td>
</tr>
<tr>
<td>Anticipated transaction costs</td>
<td>40.0%</td>
</tr>
</tbody>
</table>
behavior and social esteem motivations were excluded by design. The results are consistent with a wide body of descriptive research in business decision making, demonstrating that sunk costs do matter. We emphasize that in the practice of outsourcing, sunk costs are the rule rather than the exception. Only start-up firms are faced with “pure” make-or-buy decisions. For existing firms outsourcing is always a de-integration decision, in which prior commitments to internal procurement should be ignored. Further research will have to determine to which psychological antecedents the reluctance to outsource can be attributed. Obviously, our results also raise the question how sunk cost errors in outsourcing decisions can be avoided, either by training or by attending to the format in which accounting information is provided. While working with scenarios is common in experimental research in accounting, future lab research may also address whether the results can be replicated by other methods, like simulated management decision games.

Our study was conducted with health care managers and health care scenarios to ensure a high level of domain expertise. In addition, our analyses showed that the extent of their expertise did not seem to matter. However, while domain experts might be better able to distinguish relevant and irrelevant costs in their particular field of action, they might be less familiar with formal decision analysis. In an additional experiment, we therefore replicated our study with a group of senior finance and executive accounting students. They received formally equivalent scenarios, situated in the context of outsourcing part of the manufacturing process of television sets. The results were identical to those of the reported study, increasing our confidence that the effects are reliable.

In summary, while accounting researchers recently have argued that companies are overly committed to outsourcing and underestimate potential drawbacks that are due to transaction costs (Chalos, 1995), we provide a different perspective. In situations where the optimal decision would be to discontinue internal production in favor of outsourcing, individual managers display a striking conservatism. First, they do take asset specificity into account. Second, decision makers are even more conservative than they should be, by incorporating sunk costs as well. These results present a challenge to the prevailing wisdom in the accounting literature, and suggest an elaborate research agenda for many years to come.
References


