Uncertainty During Tender Offers and the Measurement of Shareholder Wealth Effects

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Abstract. Uncertainty concerning the ultimate outcome of tender offers may affect the measurement of changes in shareholder wealth. The uncertainty regarding the outcome of tender offers is measured by estimating the probability of acceptance of tender offers during the period when the tender offers are outstanding. The estimated probability of acceptance of tender offers implies that the amount of uncertainty prior to knowledge of the ultimate outcome is substantial and affects the measurement of expected equity gains. The uncertainty-adjusted measure of the change in shareholder wealth indicates that previous studies may have underestimated the gains expected to result from tender offers.

Key words: tender offers, uncertainty, shareholder wealth, gains measurement

1. Introduction

When a firm makes an offer to acquire another firm, the price of the target firm's shares generally does not immediately rise to reflect the full value of the offer. The market prices of both the bidding and target firms' shares reflect a discount for uncertainty regarding the outcome of the offer. That is, investors discount the prices of both the bidding and target firms because of the possibility that the offer will be rejected. Uncertainty regarding the outcome of the offer is present from the announcement of the offer until the ultimate outcome is known. Therefore, ignoring uncertainty regarding the outcome of the offer will result in an underestimate of the change in value of equityholders' claims measured before the outcome of the offer is finalized. The purpose of this article is to examine the effects of this uncertainty on the measurement of incremental shareholder wealth during the period when the tender offer is outstanding.

Previous studies have found that accepted tender offers produce synergistic benefits for equityholders (Bradley, Desai, and Kim, 1983, 1988). However, the increase in shareholders' wealth is only temporary if the offer is rejected and no subsequent offer is made. These findings imply that changes in bidding and target firms' equity prices, during the tender-offer period, reflect not only the expected synergistic benefits, but also the probability that the offer will be accepted. Consequently, to be considered an unbiased estimate of the expected impact from the completed acquisition, any measurement of the change in shareholder wealth must be adjusted for uncertainty regarding the outcome of the offer.
Although the effects of acquisitions on shareholders' wealth have been well documented (Jensen and Ruback, 1983; Jarrell, Brickley, and Netter, 1988), there is no adjustment made in previous research for uncertainty regarding the outcome of the offer. The methodology used in this study provides estimates of three market-determined variables: 1) the level of uncertainty regarding the outcome of the tender offer, 2) the uncertainty-adjusted change in bidding firms' shareholder wealth, and 3) the uncertainty-adjusted change in target firms' shareholder wealth. Results using this methodology are compared to existing research that does not incorporate the effects of uncertainty. Finally, to examine the validity of the estimates of uncertainty, uncertainty-adjusted changes in shareholder wealth are compared with realized changes in shareholder wealth measured after the delisting of the target firms' shares for completed transactions.

The remainder of the article is organized as follows. The methodology is contained in the next section, including a description of how the probability estimates and uncertainty-adjusted changes in shareholder wealth are measured. Following the methodology, the results of the analysis are presented. The final section of the article contains the summary and conclusions.

2. Methodology

The bidding and target firms' shares trade separately during the period when the tender offer is outstanding, and their prices are influenced by the expected change in value associated with the completed acquisition, the offer itself, and the probability that the offer will be accepted. The magnitude of the total change in value from the completed acquisition depends on the economic benefits that will result from the acquisition and is not dependent on the offer or the probability that the offer will be accepted. The offer determines only the division of the gain between the bidding and target firms (Halpern, 1973).

Because uncertainty regarding the outcome of the tender offer is reflected in the market prices of the bidding and target firms' shares, these prices must be adjusted to accurately measure the total change in value associated with the completed acquisition. The methodology described below extends the models first presented by Lewellen and Ferri (1983) and Samuelson and Rosenthal (1986) to measure the change in equity value after adjusting for the uncertainty regarding the outcome of the offer.

2.1. Effects on shareholders' wealth

Following the announcement of a tender offer, the price of the bidding and target firms' shares can be expressed as

\[ P'_B = \pi(P_B^*) + (1 - \pi)P_B \]  
\[ P'_T = \pi(P_T^*) + (1 - \pi)P_T, \]