

Updated and New Analysis on Merger Arbitrage

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Department of Banking and Finance
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Prof. Per Östberg, Ph.D.
Christoph Wenk

Written by:
Sandro Braun

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**University of
Zurich** UZH

Executive Summary

Hypothesis

Welles (1981) notes that merger arbitrage has been employed since the 1930s, but it was not until the 1970s that this investment strategy was introduced to the general public. Since then, financial markets have evolved enormously. The access to financial information has become faster, transaction cost and practical limitations have further decreased and there is much more liquidity in today's merger arbitrage market. All in all, these aspects are expected to increase the efficiency of the market pricing of mergers and acquisitions over the course of time. The existing academic literature, however, mainly focuses on the 1980s and the 1990s. There are hardly any papers analyzing merger arbitrage in the new millennium. By analyzing newer mergers and acquisitions until 2009, this paper corrects the common shortcomings of the outdated data in the existing literature and answers the question whether merger arbitrage can (still) provide attractive abnormal returns. In addition to this, the paper also tests whether the abnormal returns can be attributed to either limited arbitrage or transaction costs.

Methodology

The paper uses US merger and acquisition data from the Securities Data Company (SDC) database as well as individual stock information from the Center for Research on Security Prices (CRSP) between 1986 and 2009. The final sample is comprised of 2'083 cash and stock deal transactions. Using a time-series portfolio approach, the paper constructs equal- and value-weighted merger arbitrage portfolios and evaluates the profitability of merger arbitrage over the course of time. To test for abnormal returns, the merger arbitrage returns are first benchmarked using standard linear models like the CAPM, the Fama and French (1993) three-factor model, the Carhart (1997) four-factor model and a model that includes in addition the Pástor and Stambaugh (2003) liquidity factor. Benchmarking merger arbitrage returns against these linear models, however, is not necessarily appropriate, because the returns are expected to be of a nonlinear nature. Therefore the paper also benchmarks the returns against a piecewise linear model that better fits the expected return pattern of merger arbitrage.

In a second part, the paper uses event excess returns to perform a cross-sectional analysis. In this way, whether the abnormal returns to merger arbitrage can be explained by either a model of limited arbitrage or a model of transaction cost can be tested.

Results

This paper reinforces the results of other academic papers that merger arbitrage earns significant abnormal returns. Using a time-series portfolio approach, merger arbitrage yields monthly abnormal returns of 1.08-1.10% and 0.43-0.56% for the equal- and value-weighted merger arbitrage portfolio when testing against linear benchmark models. Nevertheless, the paper also shows that the abnormal returns decrease over the course of time. This reduction may be a sign of improvements in market efficiency over time. The paper also

shows that the merger arbitrage returns between 1986 and 1997 are better described by a piecewise linear benchmark model. This conclusion, however, cannot be projected on newer mergers and acquisitions between 1998 and 2009. Nevertheless, if the merger arbitrage returns are benchmarked against a piecewise linear benchmark model, the abnormal returns are still statistically significant and even increase a few basis points compared to the linear benchmark models.

In the second part, the paper uses the cross-section of merger arbitrage event excess returns to find out whether the abnormal return can be attributed to either a limited arbitrage model or a transaction cost model. Contrary to Baker and Savaşoglu (2002), the paper cannot find evidence for limited arbitrage. But the paper not only rejects the limited arbitrage model, it also invalidates the transaction cost model. All in all, both proposed models cannot explain the abnormal returns of merger arbitrage.

Conclusion

The paper shows that merger arbitrage still provides abnormal returns. Even though these returns have decreased, they are still significantly positive, yielding 0.33-1.01% per month for 1998 to 2009. The abnormal returns, however, cannot be explained by the limited arbitrage or transaction cost models in this paper. But this does not mean that there is no new insight. In the words of Thomas Edison (1847-1931): "I have not failed. I've just found 10'000 ways that won't work." Accordingly, there is still a lot of academic work to do to fully understand merger arbitrage and its abnormal returns.