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Conducting Event Studies on a Small Stock Exchange

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Abstract

This paper analyses whether it is possible to perform an event study on a small stock exchange with thinly trade stocks. The main conclusion is that event studies can be performed provided that certain adjustments are made. First, a minimum of 25 events appears necessary to obtain acceptable size and power in statistical tests. Second, trade to trade returns should be used. Third, one should not expect to consistently detect abnormal performance of less than about 1% (or perhaps even 2%), unless the sample contains primarily thickly traded stocks. Fourth, nonparametric tests are generally preferable to parametric tests of abnormal performance. Fifth, researchers should present separate results for thickly and thinly traded stock groups. Finally, when nonnormality, event induced variance, unknown event day, and problems of very thin trading are all considered simultaneously, no one test statistic or type of test statistic dominates the others.

Keywords:

Event studies thin trading

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Notes

1. Although event studies date back to the 1930s, the papers by Ball and Brown (1968) and Fama et al. (1969) introduced the methods used today. MacKinlay (1997) contains an excellent description of the history and implementation of event studies.

2. If the difference between the 'filled in' value and the underlying unobservable 'true' value is white noise then both the lumped and uniform methods provide an unbiased estimate of returns. Also, the bias in the lumped return method may not be too large if volume and returns are positively correlated. If a lack of volume implies small price changes, a zero return on a nontrading day might be a reasonable estimate of the true unobserved return for that day. See Karpoff (1987) for a survey of the relationship between changes in price and volume.

3. Real-time values for the KFX are provided by several data vendors. For example, it is listed as KFX on Yahoo-Finance. The KFX is a value-weighted index of the 20 largest Danish blue chip stocks selected from a list of the 25 most actively traded (liquid) stocks during a 12 month period ending in November of the previous year. Although the index is not intended to reflect all major industry groups, it is a good gauge of the Danish economy. Throughout the sample period the index has generally included firms in food production, banking, insurance, technology, wind energy, transportation, pharmaceutical, and the retail sectors. Like most indexes, it does not included dividends. Since it is composed of the most liquid stocks on CSE, it is unlikely to suffer from thin trading problems. Therefore, it is a better market index than an equal or value-weighted index of all stocks on the CSE.

4. Test statistics for cross-sectional dependence and cross-sectional independence, as presented in Brown and Warner (1980, 1985) were also calculated. These statistics are related to T_1, but are known to have lower power. Our results confirmed that they did not perform as well as T_1. Further description of test statistics and results from the lumped return adjustment are available from the authors upon request.

5. Although results for the lumped return adjustment for thin trading are not reported in the paper for the sake of brevity, lumped returns actually provide slightly better results in terms of power and size for the medium traded group. Trade to trade returns do better for both thickly and thinly traded stocks. Nevertheless, since the lumped return adjustment is relatively easy to implement, researchers facing time constraints might consider it.

6. If there are no trades on the n−1 days between day t−n and day t, then the n daily returns for day's t−(n−1) to day t are unobserved.

7. This is often referred to as Patell's (1976) adjustment.

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