

Trading activities around the announcement days of some major M&A

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Executive Summary

This work will try to show if there are some kind of information leakages in the option markets by replicating the research made by Jayaraman et al. (2001). Instead of quarterly earning releases, which are planned and everyone is aware of their date, some of the major M&As of the last two decades are analyzed: M&As are event of which the date isn't public and come out only through a public announcement once the decision has been taken. Those events do normally take a long time before they end up with an approval or a withdrawal, and their consequences on the very announcement day are pretty heavy and clear in the stock markets. Plus, behind every merger and acquisition there is always the question whether the corporate event creates value for both companies or not: it will be therefore worth to spend a couple of words about both the non-synergistic and the synergistic theory. The two concepts are briefly explained in the paper through the researches of Jensen (1986), Roll (1986), Shleifer and Vishny (1989), Bradley et al. (1988), Klein et al. (1978) and Coase (1937), and thanks to the evidence of the changes in stock prices and in the open interest of options, one of the two theories will come out to be stronger/weaker.

Going a step back, the research made by Jayaraman et al. (2001) will be the milestone on which this paper will be based on: they were in fact the really first who chose to analyze anomalies in the open interest around a portfolio of mergers and acquisitions, and this work will continue the research by focusing on later events. The open interest is a unique cumulative measure which counts all outstanding put and call contracts and which have been later on further analyzed e.g. by Chesney et al. (2009), who used in their research a top-down method, method which allowed them to match the found anomalies with the relative events. Yet, this paper will utilize a bottom-up method, by starting from each single event ending up looking for anomalous changes in the OI.

It is therefore surely of interest to dig deeper into the option markets, since options are cheaper and offer a larger leverage as well as larger gain possibilities: an informed trader could jump on them and take profit of some kind of early information he owns. Now, "insider trading" is classified as illegal, and still there is no perfect criterium which allows to point out this kind of traders and transactions, it is now more appropriate to refer to those trades as to "informed trading". The results might then illustrate a path which could be followed in the future in order to be more precise when it comes up to the regulators and authority to report cases of "insider trading". The paper by Chesney et al. (2009) unifies three criteria for a deeper understanding of how informed/insider trading might be found out and offers the possibility to look at what steps could be taken and added to a mere research only on anomalies in the open interest measure.

In order to proceed with the analysis, thanks to Option Metrics® and CRSP®, both available at Wharton (wrds.wharton.upnn.edu), all datas regarding stock prices, outstanding option contracts and open interest are needed. Furthermore, three time windows are chosen, still by following the concept illustrated by Jayaraman et al. (2001), yet by modifying the periods they have chosen: in this paper the first window is a benchmark time window, in which the average daily open interest of call and put options is calculated, it starts 150 days and ends 51 days before the announcement. This should behave itself without anomalies, since rumors aren't public and the announcement still didn't happen. The second window is a pre-announcement window, starting 20 days and ending 1 day before the announcement: this is the window in which informed traders might profit of their early informations by opening/closing call/put positions, and it's here that the open interest is expected to behave itself abnormally. The third and last time window, the post-announcement window, starts 1 day and ends 20 days after the announcement: here the anomalies are expected to go back towards a normal level, following the direction of the underlying toward earnings, since investors simply follow the resulting market trends and the whole story should end up stabilizing itself closer to the benchmark levels. Since the extent of open interest is a really large value, it makes more sense for the research's purposes to take the logarithm out of it and then calculate the degree of increase/decrease by dividing the open interest pre and post-announcement by the open interest of the benchmark. The robustness of the test will be evaluated through a t-test which will confirm how strong the anomaly at several confidence levels is. All analysis will be executed through MatLab, and an output graph of calls and puts is to be found in the Appendix of this paper.

These are the chosen events:

- Exxon – Mobil
- Vodafone P.L.C. - Mannesmann
- Glaxo Wellcome – SmithKline Beecham
- United Airlines – US Airways
- Procter&Gamble – Coke
- Johnson&Johnson – Alza Corporation
- Hewlett Packard – Compaq Computers
- Pfizer Inc. - Pharmacia
- JP Morgan Chase – BankOne Group
- AT&T – BellSouth
- Novartis – Alcon

This is a well diversified portfolio of companies, which includes financial institutions,

pharmaceutical companies, firms active in the oil industry, airlines and finally telecommunication giants as well, for a total of 22 companies which are involved in respectively 10 M&As and 1 Joint Venture. For each of the eleven events this paper will spend some word to describe the backgrounds, the reasons and the consequences the deals brought on the newspaper, in order to build us up an idea of the mergers and to better understand the results which will come out from the calculations. All the news about the involved mergers and the acquisitions are taken out from The New York Times and the Handelszeitung, which are useful and reliable source.

The results, finally, are far from being unexpected, on the contrary, anomalies are jumping out from almost all cases: this means that investors did quickly and abnormally change their investment strategies (started to write contracts/close positions) during the days leading up to the announcements. We can't really know if those changes in strategy ended up in large profits and therefore in possible cases of "insider trading", but sure is that something happened, and it could be of interest to discover where those transactions are coming from and the reason behind them. As expected, some kind of "back-to-the-roots" effect took place, since the level of open interest seemed to follow (especially and more clearly on the target firms side) the logical run for earnings due to the announcement's market reactions: it can be therefore deducted that investors simply followed the market trends after having swallowed the informations about the announcement.

This analysis could be used as a starting point: if the criteria used by Chesney et al. (2009) would be applied to a bottom-up method, the gains of this transactions and their edging purposes could be pointed out, and the answer to the question whether illegal profit has been exploited or not might then get a clearer answer.

This research could give a couple of inputs to answer to the questions on which it is based:

- *What are the consequences of a major M&A on the respective underlyings?*
- *Are there unusual/suspect events occurring in the option markets in the days prior and after the announcement of an M&A?*
- *Could they be classified as informed?*
- *Is the market efficient in respect of insider informations?*

Yet, it is impossible to answer properly to all of them, but a draft could already be drawn. The consequences on the respective underlyings are pretty clear in respect of stock prices and changes in OI (although here a bit less), as well as discover whether unusual/suspect events occurred or not. Now, whether they are to be classified as informed as well as to judge whether the market is efficient in respect of insider information is still hard to do: still, this research could help out to understand one behavior in the option markets during the days leading up to the announcements,

and set a starting point to dig deeper into it. All answers will be illustrated in detail in the conclusions of this work.