

# THE MICHEL/SHAKED GROUP

## RESEARCH FROM OUR EXPERTS

### *Fraud-on-the-Market*

When a public corporation knowingly or recklessly disseminates false information, investors may suffer damages. Misinformation might inflate the prices of the publicly traded securities of the corporation. Subsequently, when the truth is disclosed and prices drop, investors lose money. Plaintiffs may individually or as a class seek compensation from the party (or parties) responsible for this “fraud-on-the-market”.

#### *Materiality but not Reliance*

The relevant statutes governing fraud-on-the-market cases are Section 10(b) of the Exchange Act of 1934, SEC Rule 10b-5, and the Private Securities Litigation Reform Act of 1995 (“PSLRA 1995”). In order to prevail, plaintiffs must prove materiality of the false information. This means that plaintiffs must prove that the fraud was material in affecting the market prices of public securities. However, since the 1988 Supreme Court decision in *Basic, Inc. v. Levinson*, and clarifications in PSLRA 1995, plaintiffs need no longer prove reliance. This means that plaintiffs need not prove that they relied on any specific information, correct or incorrect, in making their decisions to buy or sell securities. In fact, plaintiffs do not even have to have known about the information that later proved false. Instead, plaintiffs can argue that they relied on the integrity and informational efficiency of the market when making their trade decisions.

Prices reflect information. An efficient market is one in which prices incorporate all relevant public information. Plaintiffs can argue that by relying on the integrity of the market, they operated under the assumption that the prices they paid were fair – a fair reflection of all relevant data, facts, forecasts, and information of the company and its business. Falsehoods disrupt the integrity of the market by perturbing prices. When

investors rely on prices to make sound investment decisions, and prices are skewed by misrepresentations, then the resulting losses are attributable to the fraud.

#### *Proving Materiality*

Materiality of information can be established in a variety of ways. The financial expert may conduct an event study, which is a type of data analysis that tests whether or not certain information or a particular event generally impacts prices. Alternatively, one can cite results of relevant event studies published in the finance literature.

Another way to document materiality is to examine valuation models constructed from generally accepted valuation principles. If the type of information at issue is one of the key variables in a valuation model, then that information is likely to affect market prices. For example, a misrepresentation about a company’s earnings will likely affect the valuation derived from a price-earnings multiple model. Consequently, depending on the size of the impact of a misrepresentation, earnings may well be considered material information.

Not all valuation models are appropriate in all situations. One must be careful not to apply a

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*The opinions expressed in this article are those of the author and do not necessarily reflect those of The Michel/Shaked Group.*



valuation model that is inappropriate for the facts and circumstances of the case. A review of the literature on investment theory can also help prove materiality. Particular facts and types of information that are cited as important in the investments literature can certainly be argued material in court.

One might also attempt to document materiality by decomposing the price movements of a company's stock into explained and unexplained factors. If a large price movement happens to coincide with the release or correction of a specific piece of information, and if no other identifiable factors can explain the price movement, materiality of the information may be the likeliest explanation. Sometimes a regression analysis can facilitate the decomposition of price movements into various factors.

### *Estimation of Damages*

Estimating the damages in a fraud-on-the-market-case can be difficult. Since reliance need not be proved, injured parties might not know they were injured. Therefore, one certainly cannot expect individual investors to step forward with prepared computations showing precisely how much they lost on account of specific misrepresentations made to the market. The role of the financial expert in these cases is crucial.

Three things are needed to estimate total damages. First, we need to establish the length of the fraud period – the time from when the misinformation was first disseminated to the time of full correct disclosure. Sometimes the fraud period is easy to identify as it is the range between two public announcements. In other cases the dates must be inferred from price reactions in the marketplace. For example, there may never be a formal correction announcement issued by the corporation, but the market becomes fully aware of fraudulent misrepresentations earlier due to third party investigations. In such instances, the dates of the fraud period may be identified by examining price and volume data.

Second, we need to estimate how much the price was misstated on each day of the fraud period. The time series showing the difference between the actual price and what the price would have been had there been no fraud is known as the “damages ribbon” or the “inflation ribbon”. For example, if the actual stock price was \$45 per share on a particular day, and it would have been \$40 per share if false information had not been disseminated, then the damage ribbon for that day would be \$5 per share.

## A Letter From Our Managing Directors

Dear Friend:

We are pleased to bring you Professor Steven Feinstein's contribution to our series of research reports. In addition to serving as a finance professor at Babson College, he has been frequently retained as an expert witness on various financial issues, including several challenging and highly class action lawsuits.

Plaintiff class action lawsuits have continued to be a source of much litigation. These cases frequently arise out of a claim of lack of appropriate disclosure. It is typically argued that the company had knowledge of impaired earnings prior to their public announcement of the "true" facts. These cases are collectively known as fraud-on-the-market cases, where a fraud is allegedly perpetrated on market participants.

Despite numerous fraud-on-the-market cases in jurisdictions across the country, there is little available discussion in the financial literature about the measurement of damages in these cases.

We hope that you will find Professor Feinstein's article insightful and helpful to your practice.

Sincerely,



Allen Michel



Israel Shaked

Anyone who bought the stock on that day would have paid \$5 too much.

Third, we need to know how many shares were purchased on each day of the fraud period, and when those shares were subsequently sold. If an investor buys shares when the price is overstated by \$5, but later sells them when the shares are overpriced by \$3, the investor's damages are \$2 per share, not the original \$5 per share. Thus, for every share purchased during the fraud period, we must record or estimate the subsequent sale date.

Suppose the period between the misinformation release and the correction spans 10 days. Furthermore, suppose there were 1 million shares traded the first day. We must estimate how many of these 1 million shares were subsequently sold on the second day of the fraud period, how many were sold on the third day, and so on. We must also estimate how many of those 1 million shares were still held, and not yet sold, as of the end of the fraud period. Suppose there were 2 million shares traded on the second day of the fraud period. We must similarly estimate how many of those 2 million shares were

subsequently traded on the third day of the fraud period, and on each day after that. What results from this estimation is a matrix detailing the number and timing of shares bought, sold, and held during the fraud period. This matrix is called the “buy/sell matrix”.

### *Estimating the Inflation Ribbon.*

There are various ways to estimate the inflation ribbon. One method makes use of a valuation model. Inputting first the false information into the valuation model, and then replacing the false information with the corrected information, we can arrive at an estimate of the impact of the false information on the valuation of the company. For example, suppose it is determined that a price/earnings (P/E) model is appropriate, and the company in question has a P/E multiple of 20. Suppose earnings were incorrectly reported to be \$5 per share so that the resulting stock price was \$100 per share. If it is later reported that earnings were only \$4 per share, then we can estimate that the stock price would have been \$80. The inflation ribbon would have been \$20 per share, the difference between \$100 and \$80.

A fixed P/E multiple model is not always appropriate. Sometimes there is evidence that an “impact P/E” model or “marginal P/E” model is more appropriate. Cash flow models should also be examined in certain circumstances, as should models in which risk, discount factors, earnings growth rates, revenue levels, growth, and the value of real project options are of central importance.

Another way to estimate the inflation ribbon is to examine the response of the stock price when the false information is corrected. A drop in price may indicate that the price had previously been biased upward, but it is important to factor out the effect of other influences on the stock price, such as the performance of the overall stock market, and the revelation of new information not related to the fraud.

For example, suppose a company makes an announcement correcting previous false information about first quarter performance, and on that same day the stock price drops 10%. Before jumping to the conclusion that the inflation ribbon was 10% of that day’s price, the financial analyst should examine what else happened on that same day. Perhaps the overall stock market fell 2% and this particular company has a beta of 1.5. If that is the case, then a drop of 3% (1.5 times 2%) can be attributed to the market and so should be excluded from the inflation ribbon. Suppose on the same day it is also announced that the company’s second quarter performance was very poor. With the aid of a valuation model, you might be able to determine that the second quarter performance should push the stock price down 5%. Thus, of the 10% drop, 3% is attributable to the market, and 5% is attributable to the poor recent business performance. Only the remaining 2% can then be attributed to the previous fraud.

The inflation ribbon may vary over the fraud period. It is possible that the amount or impact of misinformation changes from day to day. For example, suppose a company misstates revenue in one period, and in a subsequent period they misstate it by even more. Deception tends to breed more deception (“What a tangled web we weave...”) Under this scenario, the inflation ribbon will likely grow. Alternatively, suppose they fraudulently overstate recent earnings, but over time earnings do indeed catch up to the overly optimistic levels. As the actual earnings approach the reported levels, the inflation ribbon declines.

### *Constructing the Buy/Sell Matrix*

Theoretically, one can construct the buy/sell matrix from trading records. When volume is high and the number of traders is great, however, this method becomes impractical. Another approach is to estimate the matrix from a sample of traders’ records. Data on institutional holdings is often used in conjunction with this method. This method, however, requires that the sampled group be representative of the entire population of traders, an assumption that may be questionable when data is only available for institutions.

A third method involves constructing a model of trader behavior. The “single-trader proportional model” is an example of this approach. This model is based on an assumption that the likelihood of any particular investor

**"Falsehoods disrupt the integrity of the market by perturbing prices."**

selling his shares on a given day equals the ratio of that day’s volume to the outstanding float for the stock issue. For example, if volume on a particular day is 1 million shares and outstanding float is 100 million shares, then it is assumed that 1/100 or 1% of the shares purchased on each previous day sold on that day. This simple assumption is sufficient to build the buy/sell matrix.

The “two-trader proportional model” is similar, but accommodates an assumption that there are two types of investors – investors who invest for the long-run, and investors who tend to turn over their stock frequently. The financial analyst must use judgment in order to select the most appropriate model of trading behavior given the facts and circumstances of the case. Empirical research is currently being conducted (at The Michel/Shaked Group) to develop models whose estimates are the most accurate given observable facts and data, such as trading volume, institutional holdings, and float.

Whether a one-trader or two-trader model is used, there are certain relationships that influence total damages. All else equal, damages are greater when:

1. the misinformation has a big impact on the stock price,
2. the fraud period is long,
3. the number of shares outstanding is great,
4. trading volume is high,
5. investors tend to hold shares for the long-run, rather than turn them over quickly, so that reported volume represents newly damaged shares, rather than the same shares trading repeatedly.

An actively traded stock, issued by a large company, whose price was vastly overstated for three years, will result in greater damages than a thinly traded stock issued by a small company whose stock was slightly overstated for a few months.

Thus far we have focussed on the damages to stock investors in a fraud-on-the-market case. These days there are many other securities that are tied to a company's stock price, or are affected by the same information that might impact the stock price. To compute total damages, one must also consider the company's stock options, warrants, convertible bonds, and even engineered derivatives. If the company's stock price is overstated, then call options will be overvalued too, but put options will be undervalued. A comprehensive analysis of fraud-on-the-market damages might potentially take these other instruments into account as well.

### *Summary*

The breadth of equity ownership has grown dramatically in the past decade. More investors than ever before own stocks. The costs of trading have declined significantly and volume is at an all time high. Concomitantly, there has been a significant increase in the number of initial public offerings, so that the number of stock issues is

increasing at a fast pace. The financial marketplace is the bridge between investors' funds and corporate funding. For the sake of efficiency and equity, it is of the utmost importance that the honesty and integrity of the marketplace be preserved. Working in tandem, the attorney and the financial expert play important roles. An understanding of modern capital markets and finance theory is essential in this undertaking. Together, they can assess whether or not fraud-on-the-market has taken place. ■



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