



Can Fluctuations in Prices or Volumes of a Security Trigger a Duty for Listed Companies to Disclose Inside Information?

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Abstract The European market abuse rules require issuers to disclose inside information which directly concerns them (‘price-sensitive information’) as soon as possible. Delaying disclosure is possible under strict conditions, one of them being that confidentiality of the information is ensured. This paper analyses the question of whether the duty to disclose can be re-activated in case of considerable fluctuations in the price or volume of the traded securities, as confidentiality may no longer be ensured. In the Dutch *VEB/SdB* case, the Court of Appeal decided that an issuer did not timely disclose, considering the market developments, which constituted a tort towards investors. The paper analyses this case, the questions it raises, and its relevance for European jurisdictions. The implication of *VEB/SdB* is that issuers would be wise to carefully monitor the development of prices and volumes when they delay disclosure of inside information which directly concerns them, as failure to disclosure could result in civil liability or penalties.

Keywords Listed companies · Market abuse · Delaying disclosure of inside information · Confidentiality · Event study methodology

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1 Introduction

European law contains several obligations for companies to inform investors if the companies' securities are to be publicly traded.¹ There is an initial obligation to publish a prospectus when securities are offered to the public or admitted to trading,² and there are continuing obligations when securities are subsequently being traded. These continuing obligations can be distinguished in periodic disclosure obligations (e.g., half-yearly and yearly financial reports)³ and ad hoc obligations to disclose certain *inside information* (also called episodic/ad hoc reporting requirements, or current reports). This article focuses on the latter obligation, which as of 3 July 2016 is based on the new Market Abuse Regulation (MAR) and Market Abuse Directive (MAD).⁴ Before, it was based on the MAD of 2003.⁵ According to the MAR, there is an obligation for an issuer to 'inform the public as soon as possible of inside information which directly concerns that issuer'.⁶ Inside information is defined as

'information of a precise nature, which has not been made public, relating, directly or indirectly, to one or more issuers or to one or more financial instruments, and which, if it were made public, would be likely to have a significant effect on the prices of those financial instruments or on the price of related derivative financial instruments.'⁷

Delaying the disclosure of such price-sensitive information (in the paper this term is used as a shorthand for inside information which directly concerns the issuer) is possible, but only under strict conditions. These are: (1) the delay serves a legitimate interest of the issuer; (2) the delay would not be likely to mislead the public; and (3) the issuer is able to ensure the confidentiality of such information.⁸ Compared to the MAD of 2003, the MAR has added new rules. In case of a delay, issuers need to inform the supervisory authority of the delay and provide a written

¹ 'Publicly traded' here refers to securities being traded on a regulated market, or if the European disclosure rules so require, on a multilateral trading facility or organised trading facility.

² See Council Directive 2003/71/EC of 4 November 2003 on the prospectus to be published when securities are offered to the public or admitted to trading, OJ 2003 L345/64 (hereafter: the Prospectus Directive). This Directive was later amended by Council Directives 2008/11/EC, 2010/73/EU, 2010/78/EU, 2013/50/EU and 2014/51/EU.

³ See Council Directive 2004/109/EC of 15 December 2004 on the harmonisation of transparency requirements in relation to information about issuers whose securities are admitted to trading on a regulated market, OJ 2004 L390/38.

⁴ Art. 17 of Council Regulation (EU) No 596/2014 of 16 April 2014 on market abuse (Market Abuse Regulation—MAR), OJ 2014 L173/1. See also new Council Directive 2014/57/EU of 16 April 2014 on criminal sanctions for market abuse (Market Abuse Directive—MAD), OJ 2014 L173/179.

⁵ Art. 6 of Council Directive 2003/6/EC (later amended by Directives 2008/26/EC and 2010/78/EU) of 28 January 2003 on insider dealing and market manipulation (market abuse), OJ 2003 L96/16.

⁶ Art. 17(1) MAR. See also Art. 6(1) MAD for the situation before 3 July 2016.

⁷ Art. 7(1) MAR. See also Art. 1 MAD for the situation before 3 July 2016.

⁸ See Art. 17(4) MAR, and Art. 6(2) MAD 2003 for the situation before 3 July 2016. Although there is a small difference in the wording of the MAR and the MAD 2003 on this point, this does not seem to have implications.

explanation that the requirements for delay were met. This needs to be done immediately after disclosure, or, alternatively, Member States may require that a record of such explanation is only to be provided to the supervisory authority upon request.⁹ Furthermore, requirements for credit institutions and financial institutions were added, with a view to the stability of the financial system.¹⁰ Moreover, the MAR has added a provision regarding the confidentiality of the inside information. As soon as confidentiality is no longer ensured, issuers should disclose as soon as possible. This includes situations where a rumour explicitly relates to the inside information and is sufficiently accurate to indicate that the confidentiality of that information is no longer ensured.¹¹ Unfortunately, the obligation to disclose price-sensitive information raises various questions, as the MAR and MAD do not always provide (sufficiently) clear definitions and concepts.¹²

In this article, I focus on the case where an issuer delays the disclosure of price-sensitive information but there are questions as to whether the confidentiality of the information is still ensured due to considerable fluctuations in price or volume of the issuer's traded securities. Such a case occurred in the Netherlands, where the Dutch investor association VEB accused a (formerly listed) company of violating its disclosure duties, and, in a civil liability lawsuit, successfully obtained a court declaration that the company's behaviour constituted a tort towards investors.¹³ This example is relevant not only for the Netherlands, but for all European jurisdictions where criminal or administrative penalties can be imposed or private enforcement by investors is possible. The question is how to establish whether confidentiality is still ensured when there are considerable fluctuations in volumes and/or prices.

To answer this question, I first present the Dutch *VEB/SdB* case. Next, I discuss the relevant criterion to establish whether confidentiality is still ensured. I then proceed with a discussion of different methodologies that can be used to establish a breach of confidentiality. The article concludes with an assessment of the implications of the analysis for European jurisdictions.

2 The *VEB/SdB* Case

Super de Boer (SdB) was a Dutch supermarket chain with shares listed on Euronext Amsterdam. On 4 September 2009, SdB was informed that competitor Jumbo wanted to make a bid for all its assets and liabilities. After 4 September 2009, negotiations were held between SdB and Jumbo about the proposed 'takeover'. At that point, SdB did not inform investors but kept the negotiations silent. About

⁹ Art. 17(4) MAR.

¹⁰ Art. 17(5–6) MAR.

¹¹ Art. 17(7) MAR.

¹² For an extensive analysis, see Hoff (2011).

¹³ Hof Amsterdam 10 July 2012, JOR 2015/70; Hof Amsterdam 16 April 2013, ECLI:NL:GHARL:2013:2660; Hof Amsterdam 11 November 2014, JOR 2015/71. Later, a settlement was achieved. In the background, the author advised the VEB in the capacity of expert. No personal financial gain was involved.

2 weeks later, on 17 September, SdB received a phone call from a newspaper that seemed to be well informed about the pending deal. SdB suspected that the takeover plans were no longer confidential and issued a press release on 18 September, announcing the takeover plans. However, the Dutch investor association VEB questioned whether delaying disclosure until 18 September had been lawful, considering the significant fluctuations in volumes and prices of the shares before 18 September. Hence, it filed a lawsuit for damages against Super de Boer.

The development of the share price and the number of transactions was as follows (see Table 1)

During the proceedings, the VEB showed how the share price and volume had developed historically in a two-year period before September 2009.

Until July 2008, the number of transactions fluctuated significantly from less than 100,000 to a multitude of 100,000. Volumes of between 500,000 and 1,000,000 were not uncommon, with some volumes above 1,000,000. However, from August 2008 onwards, such high numbers no longer occurred and large differences between trading days were no longer observed. On only 7 dates did the number of transactions exceed 200,000. The share price fluctuated during the two-year period. From August 2008, the price decreased irregularly from €3.72 to €1.942 and then increased to €3.091, to vary later between €2.75 and €3.08. In the period immediately preceding 4 September 2009, the share price fluctuated between €2.80 and €2.85.

Looking at the Table and the historical data, it can be observed that especially on 9 and 10 September 2009 considerably more shares were being traded than in the period before. Until 10 September, the share price had been more or less constant but then increased after that, first by 1% but later by several percentage points a day.

Now the question is whether these developments can be said to have triggered a duty for Super de Boer to report the price-sensitive information on the takeover before 18 September, the date on which the company actually issued a press release. Both the Dutch District Court and the Court of Appeal answered this question affirmatively, although they differed somewhat in their reasoning as well as in their opinion regarding the precise date on which the information should have been disclosed. The decision of the Court of Appeal is final and no longer open to appeal. Below, I discuss both decisions and add my own analysis.

3 The Criterion for Deciding When Confidentiality Is (Apparently) No Longer Ensured and Price-Sensitive Information Needs to Be Disclosed

Under Dutch law, to be able to ensure confidentiality, the issuer checks the access to the information and takes appropriate measures so that this access is restricted to persons who need to be familiar with the information for the normal course of their work, profession or function.¹⁴ Even if the issuer meets these requirements, there could still be instances where confidentiality of the price-sensitive information is

¹⁴ Art. 4(2) Besluit transparantie uitgevende instellingen Wft.

Table 1 Development of share price and volume

| Date (Sept. 2009) | Share price end of day in € | Increase/decrease | Volume |
|-------------------|-----------------------------|-------------------|-----------|
| 4 | 2.82 | 0.53% | 41,234 |
| 7 | 2.828 | 0.28% | 198,778 |
| 8 | 2.829 | 0.04% | 126,887 |
| 9 | 2.828 | (0.04%) | 607,200 |
| 10 | 2.859 | 1.10% | 865,239 |
| 11 | 3.0 | 4.93% | 426,245 |
| 14 | 3.137 | 4.57% | 318,255 |
| 15 | 3.235 | 3.12% | 611,928 |
| 16 | 3.395 | 4.95% | 310,635 |
| 17 | 3.491 | 2.83% | 306,256 |
| 18 | 4.07 | | 9,081,166 |

apparently no longer ensured. In that case, the obligation to disclose the information as soon as possible is re-activated. The Court of Appeal argues that confidentiality need not actually or certainly have been breached before the disclosure duty can be re-activated. Clear signals that confidentiality is no longer ensured will suffice. Market developments such as fluctuations in prices or volumes, possibly in combination with other factors, could constitute such a signal. According to the Court of Appeal, the issuer generally does not have to react to speculation or unfounded rumours in the market. However, delaying disclosure of price-sensitive information can no longer be justified

‘if there are developments in the market that deviate significantly from usual patterns, without there being an alternative (convincing) explanation.’¹⁵

Arguably, this is a reasonable criterion. It should be acknowledged that there may be a leakage, despite the issuer’s best efforts to keep the price-sensitive information confidential. This leakage could show itself in trading patterns. Even though the issuer is allowed to delay disclosure of the price-sensitive information if this serves a legitimate interest, this is no longer the case if it is clear that confidentiality is compromised. A difficulty with the criterion is the precise meaning of the word ‘significantly’. Below, I analyse methodologies that could be used to determine whether a deviation is ‘significant’.

The Court of Appeal’s criterion rightly allows for alternative (convincing) explanations for the unusual patterns. The burden of proof regarding alternative explanations should be on the issuer that decided to delay disclosure. What kind of alternative explanations are conceivable? In the *VEB/SdB* case, the issuer SdB provided several alternative explanations, but failed to convince the Court that these could account for the anomalous trading patterns. I return to this subject below (Sect. 5).

¹⁵ Hof Amsterdam 10 July 2012, JOR 2015/70 [4.12].

4 Methodology to Determine ‘Significant Deviation from Usual Patterns’

4.1 Introduction

The Court of Appeal decided to consult experts on the implementation of its criterion. Two experts were appointed, a finance professor and an investment analyst/former banker, to reflect both science and practice in the expert opinions. In an interlocutory judgment, the Court phrased a number of questions for them:¹⁶

1. Was the development of volumes and prices in the relevant period significant in itself and from a historical perspective? How is significance determined? Is it necessary to correct for external factors such as the development of the general index, and if so, how?
2. Are there any other factors that provide a convincing explanation for the developments?¹⁷
3. What does a ‘leakage’ typically look like?
4. What period needs to be used to compare the developments in September 2009 with the past?
5. Are only positive price differences relevant, or do negative price developments also have to be taken into account?
6. Should the issuer have recognised that there were significant and unexplainable developments in prices and volumes in the relevant period? If so, from what date?
7. Are there any other relevant aspects?

These questions are quite logical and need no further comment.

4.2 The Finance Professor: Use of Statistics and Event Study Methodology

The finance professor used a statistical methodology to determine whether the developments were so abnormal that this should have alerted the issuer. He conducted an event study, which is a common methodology in finance to study whether a certain event had an impact on the stock price (see Sect. 4.5 *infra*). The question is whether the observed pattern in price or volume is significant from a statistical perspective. The answer can be found by comparing the observed pattern with what was to be expected using a historical comparison period.

The expert used two control periods, of 120 and 250 days, immediately preceding the relevant period (Question 4 above). According to the expert, 120 days

¹⁶ See Hof Amsterdam 16 April 2013, ECLI:NL:GHARL:2013:2660.

¹⁷ Specifically, the court asked for the experts’ opinion on the factors mentioned by issuer Super de Boer, namely: (a) whether the higher volumes on 9 and 10 September were the result of so-called block trades (see Sect. 5 *infra*); (b) there were no particular market rumours about a takeover of Super de Boer, whereas there was speculation in the market about consolidations in the branch of trade concerned and about a possible takeover of Super de Boer; (c) the fluctuations in the share in the relevant period did not show a typical picture of a leakage; (d) the increased activity in the share followed the general positive market sentiment of the AScX and AMX indexes; and (e) the possibility of speculation about the publication of quarterly results on 15 September 2009.

is a commonly used period for estimates based on daily data. The 250-day period was used to make clear how much the analysis depends on the underlying assumptions. With both control periods it was shown that the developments were statistically abnormal at the 1% significance level.

Statistical significance here means that it can be concluded with a certain probability that the observed developments fit the developments that one would expect based on the historical control period. According to the expert, in the *VEB/SdB* case there was only a 1% probability that the developments in volumes and prices fitted the developments in the control period. This is quite a firm conclusion from a statistical perspective. The development of volumes was abnormal from 7 September 2009 onwards, and on 11 September 2009 both prices and volumes showed abnormal patterns. This was before 18 September, when a press release with the price-sensitive information was issued by Super de Boer. According to the expert, the most likely explanation for the statistically abnormal patterns is that new information—either public or private—reached the market and influenced prices and volumes. The expert was unable to attribute the developments to new public information based on case documents and databases. Regarding the Court's fifth question, the expert states that developments in prices are more important than developments in volumes, because prices 'are informative about the interpretation of volumes'. In his view, the issuer *could* have observed significant developments as of 7 September 2009, and *should* have acknowledged unexplainable developments that were significant on 11 September.

Regarding the Court of Appeal's third question, the expert observes that it is impossible to describe a typical leakage, because the consequences depend on the information's importance, the transactions that are being conducted, and other investors' reactions. It is possible that the magnitude of transactions is so small that it will not show up in the analysis, or that the effect is amplified by other investors' reactions. Either way, the expert concludes that the patterns in the *VEB/SdB* case are consistent with an information leakage.

An advantage of the statistical methodology used by the finance professor is that it can be implemented relatively quickly and easily by issuers' compliance departments. If a statistical analysis shows abnormal price and volume patterns in a period when disclosure of price-sensitive information is being delayed, this is a reasonably clear signal for the issuer that further delay is no longer possible, unless there are good alternative explanations for the abnormal developments.

4.3 The Investment Analyst: Use of Technical Analysis and Charting

The other expert used the method of technical analysis. This is a security analysis methodology for forecasting the direction of prices through the study of past market data, primarily price and volume. The efficacy of technical analysis is contested by advocates of the efficient-market hypothesis¹⁸ which states that stock

¹⁸ For an explanation, underlying assumptions and criticism, see Fama (1970), Fama (1991) and Shleifer (2000).

market prices are essentially unpredictable because past information is already reflected in market prices.

In the *VEB/SdB* case, the investment analyst depicted the development of prices and volumes from the beginning of 2009, i.e., 9 months before the relevant period. He observed that ‘volume precedes price’ and concludes that in the 9-month period, the increase in volume was significant when the volume in September was ‘much higher’ than the daily mean of 64,000 trades. The significant jump in volume on 9 September was a strong signal for the market, and the issuer should have recognised this. On 11 September, the price jumps, from € 2.86 to € 3.00, which is the final ‘buying signal’ for the analyst. Although the expert is not very clear on this point, he seems to argue that the issuer should have disclosed the price-sensitive information on 9 September.

In my opinion, the method of technical analysis and charting is not particularly suited to determine whether price-sensitive information was timely disclosed. What is problematic is the lack of agreement among technical analysts about the implementation of the methodology. The identification of ‘trends’ and interpretation of charts seems quite subjective. For example, the expert report in the *VEB/SdB* case does not thoroughly substantiate the choices of methodology. Arguably, a somewhat more objective methodology could more easily be implemented by issuers and leads to less legal uncertainty.

4.4 The Court’s Approach

In its final judgment, the Court of Appeal adopts the conclusions of the experts that there had been abnormal developments. However, this masks that the experts used a very different methodology and identified a different date on which the issuer should have recognised the abnormality of the developments. Remarkably, the Court of Appeal marks a different moment than at least one of the experts, namely the end of 9 September (or, at the latest, 10 September, before trading started) as the relevant moment for the issuer to disclose the price-sensitive information. The finance professor argued for 11 September as the relevant moment, the investment analyst for 9 September, whereas the District Court chose the end of 10 September.

How does the Court of Appeal arrive at its identification of the end of 9 September as the moment to disclose the price-sensitive information? On 9 September, a ‘multitude’ of shares of nine times the daily mean of the previous period (the court implicitly uses a 9-month historical period) was traded, and on the two previous days, volumes had also been ‘considerably higher’. Therefore, it was clear to the Court that the development differed significantly from usual patterns, which should have been acknowledged by the issuer. As we will see below, the Court did not see any plausible alternative explanations. It adds that the lack of a price increase at (the end of) 9 September does not undermine its conclusion, because trading on the basis of private information does not necessarily lead to a price increase.

4.5 Analysis and Assessment

For issuers and for the value of the precedent it is unsatisfactory that the District Court, the Court of Appeal, and the experts chose different moments for the duty to disclose price-sensitive information. I will focus here on the reasoning of the Court of Appeal, which can be followed but is not very precise. For example, what ‘multitude’ of average daily trading volumes leads to the qualification of abnormality? A nine times higher trading volume on 9 September appears to be a clear enough signal for the Court, whereas a twice or thrice as high volume in the preceding days is probably not enough. Arguably, the statistical approach of the finance professor is more precise. It results in less legal uncertainty than the Court’s loose reasoning, and the statistical methodology is also easier to implement for issuers. Therefore, it seems preferable to use the concept of statistical significance rather than the Court’s approach. Although the use of statistics does not lead to hard-and-fast rules, it can throw up fairly clear red flags. Let us now focus on event studies in more detail.

4.5.1 *Event Studies, Statistical Significance and the Likelihood of Loss of Confidentiality*

To analyse the role that event studies play in the choices faced by the Court, first some preliminary remarks will be made. The event study is a common tool in (US) securities fraud litigation to detect the impact of fraud on securities prices.¹⁹ In an event study, the observed movements in price and/or volume in the period of investigation are compared with historical patterns of price and volume movements in a control period. As a first step, a model is estimated on the basis of the historical control period to calculate the movements in price and volume that would be expected in the period under investigation. Subsequently, the actually observed movements in the period under investigation can be compared with what was expected. In event studies it is usually assumed that the differences between the observed and the predicted changes are distributed according to a normal bell-shaped probability distribution function with a mean of zero. In that case, the differences (the ‘abnormal return’) would be close to zero in most cases. Only if the observation passes a critical value or cut-off point—a certain number of standard deviations from the mean—will it be concluded that the result is statistically significant, i.e., the null hypothesis of the observations fitting into a normal pattern is rejected. It is customary to use critical values so that statistical significance is assumed if the observed difference occurs only in 5% of the cases (5% significance level), although other percentages such as 10, 2.5 and 1% are also used in research practice.²⁰ Note that, to be significant at the 2.5 or 1% level, the observed difference has to be further away from the mean than if a 5% significance level is used, because

¹⁹ For general concerns and problems regarding the use of event studies, see, among others, Bhagat and Romano (2002), Fisch (2013, 2015) and Brav and Heaton (2015). For the historical development of the use of event studies, see Craig MacKinlay (1997).

²⁰ Brav and Heaton (2015), at p. 11.

the critical value is further away from the mean. In that sense, the 2.5 and 1% tests are stricter than the 5% test and there is more certainty that the observed pattern indeed does not fit into a normal pattern. The opposite is true if a 10% significance level is used.

For the purposes of this paper, the null hypothesis tested is that there is no loss of confidentiality of price-sensitive information based on the observed movements in prices and volumes. According to the statistical test, we would reject this null hypothesis if the differences between the observed movements and the predicted movements occurred in less than 5% (or another percentage) of the cases where the null hypothesis is true. In the *VEB/SdB* case, there was statistical significance at the 5% and even at the 1% level. However, it is still possible that, in reality, no price-sensitive information was leaked and it is just coincidence that such a strange pattern is observed. This is a type I error ('false positive'): the observed pattern is statistically qualified as abnormal (leakage of information), whereas in reality it is normal (no leakage of information).²¹ Nevertheless, in case of statistical significance at the 5, 2.5 or 1% level, the probability of a type I error is low.

We saw that the Court of Appeal argued that the duty to disclose price-sensitive information can be re-activated if there is a clear signal that confidentiality is no longer maintained. Statistical significance of the observed movements at the 1 and 2.5% levels can be claimed to constitute such a clear signal. It could be argued that statistical significance at the less strict 5% or even 10% level also constitutes a sufficiently clear signal. However, it should be remembered that it is difficult for issuers to interpret (volatile) stock price and volume movements, and they can have a legitimate interest in delaying disclosure of the price-sensitive information. Courts would be wise to look carefully at the statistical model's assumptions and specifications, as well as the other evidence, before imposing liability on the issuer (especially when based on the 10% significance level) for delaying the disclosure of price-sensitive information. There is a great deal of flexibility in how event studies are constructed.²²

What can be concluded if the observed pattern does *not* pass the statistical test? In that case, from a statistical point of view, the null hypothesis of a normal development (no leakage) cannot be rejected. However, in reality, the development could be abnormal (there was a leakage). This would be a so-called type II error ('false negative').²³ It is important to understand that the absence of statistical significance does not mean that it is more likely than not that confidentiality was maintained.²⁴ Stated differently, the null hypothesis of maintained confidentiality is not necessarily the most likely if no statistical significance can be shown. Hence, lack of statistical significance should not automatically shield the issuer from a duty

²¹ See, more generally, *ibid.*; Fox et al. (2015), at p. 29.

²² Fox (2015).

²³ Brav and Heaton (2015), at p. 11; Fox et al. (2015), at p. 29.

²⁴ See Brav and Heaton (2015), at p. 11, who assert that the use of likelihood ratios may have a better connection to evidentiary burdens than simple reliance on type I errors. A likelihood ratio is a statistical term that refers to the strength of information supporting one hypothesis over another. A likelihood ratio test then associates liability with evidence strength exceeding a posited threshold. See Kaplow (2014), who also writes about the relationship with the more familiar Bayesian posterior probabilities analysis.

to disclose (and from liability if it fails to do so). All available evidence should be considered. It should be noted that event studies are most suited to detect a breach of confidentiality that has a relatively large impact on prices or volumes. Generally, the stricter (i.e., lower) the required significance level, the lower the rate of type I errors, but the higher the rate of type II errors. There is a tradeoff here.

4.5.2 *Event Studies and Volatility*

A problem with the event study methodology is that the more volatile the trading patterns of a listed company, the less powerful the event study test.²⁵ Statistical power means the probability that a test will correctly identify a genuine effect (in this case a loss of confidentiality), i.e., it is the probability that the test will reject a false null hypothesis.²⁶ This probability is inversely related to the probability of making a type II error (assuming no loss of confidentiality whereas in fact there is a loss of confidentiality).²⁷ In turn, the type II error rate depends not only on the significance level, but also on the magnitude of the actual effect of the loss of confidentiality and the standard deviation.²⁸ The larger the actual effect relative to the standard deviation, the greater the odds of passing the statistical test.²⁹ Conversely, a larger standard deviation reduces the odds of passing the test.³⁰ It becomes more difficult to identify truly anomalous patterns. If a statistical event study test were leading for the courts to assume liability towards investors, firms with high stock price volatility would escape liability more often than firms with low stock price volatility. Therefore, it should be reiterated that statistics do not lead to hard-and-fast rules, but can throw up red flags. As always, the courts should consider all relevant circumstances and available evidence.

4.5.3 *The Length of the Historical Control Period*

An interesting issue is the required length of the historical control period. According to the issuer in *VEB/SdB*, a long comparison period should be used, whereas the investor association argued that a much shorter period would be preferable (hence an abnormal development was easier to demonstrate). The Court of Appeal implicitly adopts the 9-month period which was used by the technical analyst. However, it does not clearly motivate this choice, which is different from the control period of 4 and 8 months used by the finance professor. This is unsatisfactory. In my opinion, the finance professor's method is to be preferred.

²⁵ Fox (2015); Fox et al. (2015).

²⁶ Brav and Heaton (2015), at p. 11, referring to Ellis (2010).

²⁷ Ibid.

²⁸ Fox et al. (2015), at p. 30.

²⁹ Ibid., at p. 32.

³⁰ A special case is analysed by Fox et al. (2015), where an economic crisis leads to volatility spikes. They show that conventional event study methodology can underestimate the extent of type I errors, because the standard deviation is underestimated. With more advanced econometric techniques, it is possible to correct for this flaw. The type II error rate can also rise at a time when volatility increases due to an economic crisis.

By using different time windows, it becomes clear how much the results of the analysis depend on the underlying assumptions. Time windows can also demonstrate the influence of recent or less recent volatility (see above). Courts should take this into account in their decisions. In academic literature, control periods of 100–300 days are considered normal for conducting event studies.³¹

4.5.4 *How to Act upon Discovery of a Statistically Significant Deviation in Trading Patterns*

How should the issuer act when a statistically significant deviation in trading patterns is discovered? Should it disclose the price-sensitive information immediately, or should the deviation in trading patterns continue for a certain period of time before action will be required (and if so, for how long)? The Court of Appeal's decision is not very clear on this issue but does mention 3 days of subsequent anomalous patterns, the third day being considerably more significant than the days before. Under the MAR, the issuer should disclose as soon as possible if confidentiality is no longer ensured,³² and the issuer should document the reasons for delaying disclosure so as to be able to provide a written explanation to the supervisory authority.³³ The tricky part is determining when the issuer should conclude that confidentiality is no longer maintained. Considering the difficulty of interpreting volatile stock price and volume movements and issuers' legitimate interest in delaying the price-sensitive information, it could be argued that some time should be given to issuers to investigate the anomalies and the possibility of alternative explanations. It is difficult to say categorically how much time should be available to issuers, but it would seem hard to justify a further delay of disclosure after 2 days of statistically significant deviations without there being convincing alternative explanations. The magnitude of the deviation could also be relevant here: the larger the deviation, the sooner a press release will be necessary.

4.5.5 *Volumes or Prices?*

Finally, it is somewhat remarkable that the Court bases its decision on the abnormal development of volumes, without there being an abnormal price development (yet). Both experts state that price movements are more important than volumes, because prices 'are informative about the interpretation of volumes' (finance professor) and volumes and prices need to be analysed in conjunction (technical analyst). However, the Court seems to be right in stating that trading on the basis of private information

³¹ Fox (2015) mentions a 1-year control period. Mitchel and Netter (1994) refer to a period of 100 to 300 trading days.

³² Art. 17(7) MAR.

³³ Art. 17(4) MAR.

does not necessarily lead to a price increase,³⁴ although price increases make a more convincing case of a leakage.

5 Alternative Explanations for Anomalous Patterns

In the *VEB/SdB* case it was held that delaying disclosure of price-sensitive information is no longer justified if significant abnormal developments are observed *that do not have an alternative (convincing) explanation*. What kind of alternative explanations are conceivable?

In *VEB/SdB*, both experts argued that there was no convincing alternative explanation, even though the issuer fiercely argued that there was. The finance professor had consulted the case documents as well as the Lexis-Nexis database for value relevant news about Super de Boer, but had not been able to find indications of public news explaining the observed anomalies. He also argued that the anomalies were too strong to be explained by 'noise trading'. Noise trading is trading not based on information and without a specific motivation.³⁵ He stated that 'liquidity traders' could account for some of the effects. These liquidity traders do not trade on the basis of fundamental information, but with a specific motivation, such as adjusting portfolio weights to track an index. The issuer Super de Boer argued that so-called block trades were responsible for (part of) the anomalies. In a block trade, an investor buys or sells a large amount of securities. The issuer argued that trading on inside information is unlikely in a block trade, but this argument could not be substantiated with certainty in the procedure. The finance professor considered it possible that the block trade was based on private (inside) information, and therefore did not exclude block trades from his analysis. What sparked a debate after the experts had delivered their reports was the question of whether block trades could lead to herding behaviour of other investors. The finance professor considered it unlikely that noise trading could explain the anomalies, but did not elaborate on this statement. The Court of Appeal subsequently followed the expert, also without elaborating much.

What is interesting is the extent to which arguments from the school of 'behavioural economics' can be invoked by issuers to substantiate alternative explanations. Behavioural economics acknowledges that investors do not act perfectly rational, as is traditionally assumed by neoclassical economics. In experiments, psychologists and behavioural economists have identified many cognitive biases and heuristics.³⁶ Thus, the argument made by the issuer in *VEB/SdB* that the anomalous pattern could be explained by herding behaviour invokes

³⁴ See also Prevoo and Ter Weel (2010) ('trading on share relevant information might not be seen in price changes if the information is not public. If an individual possesses information which leads him/her to believe a certain stock price is going to rise in the near future, and if the information is not known to or anticipated by the market as a whole, the transaction will not necessarily lead to an increase in the price of the stock. Insider trading might then only be discovered when examining trade volumes.').

³⁵ See Shleifer (2000), at p. 28.

³⁶ See, e.g., Kahneman and Tversky (1973), Kahneman and Tversky (1979) and Kahneman (2011). For an overview, see Rubinstein (2001).

behavioural economics. Although the Court could dismiss these arguments by simply referring to the independent expert's opinion, the question remains to what extent courts would and should be susceptible to such arguments.

The degree of (empirical) scientific documentation of the modality of non-rational behaviour that is invoked by the issuer could be relevant for courts. If the phenomenon has been described in several publications in high-ranking journals, it will be more credible than if it has only been described in unpublished working papers. Furthermore, the issuer will have a stronger case if the alternative explanation is not only theoretically described, but also supported by empirical evidence. Arguably, non-rational behaviour can sometimes provide an alternative explanation for abnormal volume or price movements, but this is an exception to the basic assumption of (fairly) rational and efficient markets. Behavioural economists have been criticised for coming up with all kinds of new explanations for anomalous stock market patterns *ex post*,³⁷ which some would call a mess of special cases.³⁸ Their explanations of the past do not easily generalise to the future, which complicates making sound practical (legal) policy based on behavioural theories. Hence, courts should be aware that, in most cases, issuers will be able to provide some kind of behavioural explanation for anomalous patterns, but that the credibility and possibility of generalisation of such explanations may vary quite significantly.

6 The Value of the Precedent and the Relationship Between Private and Public Law

The *VEB/SdB* case is based on general Dutch tort law. Under Dutch law, violation of a statutory duty which results in harm to investors can render the issuer liable towards them. In Dutch jurisprudence and legal doctrine it is generally accepted that violation of the statutory duty to timely disclose price-sensitive information (being an implementation of the MAD 2003) can indeed constitute a tort. In other European jurisdictions, general tort law or specific statutory rules can also allow damage claims by investors or investor associations. For example, Germany has specific statutory rules for such cases,³⁹ and the UK has special (but strict) rules for liability in cases of fraud and negligence.⁴⁰ The facts and arguments in the *VEB/SdB* case could also be relevant for such jurisdictions, and the case could therefore be an important precedent in takeover scenarios. Of course, additional conditions may apply for establishing liability, but the question of when there is a violation of the

³⁷ Levine (2012), quoted in Harford (2014) ('There is a tendency to propose some new theory to explain each new fact. The world doesn't need a thousand different theories to explain a thousand different facts. At some point there needs to be a discipline of trying to explain many facts with one theory.'). Fama (1998) argues that many of the findings in behavioural finance appear to contradict each other. Fama also finds that the jump made by behaviourists from individual irrationality to market irrationality is not supported by the data.

³⁸ Harford (2014).

³⁹ See § 37b and 37c WpHG.

⁴⁰ See s 5 of Schedule 10A of the FSMA 2000; Davies and Worthington (2012), para. 26–11.

duty to timely disclose price-sensitive information is similar across jurisdictions. Therefore, investors or investor organisations could use arguments from the *VEB/SdB* case as a basis for legal proceedings, and courts could find inspiration in the approach chosen by the Dutch Court of Appeal.

Failure to comply with ad hoc disclosure duties need not only be sanctioned by way of private law. In fact, the European market abuse regime requires administrative penalties in case of violation of these duties, while it allows Member States to also impose criminal sanctions or apply tort law.⁴¹ If jurisdictions impose administrative and/or criminal sanctions, the public prosecutor, the supervisory authority and judges will have to answer similar questions as the Dutch Court in the *VEB/SdB* case, namely whether and when anomalous market developments can trigger a duty to disclose price-sensitive information (and delaying disclosure is no longer allowed). Supervisory authorities may have to think about this question at an early stage, as the new MAR requires that issuers provide a written explanation of the delay to the supervisory authority (either immediately after disclosure of the information to the public, or upon request of the supervisory authority).⁴²

As of 3 July 2016, the MAR replaced the MAD of 2003. Consequently, the duty to disclose price-sensitive information is no longer based on national law (implementing the Directive) but in principle applies directly as a result of the Regulation. It is conceivable that national courts will submit preliminary questions to the European Court of Justice regarding the precise meaning of the condition that the issuer needs to be able to ensure the confidentiality of the information if there are anomalous market developments. The Dutch courts did not do so and interpreted the national law (implementing the MAD 2003) themselves. Perhaps the shift from a Directive to a Regulation will result in a greater tendency among Dutch or other national courts to submit preliminary questions regarding this matter. If this happens, the European Court of Justice could find inspiration in the Dutch approach but of course need not follow it.

In the *VEB/SdB* case, the lawsuit by investor association VEB was not accompanied by any administrative or criminal prosecution of the issuer. Although the issuer pointed out that the absence of administrative measures was a signal that there was no loss of confidentiality of inside information, the Court of Appeal still ruled that the duty to disclose had been violated. According to the Court, the issuer had not been able to give concrete information as to whether the supervisory authority AFM had actually investigated this case and whether it had indeed decided not to take measures (and if so, for what reasons). Any viewpoints of the supervisory authority could therefore not be taken into account.

⁴¹ See Art. 30 MAR (and before 3 July 2016 Art. 14 MAD 2003). The new market abuse regime allows the absence of administrative sanctions if infringements are subject to criminal sanctions.

⁴² Art. 17(4) MAR.

7 Conclusion

This article has focused on issuers' duty to disclose inside information which directly concerns the issuer as soon as possible, as laid down in the European market abuse rules. Delaying disclosure is possible under strict conditions, one of them being that confidentiality of the information is ensured. The question that has been analysed is whether considerable fluctuations in price or volume of the issuer's traded securities can re-activate the duty to disclose, as confidentiality is apparently no longer ensured. A Dutch case, *VEB/SdB*, is an important precedent in this respect: the Court of Appeal ruled that issuer Super de Boer did not timely disclose, considering the market developments, and this constituted a tort towards investors.

The relevant criterion adopted by the Court for deciding that further delaying disclosure of price-sensitive information is no longer allowed is that there are developments in the market that deviate significantly from usual patterns, without there being an alternative (convincing) explanation. Experts in this case used the statistical event study methodology and technical analysis to implement this criterion. Although the Court accepted both methodologies, it has been submitted in this paper that the statistical methodology is to be preferred to technical analysis, as the latter methodology is less objective than the former and leads to more legal uncertainty for issuers. The paper has discussed several legal issues that come up when a statistical methodology is used to assess the issuer's liability.

Subsequently, possible alternative explanations for anomalous market patterns have been discussed. In *VEB/SdB*, the issuer failed to convince the Court of the existence of such an alternative explanation. It is especially interesting to see the extent to which arguments from behavioural economics, such as herding behaviour among investors, can provide adequate explanations. It has been submitted that investor irrationality can, under some circumstances, provide an alternative explanation. However, courts should be somewhat careful in accepting behavioural arguments. In most cases, issuers will be able to proffer some kind of behavioural explanation for anomalous patterns, but the credibility and possibility of generalisation of such explanations may vary quite significantly.

Finally, it has been submitted that the *VEB/SdB* case is relevant for all European jurisdictions that allow damage claims by investors for untimely disclosure of price-sensitive information, as similar questions need to be answered. The same is true for administrative or criminal procedures. An important lesson from the Netherlands is that issuers would be wise to carefully monitor the development of prices and volumes when delaying disclosure of price-sensitive information, as failure to do so can result in civil liability or penalties.

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References

- Bhagat S, Romano R (2002) Event studies and the law: part I: technique and corporate litigation. *Am Law Econ Rev* 4:141–167
- Brav A, Heaton JB (2015) Event studies in securities litigation: low power, confounding effects and bias. Available at SSRN: <http://ssrn.com/abstract=2581202>. Accessed 1 Mar 2016
- Craig MacKinlay A (1997) Event studies in economics and finance. *J Econ Lit* 35:13–39
- Davies P, Worthington S (2012) *Gower & Davies' principles of modern company law*. Sweet & Maxwell, London
- Ellis PD (2010) *The essential guide to effect sizes: statistical power, meta-analysis, and the interpretation of research results*. Cambridge University Press, Cambridge
- Fama EF (1970) Efficient capital markets: a review of theory and empirical work. *J Financ* 25:383–417
- Fama EF (1991) Efficient capital markets: II. *J Financ* 46:1575–1618
- Fama EF (1998) Market efficiency, long-term returns and behavioral finance. *J Financ Econ* 49:283–306
- Fisch JE (2013) The trouble with basic: price distortion after Halliburton. *Washington Univ Law Rev* 90:895–932
- Fisch JE (2015) The future of price distortion in federal securities litigation. *Duke J Const Law Public Policy* 10:87–103
- Fox MB (2015) Halliburton II: it all depends on what defendants need to show to establish no impact on price. *Bus Lawyer* 70:437–464
- Fox EG, Fox MB, Gilson R (2015) Economic crises and the integration of law and finance: the impact of volatility spikes. *Columbia Law Review* 115:forthcoming. Also available at SSRN: <http://ssrn.com/abstract=2401712>. Accessed 1 Mar 2016
- Harford T (2014) 'Behavioural economics and public policy', *Financial Times*, 21 March 2014
- Hoff GTJ (2011) *Openbaarmaking van koersgevoelige informatie*. Kluwer, Deventer
- Kahneman D (2011) *Thinking, fast and slow*. Allen Lane, London
- Kahneman D, Tversky A (1973) On the psychology of prediction. *Psychol Rev* 80:237–251
- Kahneman D, Tversky A (1979) Prospect theory: an analysis of decisions under risk. *Econometrica* 47:263–291
- Kaplow L (2014) Likelihood ratio tests and legal decision rules. *Am Law Econ Rev* 16:1–39
- Levine DK (2012) *Is behavioral economics doomed?* Open Book Publishers, Cambridge, UK
- Mitchel M, Netter J (1994) The role of financial economics in securities fraud cases: applications at the Securities and Exchange Commission. *Bus Lawyer* 49:545–590
- Prevoot T, Ter Weel B (2010) The effects of a change in market abuse regulation on abnormal returns and volumes: evidence from the Amsterdam stock market. *De Econ* 158:237–293
- Rubinstein M (2001) Rational markets: yes or no? The affirmative case. *Financ Anal J* 57:15–29
- Shleifer A (2000) *Inefficient markets. An introduction to behavioral finance*. Oxford University Press, Oxford