

# Use of Event Study Analysis in US Securities Litigation

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**November 22, 2019, Bergamo, Italy**

# Topics

- Event Study Analysis for Loss Causation and Economic Evidence of Materiality
- Translation of an Event Study into Inflation per Share

# Event Study Analysis

- An **event study** is an *econometric technique* used by financial economists *to measure the effect of new information on the market prices* of a company's publicly traded securities
- *In securities litigation*, event study analysis *can provide*:
  - a **measurement of loss causation** from disclosure failures and
  - **economic evidence of materiality**

# Event Study Analysis

Main types of events analyzed in securities litigation:

- Events that *correct prior disclosure failures* (i.e., misrepresentations)
  - *For loss causation*
  - *For materiality*
- Events that *contain the disclosure failures* (i.e., misrepresentations)
  - *For materiality*

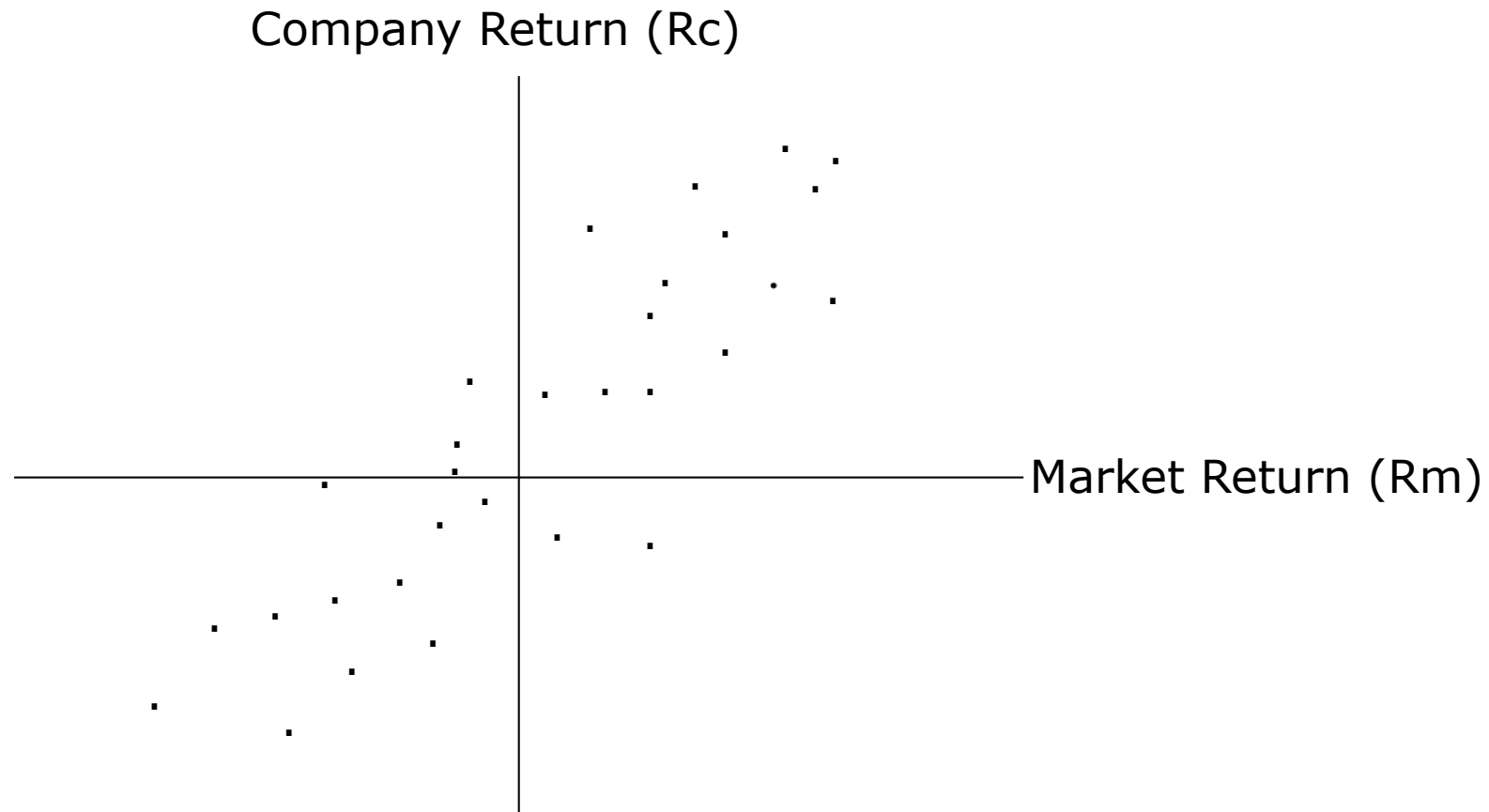
# Event Study Methodology

Two main components:

- **Market Model Statistical Regression**
  - Allows to *account for stock price changes caused by systematic events* (i.e., as reflected in Market and possibly Industry movements)
- **Analysis of Information Content**
  - Allows to *account for economic content and substance of the information disclosed* as it pertains to the alleged disclosure failures

# Statistical Analysis

## Market Model

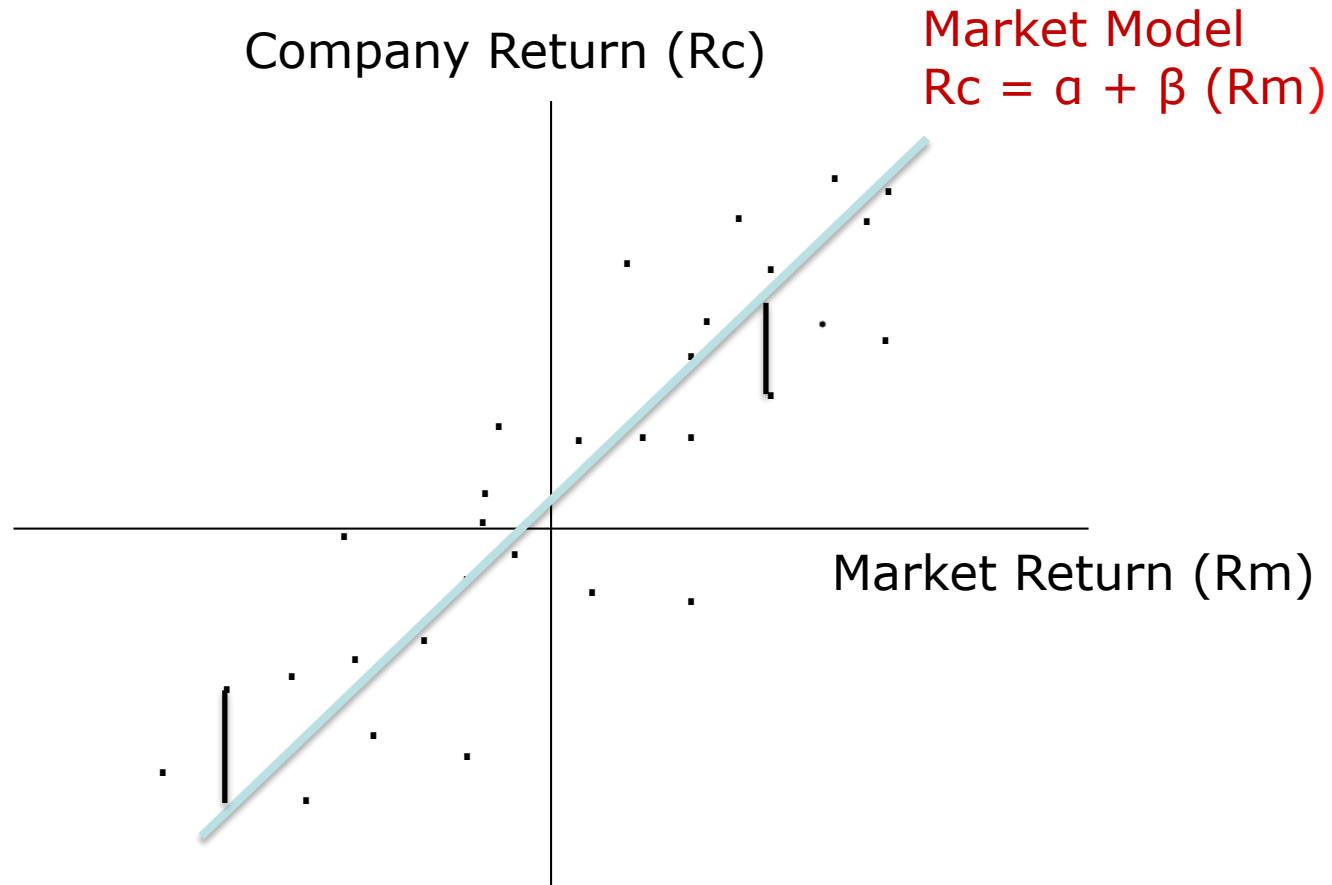


# Statistical Analysis

## Market Model

**Adjusted R-Squared:** how much of the movement in the Company's price (return) can be 'explained' by market (and peer industry) movements

**Standard Error:** normal volatility - the measure of the typical difference between the actual and predicted return



# Statistical Analysis

## Excess Returns and Statistical Significance

- Excess Return is the return after adjusting for market and industry movements using the market model
  - Predicted Return =  $\alpha + \beta \times \text{Actual Market Return}$
  - Excess Return = Actual Return – Predicted Return
- Statistical significance is an analytical means of determining how important or ‘material’ is an event.
- A t-statistic (t-stat) measures statistical significance.
  - T-stat = Excess Return  $\div$  Standard Error
  - If t-stat  $\geq 1.96$  or  $\leq -1.96$ , then the Excess Return for the disclosure day is statistically significant with 95% confidence



# Statistical Analysis Example

Example:            Market Model :  $R_c = 0.001 + 1.5 \times R_m$   
                         Standard Error = 0.025  
                         Actual Return =  $-0.105$   
                         Actual Market Return ( $R_m$ ) =  $-0.02$

Predicted Return =  $.001 + 1.5 (-0.02)$   
                         =  $-0.029$

Excess Return     = Actual – Predicted  
                         =  $-0.105 - (-0.029) = -0.076$

T-stat             = Excess Return  $\div$  Standard Error  
                         =  $-0.076 \div 0.025 = -3.04$

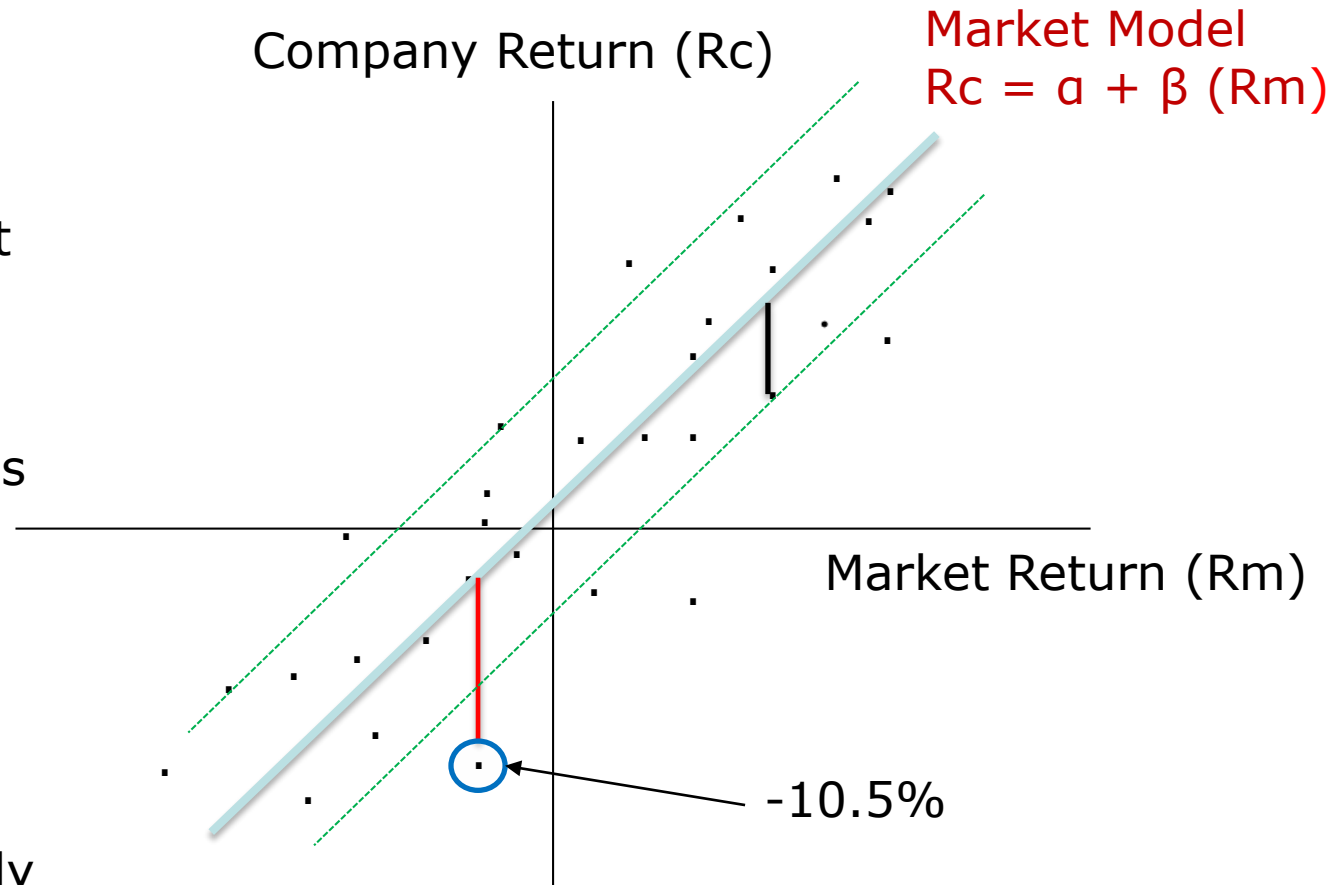
# Statistical Analysis

## Market Model

The **Green Lines** represent the 95% confidence band of expected company returns, given market returns

The **Red Line** Represents the Excess Return of -7.6%

When the Return is Outside the green band region, it is deemed as statistically significant



# Economic Correspondence

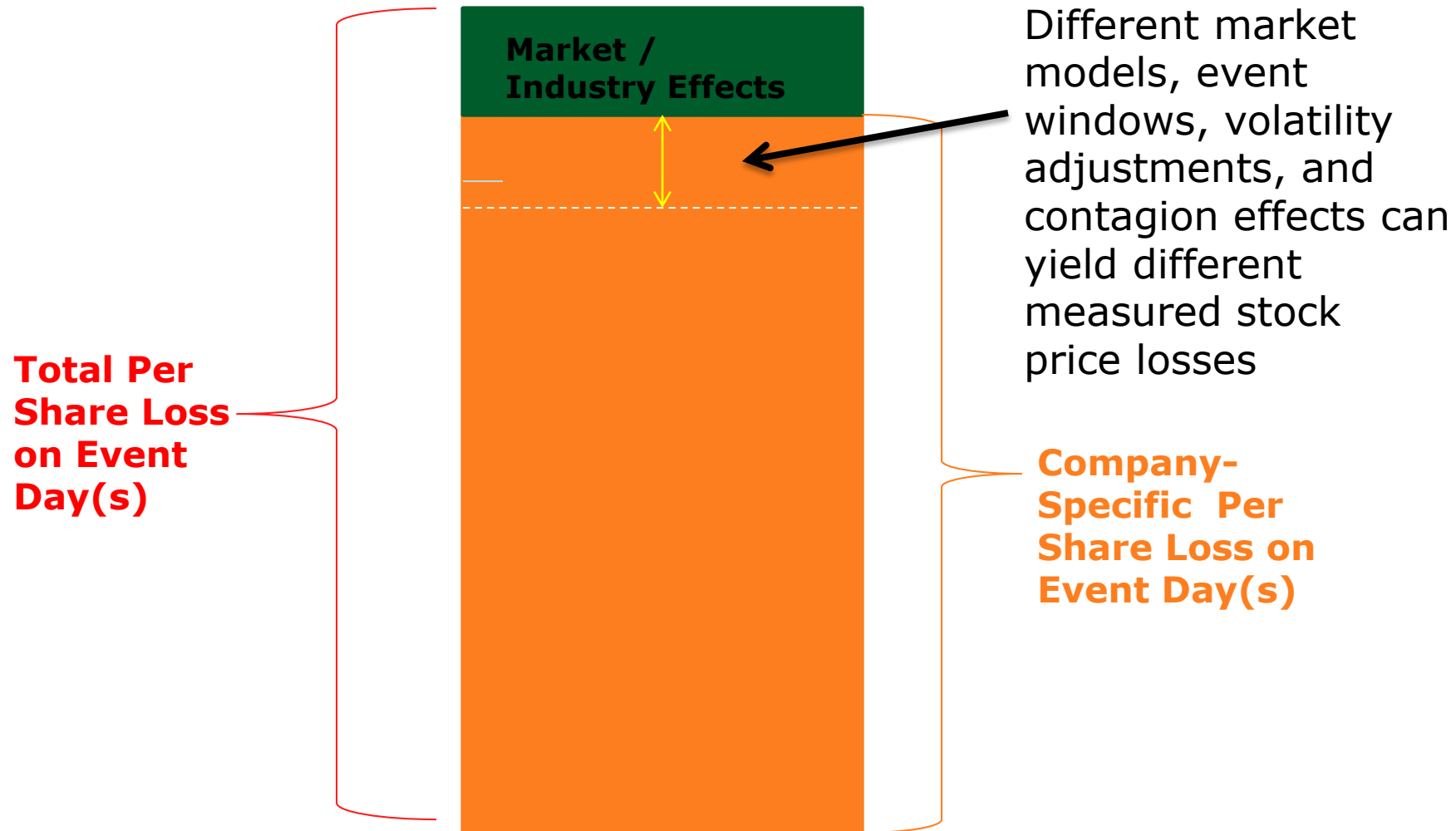
- **Economic Correspondence** means that the *economic content and substance* of the information disclosed is *in line with the alleged contraventions*
  - **Direct Correspondence** - *corrective information* disclosed is *expressly related to the Contraventions*
  - **Indirect Correspondence / Foreseeable Consequences** – *economic inferences* by the market *about the corrective information* that would have been *foreseeable from the stated Contraventions or assumed Counterfactuals*

# Issues in Event Study Analysis

## Statistical Analysis

- Market Efficiency
- Period Used to Compute the Market Model
- Indexes Used in the Market Model
- Event Window
- Changing Volatility
- Contagion Effect

# Issues: Statistical Analysis



# Issues in Event Study Analysis

## Analysis of Information Content

- Over-Correction v. Foreseeable Consequences
- Confounding News
- Truth on the Market

# Issues

## Over-Correction

- There are circumstances in which the *current information*, while related to contraventions, is of *greater magnitude than what was known* or could have been disclosed *earlier*
- This will generally make the *stock price losses from the events study analysis larger than appropriate for the loss causation opinion*

# Issues

## Foreseeable Consequence

- Refers to whether the *ultimate effects or consequences of the contraventions*, even though not directly stated in the contraventions, *would have been anticipated or predictable* from the disclosure failures occurred during the relevant period
- E.g., loss of reputational capital from wrongdoing, reduced earnings expectations, etc..



## Issues

# Over-Correction vs Foreseeable Consequences

- On virtually no case does the language from a corrective disclosure exactly match, word-for-word, the alleged disclosure failures
  - The proper analysis is not in a wordsmithing exercise, but rather it is an economic analysis of the content of the disclosure
- Would the *valuation consequences* that resulted from a corrective disclosure have been *reasonably foreseeable* from the contravening information or from any assumed counterfactual?
  - If NO – then Over-Correction
  - If YES – then Foreseeable Consequences

# Issues

## Confounding Information

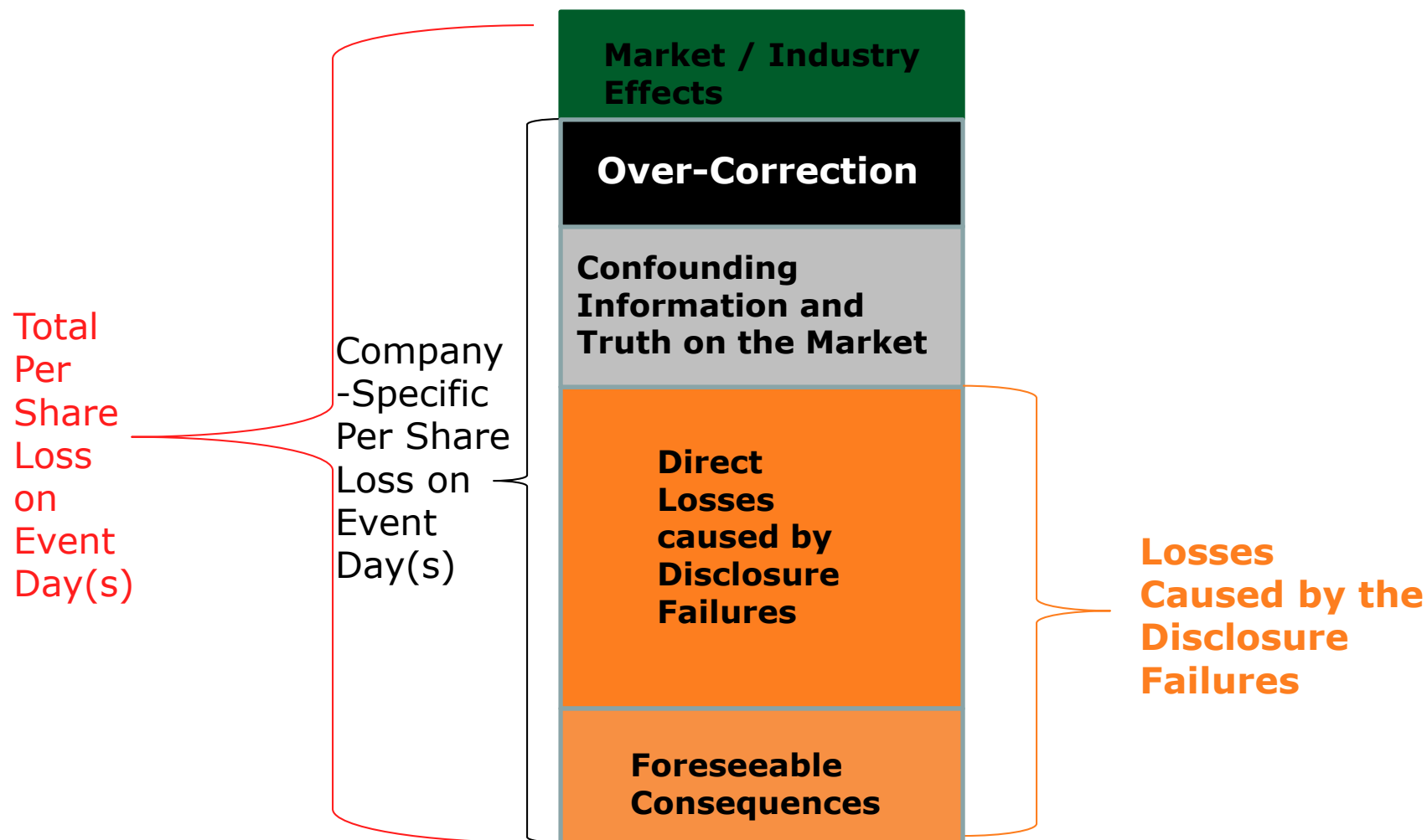
- Requirement to *separate losses caused by other important company-specific information* unrelated to the disclosure failures
  - Other information must be “important”, i.e., material
- Effect of confounding information will be challenged as subjective and unreliable
- Some ways to separate price effects:
  - *Intra-day prices* (when event news and confounding information are not released at the same time)
  - *Fundamental analysis*
  - *Pro-rata* (e.g., based on earnings or other metrics)
  - *Analysts’ opinions / market commentary*

# Issues

## Truth on the Market

- **Truth on the Market** - information identified in a specific disclosure that corrects the alleged misrepresentations has been previously disclosed
- Used *to establish* that most or all of the company-specific *loss is due to confounding information*

# Loss Causation From Event Study Analysis



# Issues in Event Study Analysis

## Supporting Analyses

- **Fundamental Analysis**

- *DCF*

- *Multiples* (e.g., P/E ratios)

- Note: Loss of reputational capital can cause the losses measured from the Event Study valuation to exceed that from a fundamental valuation

- **Analysts commentary -**

- Contemporaneous analysis/viewpoints of securities analysts, commentators, etc.

## Economic Evidence of Materiality

- Economic evidence that a disclosure failure was material when corrected (i.e., from a corrective disclosure)
- Economic evidence that a disclosure failure was material at the time the disclosure failure occurred

# Economic Evidence of Materiality Issues

- *Difference in the economic environment when the disclosure failure occurred versus when the failure was revealed or corrected*
- Magnitude of the disclosure failure increased from when the disclosure failure first occurred to when it was revealed or corrected
- Some experts will claim that the absence of a statistically significant increase on days containing disclosure failures is evidence against materiality
  - False for omissions or for disclosures that maintain market expectations