

## Use of index models to calculate damages in securities class-action lawsuits

- ❑ On October 15, ZComp announces that its sales reported last quarter were overstated.
- ❑ ZComp price falls from \$100/share to \$92.
- ❑ A class action suit is immediately filed alleging that ZComp's management knew of the restatement facts earlier and did not disclose them promptly.
- ❑ The suit is filed on behalf of all investors who purchased ZComp prior to the announcement.
- ❑ "Discovery" allows plaintiff's counsel to examine all ZComp's memos and internal communication prior to October 15.

## U.S. Securities Exchange Act Rule 10b-5

- It shall be unlawful for any person, directly or indirectly, by the use of any means or instrumentality of interstate commerce, or of the mails, or of any facility of any national securities exchange,
  - (1) to employ any device, scheme, or artifice to defraud,
  - (2) to make any untrue statement of a material fact or to omit to state a material fact necessary in order to make the statements made, in light of the circumstances under which they were made, not misleading, or
  - (3) to engage in any act practice, or course of business which operates or would operate as a fraud or deceit upon any person, in connection with the purchase or sale of any security.
- Rule 10b-5 provides the basis for civil proceedings against companies and their executives who have not adequately publicly disclosed material information.

## The damage calculation

- Suppose it turns out that
  - Management “knew” about the restatement on Oct. 1.
  - Between October 1 and the announcement, trading volume was 6 Million shares.
- Damage calculation
  - 6 Million shares were “purchased” over the period.
  - The buyers were deprived of material information
  - Damages = 6 Million x concealment cost per share
- So what was the concealment cost per share?

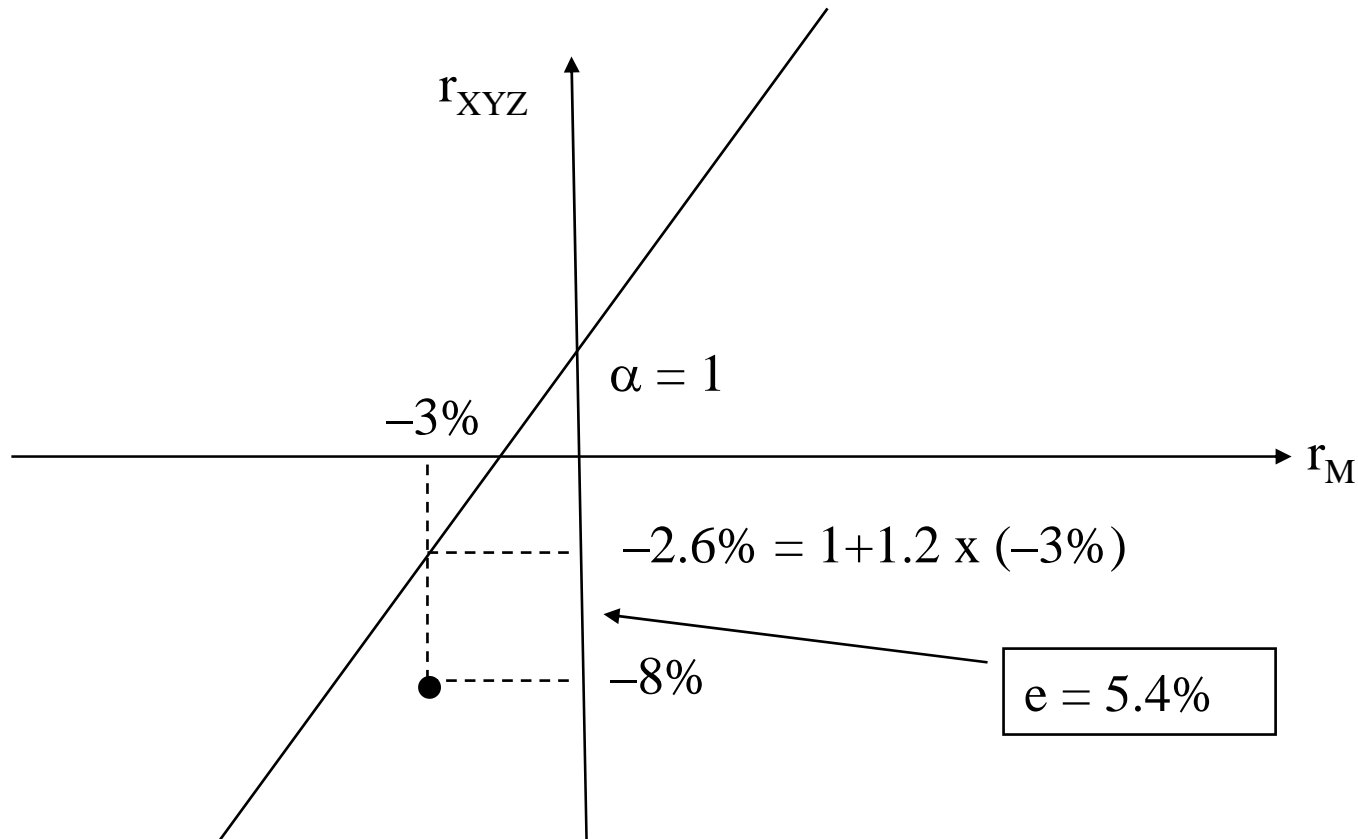
- ❑ On the day of the announcement, the stock price dropped from \$100 per share to \$92.
- ❑ Under the presumption of efficiency, stock price changes are attributed to new information.
- ❑ When the accounting figures were restated, each share was worth \$8 less than previously.
- ❑ Is \$8 the concealment cost?
- ❑ What other information affected the market price on that day?

## Index model: $r_{it} = \alpha_i + \beta_i r_{Mt} + e_{it}$

- $r_{it}$  stock  $i$ 's return on day  $t$
- $r_{Mt}$  market return on day  $t$
- $e_{it}$  regression error/residual (the idiosyncratic, firm-specific component of return)
- $\alpha_i$  and  $\beta_i$  are the regression parameters (intercept and slope)
- We attribute the *idiosyncratic component* to company information that is revealed or announced on the day (e.g., takeover, dividend cut, earnings surprise, corporate charter changes, etc.)

# Problem

- Suppose the index model estimates for *ZComp* are  $\alpha = 1$  and  $\beta = 1.2$
- On October 15, the market was down 3%.



## Summary

- ❑ Only 5.4% of the decline is attributed to the new information.
- ❑ The concealment cost per share is  $5.4\% \times \$100 = \$5.40$
- ❑ Total damages are  
 $6 \text{ Million shares} \times \$5.40 = \$32,400,000$