

IFM: Lecture 9

Efficient Market Hypothesis (EMH)

Dr. Jia Miao, PhD CFA
jia.miao@uwtsd.ac.uk

What is meant by efficiency?

- In an efficient capital market, security (for example shares) prices rationally reflect available information
- If new information is revealed about a firm, it will be incorporated into the share price rapidly and rationally, with respect to the direction of the share price movement and the size of that movement
- No trader will be presented with an opportunity for making a return on a share greater than a fair return for the riskiness associated with that share, except by chance
- Stock market efficiency does not mean that investors have perfect powers of prediction
- The current share price level is an unbiased estimate of its true economic value based on the information revealed

Value of Shares

- Book value:
 - Shareholders' equity (from balance sheet)

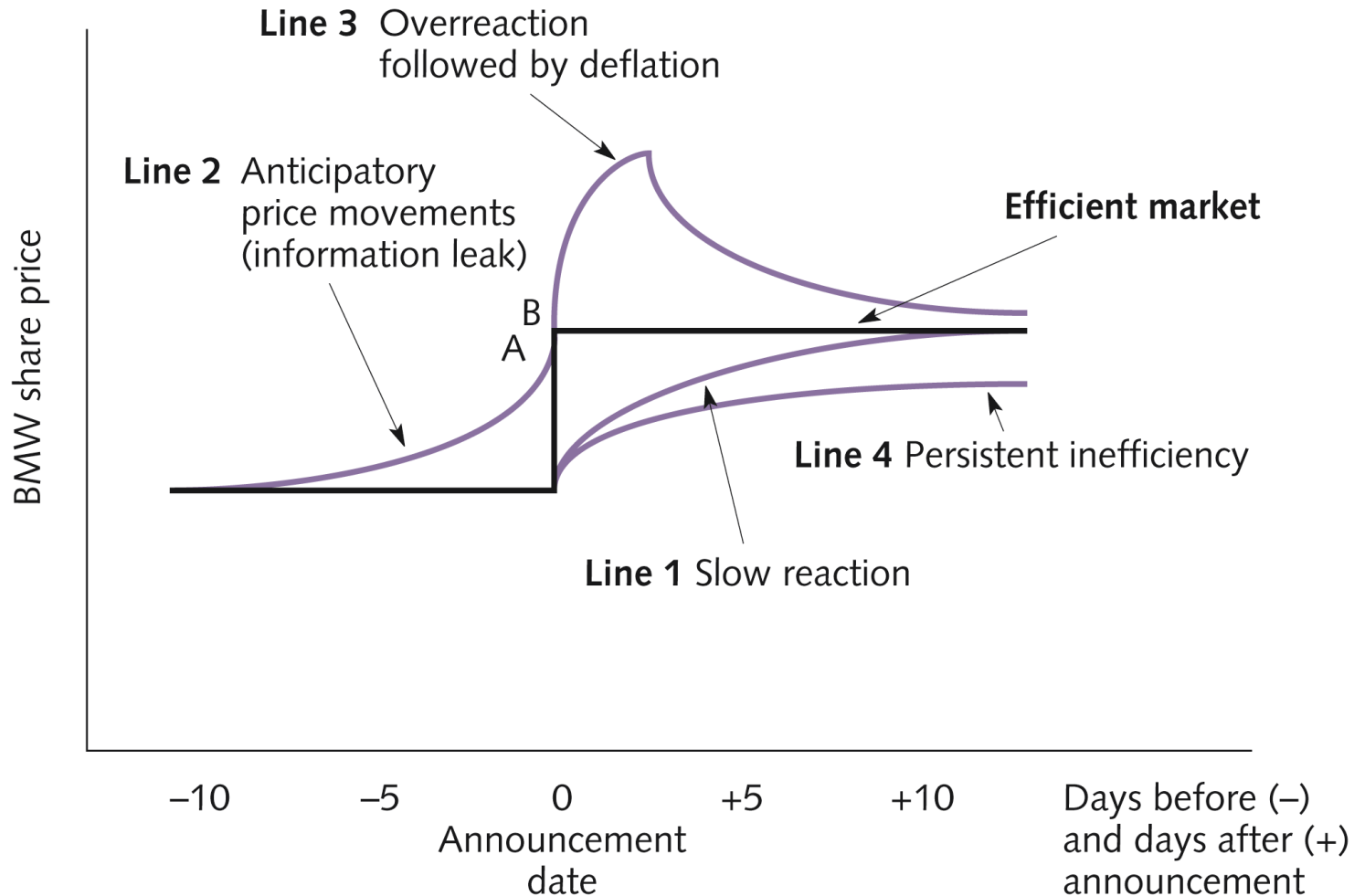
$$\text{Book Value per Share} = \frac{\text{Total Shareholders' Equity}}{\text{Total \# of Shares Outstanding}}$$

- Market value

$$\text{Total Market Capitalisation} = \text{Market Price per Share} \times \text{Total \# of Shares Outstanding}$$

- Intrinsic value
 - Share valuation is the process to find the intrinsic value of a share

New information (an electric car announcement by BMW) and alternative stock market reactions – efficient and inefficient

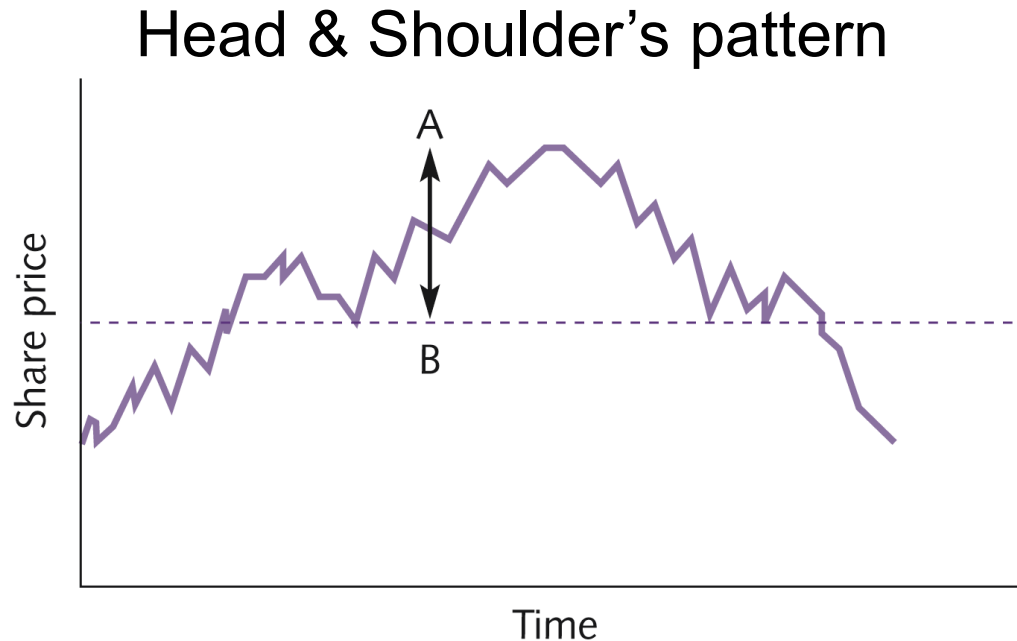


The three levels of efficiency

- Weak-form efficiency. Share prices fully reflect all information contained in past price movements
- Semi-strong form efficiency. Share prices fully reflect all the relevant publicly available information
- Strong-form efficiency. All relevant information, including that which is privately held, is reflected in the share price

Weak-form tests

- There will be no mechanical trading rules based on past movements which will generate profits in excess of the average market return (except by chance)
- A simple price chart



Weak form efficiency - general conclusion

- The evidence and the weight of academic opinion is that the weak form of the EMH is generally to be accepted
- Benjamin Graham: “One principle that applies to nearly all these so-called ‘technical approaches’ is that one should buy because a stock or the market has gone up and should sell because it has declined... the exact opposite of sound business sense everywhere else... we have not known a single person who has consistently or lastingly made money by thus ‘following the market’”

Return reversal

- De Bondt and Thaler (1985)
 - Shares that had given the worst returns over a three-year period outperformed the market by an average of 19.6 percent in the next 36 months
- Chopra et al. (1992)
 - Extreme prior losers outperform extreme prior winners by 5–10 per cent per year during the subsequent five years
- Arnold and Baker (2005)
 - Loser shares outperformed winner shares by 14 percent per year

Semi-strong form tests

- Is worthwhile expensively acquiring and analysing publicly available information?
- Fundamental analysts try to estimate a share's true value based on future business returns
- Majority of the early evidence (1960s and 1970s) supported the hypothesis
- Some academic studies which appear to suggest that the market is less than perfectly efficient

Semi-strong form tests

- Information announcements
 - Over-reaction vs Under-reaction
- Size effect
- Seasonal, calendar or cyclical effects
 - Examples such as The weekend effect, The January effect, Hour of the day effect
 - Cease to exist when known
 - High transaction costs
 - Accusation of 'data-snooping'

Value investing

- Low price-earning ratio shares
 - The evidence generally indicates that these shares generate abnormal returns Basu (1975, 1977, 1983), Keim (1988), Lakonishok et al. 1994) Levis (1989), Gregory et al. (2001, 2003)
 - Dispute whether it is the small-size effect that is really being observed Reinganum (1981), and Banz and Breen (1986)
 - Levis (1989), and Gregory et al. (2001), concluded that low PERs were a source of excess returns
- Investors place too much emphasis on short-term earnings data
- The tendency for extreme profit and growth trends to moderate 'to revert to the mean'
 - (Little (1962), Fuller et al. (1993), Dremen (1998))
- Lakonishok et al. (1994) found that low PER shares are actually less risky than the average

Comment on the semi-strong efficiency evidence

- Despite the evidence of some work showing departures from semi-strong efficiency, for most investors most of the time the market may be regarded as efficient
- The evidence for semi-strong efficiency is significant but not so overwhelming that there is no hope of outperformance for the able and dedicated
- Publication bias
- Hundreds of researchers examining the data
 - Paradox: in order for the market to remain efficient there has to be a large body of investors who believe it to be inefficient

Strong-form tests

- It is possible to trade shares on the basis of information not in the public domain and make abnormal profits
- Trading on inside knowledge is thought to be a 'bad thing'
- Insider dealing is considered to be, besides dealing for oneself either counselling or procuring another individual to deal in the securities or communicating knowledge to any other person, while being aware that he or she (or someone else) will deal in those securities
- The term 'insider' covers anyone with sensitive information, not just a company director or employee
- Raise the level of information disclosure
- Prohibit certain individuals from dealing in the company's shares for crucial time periods

Implications of the EMH for investors

- For the vast majority of people public information cannot be used to earn abnormal returns
- Investors need to press for a greater volume of timely information
- The perception of a fair game market could be improved by more constraints and deterrents placed on insider dealers

Implications of the EMH for companies

- Focus on substance, not on short-term appearance
- The timing of security issues does not have to be fine-tuned
- Large quantities of new shares can be sold without moving the price
- Signals from price movements should be taken seriously