

## Public information

### Securities Trading: Principles and Procedures, Chapter 9

For Thursday, March 26 class.

#### □ Read

- Fischel, Daniel R. (1982). Use of modern finance theory in securities fraud cases involving actively traded securities. *Business Lawyer*, 38(1), 1-20.
- *Wei Ding v. Roka Bioscience*. (2014). Initial complaint.

## Overview

- ❑ Value-relevant information
- ❑ Trading-relevant information
- ❑ The efficient market hypothesis
- ❑ Public and private information
- ❑ Market reactions to public information
- ❑ Trading halts

## Information and the buy-and-hold *investor*

- ❑ Many securities can be viewed as claims on real assets.
  - Example: The stock of a corporation is the claim on the earnings generated by the physical, intellectual and intangible assets (after expenses)
- ❑ *Fundamental valuation* produces an estimate of the *intrinsic value* for the security
  - .... based on level, timing, and risk of cash flows from real assets.
  - ... usually assuming that the investor buys the security and holds it forever.
  - Example: the dividend growth model for stocks.
- ❑ *Fundamental information* helps refine predictions of cash flow level, timing and risk.
  - Also called *value-relevant information*
  - Examples: accounting estimates, earnings and revenue projections.

## Information and the buy-and-sell *trader*

- ❑ A trader expects to purchase and resell the security (in the “short-run”)
- ❑ Predicting the resale value of a security is more difficult than fundamental valuation.
  - We’re predicting the valuations of all other investors and traders.
  - Situation is “forecasting the forecasts of others,” or a “Keynsian beauty contest”.

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John M. Keynes, *The General Theory of Employment, Interest and Money* (1935)

- ❑ .... professional investment may be likened to those newspaper competitions in which the competitors have to pick out the six prettiest faces from a hundred photographs, the prize being awarded to the competitor whose choice most nearly corresponds to the average preferences of the competitors as a whole; so that each competitor has to pick, not those faces which he himself finds prettiest, but those which he thinks likeliest to catch the fancy of the other competitors, all of whom are looking at the problem from the same point of view.
- ❑ It is not a case of choosing those which, to the best of one's judgment, are really the prettiest, nor even those which average opinion genuinely thinks the prettiest. We have reached the third degree where we devote our intelligences to anticipating what average opinion expects the average opinion to be. And there are some, I believe, who practise the fourth, fifth and higher degrees.

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## Investors' and traders' decisions: an example

- ❑ A buy and hold investor will try to predict the long-term growth rate of dividends.
- ❑ A buy and sell trader will try to discern what others believe about the growth rate of dividends
  - ... and how those beliefs will change over the trader's holding period.
  - ... even if she knows these beliefs to be wrong.

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## The interplay between market prices and information

- ❑ Usually discussed from the perspective of the Efficient Market Hypothesis (EMH).
- ❑ (Informational) efficiency is a recurrent idea in economic thought.
- ❑ Formalized as a debatable proposition ("hypothesis") in the mid-20<sup>th</sup> century.

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## Efficient market hypothesis (EMH)

- Two common formulations
  - The price of a security fully reflects all available information.
  - Nobody can make “abnormal” trading profits based on information.
    - “Normal” trading profits include compensation for the time value of money and risk.
- The EMH *does not* maintain that stocks are always “correctly” priced.
  - Market beliefs and expectations might be wrong.

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## Practical implications

- The “fully reflects all available information” statement of the EMH is used to justify multi-billion dollar settlements in securities class action law suits.
- The “no abnormal trading profits” statement of the EMH
  - Encourages low-cost passive investment strategies like indexation
    - Indexation: setting up your portfolio to match an index (like the S&P 500)
  - Discourages active investment strategies (like those practiced by hedge funds)

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## What is information?

- ❑ Public information
  - Anything broadly known or disseminated.
  - Fundamental: directly related to company cash flows (accounting statements)
  - Market (technical): security price history, trades and bid-ask quotes.
- ❑ Private information
  - All non-public information known to at least one person.
  - Illegal “insider” information.
  - Insights gained through superior or more timely analysis.

## Types of efficiency

- ❑ Weak efficiency.
  - The market price of  $x$  fully reflects everything that could be learned from the trading history of  $x$  (last sale prices, trading volumes, and so on).
- ❑ Semi-strong efficiency
  - ... and everything that could be learned from accounting statements, news releases and all other public sources.
- ❑ Strong efficiency
  - ... and all private information.

## Why is the EMH important?

- ❑ A financial market is supposed to efficiently allocate scarce investment capital.
- ❑ Security prices indicate the best (and worst) uses of capital.
  - Google stock price is high → Google could easily sell more stock → the market trusts Google management to make profitable investments.
- ❑ More informative (efficient) prices make the allocation process more accurate.
- ❑ Ideally, a competitive capital market should do a much better job of finding profitable investments than a government central planner.

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## The driving force behind the EMH is competition ...

- ❑ *Competition* among investors.
- ❑ Suppose a stock is trading at \$10, and there's a major news announcement: shares are worth \$1 more.
  - Anybody who's heard the news will lift any offer below \$11.
  - This process *could* occur without any trading.
    - ❑ Initial quotes of \$9.90 bid, offered at \$10.10, are cancelled and replaced by: \$10.90 bid, offered at \$11.10.
  - But trading often accompanies the adjustment.

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## Impediments to market efficiency

- ❑ Information is costly to accumulate and process
  - Some investors have superior acquisition or processing ability.
- ❑ Trading costs.
  - Some investors have lower trading costs.
- ❑ Psychological/cognitive biases.
  - Some investors are better at recognizing and countering them.

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## The dynamics of prices and public information

- ❑ The tools to discuss public and private information are different.
- ❑ In this section/chapter we'll look at three reactions to public information.
  - In the next section/chapter, we'll look at private information.
- ❑ We'll look at three scenarios
  - Frequent arrivals of small information.
  - Large anticipated events
  - Large unanticipated events

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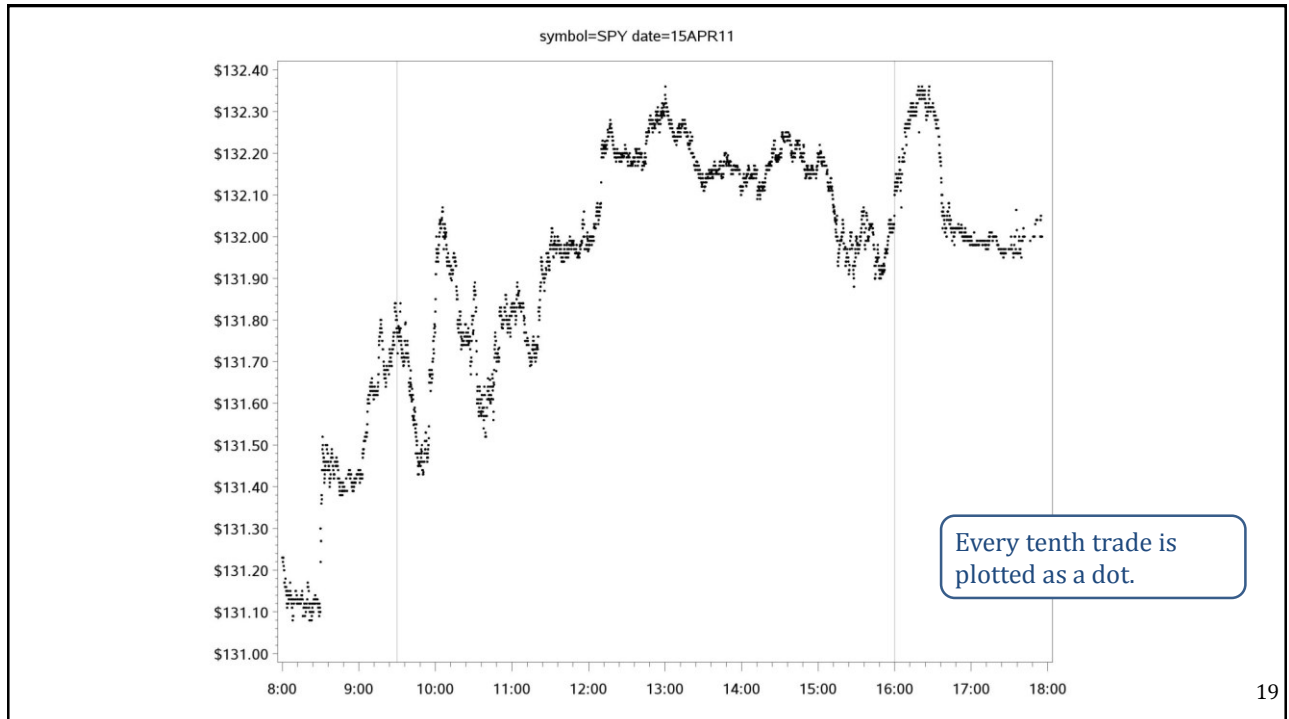


## A case study: the SPDR

- ❑ Standard and Poor's Depositary Receipts ("Spiders")
- ❑ Family of ETFs (exchange-traded [mutual] funds).
- ❑ The assets are portfolios of stock constructed to mimic S&P indexes.
- ❑ The most actively SPDR traded mirrors the S&P 500 index.
  - Ticker symbol: SPY

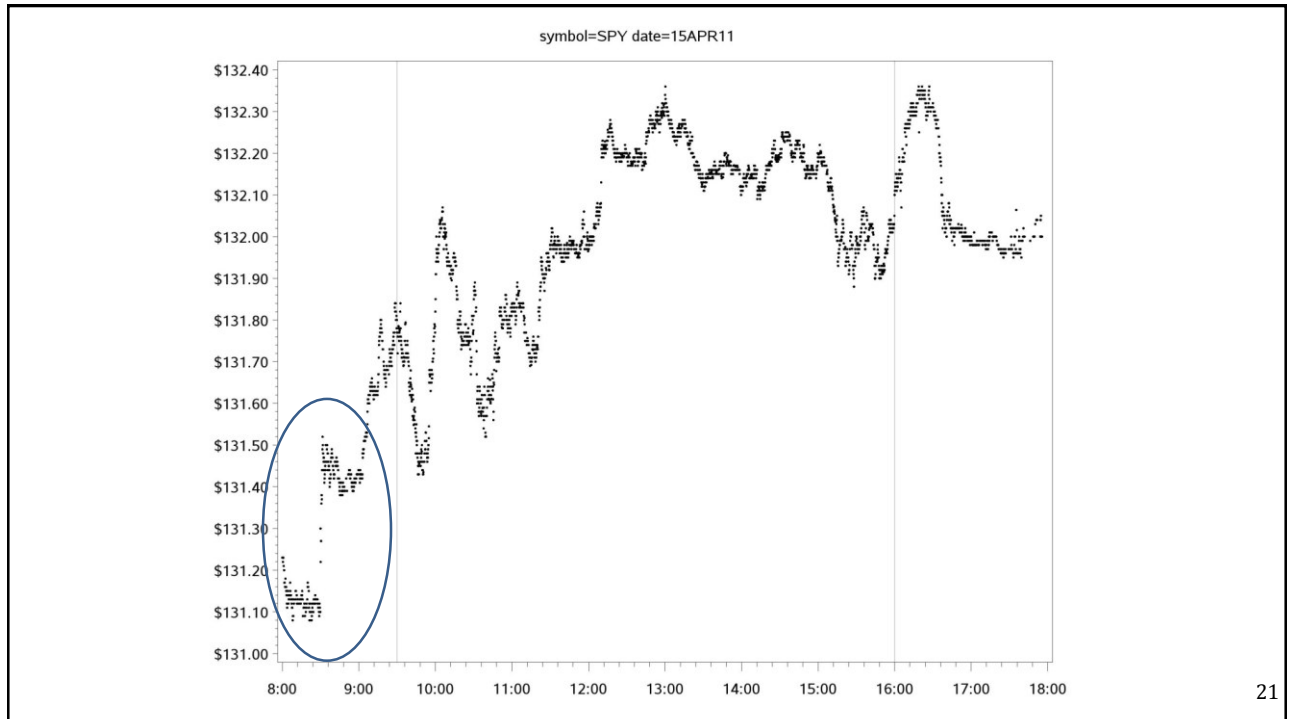
## Informational characteristics

- ❑ An index security tracks broad market movements.
  - Not as sensitive to idiosyncratic news as stock of individual company.
- ❑ Often a news stream consists of many minor announcements.
  - No single announcement is important.
  - They can accumulate to the point where they can move prices.
- ❑ Next: SPY on April 15, 2011.



## With a flow of minor news announcements ...

- ❑ Successive price movements are small and incremental.
  - Often mathematically modeled as Brownian motion processes.
- ❑ Stepping back and looking at a full day, the price paths appear to exhibit patterns.
  - Technical analysis tries to detect and classify these patterns (trends, cycles, support levels, resistance levels, and so on)
  - Most patterns aren't statistically significant and aren't predictable enough to be useful as trading signals.
- ❑ Note that around 8:30a there is a rapid jump.



## Anticipated news announcements

- ❑ Most companies (and governments) like to schedule announcements in advance and outside of regular trading hours.
- ❑ See “economic” or “company” calendars

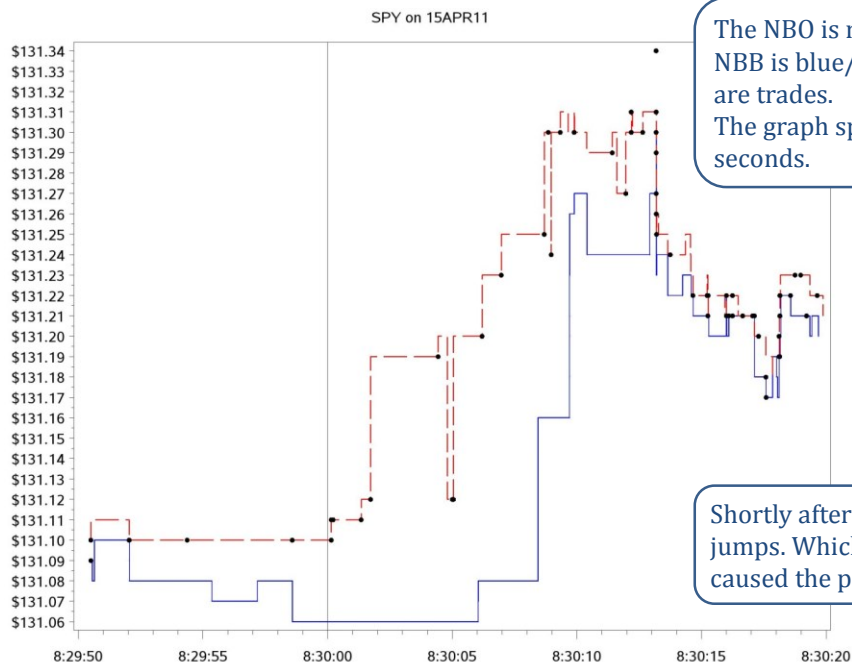
## Calendar for April 15, 2011 (briefing.com)

Scheduled release time (Eastern)	Release statistic	For	Actual	Consensus
8:30	Consumer price index (CPI)	Mar	0.50%	0.50%
8:30	Empire Manufacturing Survey	Apr	21.7	15
9:15	Industrial Production	Mar	0.80%	0.60%
9:15	Capacity Utilization	Mar	77.40%	77.40%
9:55	Michigan Consumer Sentiment	Apr	69.6	66.5

- ❑ The *consensus* is the average of analyst beliefs prior to announcement; The *actual* is the newly announced number
- ❑ The consumer price index is the US Bureau of Labor Statistics measure of inflation.
- ❑ The Empire Manufacturing Survey measures the output of factories in New York State.
- ❑ Next: detail of the SPY trading around 8:30a.

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## Typical adjustment around a scheduled news announcement

- ❑ The period covering the announcement may have a lot of volatility.
  - Anyone who establishes a position prior to the announcement is taking on extra risk.
- ❑ Prior to announcement
  - The bid-ask spread tends to widen.
    - ❑ From a dealer's perspective, market-making is riskier.
    - ❑ This is when a designated market maker (like a specialist) would usually prefer not to post bids and offers.
  - Depth (sizes, # of shares at the NBBO) declines. *Not displayed on the graph.*
  - Trading volume tends to decline.

## Immediately after the announcement (first ten seconds)

- ❑ The incoming order flow tends to be one-sided, in the direction of the announcement surprise.
- ❑ SPY
  - In response to a positive surprise, the offer side is repeatedly lifted.
  - Limit orders on the offer side are executed faster than they are being replenished: the offer rises.
  - Adjustment on the bid size follows, but not immediately.
    - ❑ The spread widens, and then narrows as the bid catches up to the ask.
- ❑ For a negative surprise, the directions are generally reversed.
  - The bid is hit repeatedly; the bid moves down
  - The bid initially moves faster than the offer.
  - The spread widens and then narrows as the offer catches up.

The overall adjustment path in the first twenty seconds.

- ❑ The initial increase looks like an overreaction.
  - After 8:30:10, the price falls back a bit.
  - Under- and overreactions are apparent only after the fact.
- ❑ There is usually disagreement about the meaning and significance of a news announcement.
- ❑ This disagreement gets resolved through trading.
- ❑ *Price discovery* refers to the trading process leading to an emergence of a consensus price.

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## US corporations and information

- ❑ Many issues dealing with the stock market and information fall under the 1934 Act Rule 10b-5 (“10b-5”)
- ❑ Requires corporate managers to promptly and truthfully disclose most material facts.
- ❑ The full citation is:
  - Code of Federal Regulations ([www.ecfr.gov](http://www.ecfr.gov)); Title 17 - Commodity and Securities Exchanges; CHAPTER II - SECURITIES AND EXCHANGE COMMISSION (CONTINUED); PART 240 - GENERAL RULES AND REGULATIONS, SECURITIES EXCHANGE ACT OF 1934; §240.10b-5 Employment of manipulative and deceptive devices

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## 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,
  - (a) To employ any device, scheme, or artifice to defraud,
  - (b) 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 the light of the circumstances under which they were made, not misleading, or
  - (c) 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.
- ❑ “*material fact*”: there is a substantial likelihood that a reasonable investor would consider it important.

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## Who to tell? When to schedule the announcement?

- ❑ Company announcements in the US are governed by SEC Regulation FD (“Full Disclosure”)
- ❑ The information must be made available to all market participants at the same time.
  - Prohibits conference calls with securities analysts that aren’t open to the public.
- ❑ Most US earnings announcements are made before or after regular trading hours (9:30-16:00)

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## Information disclosure by others

- ❑ Example: company research produced by a brokerage firm.
- ❑ Reg FD does not apply, but other FINRA rules might.
- ❑ This is an area of ongoing regulatory interest.
  - Advance disclosure of research to trading desk is generally prohibited.
  - Selective advance disclosure to customers is common, but under scrutiny.
    - ❑ Do all customers know that some customers are getting the information earlier?

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## Public and private information: one gray area

- ❑ The Michigan Consumer Sentiment Index is a survey number compiled and published by the University of Michigan.
- ❑ Prior to June, 2013
  - Reuters paid UM \$1.1 Million per year for distribution rights.
  - “Official” public release time was 9:55:00 Eastern time.
  - But by paying a \$5,000 monthly fee subscribers could get the release at 9:54:58.
- ❑ For two seconds, the numbers were *private* information.
- ❑ Was this legal? Was this fair?

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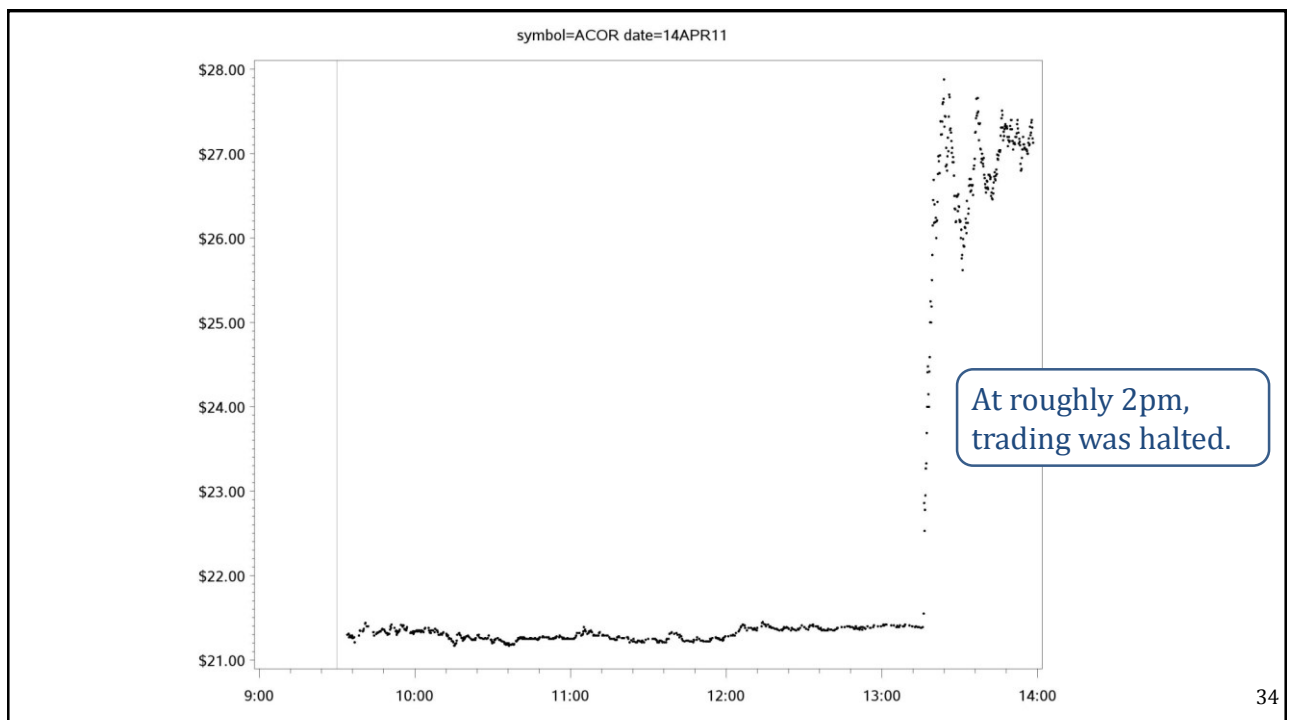


## Unexpected/unscheduled news announcements

- ❑ Acorda Therapeutics (ticker symbol: ACOR) is a NASDAQ-listed pharmaceutical firm.
- ❑ Shortly after 13:00 on April 14, 2011 ...
  - “RBC Capital Markets speculated in a report that the patent on the company’s multiple sclerosis (MS) drug, dalfampridine (Ampyra), might extend for longer than initially expected.”

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## Trading Halts

- ❑ Used when the trading process is not “fair and orderly”.
- ❑ Market-wide
  - Cover all stocks.
  - Purpose is to stem “panic selling”
- ❑ Stock-specific
  - Purpose is to ensure fair dissemination of information.

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## Market-wide *circuit breakers*

- ❑ SEC regulation, applies to US equities
- ❑ Triggered by a 7% decline (from previous day's close) in the S&P 500 index.
- ❑ 15-minute trading halt in all stocks.
- ❑ Continuous trading is reopened at the primary listing exchange.
  - Reopening generally uses a single-price call auction.

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## Single-stock halt mechanisms

- Trading can be halted pre-emptively
  - A company can notify its primary listing exchange that it will shortly release major news and request a news-pending halt.
  - Companies usually prefer to schedule announcements outside of regular trading hours, but sometimes they may not have control.
- Halts can also be triggered by price movements.

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### Table 5.2 NASDAQ Halt Codes

Trade Halt Code	Trade Halt Description
T1	Halt - News Pending. Trading is halted pending the release of material news.
T2	Halt - News Released. The news has begun the dissemination process through a Regulation FD compliant method(s).
...	
T6	Halt – Extraordinary Market Activity. Trading is halted when extraordinary market activity in the security is occurring ...
...	
T12	Halt - Additional Information Requested by NASDAQ Trading is halted pending receipt of additional information requested by NASDAQ.

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## “Limit up / limit down” (SEC regulation)

- ❑ Sets trading price bands that, when hit, trigger a five-minute trading “pause”.
- ❑ Bands are  $\pm 5\%$  of the *reference price*
  - Average of trade prices over previous five minutes.
  - If no trades, previous reference price.
  - Sometimes: opening or re-opening price.
- ❑ “5%” is used for “Tier 1” stocks
  - S&P 500, Russell 1,000, active non-stock exchange-traded products (like the SPDR)

## Are trading halts beneficial?

- ❑ Pro
  - Trading halts level the playing field when some people haven’t had time to learn, verify, and interpret new information.
- ❑ Con
  - Trading halts impair market efficiency because the price can’t adjust to a new value without trading.
  - Trading halts aren’t necessary because trading is voluntary.
    - ❑ Anyone can simply choose not to trade.