

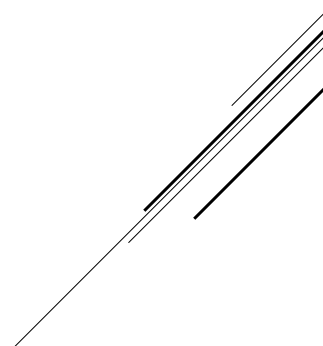
# TRADING MECHANICS: TYPES OF ORDERS

## WHAT WILL YOU LEARN?

- What are the different types of orders an investor can place in trading securities in secondary markets?

## TYPES OF ORDERS

- ▶ Market orders
- ▶ Limit orders
- ▶ Stop orders
- ▶ Short sales

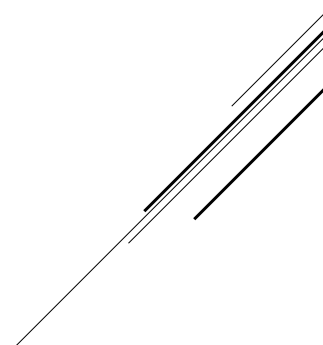


## MARKET ORDERS

- ▶ A **market order** is an order to buy or sell to be executed at the best price currently available.
- ▶ Suppose you call your broker to ask for the market price of Apple stock.

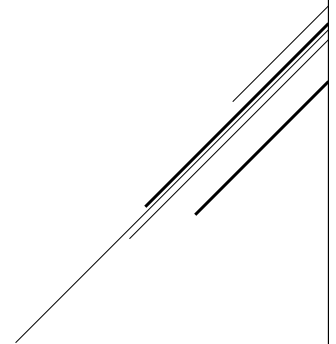
	BID	ASK
AAPL	\$96	\$96.06

- ▶ It ensures execution at the expense of uncertainty over price.



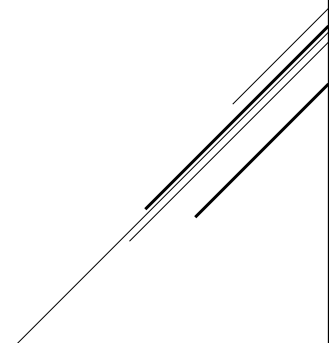
## LIMIT ORDERS

- ▶ A **limit order** is an order to buy or sell at a maximum or minimum price.
- ▶ Suppose you put an a limit order to sell 100 shares of IBM for \$125.
- ▶ This guarantees that the sale would be at a minimum of \$125.
- ▶ **Limit order book** is the collection of limit orders waiting to be executed.
- ▶ So limit orders control the price but do not guarantee that the order will be filled.



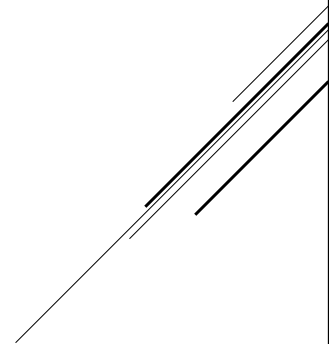
## STOP ORDER

- ▶ **Stop orders** are activated only when stock price reaches or passes through some predetermined level.
- ▶ A **stop loss** is an order to sell when price falls below a certain level.
- ▶ A **stop buy order** specifies to buy when the price rises above a certain limit. (There are usually used together with short sales to limit potential losses from short positions)(.



## SUMMARY

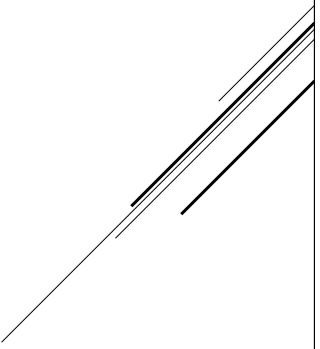
- ▶ You learned the definitions of and the differences among the three main types of orders in trading securities.
- ▶ We next look at short-selling and margin buying.



# TRADING MECHANICS: MARGIN TRANSACTIONS

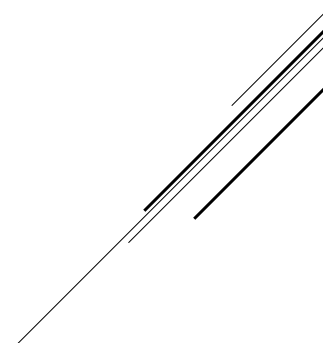


## WHAT WILL YOU LEARN?

- ▶ What is a margin account?
  - ▶ What are the mechanics of margin transactions?
  - ▶ What is buying on margin?
  - ▶ What is the initial margin requirement?
  - ▶ What is maintenance margin?
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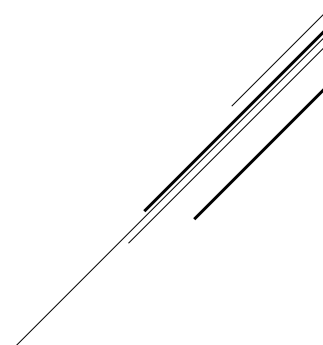
## BUYING ON MARGIN

- ▶ Investors can buy securities either with cash or with part cash and part borrowing.
- ▶ **Buying securities on margin** means that the investors borrows part of the purchase price from the broker.
- ▶ **Margin** is the amount contributed by the investor.
- ▶ The securities serve as collateral for the loan.
- ▶ In this way, the investor creates **financial leverage**.

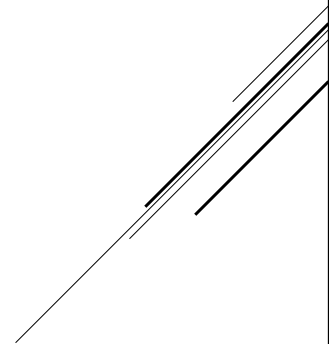


## MARGIN TRANSACTION EXAMPLE

- ▶ Suppose you have \$10,000 to invest and you are considering Fast Cars, Inc. which is selling \$20 a share.
- ▶ With your \$10,000, you can buy 500 shares.
- ▶ The broker can arrange for you to borrow another \$10,000, so that you buy additional 500 shares.
- ▶ So now you can buy 1000 shares for your \$10,000.
- ▶ The 1000 shares of Fast Cars serve as collateral, and you will have to pay interest on the amount borrowed.

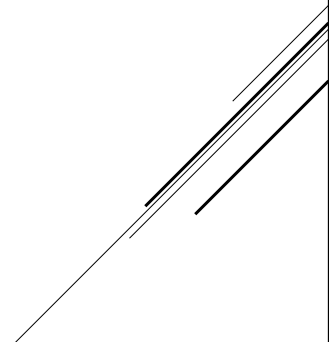


## MARGIN TRANSACTIONS EXAMPLE



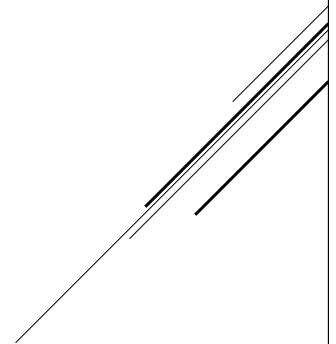
## INITIAL MARGIN REQUIREMENT

- ▶ The minimum amount of margin that must be in the account when the purchase is made is called the **initial margin requirement**.
- ▶ Consider a 50% initial margin requirement.
- ▶ In the previous example your \$10,000 met the initial margin requirement for buying 1000 shares at \$20 a share.



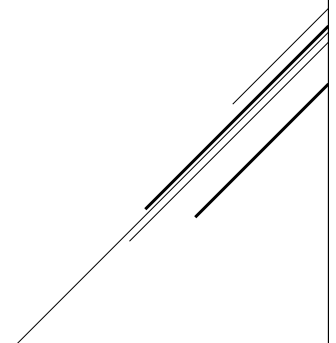
## MARGIN TRANSACTIONS EXAMPLE

- ▶ Suppose the price went up to \$30 per share.
- ▶ Suppose you are also interested in shares of New Toys which are selling for \$10 a share. You can buy 500 shares of New Toys only by borrowing.



## MAINTENANCE MARGIN

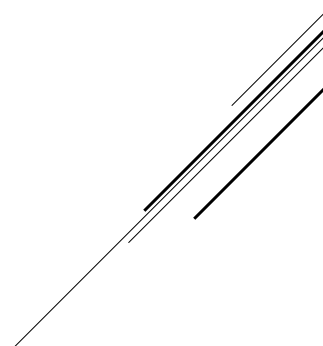
- ▶ The minimum amount the margin can decline to without an investor having to take any action is called the **maintenance margin**.
- ▶ If your margin in the account drops below this threshold level, you will receive a **margin call** – essentially to add more cash.





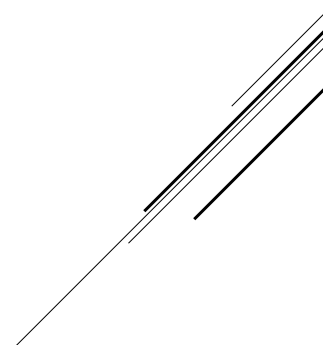
## MARGIN TRANSACTIONS EXAMPLE

- Suppose that the maintenance margin requirement is 30%, and instead of going up if Fast Cars share price drops down to \$14.



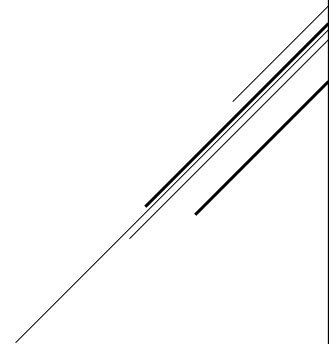
## CREATING LEVERAGE

- Suppose the expected rate of return on Fast Cars was 30%. And let's suppose that the interest rate on the margin loan was 10% per year.



## SUMMARY

- ▶ You learned the mechanics of margin transactions.
- ▶ Definition of initial margin requirement and maintenance margin.
- ▶ We looked an example of buying on margin to illustrate how a margin transaction works.



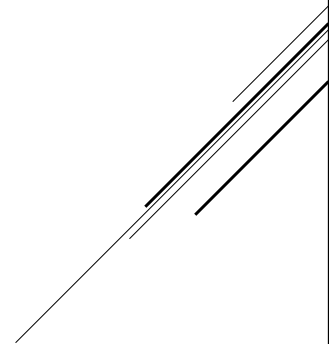
## TRADING MECHANICS: SHORT SALES

### WHAT WILL YOU LEARN?

- ▶ What is the definition of short sales?
- ▶ What is involved in short sales?
- ▶ Why do we need short sales?

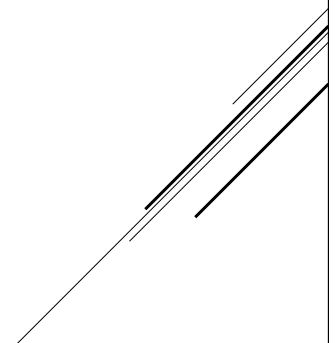
## SHORT SALES

- ▶ Selling securities that are not owned at the time of sale is called **short selling**.
- ▶ The investor borrows the security to sell it short.
- ▶ Later, the short seller needs to repurchase the security to replace it. This is called **covering the short**.



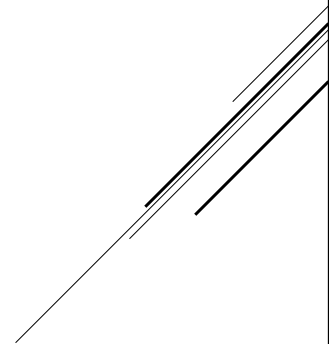
## SHORT SALES EXAMPLE

- ▶ Suppose you are bearish about the BubbleNet stock.
- ▶ Its current market price is \$50.
- ▶ You tell your broker to sell short 1000 shares.
- ▶ The broker borrows 1000 shares from another client or another broker.
- ▶ The proceeds from the short sale \$50,000 is credited into your account.



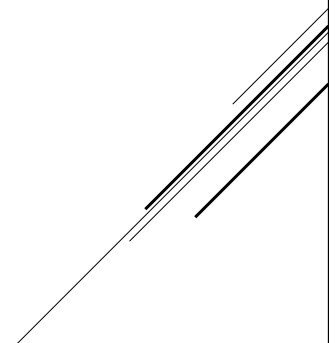
## SHORT SALES EXAMPLE

- ▶ Short-sellers are required to post margin with the broker to cover potential losses in case the price increases.
- ▶ Suppose there is a 50% margin requirement.
- ▶ That means you must have other cash or securities worth at least \$25,000 in your account.



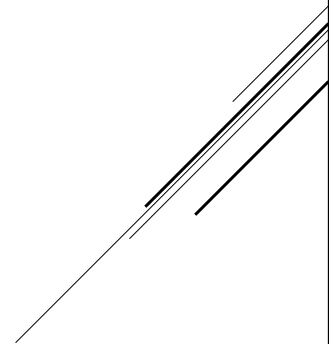
## SHORT SALES EXAMPLE

- ▶ Now let's suppose you were right, and price of BubbleNet drops to \$30 per share.
- ▶ You can now close out your position:
  - ▶ Buy 1000 shares to replace the ones you borrowed.



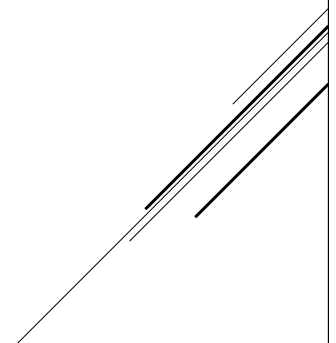
## MARGIN REQUIREMENT ON SHORT SALES

- ▶ Just like investors who buy on margin, a short-seller may receive margin calls.
- ▶ Suppose instead the price of BubbleNet goes up from \$50 to \$90 a share. And also suppose that maintenance margin is 30%.



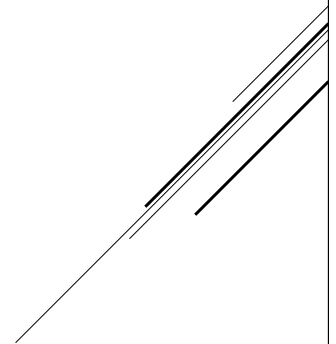
## DO WE NEED SHORT SALES?

- ▶ Short-selling often comes under fire!
- ▶ In September 2008, SEC temporarily banned short-selling on nearly 1000 firms.



## SUMMARY

- ▶ You learned the definition of short sales.
- ▶ You learned the mechanics of a short-sales transaction.
- ▶ Short-sales contribute to efficient price discovery.



# NEW TRENDS IN SECURITIES TRADING

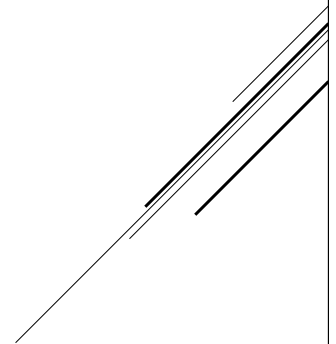
## WHAT WILL YOU LEARN?

- ▶ What is algorithmic trading?
- ▶ What is high frequency trading?
- ▶ Flash crash of May 2010



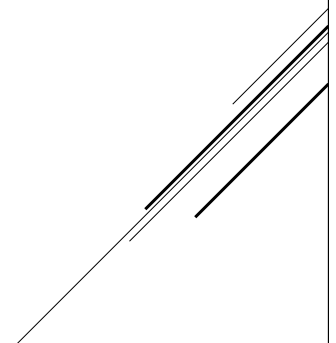
## ALGORITHMIC TRADING

- ▶ **Algorithmic trading** is the use of computer programs to make trading decisions.
- ▶ These trades exploit very small price discrepancies across securities or even sometimes markets.
- ▶ Order-handling algorithms, statistical arbitrage, pairs trading...

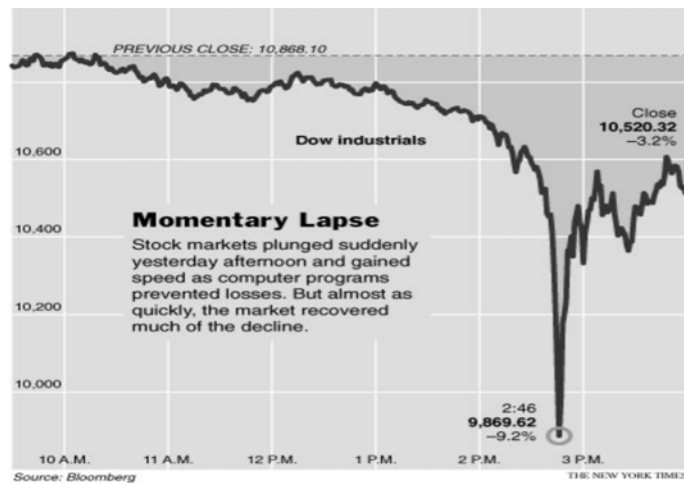


## HIGH FREQUENCY TRADING (HFT)

- ▶ **High frequency trading** is a type of algorithmic trading that relies on super-fast computers for extremely rapid trades.
- ▶ These trades exploit very small price discrepancies across securities or even sometimes markets.
- ▶ Typically, HFTs compete for very small profits that can accumulate to large sums.
- ▶ Location counts... Co-locating servers to a trading venue can shave millisecond of the timing of a trade.



## 2:42 PM FLASH CRASH OF MAY 6, 2010



## WHAT CAUSED THE FLASH CRASH?

- ▶ \$4 billion sell order of market index futures contracts by a mutual fund – automated algorithmic trade
- ▶ HFTs initially helped absorb the sell pressure buying the contracts
- ▶ Within minutes, heavily selling to reduce their long position
- ▶ Leading to faster execution of the algorithm
- ▶ Feedback loop!

## SUMMARY

- ▶ Algorithmic and high-frequency trading relies on high-speed super-computers to detect and exploit market movements.
- ▶ Controversy over their impact on financial markets
- ▶ Flash crash of May 2010

