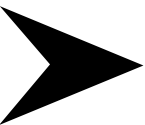


Technical Analysis

- Technical analysis – technical trading rules based on past price movements
- Contrast to EMH
 - past influence has no impact on future performance
- Examination of past market data
 - Prices and the volume of trade
- Which leads to an estimation of future price trends and investment decision
 - Market is its own best predictor

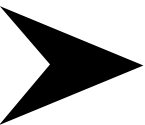
Underlying Assumptions of Technical Analysis

1. The market value of any good or service is determined solely by the interaction of supply and demand
2. Supply and demand are governed by numerous factors, both rational and irrational

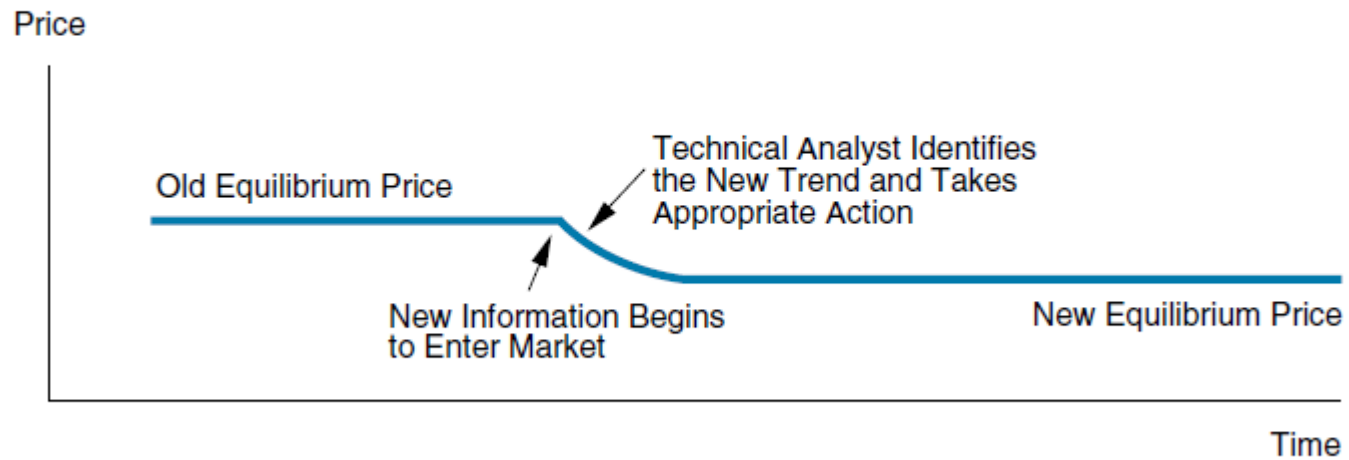


Underlying Assumptions of Technical Analysis

3. Disregarding minor fluctuations, the prices for individual securities and the overall value of the market tend to move in trends, which persist for appreciable lengths of time
4. Prevailing trends change in reaction to shifts in supply and demand relationships and these shifts can be detected in the action of the market

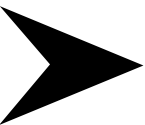


TECHNICAL VIEW OF PRICE ADJUSTMENT TO NEW INFORMATION



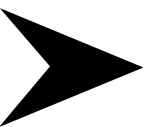
Advantages of Technical Analysis

- Not heavily dependent on financial accounting statements
 - Problems with accounting statements:
 1. Lack information needed by security analysts
 2. GAAP allows firms to select reporting procedures, resulting in difficulty comparing statements from two firms
 3. Non-quantifiable factors do not show up in financial statements



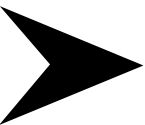
Advantages of Technical Analysis

- Fundamental analyst must process new information and quickly determine a new intrinsic value, but technical analyst merely has to recognize a movement to a new equilibrium
- Technicians trade when a move to a new equilibrium is underway but a fundamental analyst finds undervalued securities that may not adjust their prices as quickly



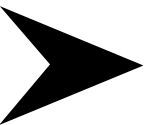
Challenges to Technical Analysis

- Assumptions of Technical Analysis
 - Empirical tests of Efficient Market Hypothesis (EMH) show that prices do not move in trends
- Technical Trading rules
 - The past may not be repeated
 - Patterns may become self-fulfilling prophecies
 - A successful rule will gain followers and become less successful
 - Rules require a great deal of subjective judgement



Technical Trading Rules and Indicators

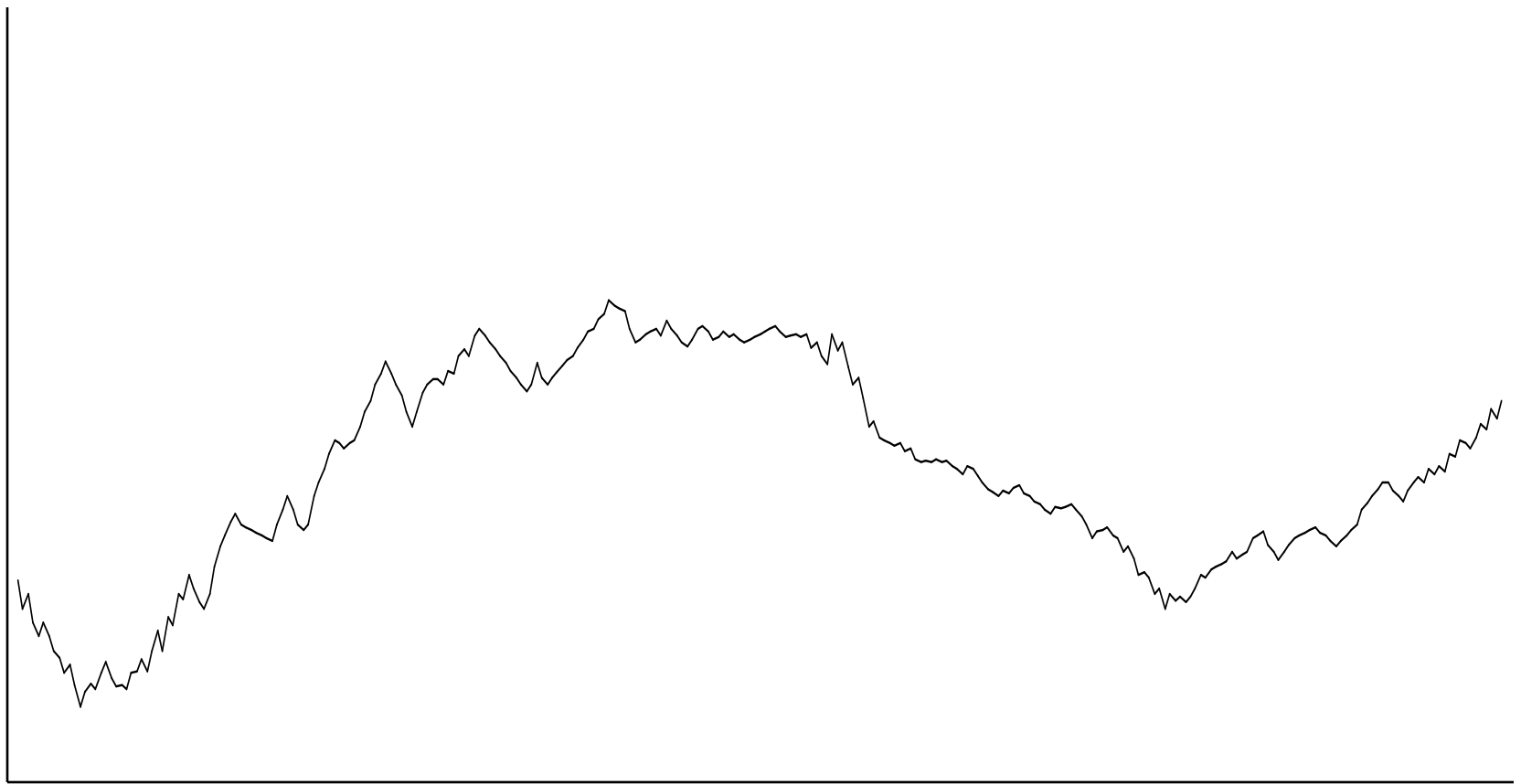
- Stock cycles typically go through a peak and trough
- Analyze the following chart of a typical stock price cycle and we will show a rising trend channel, a flat trend channel, a declining trend channel, and indications of when a technical analyst would want to trade



Typical Stock Market Cycle

Stock
Price

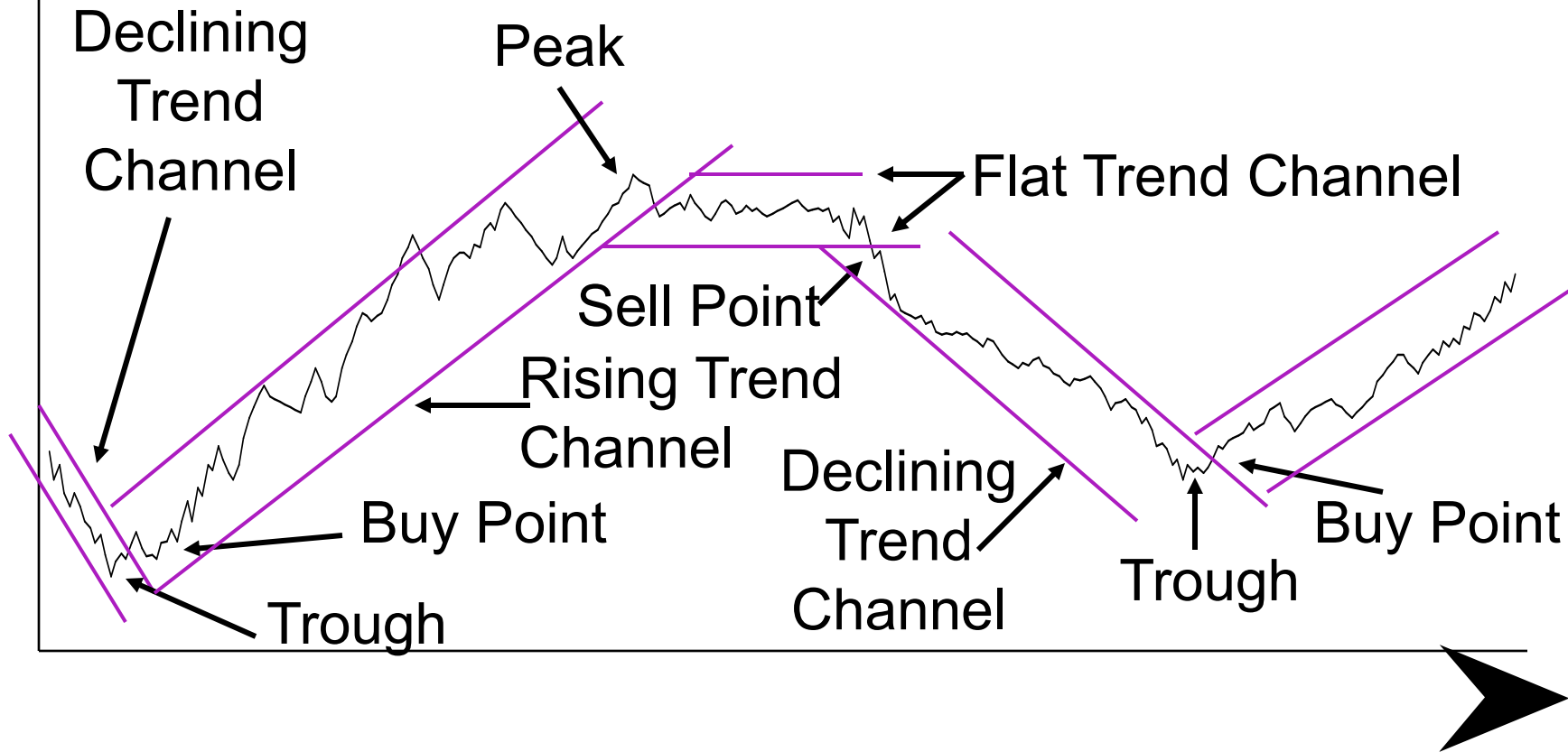
Exhibit 16.2



Typical Stock Market Cycle

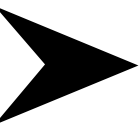
Exhibit 16.2

Stock Price



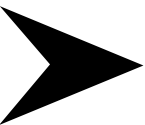
Contrary-Opinion

- Many analysts rely on rules developed from the premise that the majority of investors are wrong as the market approaches peaks and troughs
- Technicians try to determine whether investors are strongly bullish or bearish and then trade in the opposite direction
- These positions have various indicators



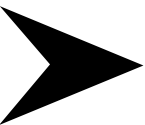
Contrary-Opinion Rules

- Mutual fund cash positions
 - 4 (TA sell, near peak)– 11 %(TA buy, near trough)
- Credit balances in brokerage accounts
 - Purchasing power
- Investment advisory opinions
 - Trend followers
- OTC versus NYSE volume
- Chicago Board Options Exchange (CBOE) put/call ratio
 - 0,4 – 0,6
 - 40:100 - 60:100
- Futures traders bullish on stock index futures
 - 70 % bearish speculators
 - 30 % bullish speculators



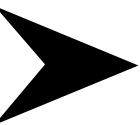
Follow the Smart Money

- Indicators showing behavior of sophisticated investors
- The Barron's Confidence Index
- T-Bill - Eurodollar yield spread
- Debit balances in brokerage accounts (margin debt)

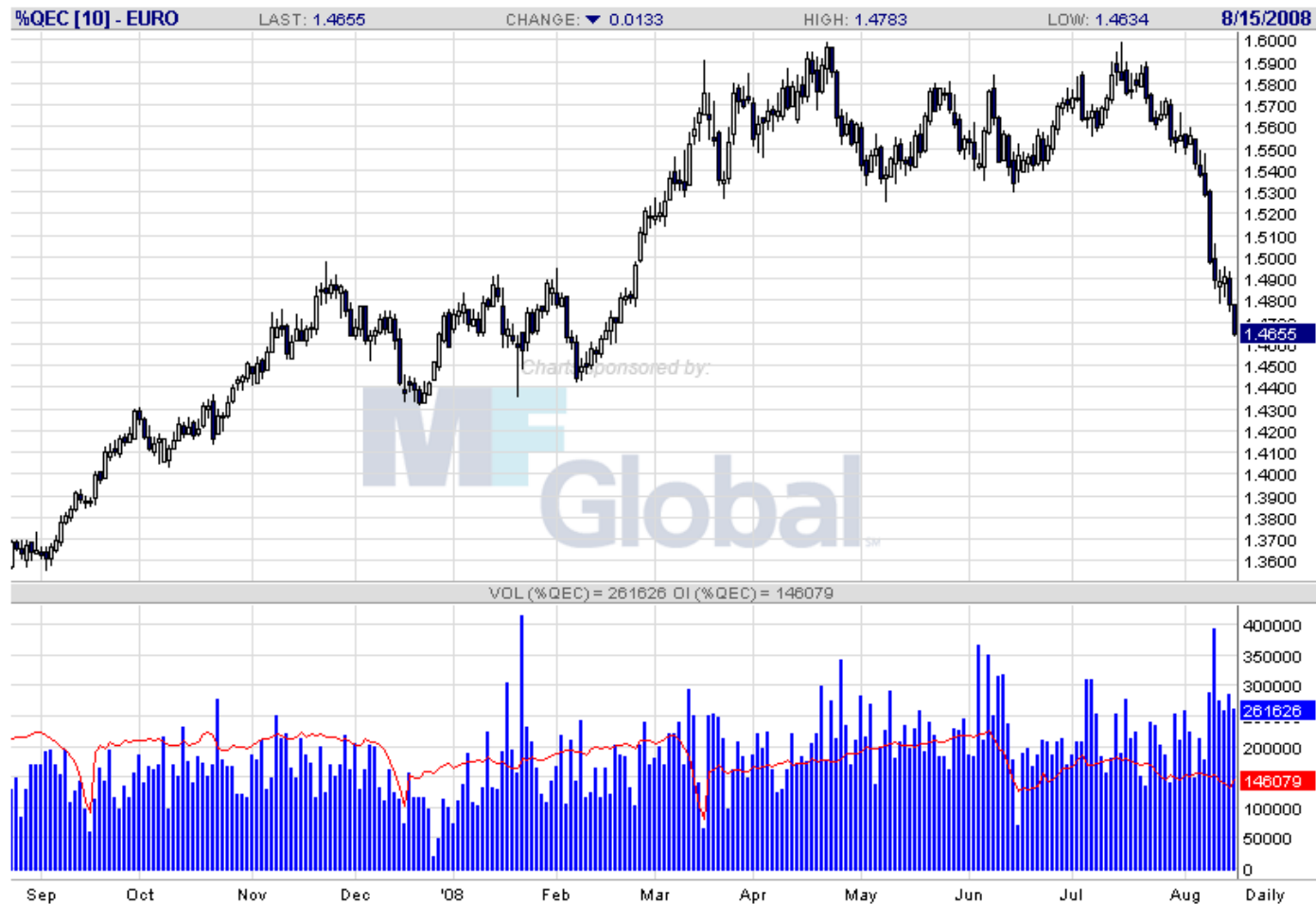


Kinds of charts

- Line chart
- Bar charting
- Candle stick
- Point-and-figure charts
 - Ch. Dow



Line Chart with volume of trade



Bar chart

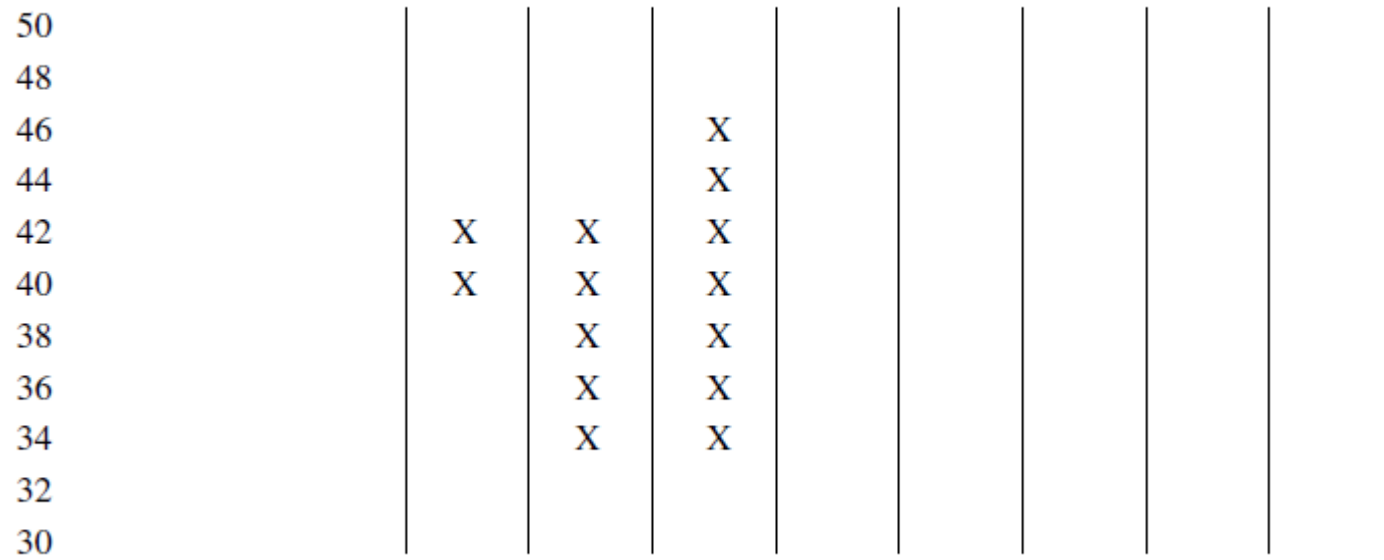
Sun Microsystems, Inc. (SUNW) Nasdaq Nat. Mkt. © StockCharts.com
14-Mar-2000 4:00pm **Open** 46.12 **High** 47.38 **Low** 43.38 **Last** 43.69 **Volume** 33.8M **Chg** -1.75 ▼



Candel stick



SAMPLE POINT-AND-FIGURE CHART



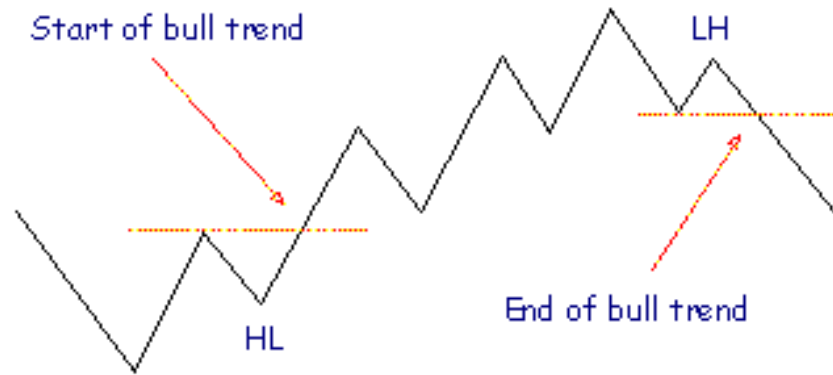
Dow theory

- Charles Dow
- DJTA, DJIA
- Grandfather of TA, indexing
- 3 trends
 - Major, intermediate, short-run
- Only major trend
- Importance of volume

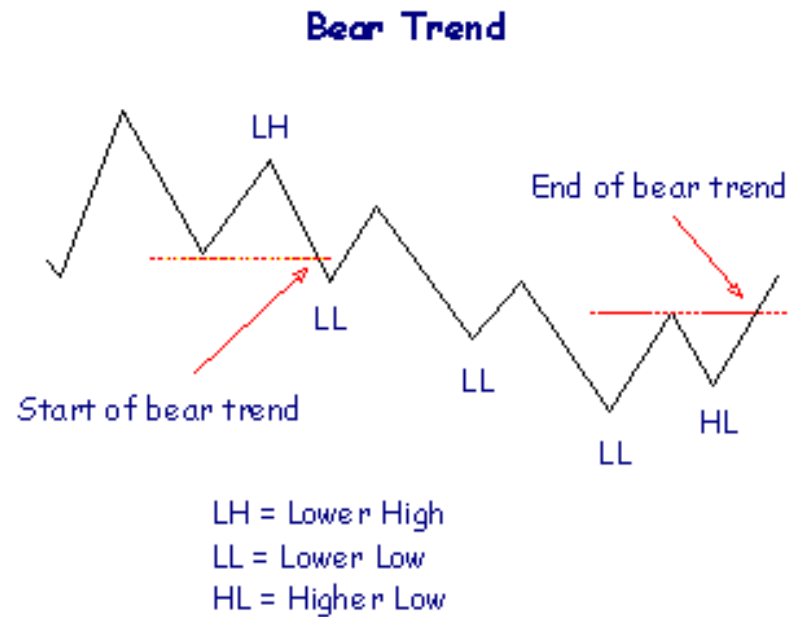
- On the basis of security rates study assumed conclusion that
 - As market barometry can be used the average closing rate of particular securities.
 - This can be used as a rate of whole market performance.
 - First application in 1884 - Railroad Average first index composes of 11 stocks (9 stocks of railroad companies)
 - In 1896 Dow created new index because Railroad Average was able to describe only part of the economy because of limited number of sector securities.
 - Dow Jones Industrial Average - average of closing rates of 12 securities
 - Highly speculative
 - Industry companies
 - In 1928 basis of DJIA extent to 30 titles.
 - Value of DJIA first published in Wall Street Journal in May 1896 its value was 40,96 points (that days 8.000 points)
 - Former Railroad Average is still used is known as a Dow Jones Transportation Average (DJTA).

Bull Trend

Bull Trend: Start and End



Bear Trend



Trends

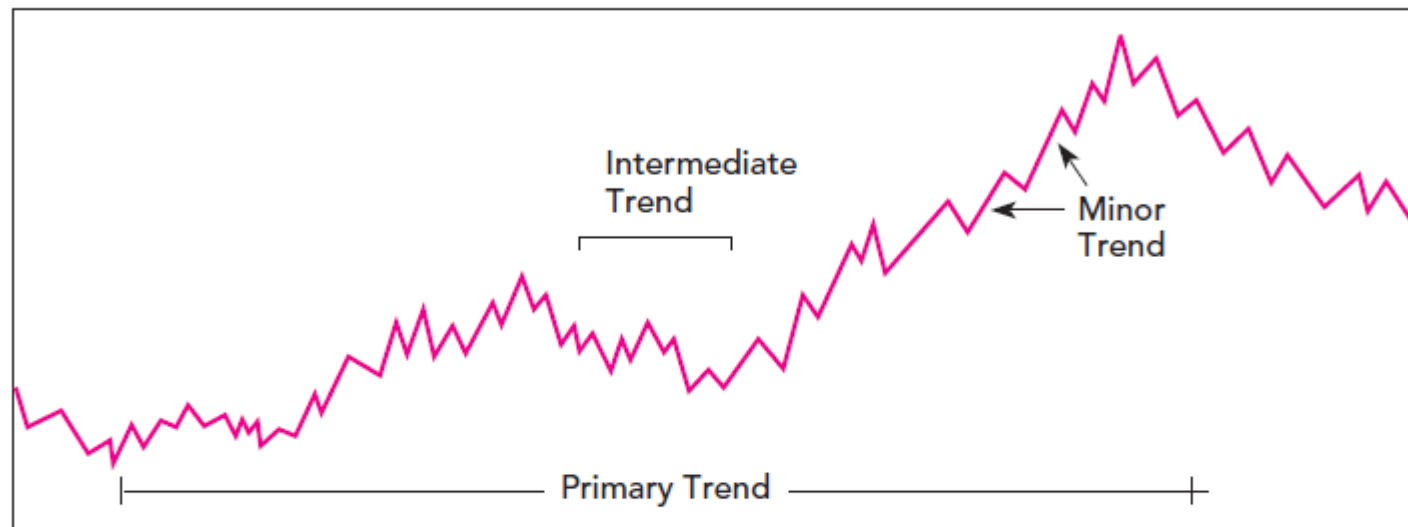


FIGURE 12.3 Dow theory trends

Source: From "Dow Theory" by Melanie Bowman and Thom Hartle, *Technical Analysis of Stocks & Commodities*, Vol. 8, No. 9 (Sept. 1990). Copyright © 1990, Technical Analysis, Inc. Used with permission.

Trend Line

\$GOLD (Gold - Continuous Contract (EOD)) INDX

© StockCharts.com

10-Mar-2006 2:30pm **Open** 545.95 **High** 547.10 **Low** 534.20 **Last** 541.95 **Volume** 0 **Chg** -4.15 ▼



Trend Line



Trading Diary: Volume, Advancers, Decliners

	NYSE	% chg from 65-day avg	Nasdaq	% chg from 65-day avg	AMEX	% chg from 65-day avg
Issues traded	3,412	-0.1	3,086	-1.9	1,254	-1.1
Advances	1,233	-25.2	1,137	-21.5	479	-19.1
Declines	2,068	23.3	1,807	15.0	684	16.5
Unchanged	111	24.1	142	13.3	91	3.1
New highs	85	-18.9	114	47.2	47	9.6
New lows	24	-85.5	35	-68.7	15	-68.8
Adv. volume*	467,560,150	-41.4	685,769,070	-34.6	10,816,500	-41.9
Decl. volume*	766,901,460	-7.6	1,143,477,485	13.4	19,158,379	2.2
Total volume*	1,246,345,660	-24.2	1,857,988,473	-11.1	33,068,379	-15.3
Closing tick	-169	...	-264	...	-64	...
Closing Arms (TRIN)†	0.98	...	1.05	...	1.24	...
Block trades*	p4,457	...	p8,629	...	p421	...

FIGURE 12.7 Market Diary

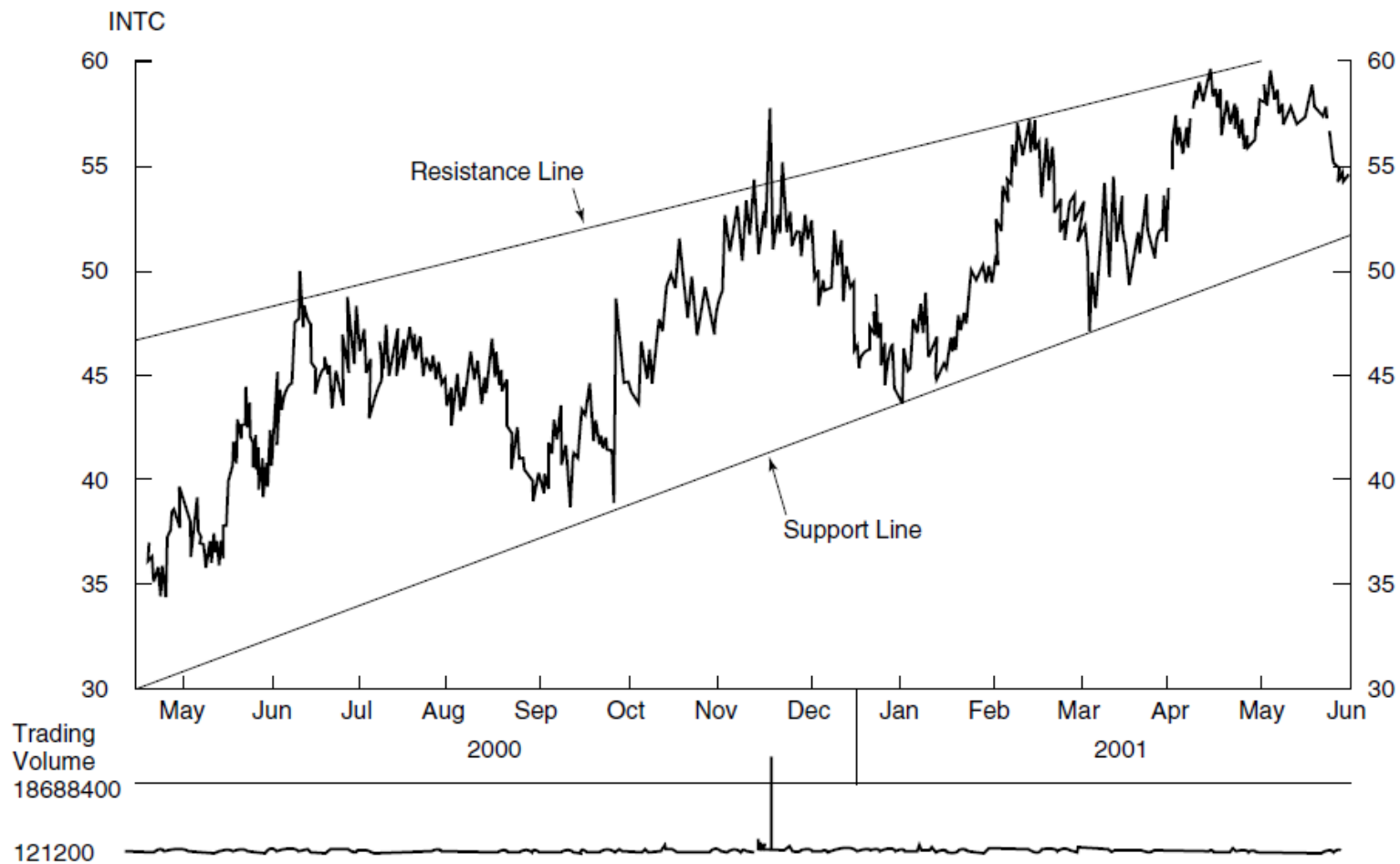
Source: *The Wall Street Journal*, October 4, 2007. Reprinted by permission of Dow Jones & Company, Inc. via Copyright Clearance Center, Inc. © 2007 Dow Jones & Company, Inc. All Rights Reserved Worldwide.

Support and resistance level

- Support and resistance levels
- Overbought v. oversold
- Psychological barrier
 - Price ending by 0 or 5

EXHIBIT 16.9

DAILY STOCK PRICES FOR STRYKER CORP. WITH INDICATIONS OF SUPPORT AND RESISTANCE LEVELS



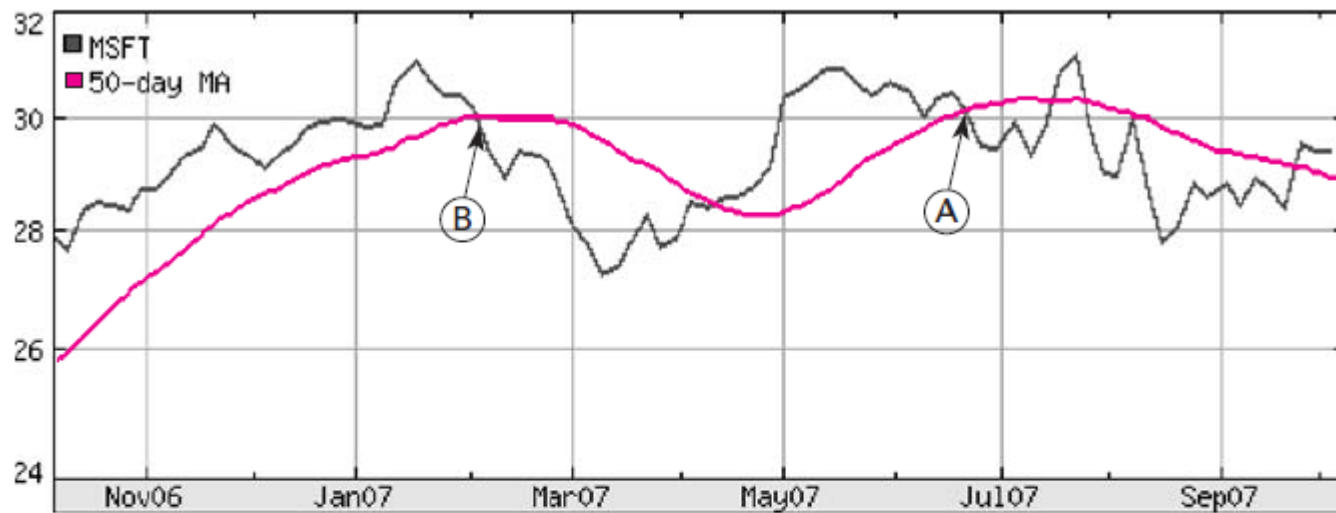


FIGURE 12.5 Moving average for Microsoft

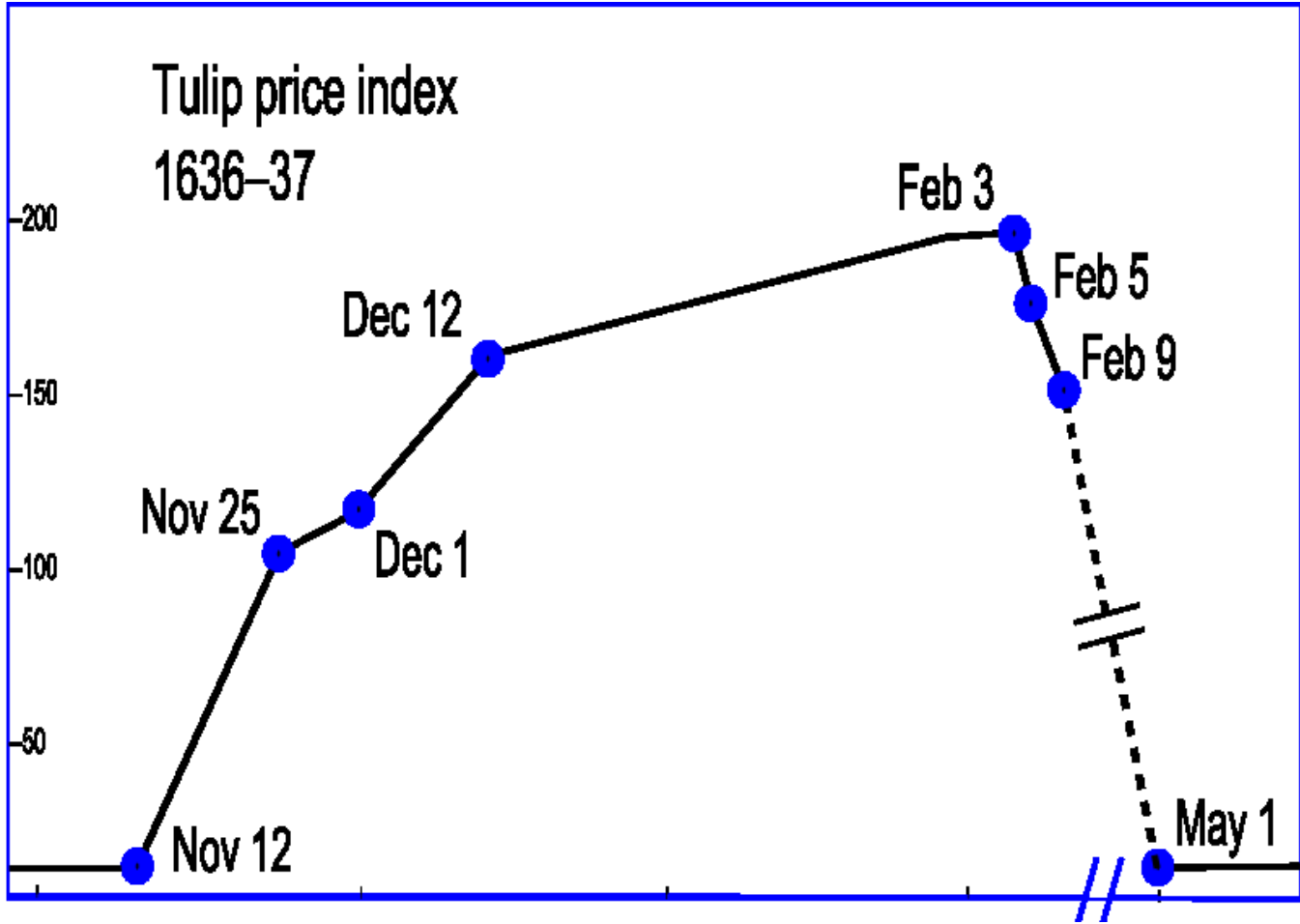
Source: Yahoo! Finance, October 4, 2007 (finance.yahoo.com). Reproduced with permission of Yahoo! Inc. © 2007 by Yahoo! Inc. Yahoo! and the Yahoo! logo are trademarks of Yahoo! Inc.

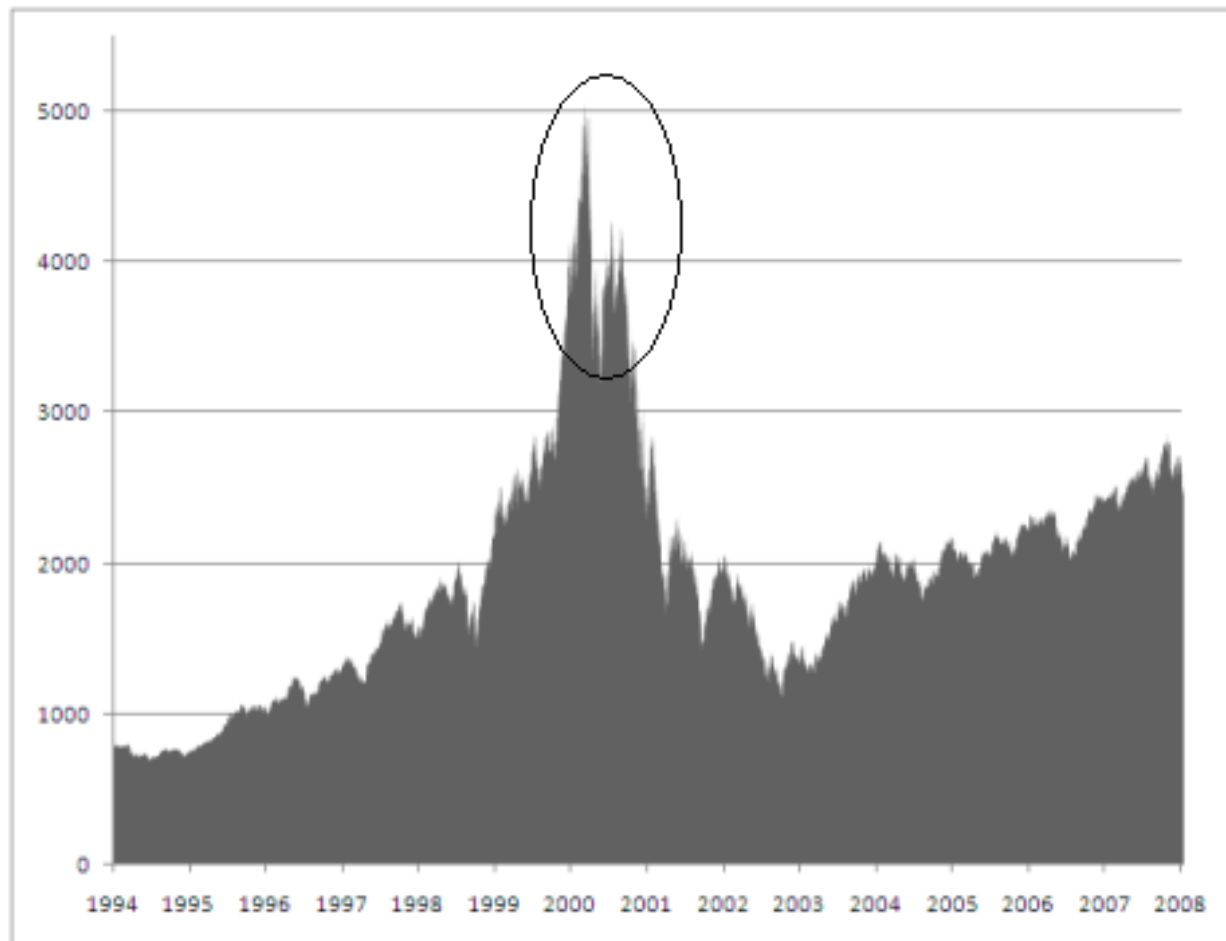
Week	DJIA	5-Week Moving Average	Week	DJIA	5-Week Moving Average
1	13,290		11	13,590	13,555
2	13,380		12	13,652	13,586
3	13,399		13	13,625	13,598
4	13,379		14	13,657	13,624
5	13,450	13,380	15	13,699	13,645
6	13,513	13,424	16	13,647	13,656
7	13,500	13,448	17	13,610	13,648
8	13,565	13,481	18	13,595	13,642
9	13,524	13,510	19	13,499	13,610
10	13,597	13,540	20	13,466	13,563

Psychological analysis

- Herd behaviour
 - Bubbles, crissis
 - Tulip bubble
 - South sea company bubble
 - Dot com bubble
- A.Kostolany
- J.M. Keynes







Market	Year	P/E ratio
NYSE	1929	21
NYSE	1969	18
NASDAQ	2000	200