

9. Behavioral Finance and Technical Analysis

- Behavioral Finance - Behavioral explanations for investor activity, focusing on rationality of indiv decision makers. Irrational behavior may, or may not, mean prices are irrational. A few large rational investors will enforce rational pricing!
 - Information Processing Errors
Overconfidence, forecast errors, conservatism, representativeness
 - Behavioral Biases
Framing, mental accounting, regret avoidance.
- Technical analysis – Techniques for predicting market direction based on (1) historical price and volume behavior, and (2) investor sentiment.
 - Charting: Dow Theory, Candlesticks and Point and figure.
 - Technical indicators: Sentiment, Flow of Funds and Market Structure.
- There are many other technical/charting techniques.
 - Will they earn abnormal returns?

Information Processing Errors

- Behavioral Finance – recognizes how behavior patterns of investors may be irrational, and may influence stock prices, causing markets to be inefficient.
 - It may be difficult, however, for rational traders to exploit these inefficiencies. Such strategies may involve risk or limits to arbitrage.
 - Info Processing Errors and Behavioral Biases....
- Information Processing Errors – may cause investor to misinterpret data
 - Overconfidence – E.g., 90% of drivers rate themselves above avg;
 - Forecast errors – forecasts tend to be extreme; too much weight on recent obs. Explain value effect?
 - Conservatism – investors may be initially slow to update beliefs. Delay in updating EPS forecasts may cause (interm horizon) return momentum.
 - Representativeness – investors may extrapolate sequence of surprises too much.

Behavioral Biases 1/2

- Behavioral Biases – may cause investors to make irrational/suboptimal decisions. Will irrational behavior cause observed prices to be irrational?
- Framing – Risk assessed differently if framed in terms of possible gain or loss. An unusual disease is expected to kill 600 people. Two possible programs are:
 - (A) Save 200 only (72%) OR
 - (B) 1/3 prob all 600 saved; 2/3 prob nobody saved.
- Now consider these two programs:
 - (A1) 400 die (22%) OR
 - (B1) 1/3 prob nobody dies; 2/3 prob 600 people die.
- Mental accounting – people tend to segregate decisions in an irrational manner. Investors may take greater risks to “make up” losses, or hold “losers” longer. Investors may take greater risks with “winnings” than with initial endowment.
- Regret avoidance – people tend to blame themselves if novel choices do poorly. May explain value effect. Value stocks are “out of favor” (prices bid down).

Behavioral Biases – Considering the Past - 2/2

- Considering the Past – if events are independent, the past should not effect future assessments of risk (for small fraction of total wealth).

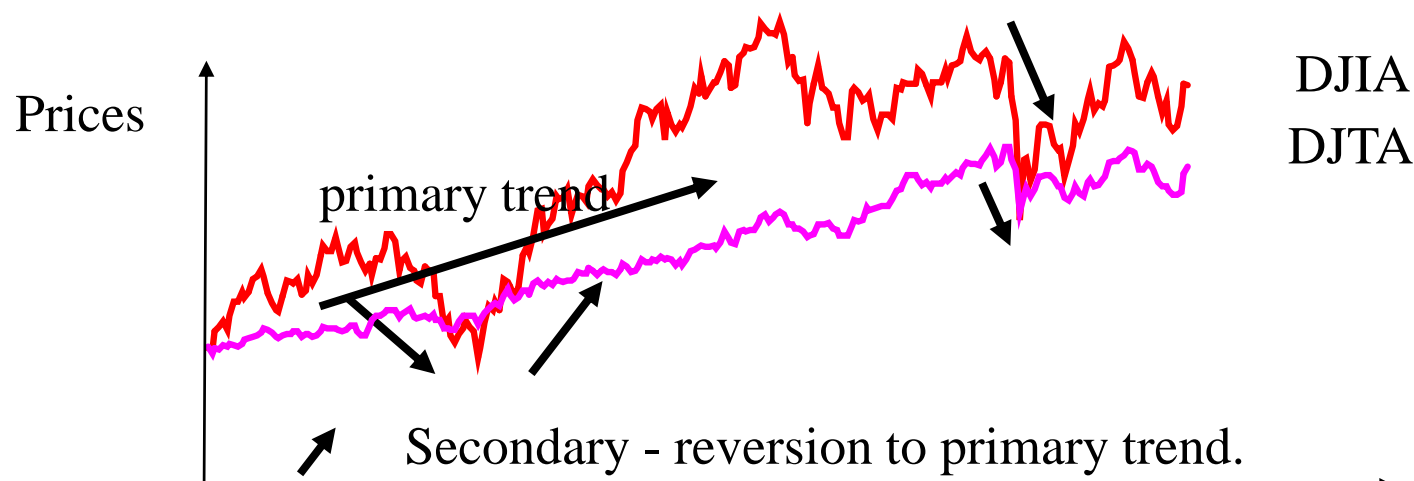
- Endowment effect – unusual reluctance to part with initial endowment.
 - Students ranked gifts – chocolate bars much preferred to a pen
 - Students given pens, then asked if willing to trade for chocolate.
 - .

- Cognitive dissonance – avoiding info inconsistent with beliefs/recollection.

- Consider an coin toss experiment, in which half have won \$10 and half lost.
 - House money – winners tend to be willing to take larger risks with winnings.
 - Snake bite – losers tend to be risk averse. Most losers refused coin toss on \$5.
 - Trying to break even – but losers did tend to accept “double or nothing” bet.

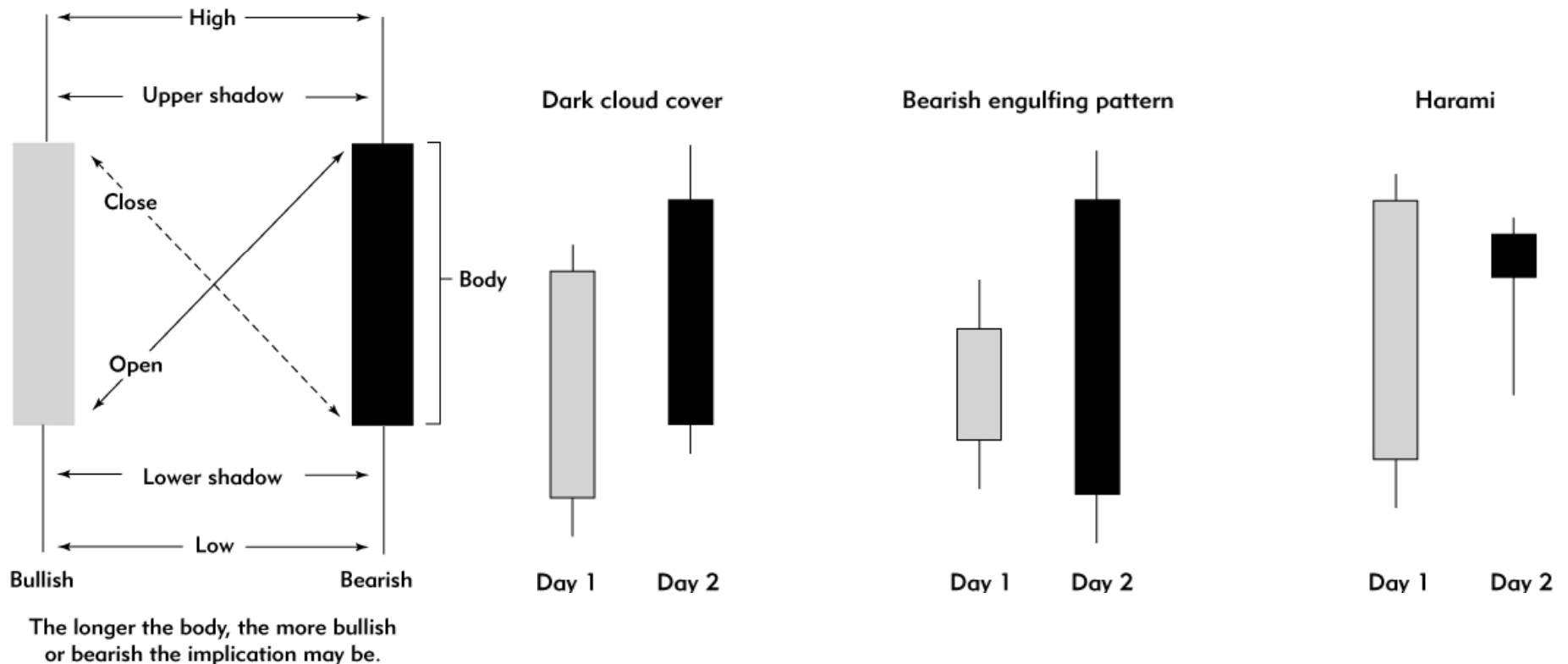
Charting – Dow Theory

- Dow theory –method of interpreting and signaling changes in stock market direction based on monitoring of Dow Jones Industrial and Transportation Avg.
 - primary trend – reflects long-run direction of market.
 - secondary trend – temporary departures from primary trend.
 - daily fluctuations –
- Resistance and support –viewed as psychological barriers on index’s value. Bargain hunters help “support” the lower level. Profit takers “resist” upper level.
 - Breakout –



Charting – Candle Stick Hi-Lo

- Hi-lo-close chart – bar chart showing high, low and closing price for each day.
 - Candlestick chart – Also shows if closing price was above opening price.
 - Dark Cloud cover – some rising price, followed by pull-back.
 - Harami (Japanese for pregnant or body within) – may indicate end of trend

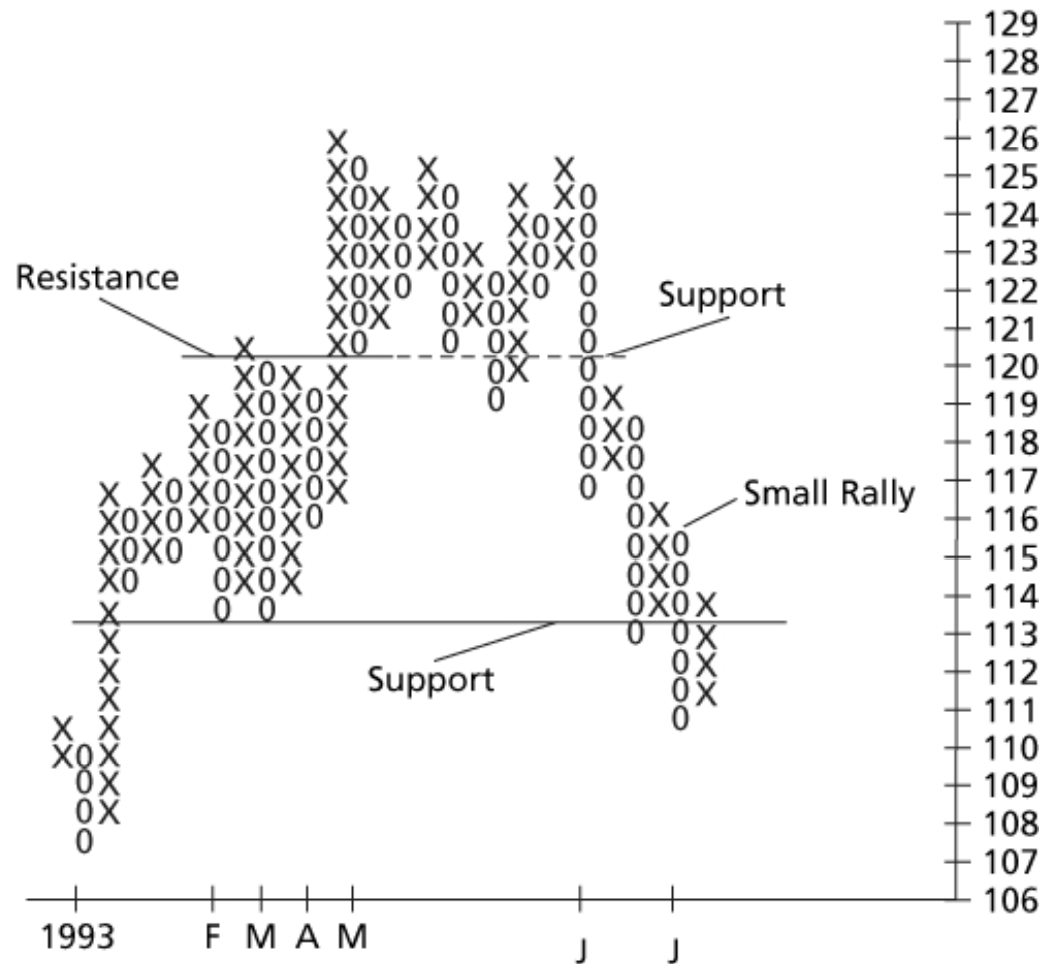


Charting – Point and figure

- Point-and-figure – shows major price moves and direction.
 - Major (\$2) up-move is marked with an “X,”
 - Major (\$2) down-move is marked with an “O.”
 - New column starts every time there is change in direction. See figures in text.

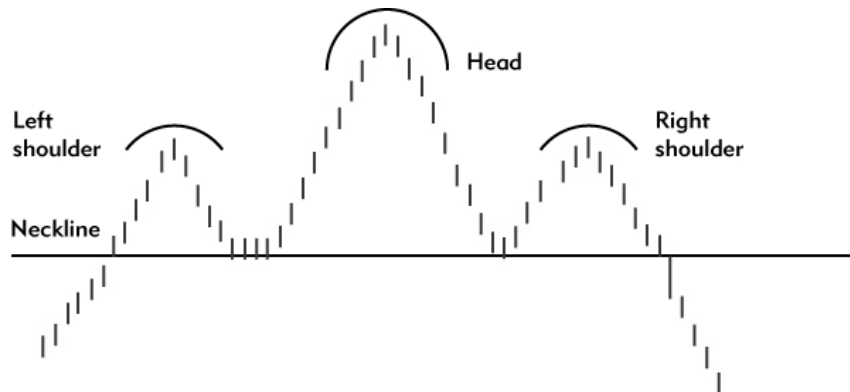
table 19.2				Date	Price
Stock price history				January 2	\$40
				January 3	40.50
				January 4	41
				January 5	42*
				January 8	41.50
50				January 9	42.50
				January 10	43
48		X		January 11	43.75
				January 12	44*
46		X	O	January 15	45
				January 16	44
44	X		X	January 17	41.50 [†]
				January 18	41
42	X	O	X	January 19	40*
				January 22	39
40		O	X	January 23	39.50
				January 24	39.75
38		O	X	January 25	38*
				January 26	35*
36		O	X	January 29	36 [†]
				January 30	37
34			O	January 31	39*

*Indicates an event that has resulted in a stock price increase or decrease of at least \$2.
[†]Denotes a price movement that has resulted in either an upward or downward reversal

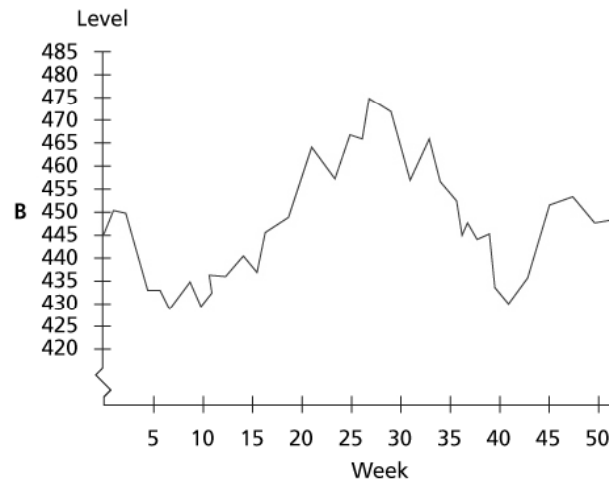
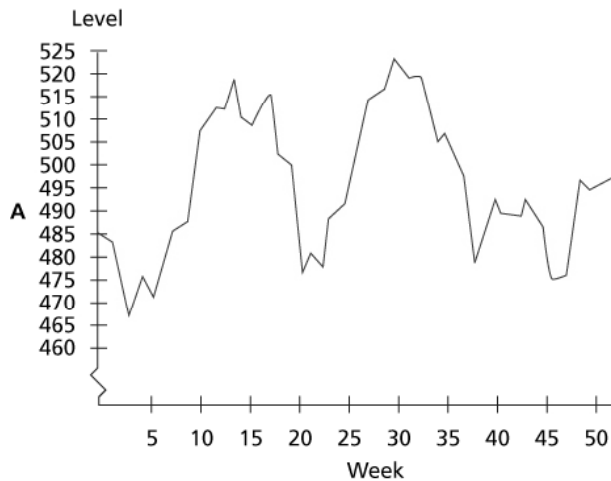


Charting - Patterns

- Patterns – Once chart is drawn, technical analysts examine it for various formations or pattern types in an attempt to predict stock price or market direction.
 - head-and-shoulders – sell when stock price “pierces the neckline”.
 - Others: Flags and pennants, inverted head and shoulders, ascending triangles, descending triangles, triple tops, butterflies, etc.



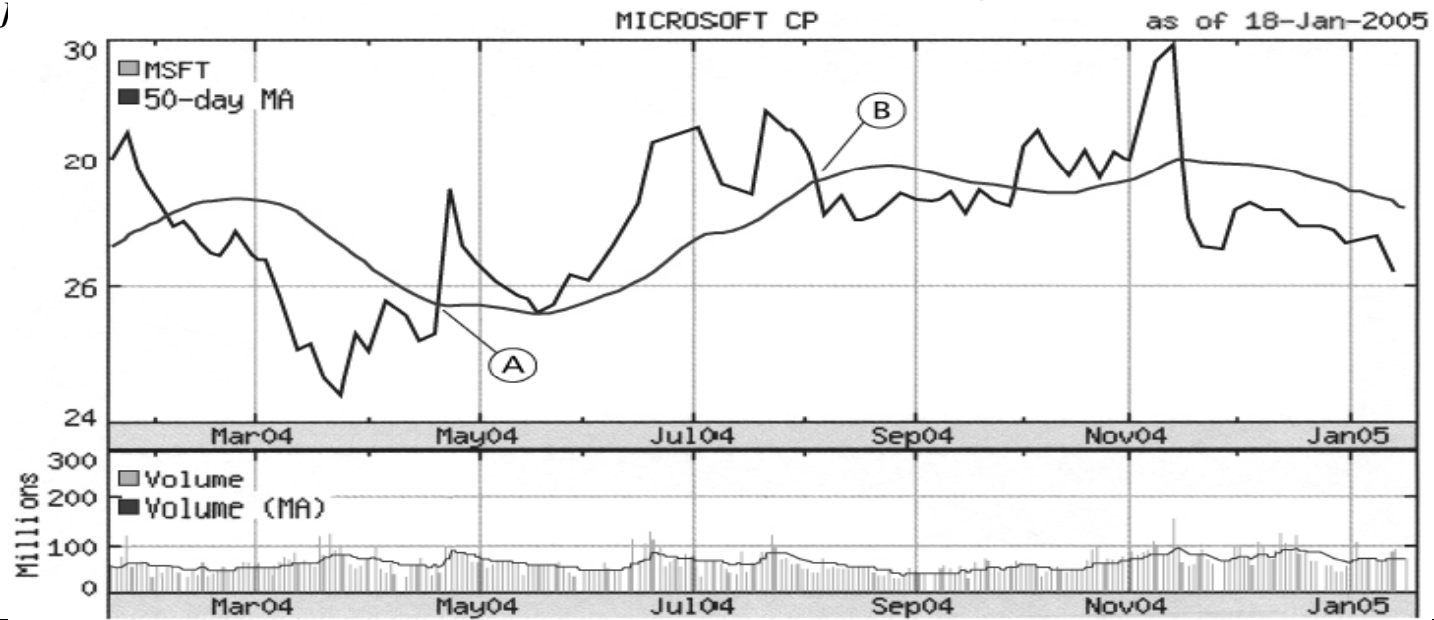
- Patterns – Do you recognize patterns here?



Friday closing levels, December 30, 1955—December 28, 1956, Dow Jones Industrial Average

Technical Indicators 1/2

- Sentiment Indicators – technical traders view others (indiv, mutual funds) as missing key turning points. They can construct contrarian strategies based on:
 - Mutual Fund cash – percent cash in mutual fund.
 - Odd lot trading – odd lot buying / odd lot selling. Represents indiv investors.
 - Put/call ratio – typically ~65%. Represents option traders.
 - Trading index (trin) – $(\text{Avg Vol in Decl Issues}) / (\text{Avg Vol in Adv Issues})$
- Flow of funds – measure potential of investors to buy or sell.
 - Short interest – # shares sold short, often as percentage of outstanding shares.
 - Credit balances in brokerage accts – viewed as cash available to buy stocks.
- Market Structure –
 - Breadth – # stocks advancing minus # declining.
 - Relative strength – performance relative to benchmark (typically an index).
 - Moving average – avg daily price, using fixed #shares. Highlights short- and long-term trends (esp for Dow theory). Can give more weight to recent obs.



STOCK MARKET DATA BANK 12/18/00

DIARIES

NYSE	MON	FRI	WK AGO
Issues traded	3,344	3,316	3,315
Advances	1,880	1,305	1,669
Declines	1,084	1,600	1,180
Unchanged	380	411	466
New highs	224	126	239
New lows	96	101	52
zAdv vol (000)	709,793	445,213	759,502
zDecl vol (000)	408,363	1,051,612	413,530
zTotal vol (000)	1,145,667	1,549,869	1,202,571
Closing tick ¹	+686	+326	+468
Closing Arms ² (trin)	1.00	1.93	.77
zBlock trades	25,189	25,422	25,652

NASDAQ

Tips for Savvy Investor on Technical Analysis

- Individual investors may behave irrationally but that does not mean prices are irrational.
- We need only a few large rational investors to enforce rational pricing!
e.g., index futures satisfy no-arbitrage bounds!
- Even if prices are irrational, it may be difficult to exploit!
Trying selling short through the tech bubble!
- Technical analysis – Techniques for predicting market direction based on (1) historical price and volume behavior, and (2) investor sentiment.
 - You may earn some return, but will it be an abnormally high returns?
Better than scaling an index portfolio? Compensate for transactions costs?
 - If there is a technique that consistently “works”, they are not talking about it!