



Introduction to Position Sizing™

Tacoma IBD

Feb. 3, 2014

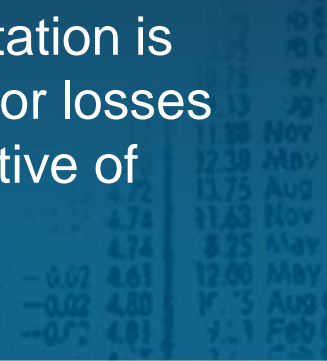
Carl Jorgensen

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11.38	Nov
12.38	May
11.75	Aug
11.63	Nov
8.25	May
12.00	May
11.75	Aug
11.38	Feb



Terminology

Risk Management –

- Position Risks
- Portfolio Risks
- Market Risks
- Personal Performance Risks

Position Size –

- How big, each position / trade



11.25	Nov
10.75	Aug
11.13	Nov
11.88	Nov
12.38	May
11.75	Aug
11.63	Nov
8.25	May
12.00	May
4.61	Aug
4.80	Aug
4.81	Feb

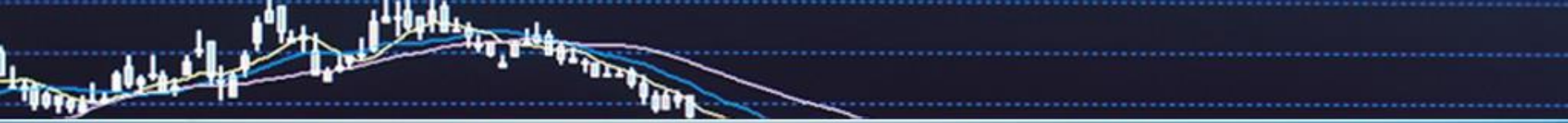


Common Errors

- Most Traders trade without a Plan
- Many Traders take on way Too Much Risk
- Many Traders have not developed the Discipline needed for Trading
- Many Traders are impatient, and abandon a good system before they realize its potential
- Many Traders have too small of an Account which forces them to take too Much Risk



11.75	Nov	10
11.3	Nov	20
11.88	Nov	30
12.38	Nov	1
13.72	Nov	11
14.74	Nov	21
15.74	Nov	31
16.74	Nov	1
17.74	Nov	11
18.74	Nov	21
19.74	Nov	31
20.74	Nov	1
21.74	Nov	11
22.74	Nov	21
23.74	Nov	31
24.74	Nov	1
25.74	Nov	11
26.74	Nov	21
27.74	Nov	31
28.74	Nov	1
29.74	Nov	11
30.74	Nov	21
31.74	Nov	31
32.74	Nov	1
33.74	Nov	11
34.74	Nov	21
35.74	Nov	31
36.74	Nov	1
37.74	Nov	11
38.74	Nov	21
39.74	Nov	31
40.74	Nov	1
41.74	Nov	11
42.74	Nov	21
43.74	Nov	31
44.74	Nov	1
45.74	Nov	11
46.74	Nov	21
47.74	Nov	31
48.74	Nov	1
49.74	Nov	11
50.74	Nov	21
51.74	Nov	31
52.74	Nov	1
53.74	Nov	11
54.74	Nov	21
55.74	Nov	31
56.74	Nov	1
57.74	Nov	11
58.74	Nov	21
59.74	Nov	31
60.74	Nov	1
61.74	Nov	11
62.74	Nov	21
63.74	Nov	31
64.74	Nov	1
65.74	Nov	11
66.74	Nov	21
67.74	Nov	31
68.74	Nov	1
69.74	Nov	11
70.74	Nov	21
71.74	Nov	31
72.74	Nov	1
73.74	Nov	11
74.74	Nov	21
75.74	Nov	31
76.74	Nov	1
77.74	Nov	11
78.74	Nov	21
79.74	Nov	31
80.74	Nov	1
81.74	Nov	11
82.74	Nov	21
83.74	Nov	31
84.74	Nov	1
85.74	Nov	11
86.74	Nov	21
87.74	Nov	31
88.74	Nov	1
89.74	Nov	11
90.74	Nov	21
91.74	Nov	31
92.74	Nov	1
93.74	Nov	11
94.74	Nov	21
95.74	Nov	31
96.74	Nov	1
97.74	Nov	11
98.74	Nov	21
99.74	Nov	31
100.74	Nov	1



I think I am the single most conservative trader on earth in the sense that I absolutely hate losing money.
~ Paul Tudor Jones

0.05	4.75	11.13	20
0.05	4.75	11.13	Nov
0.05	4.75	11.13	Nov
0.05	4.75	11.13	Aug
0.05	4.74	11.63	Nov
0.05	4.74	8.25	May
-0.02	4.61	12.00	May
-0.02	4.80	11.15	Aug
-0.02	4.81	7.13	Feb





Risk management is ESSENTIAL to good investing. And risk management is all about minimizing the downside. As Warren Buffet noted: “*Rule No.1: Never lose money. Rule No.2: Never forget rule No.1.*” And the best way to not lose money is to identify and prepare for potential losses in advance.

A table of financial data with columns for values and months. The values are mostly positive, with some negative values at the bottom. The months listed include Nov, Aug, May, and Feb.

11.13	Nov
12.38	May
13.75	Aug
11.63	Nov
8.25	May
12.00	May
4.74	Aug
4.80	Aug
4.81	Feb
-0.07	
-0.02	
-0.73	





Common Causes of Failures

Most Traders fail because they are:

1. Not Prepared for the Distribution of Trades (A String of Losses)
2. Overleveraged and/or Under Capitalized

- Dr. Van Tharp



11.88	Nov
12.38	May
11.75	Aug
1.63	Nov
8.25	May
12.00	May
4.80	Aug
4.81	Feb

Geometric Progression & Recovery

Drawdown %	Gain for Recovery %
5 %	5.3 %
10	11.1
15	17.6
20	25
25	33
30	42.9
40	66.7
50	100
60	150
75	300



Recoverable

Very difficult
to Recover



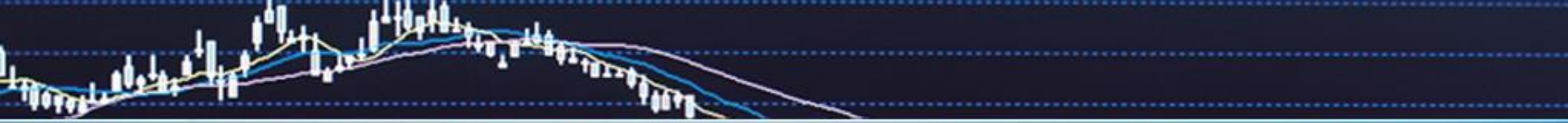
What is most important

For Trading / Investing

- Protecting your Capital
- Making a Profit



11.75	Nov	11.75
11.13	Nov	11.13
11.88	Nov	11.88
12.38	Nov	12.38
11.75	Aug	11.75
11.63	Nov	11.63
8.25	May	8.25
4.61	May	4.61
4.80	Aug	4.80
4.81	Feb	4.81



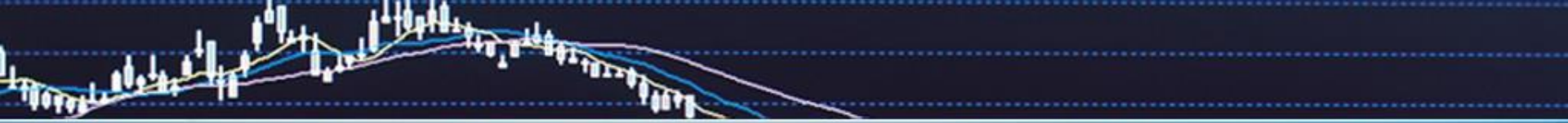
For Every Trade – Must Ask:

- What is the Risk of this Trade?
- Is the potential Reward worth the Risk?

A table of financial data with columns for price changes, values, and dates. The data is partially obscured by a blue gradient overlay.

0.01	4.75	Nov
0.02	4.75	Nov
0.03	4.75	Nov
0.04	4.75	Nov
0.05	4.75	Nov
0.06	4.75	Nov
0.07	4.75	Nov
0.08	4.75	Nov
0.09	4.75	Nov
0.10	4.75	Nov
0.11	4.75	Nov
0.12	4.75	Nov
0.13	4.75	Nov
0.14	4.75	Nov
0.15	4.75	Nov
0.16	4.75	Nov
0.17	4.75	Nov
0.18	4.75	Nov
0.19	4.75	Nov
0.20	4.75	Nov
0.21	4.75	Nov
0.22	4.75	Nov
0.23	4.75	Nov
0.24	4.75	Nov
0.25	4.75	Nov
0.26	4.75	Nov
0.27	4.75	Nov
0.28	4.75	Nov
0.29	4.75	Nov
0.30	4.75	Nov
0.31	4.75	Nov
0.32	4.75	Nov
0.33	4.75	Nov
0.34	4.75	Nov
0.35	4.75	Nov
0.36	4.75	Nov
0.37	4.75	Nov
0.38	4.75	Nov
0.39	4.75	Nov
0.40	4.75	Nov
0.41	4.75	Nov
0.42	4.75	Nov
0.43	4.75	Nov
0.44	4.75	Nov
0.45	4.75	Nov
0.46	4.75	Nov
0.47	4.75	Nov
0.48	4.75	Nov
0.49	4.75	Nov
0.50	4.75	Nov
0.51	4.75	Nov
0.52	4.75	Nov
0.53	4.75	Nov
0.54	4.75	Nov
0.55	4.75	Nov
0.56	4.75	Nov
0.57	4.75	Nov
0.58	4.75	Nov
0.59	4.75	Nov
0.60	4.75	Nov
0.61	4.75	Nov
0.62	4.75	Nov
0.63	4.75	Nov
0.64	4.75	Nov
0.65	4.75	Nov
0.66	4.75	Nov
0.67	4.75	Nov
0.68	4.75	Nov
0.69	4.75	Nov
0.70	4.75	Nov
0.71	4.75	Nov
0.72	4.75	Nov
0.73	4.75	Nov
0.74	4.75	Nov
0.75	4.75	Nov
0.76	4.75	Nov
0.77	4.75	Nov
0.78	4.75	Nov
0.79	4.75	Nov
0.80	4.75	Nov
0.81	4.75	Nov
0.82	4.75	Nov
0.83	4.75	Nov
0.84	4.75	Nov
0.85	4.75	Nov
0.86	4.75	Nov
0.87	4.75	Nov
0.88	4.75	Nov
0.89	4.75	Nov
0.90	4.75	Nov
0.91	4.75	Nov
0.92	4.75	Nov
0.93	4.75	Nov
0.94	4.75	Nov
0.95	4.75	Nov
0.96	4.75	Nov
0.97	4.75	Nov
0.98	4.75	Nov
0.99	4.75	Nov
1.00	4.75	Nov





- Various Position Size Methods and Rules, as well as Portfolio Risk Rules, can be created to help meet our various trading goals. HOWEVER, if we do not have the Discipline necessary to Follow our own Rules, then what good is this effort?
- Understanding the Value & Purpose of each rule, will help us a great deal in both building our Beliefs, and our Discipline.

A faint background image of a trading chart and a table. The table contains numerical data and month abbreviations.

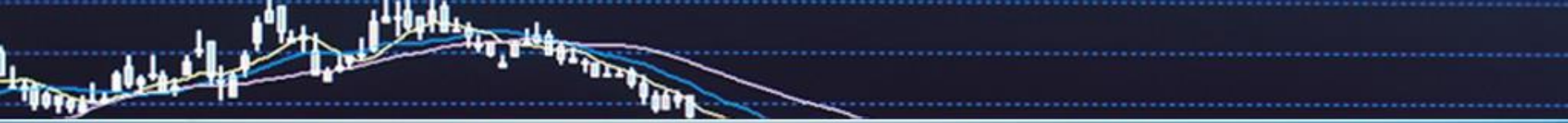
11.38	Nov		
8.74	May		
8.74	Nov		
8.25	May		
-0.07	4.61	12.00	May
-0.02	4.80	7.75	Aug
-0.07	4.81	7.75	Feb



Position Sizing™

- What is it?
 - The part of your trading system that tells you “how much” (how many shares or contracts to trade).
- Why is it Important?
 - “Poor position sizing strategies are the reason behind almost every instance of account blowouts.” - *Van Tharp*

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Terminology

- Martingale
- Gambler's Fallacy
- Anti-Martingale

11.88	Nov
12.38	May
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Martingale

- A common Gambler's Thinking
 - you cannot lose all the time “Double Down”
- Martingale Strategy – Increase bet size after losses, increasing position size as account value lowers.
Decreasing position size as account values increases. Focused on recovering losses quickly.

Very Risky



Gambler's Fallacy

“The **gambler's fallacy**, also known as the **Monte Carlo fallacy**, or the **fallacy of the maturity of chances**, is the belief that if deviations from expected behavior are observed in repeated independent trials of some random process then these deviations are likely to be evened out by opposite deviations in the future. For example, if a fair coin is tossed repeatedly and tails comes up a larger number of times than is expected, a gambler may incorrectly believe that this means that heads is more likely in future tosses. [1] Such an expectation could be mistakenly referred to as being "due". The gambler's fallacy implicitly involves an assertion of negative correlation between trials of the random process and therefore involves a denial of the exchangeability of outcomes of the random process.” -Wikipedia



Anti-Martingale

- Anti-Martingale Strategy – Decrease bet size after losses, decreasing position size as account value lowers. Increasing position size as account value increases.

Less Risky

Grows in time, with aide from the power of Compounding.



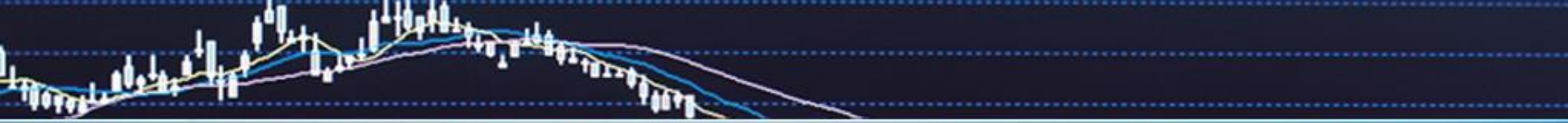
11.3	Nov
12.38	May
11.75	Aug
11.63	Nov
8.25	May
12.00	May
4.80	Aug
4.81	Feb



Rogue Trader Examples

- Nick Leeson lost \$1.4 billion and brought down a bank that had been around since 1762.
- John Rusnak hid losses of \$700 million at Allied Irish Bank, his total losses were twice that. Too make it back, he secretly bet \$7.5 billion on the yen rising, and lost.
- Yasuo Hamanaka lost \$2.6 billion for Sumitomo Co. Most his trading was a fraud, covered up for a decade.
- Peter Young lost about \$900 million for Morgan Grenfell.
- Jerome Kerviel lost \$7 billion for Societe Generale by hiding massive losses, in order to earn a big bonus.

Each tried to hide their losses, while putting on Larger and Larger Positions, in hopes to make it all back some day. All violated Risk Rules & were Seduced by Martingale.



Which would You Choose?

Martingale - or - Anti-Martingale ?

Why?

Couldn't we blow out a Trader's Account,
with a perfectly Good Trading System...

By trading TOO LARGE of Size ?

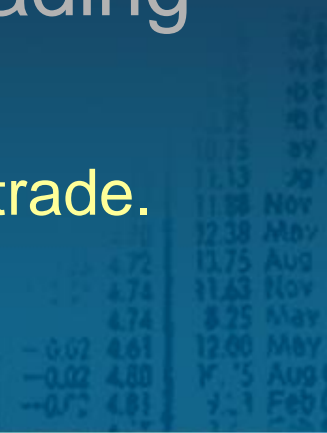
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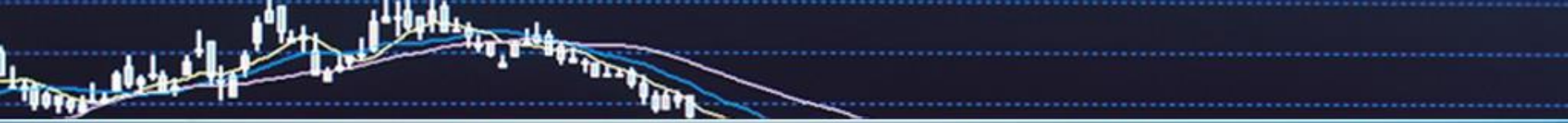


Terminology

- **R** - A Unit of Risk, $R = \text{position \$s risk}$
- **R-Multiple** – A measure of P/L relative to R
 $+2R = \text{Profit } 2x \text{ \$s risked.}$ $-0.8R = \text{Loss } 80\% \text{ of \$s risked.}$
- **Expectancy** – the Average P/L of a trading system, over time, relative to R
 $+0.8R \text{ Expectancy} = \text{Average R-Multiple of every trade.}$



11.3	Nov
12.38	May
11.75	Aug
11.63	Nov
8.25	May
12.00	May
11.75	Aug
11.63	Feb



R-Multiples

- The Win or Loss amount of any trade can be expressed as a ratio to the initial 'Risk' "R"

A table of financial data with columns for values and dates. The data is partially obscured by the text above it.

11.25	Nov
10.75	Nov
11.13	Nov
11.88	Nov
12.38	Nov
11.75	Aug
11.63	Nov
8.25	May
12.00	May
4.80	Aug
4.81	Feb



The background of the slide features a dark blue gradient with various financial data visualizations. At the top, there is a candlestick chart with several colored moving average lines (yellow, green, blue, red) overlaid. On the right side, there is a vertical list of numerical data points, some with corresponding month abbreviations like 'Nov', 'May', 'Aug', and 'Feb'. At the bottom, there is a line chart with multiple colored lines (yellow, green, blue, red) showing fluctuating trends.

R Examples

- Risk \$1,000 and Profit \$3,000
 - a +3 R return
- Risk \$1,000 and loose \$500
 - a -0.5 R return
- Risk \$500 and Profit \$5,000
 - a +10 R return



R-Distribution

- After a large sample of Trades, the performance of a system can be represented as a Distribution of “R”

Total Profits (or loss) / Avg. R amount

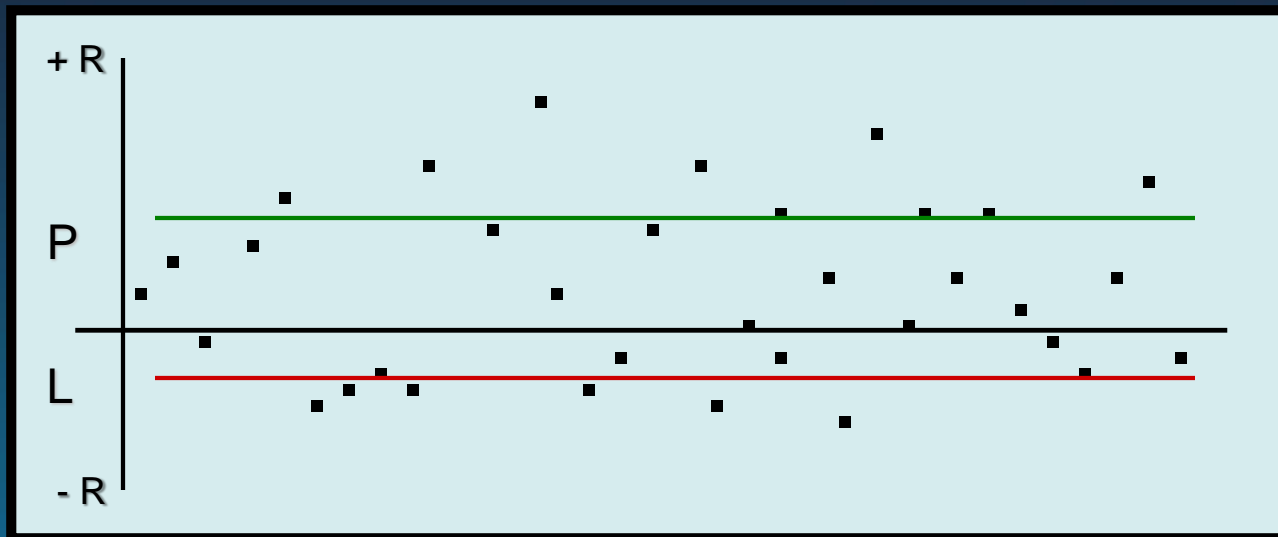
11.25	Nov
11.13	Nov
11.88	Nov
12.38	May
11.75	Aug
11.63	Nov
8.25	May
4.61	May
4.80	Aug
4.81	Feb





System Performance

- Viewed as a Distribution of wins and losses.



11.33	20		
11.38	Nov		
12.38	May		
4.72	11.75	Aug	
4.74	11.63	Nov	
4.74	8.25	May	
-0.02	4.61	12.00	May
-0.02	4.80	7.15	Aug
-0.73	4.81	7.15	Feb



Example: If R = \$1,000

	Risk	Buy	Sell	P/L	R	
1	\$1,000	\$20.12	\$22.08	\$1,960.00	2.0	
2	\$1,000	\$55.35	\$54.45	(\$900.00)	(0.9)	
3	\$1,000	\$87.25	\$89.11	\$1,860.00	1.9	
4	\$1,000	\$15.89	\$16.75	\$860.00	0.9	
5	\$1,000	\$34.10	\$33.50	(\$600.00)	(0.6)	
6	\$1,000	\$52.24	\$50.90	(\$1,340.00)	(1.3)	← Gap
7	\$1,000	\$28.54	\$33.50	\$4,960.00	5.0	
8	\$1,000	\$48.35	\$47.96	(\$390.00)	(0.4)	
9	\$1,000	\$72.20	\$73.80	\$1,600.00	1.6	
10	\$1,000	\$65.11	\$64.25	(\$860.00)	(0.9)	

\$7,150 Total Net profit / 10 Trades = \$715 per Trade +0.71R





Trading System Performance

Expectancy Measurements

50% Winners

50% Losers

Avg Win \$2,248

Avg Loss \$818

Avg Risk \$1,000

$$= [(2248 \times .5) - (818 \times .5)] / 1000$$

$$= [1124 - 409] / 1000$$

$$= 715 / 1000 = 0.715 \text{ R Expectancy}$$



11.28	Nov
12.38	May
13.75	Aug
11.63	Nov
8.25	May
12.00	May
4.74	Aug
4.61	Aug
-0.02	Aug
-0.73	Feb



Expectancy

- Reliability
 - Win/Loss Ratio
- Profitability [Payoff Ratio]
 - Win Size / Loss Size
- Slippage Cost
 - Commissions, Bid/Ask Spread



11.25	10	Nov
10.75	10	Nov
11.13	10	Nov
11.88	10	Nov
12.38	10	Nov
13.75	10	Nov
14.74	10	Nov
14.74	10	Nov
14.74	10	Nov
14.74	10	Nov
-0.02	4.61	12.00
-0.02	4.80	11.15
-0.02	4.81	11.15



System Performance

Review 'Expectunity'

$$((W/L \times \$W/\$L) - SL) \times FOO$$

W/L = # of Wins / # of Loss Ratio

\$W/\$L = Average Payoff ratio

Avg Win \$ / Avg Loss \$

SL = less Slippage Bid/Ask + Comm + Fees

FOO = Frequency of Opportunity



4.72	11.75	Aug
4.74	11.63	Nov
4.74	8.25	May
-0.02	4.61	12.00
-0.02	4.80	7.15
-0.02	4.81	7.15



System Performance

Review 'Expectunity'

$$((W/L \times \$W/\$L) - SL) \times FOO$$

OVERALL PERFORMANCE is the Measure that matters.

You will often find, that changes that improve one aspect, may often have a negative affect on another aspect.

Always Evaluate the NET Affects !



Positive Expectancy is Not Enough

A Trading system with a Good Positive Expectancy, and plenty of Opportunity, does NOT Mean you will make a Profit Trading it.

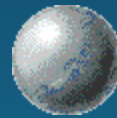
What if you Blow out your Account before you have time to realize your system's expectancy.



11.3	30	
11.88	Nov	
12.38	May	
13.75	Aug	
11.63	Nov	
8.25	May	
12.00	May	
11.75	Aug	
11.3	Feb	



Van Tharp's - 'Marble Game'



11.88	Nov
12.38	May
13.75	Aug
11.63	Nov
8.25	May
12.00	May
4.74	Aug
4.81	Feb





A Trade Simulation Game

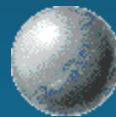
- Designed to equalize all variables but one.
- Everyone starts with the same account value & takes all the exact same Trades.
- Only the \$ amount Risked for each trade is unique for each participant.

11.33	Nov
11.38	Nov
11.75	Aug
11.63	Nov
8.25	May
12.00	May
4.80	Aug
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Game Results

- What were the results of the Marble Game ... ?
- Dramatically different ending account values after a small group of trades !



11.25	Nov
11.13	Nov
11.88	Nov
12.38	Nov
11.75	Aug
11.63	Nov
8.25	May
12.00	May
4.74	Aug
4.74	Aug
4.61	Feb
4.80	Feb
4.81	Feb





Every Trading System - Must Have

- **Markets** – What to buy or sell
- **Position Sizing** – How much to buy or sell
- **Entry** – When to buy or sell
- **Stops** – When to get out of losing positions
- **Exits** – When to get out of winning positions
- **Tactics** – How to buy or sell

BOTH are Important to define RISK



Definitions

- **Stops** - define YOUR decision point where a trade is determined to be NOT working. Can dramatically affect the performance ODDS of a trade / system.
- **Position Size** – Determines ‘How Much’ the \$ amount at Risk in a position.

Common Errors: Adjusting one or the other for the wrong reasons...not realizing the net affects.

Often Confused with Each other



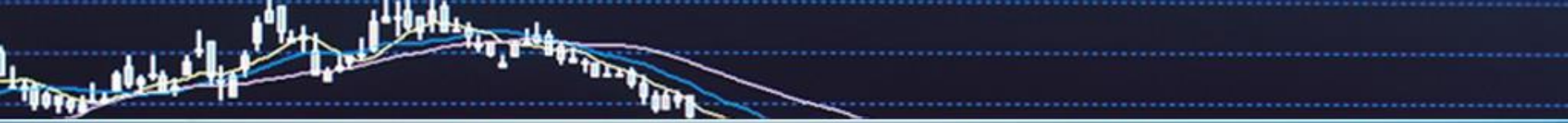
Trader Survival

Most Common Trader Error

Fatal

- Trading too large of a Position for their:
 - Account Size (too much at risk)
 - Experience level
 - Risk ‘Comfort’ level

The ability of a Trader to make Objective Observations and Decisions based upon the Markets, is Severely Hindered when they have too much risk in a Trade.




Golden Rule of Trading

**Cut your losses short, and
Let your Winners Run.**

11.75	10.75	11.13	11.88	Nov
12.38	11.75	11.63	11.63	Nov
8.25	8.25	8.25	8.25	May
12.00	12.00	12.00	12.00	May
4.80	4.80	4.80	4.80	Aug
4.81	4.81	4.81	4.81	Feb






Goal of a Position Sizing Method: to Equalize Risk

Why ?

**Do you KNOW which trade is a
winner and which is a loser
BEFORE you Enter each Trade?**



11.3	20
11.88	Nov
12.38	May
13.75	Aug
11.63	Nov
8.25	May
12.00	May
4.74	Aug
4.80	Aug
4.81	Feb




Goal of a Position Sizing Method: to Equalize Risk

Why ?

**Will you more likely survive a
String of losses, if each Trade's
Risk is Equalized?**



11.3	20	
11.88	Nov	
12.38	May	
13.75	Aug	
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Goal of a Position Sizing Method: to Equalize Risk

Why ?

Are you more likely able to
REALIZE your system's
Measured Expectancy if each
Trade is weighted Equally?



11.3	Nov
11.38	Nov
11.75	Aug
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8.25	May
12.00	May
7.75	Aug
7.5	Aug
7.5	Feb



Goal of a Position Sizing Method: to Equalize Risk

Why ?

**Would it be much more difficult
to **STICK** to your System, if you
had 'Too Large' of a position
open ?**



11.3	Nov
11.38	Nov
11.75	Aug
11.63	Nov
8.25	May
12.00	May
4.80	Aug
4.81	Feb



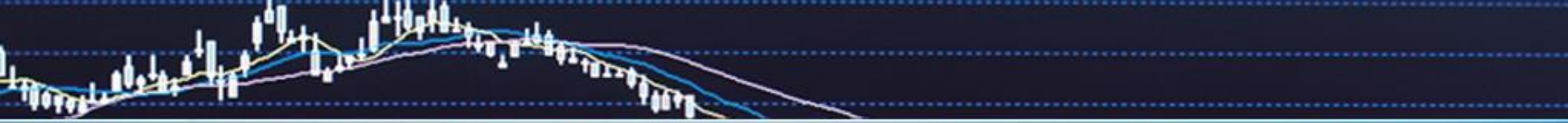
Position Size Methods



- Fixed
- Fixed Fractional
 - % of Acct value
- Fixed Ratio
 - equalized profit goals per Contract
- Volatility based methods



	11.25	Nov
	10.75	Nov
	11.13	Nov
	11.88	Nov
	12.38	Nov
	11.71	Nov
	11.75	Aug
	11.63	Nov
	8.25	May
	4.74	May
	4.61	May
-0.07	4.80	Aug
-0.02	4.80	Aug
-0.77	4.81	Feb



Fixed Position Size

- Same positions size for each trade.
10 contracts, 500 shares, etc.

A faded background image of a financial chart and a data table. The table contains numerical values and month abbreviations.

11.25	Nov
10.75	Nov
11.13	Nov
11.88	Nov
12.38	Nov
11.75	Aug
11.63	Nov
8.25	May
4.61	May
12.00	May
4.80	Aug
4.81	Feb



Fixed Position Size

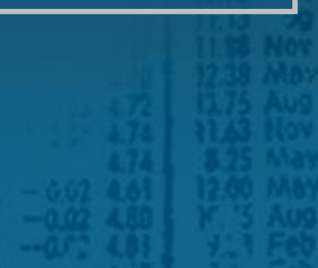
- Examples:

100 Shares Long INTC
\$19.00 Long Entry
\$18.00 Stop [-5.5%]
= \$100 Risk
\$1,900 Capital

100 Shares Long IBM
\$124.00 Long Entry
\$118.00 Stop [-5%]
= \$600 Risk
\$12,400 Capital

100 Shares Long GOOG
\$560.00 Long Entry
\$532.00 Stop [-5%]
= \$2,800 Risk
\$56,000 Capital

Is RISK Equal?



11.75	Nov	100
12.38	May	100
13.75	Aug	100
11.63	Nov	100
8.25	May	100
12.00	May	100
4.80	Aug	100
4.81	Feb	100



Fixed Position Size

- Did Fixed Position Size meet our Goal?

100 Shares Long INTC
\$19.00 Long Entry
\$18.00 Stop [-5.5%]
= \$100 Risk
\$1,900 Capital

100 Shares Long IBM
\$124.00 Long Entry
\$118.00 Stop [-5%]
= \$600 Risk
\$12,400 Capital

100 Shares Long GOOG
\$560.00 Long Entry
\$532.00 Stop [-5%]
= \$2,800 Risk
\$56,000 Capital

No



Fixed Position Size

- What if: my Winning trades also happened to be my Smallest Positions, and my Losers were the Largest Positions ?
- How Would my performance Look ?

11.88	Nov		
12.38	May		
13.75	Aug		
11.63	Nov		
8.25	May		
12.00	May		
4.74	Aug		
4.74	Nov		
4.74	May		
-0.07	4.61	12.00	May
-0.02	4.80	4.75	Aug
-0.77	4.81	4.75	Feb



Fixed Position Size

- What if we Adjust **STOPS** for Equal Risk?

100 Shares Long INTC
\$19.00 Long Entry
\$18.00 Stop [-5.5%]
= \$100 Risk
\$1,900 Capital

100 Shares Long IBM
\$124.00 Long Entry
\$123.00 Stop [-.8%]
= \$100 Risk
\$12,400 Capital

100 Shares Long GOOG
\$560.00 Long Entry
\$559.00 Stop [-.17%]
= \$100 Risk
\$56,000 Capital

Now is RISK Equal?

YES - However



Fixed Position Size

- What if we Adjust **STOPS** for Equal Risk?

100 Shares Long INTC
\$19.00 Long Entry
\$18.00 Stop [-5.5%]
= \$100 Risk
\$1,900 Capital

100 Shares Long IBM
\$124.00 Long Entry
\$123.00 Stop [-.8%]
= \$100 Risk
\$12,400 Capital

100 Shares Long GOOG
\$560.00 Long Entry
\$559.00 Stop [-.17%]
= \$100 Risk
\$56,000 Capital

INTC's ATR \$0.43

Stop = 2.3 x ATR

IBM's ATR \$1.65

Stop = .6 x ATR

GOOG's ATR \$8.50

Stop = .11 x ATR

Are Odds of Being Stopped out Equal?



Problem

In an effort to Equalize Risk by adjusting Stops, we Dramatically affected the overall Expectancy of our System, causing us to be much more likely Stopped Out of many potential ‘winners’, thus significantly decreasing the overall Win/Loss Ratio & Expectancy.

A table of financial data with columns for values and dates. The values are mostly positive, with some negative values at the bottom. The dates are listed in the rightmost column.

11.3	20
11.88	Nov
12.38	May
13.75	Aug
14.63	Nov
8.25	May
12.00	May
-0.02	Aug
-0.02	Aug
-0.73	Feb





Never Forget

- RISK
- REWARD
- PROBABILITY

Are Linked Together

A faded financial data table with columns for price, volume, and date. The data is partially obscured and difficult to read, but it appears to be a summary of market activity.

Price	Volume	Date
11.25	11.25	Nov
11.13	11.13	Nov
11.88	11.88	Nov
12.38	12.38	Nov
11.75	11.75	Aug
11.63	11.63	Nov
8.25	8.25	May
12.00	12.00	May
4.61	4.61	Aug
4.80	4.80	Aug
4.81	4.81	Feb





Position Size Methods

- Fixed
- Fixed Fractional
 - % of Acct value
- Fixed Ratio
 - equalized profit goals per Contract
- Volatility based methods



11.25	Nov
11.75	Nov
12.13	Nov
11.88	Nov
12.38	Nov
11.72	Nov
11.75	Nov
11.63	Nov
8.25	May
12.00	May
4.61	Aug
4.80	Aug
4.81	Feb

A candlestick chart with several moving average lines overlaid, showing price fluctuations over time. The chart is positioned at the top of the slide.

Fixed Fractional

- Most Common Method to equalize Risk.
- Risk is usually computed as a Percentage of Account Value
- A simple method for Stock, Options, Futures traders.

A table of financial data with columns for price, date, and month. The data is partially obscured by the text of the slide.

11.75	Nov
11.13	Nov
11.88	Nov
12.38	May
11.72	Aug
11.63	Nov
8.25	May
12.00	May
4.80	Aug
4.81	Feb



Fixed Fractional

If STOPS set at - 5% of Entry Price

and R = \$400 (2% of \$20,000 acct value)

Shares Long INTC

\$19.00 Long Entry

\$18.05 Stop [-5%]

= Risk

\$ Capital

Shares Long IBM

\$124.00 Long Entry

\$117.80 Stop [-5%]

= Risk

\$ Capital

Shares Long GOOG

\$560.00 Long Entry

\$532.00 Stop [-5%]

= Risk

\$ Capital

Are Odds of Being Stopped out Equal?



Fixed Fractional

If each position uses 10% of Available Capital, with
2% at Risk, for a \$100,000 Account Value

Shares Long INTC

\$19.00 Long Entry

\$15.20 Stop [-20%]

= \$ Risk

\$ Capital

Shares Long IBM

\$124.00 Long Entry

\$ 99.00 Stop [-20%]

= \$ Risk

\$ Capital


Shares Long GOOG

\$560.00 Long Entry

\$442.35 Stop [-20%]

= \$ Risk

\$ Capital



11.88	Nov
12.38	May
13.72	Aug
14.74	Nov
15.74	May
16.61	May
17.80	Aug
18.81	Feb



Fixed Fractional

If each position uses 10% of Available Capital, with
2% at Risk, for a \$100,000 Account Value

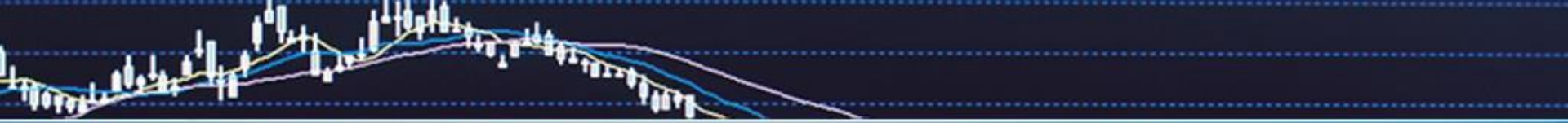
526 Shares Long INTC
\$19.00 Long Entry
\$15.20 Stop [-20%]
= \$1,999 Risk
\$9,994 Capital

80 Shares Long IBM
\$124.00 Long Entry
\$ 99.00 Stop [-20%]
= \$2,000 Risk
\$9,920 Capital

17 Shares Long GOOG
\$560.00 Long Entry
\$442.35 Stop [-20%]
= \$2,000 Risk
\$9,520 Capital

Is Risk Equalized ?

Are Stops Logical? Size of Average Loss?



Sample Trade - LMT

- LMT chart of Jan 6, 2014
- Pause in established Bullish Trend

11.88	Nov
12.38	May
11.75	Aug
11.63	Nov
8.25	May
12.00	May
4.80	Aug
4.81	Feb





LMT Long Entry: \$146.86
Prior 6 days support at \$145.84 L
Set Stop below support = \$145.36
Risk per Share \$1.50
If "R" [= 1% Acct Risk] = \$300
Max. Position Size = shares



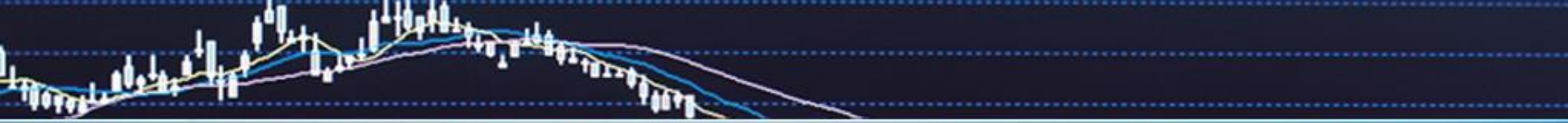
150.00
148.00
146.00
144.00
142.00
140.00
138.00
136.00
134.00
132.00
130.00
128.00
126.00
124.00
122.00

X Volume ▾ Moving Average 50 ▾

5.0M
2.1M
0.00

7 14 21 28 4 11 18 25 2 9 16 23 1/6/2014
2013 Nov 2013 Dec 2013





Fixed Ratio

- Equalize profit goals per contract.
- Effective for Derivatives (Futures) trading.

A faded financial data table with columns for price, volume, and date. The data is partially obscured and difficult to read, but it appears to be a list of market transactions or price points over time.

Price	Volume	Date
11.75		Nov
12.38		May
11.75		Aug
11.63		Nov
8.25		May
12.00		May
4.80		Aug
4.81		Feb





Position Size Methods

- Fixed
- Fixed Fractional
 - % of Acct value
- Fixed Ratio
 - equalized profit goals per Contract
- • Volatility based methods



11.25	Nov
10.75	Nov
11.13	Nov
11.88	Nov
12.38	Nov
11.75	Nov
11.63	Nov
8.25	Nov
4.74	Nov
4.74	Nov
4.61	Nov
4.80	Nov
4.81	Nov

A candlestick chart with several moving average lines overlaid, showing price fluctuations over time. The chart is positioned at the top of the slide.

Volatility Based Position Sizing

Since each Trading Instrument can represent very different levels of Volatility, lets take this into account in order to better Equalize Risk.

A table of financial data, likely a market data feed, showing various numerical values and dates. The data is partially obscured by the text and other elements on the slide.

11.75	Nov
11.13	Nov
11.88	Nov
12.38	Nov
11.75	Aug
11.63	Nov
8.25	May
12.00	May
4.74	Aug
4.74	Nov
4.74	May
4.61	May
4.80	Aug
4.81	Feb



Volatility Measurement

- Average True Range

- Wells Wilder

True Range = The greater of:

- or
 - High – Low
 - High – Prior Day's Close
 - Low – Prior Day's Close

ATR = (14 period) EMA of True Range



11.88	Nov		
12.38	May		
4.72	11.75	Aug	
4.74	11.63	Nov	
4.74	8.25	May	
-0.02	4.61	12.00	May
-0.02	4.80	7.15	Aug
-0.02	4.81	7.15	Feb



Volatility Based

- If your Initial Stop is placed at some multiple of that Instrument's current ATR, then you are taking price volatility into account (for both the current market conditions, and the trading instrument's volatility) when position Sizing.
- Compute Position size, based on this stop, and your Risk Rules (Fixed Fractional).

A table of financial data with columns for values and dates. The data is partially obscured by the text of the slide.

11.3	20
11.88	Nov
12.38	May
13.75	Aug
11.63	Nov
8.25	May
12.00	May
4.61	Aug
4.80	Aug
4.81	Feb



RIMM Long Entry: \$58.70

If ATR = \$2.00

If initial Stop = 1.5 x ATR below Entry , then Stop = \$55.70

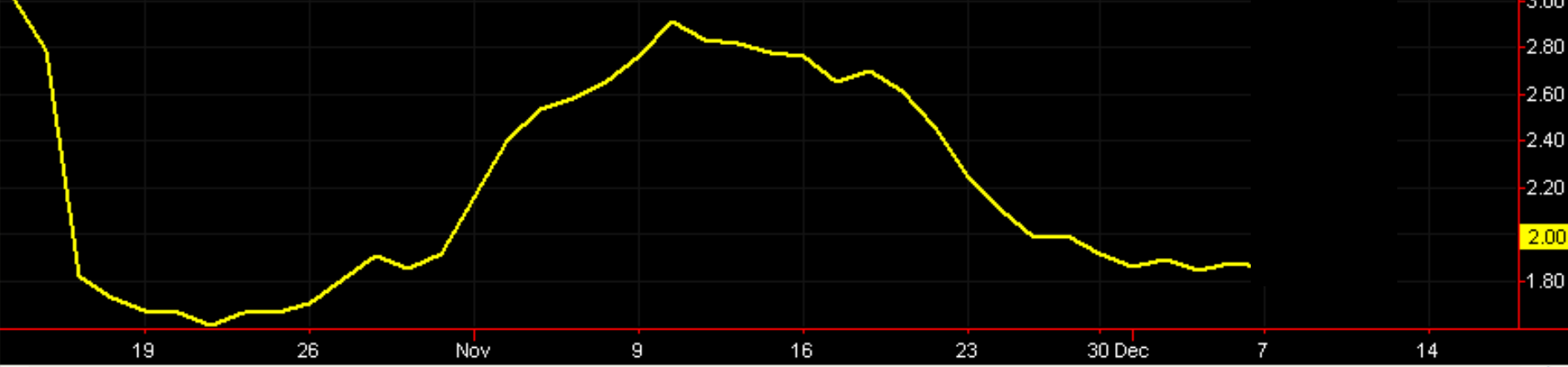
Risk per Share \$3.00

If "R" = 1% Acct Risk = \$1,000

Max. Position Size = 333 shares



Average True Range (14,14) 2.00





Volatility Based

A Famous Example of a Volatility Based Position Sizing Method



Re-Calculated the trading 'Unit Size' for each Trading Commodity, each week.

11.13	30
11.88	Nov
12.38	May
13.75	Aug
11.63	Nov
8.25	May
12.00	May
4.74	Aug
4.74	Aug
4.61	12.00
4.80	Aug
4.81	Feb





Volatility Based – Fixed Ratio

If STOPs at 2x ATR, find # Shares for Equal Risk
and R = 2% of a \$20,000 Acct. Value

Shares Long INTC

\$19.00 Long Entry
\$18.14 Stop [-4.5%]
= Risk
\$ Capital

Shares Long IBM

\$124.00 Long Entry
\$120.70 Stop [-2.7%]
= Risk
\$ Capital

Shares Long GOOG

\$560.00 Long Entry
\$543.00 Stop [-3%]
= Risk
\$ Capital

INTC's ATR \$0.43
Stop = 2x ATR

IBM's ATR \$1.65
Stop = 2x ATR

GOOG's ATR \$8.50
Stop = 2x ATR



Volatility Based – Fixed Ratio

If STOPS at 2x ATR, find # Shares for Equal Risk
and R = 2% of a \$20,000 Acct. Value

464 Shares Long INTC
\$19.00 Long Entry
\$18.14 Stop [-4.5%]
= \$399 Risk
\$8,816 Capital

120 Shares Long IBM
\$124.00 Long Entry
\$120.70 Stop [-2.7%]
= \$396 Risk
\$14,880 Capital

23 Shares Long GOOG
\$560.00 Long Entry
\$543.00 Stop [-3%]
= \$391 Risk
\$12,880 Capital

INTC's ATR \$0.43
Stop = 2x ATR

IBM's ATR \$1.65
Stop = 2x ATR

GOOG's ATR \$8.50
Stop = 2x ATR

Are Odds of Being Stopped out Equal?



Efficient Market System Adjustments

- As you try to Increase your win Probability, then usually both Reward and Risk are reduced.
- As you try to Increase Reward, you also increase Risk and reduce win Probability.
- As you increase Risk, hoping to increase Reward, you increase your Probability of Ruin.

Always Look at the NET Affect when
evaluating any change.



11.3	Nov
12.38	Nov
11.75	Aug
11.63	Nov
8.25	May
12.00	May
4.74	Aug
4.80	Aug
4.81	Feb



SIMPLE is often Better K.I.S.S.

Keep It a Simple System

- Less likely to make mistakes
- Quicker to learn
- Easier to Remember



11.75	Nov	10
11.33	Nov	20
11.88	Nov	30
12.38	Nov	10
11.75	Nov	20
11.63	Nov	30
8.25	Nov	10
4.61	Nov	20
4.80	Nov	30
4.81	Nov	10



Position Size Methods - Review

- Fixed Shares or \$ size → Very poor
- Fixed Fractional → Good & simple
 - % of Acct value
- Fixed Ratio → Good for High Leverage
 - equalized profit goals per Contract

Volatility adjustments built into system

Powerful

Not a Recommendation, for educational purposes only.




Objectives

- **Equalize** each trade's Risk, to be an equivalent financial risk. Since you do not know which trades will be winners before you Enter.
- Equalizing the risks, helps the Realized System's performance be more likely similar to it's tested Expectancy.
- More likely to survive a string of losses
- **Do NOT Confuse DIVERSIFICATION with Risk Management .**



11.3	13	Nov
12.38	13	Nov
11.75	13	Aug
11.63	13	Nov
8.25	13	May
4.61	12.00	May
4.80	11.75	Aug
4.81	11.75	Feb



“Diversification is a substitute
for not Thinking.” - Warren Buffett

“Wide Diversification is only required
when investors do not understand what
they are doing.” - Warren Buffett

“Risk comes from not knowing
what you’re doing.”
- Warren Buffett



Summary

- Manage Risk on EVERY trade and every Portfolio.
- Define your System & Stick to it.
- Keep losses small and let winners run.



4.75	11.13	30'	
4.75	11.28	Nov	
4.75	11.38	May	
4.72	11.75	Aug	
4.74	11.63	Nov	
4.74	8.25	May	
4.74	12.00	May	
-0.02	4.61	12.00	May
-0.02	4.80	11.15	Aug
-0.02	4.81	11.15	Feb



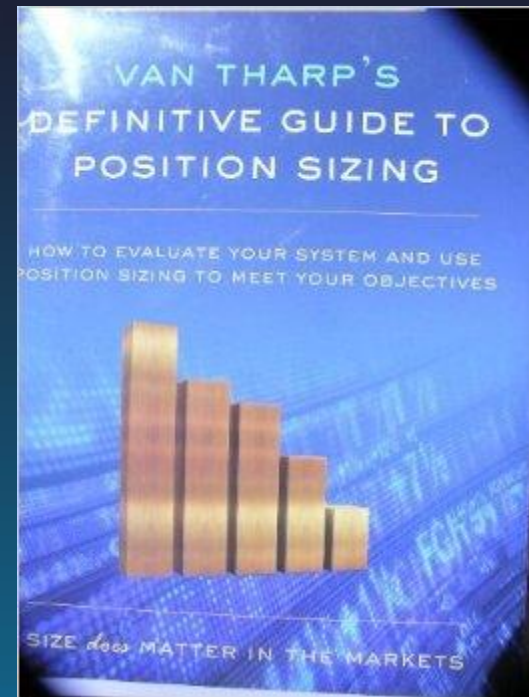
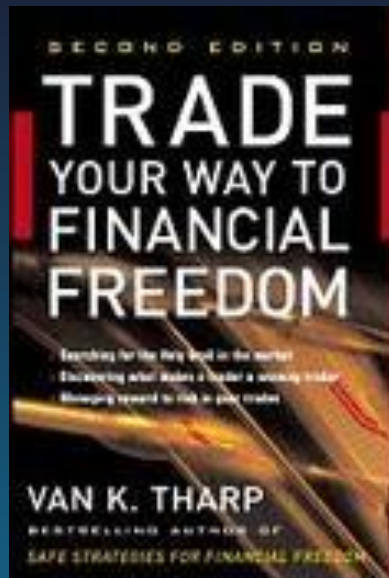
Risk Management Resources

- Dr. Van Tharp
- Ryan Jones
- Nauzer J. Balsara
- Dr. Alexander Elder
- Fred Gehm
- Ralph Vince



	11.25	Nov
	10.75	Nov
	11.13	Nov
	11.88	Nov
	12.38	Nov
	11.75	Aug
	11.63	Nov
	8.25	May
	12.00	May
-0.02	4.61	Aug
-0.02	4.80	Aug
-0.02	4.81	Feb

Dr. Van K. Tharp



www.iitm.com



Other Books on Risk Management

- Ralph Vince -
 - “The Handbook of Portfolio Mathematics: Formulas for Optimal Allocation & Leverage”
 - “The new Money Management: A Framework for Asset Allocation”
 - “The Mathematics of Money Management: Risk Analysis Techniques for Traders”



11.75	Nov
12.38	May
13.75	Aug
11.63	Nov
8.25	May
12.00	May
4.80	Aug
4.81	Feb

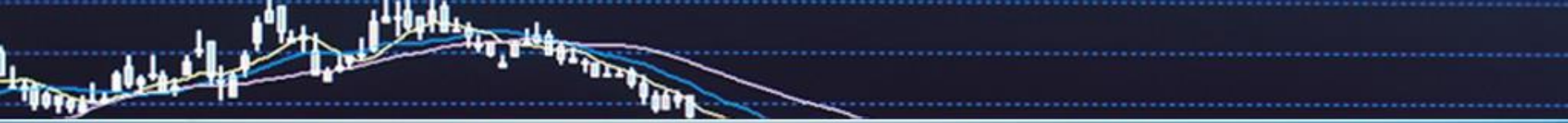


Other Books on Risk Management

- Ryan Jones -
 - “The Trading Game”
- Robert Pardo -
 - “The Evaluation and Optimization of Trading Strategies”
- Philip McDonnell –
 - “Optimal Portfolio Modeling”



11.25	Nov
11.13	Nov
11.88	Nov
12.38	Nov
13.75	Aug
14.63	Nov
8.25	May
12.00	May
4.74	Aug
4.74	Nov
4.74	May
-0.02	May
-0.02	Aug
-0.02	Feb



Thank You

Carl Jorgensen
CJTrader@yahoo.com

11.88	Nov
12.38	May
13.75	Aug
11.63	Nov
8.25	May
12.00	May
4.74	Aug
4.74	Nov
4.61	May
4.80	Aug
4.81	Feb

