

FOCUS ON YOUR STOCKS WORKSHOP

Metastock Software

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The following information is not in any way intended to provide financial advice.

Technical Analysis – Metastock

Metastock is without the doubt the most thorough technical analysis programme on the market. We are going to look at 3 major components.

- 1) The Indicators - Metastock has over 120 indicators. We are going to look at some of the more popular indicators.
- 2) The Explorer – We will look at some practical examples of explorations.
- 3) The System Tester - The importance of back testing cannot be understated.

1. Indicators and their Interpretation.

Average True Range – Wells Wilder one of the forefathers in technical analysis developed the ATR. We assign a period to the ATR. (typically 14 days)

The true range is the greatest of the following

- 1) The distance from today's high to today's low.
- 2) The distance from yesterday's close to today's high.
- 3) The distance from yesterday's close to today's low.

A 14 day ATR will be the average of the last 14 days. This is a recent chart on Brambles.



Relative Strength Index (Once Again) – Introduced by Welles Wilder eg below. The most popular is the 14 day RSI. 9 and 25 day have also become very popular. When the RSI has passed under the 30% line and then recovers, it signals the stock is likely to continue upwards. Conversely if a stock has passed above the 70 % line and passes back under, it is likely to continue in a downwards pattern.

The Following is a Gold Chart as at 14th November.



Moving Averages, Crossovers and Multiple Moving Averages

We can trade a single moving average by entering when the moving average is below the share price and exiting when it is above.

We can trade 2 moving averages (also known as the price oscillator) where we enter when the short term crosses the long term and exit when the long term crosses the short term.

As written about by Daryl Guppy in Share Trading and Trading Tactics, we can look at Multiple Moving Averages comparing a series of long term moving average with a series of short term moving averages. We look for a strong convergence in all indicators where the short term crosses the long term.

The short term moving averages are 3,5,8,10,12 & 15. The long term are 35,40,45,50,55,60. The Metastock Formulae are as follows.

MMA Short Term - $\text{Mov}(C,3,E); \text{Mov}(C,5,E); \text{Mov}(C,8,E);$
 $\text{Mov}(C,10,E); \text{Mov}(C,12,E); \text{Mov}(C,15,E);$

MMA Long Term -
 $\text{Mov}(C,35,E); \text{Mov}(C,40,E); \text{Mov}(C,45,E); \text{Mov}(C,50,E); \text{Mov}(C,55,E); \text{Mov}(C,60,E)$

The Following is a chart on Australian wine.



The Following is a chart on Life Care Health



Moving Average Convergence Divergence (MACD)

A MACD is calculated by subtracting a 26 day moving average from a 12 day moving average. When this line passes above the zero line the 12 day moving average is greater than the 26 Moving Average and when the 26 day moving average is greater than the 12 day moving average. A 9 day moving average is also plotted. There are 2 ways of reading this indicator.

1. Bullish when the MACD is above the zero line and bearish when below.



2. Bullish where the MACD passes above the 9 day trigger line and bearish when the 9 day trigger line passes above the MACD.



Can also be displayed as a histogram as the Audax Industries chart is displayed below.



System Testing

When looking at technical analysis system testing is vital. There is no such thing as the holy grail. No indicator works in every situation. Probably the most powerful feature in the optimisation feature.

With Version we can test multiple systems against multiple stocks at the one time.

For example if we look at ANZ, how do we know what the best moving average crossover will be?

If we bring up a chart on ANZ and select moving average crossovers with optimum, Metastock tells that 3 day moving average crossing an 80 is produces the best profits out of any 2 moving average crossovers since 1990 as seen below.

Summary

Equis - Moving Average Crossovers w/Opt

ANZ BANKING GRP LTD (ANZ)

Simulation Date 15/10/2003 1:36:31 AM

3310 Daily Bars 2/07/1990 Through 28/07/2003 (4774 Days)

Optimized System

Performance

Profit	\$5589.56
Performance	55.90 %
Annualized Performance	4.27 %
Buy & Hold Profit	\$1352.80
Buy & Hold Performance	13.53 %
Buy & Hold Annualized Performance	1.03 %

Trade Summary

Total Trades	85
Trade Efficiency	-26.54 %
Average Profit/Average Loss	2.67

Profitable Trades

Total	30
Long	19
Short	11
Average Profit	\$75.32
Highest Profit	\$328.70
Lowest Profit	\$3.00
Most Consecutive	5

Unprofitable Trades

Total	55
Long	23
Short	32
Average Loss	-\$28.23
Highest Loss	-\$107.00
Lowest Loss	\$0.00
Most Consecutive	6

Maximum Position Excursions

Long Favorable	\$470.00
Short Favorable	\$220.00
Long Adverse	-\$112.00
Short Adverse	-\$60.10

Trade Efficiency

Average Entry	54.92 %
Average Exit	18.54 %
Average Total	-26.54 %

Performance Indices

Buy & Hold Index	313.18 %
Profit/Loss Index	78.26 %
Reward/Risk Index	100.00 %

Accounting

Initial Equity	\$10000.00
Trade Profit	\$2259.70
Trade Loss	-\$1552.50
Commissions	\$0.00
Interest Credited	\$4882.36
Interest Charged	\$0.00
Final Equity	\$15589.56
Open Positions	\$0.00

Account Variation

Highest Account Balance	\$17431.56
Lowest Account Balance	\$9932.08
Highest Portfolio Value	\$2060.00
Highest Open Drawdown	\$0.00
Highest Closed Drawdown	\$0.00

Account Events

Margin Calls	0
Overdrafts	0

Profitable Timing

Average Trade Length	88
Longest Trade Length	210
Shortest Trade Length	1
Total Trade Length	2667

Unprofitable Timing

Average Trade Length	10
Longest Trade Length	41
Shortest Trade Length	1
Total Trade Length	562

Out of Market Timing

Average	27
Longest	80
Total	81

Optimization Variables

OPT1	3.00
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Average Long Entry	60.95 %	OPT2	80.00
Average Long Exit	23.89 %	OPT3	N/A
Average Long Total	-15.16 %	OPT4	N/A
		OPT5	N/A
Average Short Entry	49.02 %	OPT6	N/A
Average Short Exit	13.31 %	OPT7	N/A
Average Short Total	-37.67 %	OPT8	N/A
		OPT9	N/A
		OPT10	N/A

On the other hand for BWA, how do we know I the best RSI to use? The optimisation feature tells us that a 21 day RSI produced a 50% greater return than a buy hold strategy since 1996 as outlined below.

Summary

Equis - RSI 70/30 w/Optimization BANK OF WESTERN AUST (BWA)

Simulation Date 15/10/2003 1:41:58 AM 1915 Daily Bars 1/02/1996 Through 26/08/2003 (2763 Days)

Optimized System

Performance

Profit	\$2899.52
Performance	29.00 %
Annualized Performance	3.83 %
Buy & Hold Profit	\$172.50
Buy & Hold Performance	1.73 %
Buy & Hold Annualized Performance	0.23 %

Trade Summary

Total Trades	15
Trade Efficiency	43.28 %
Average Profit/Average Loss	2.30

Profitable Trades

Total	12
Long	7
Short	5
Average Profit	\$29.90
Highest Profit	\$59.80
Lowest Profit	\$2.00
Most Consecutive	5

Unprofitable Trades

Total	3
Long	1
Short	2
Average Loss	\$-13.00

Performance Indices

Buy & Hold Index	1580.88 %
Profit/Loss Index	98.67 %
Reward/Risk Index	100.00 %

Accounting

Initial Equity	\$10000.00
Trade Profit	\$358.80
Trade Loss	\$-39.00
Commissions	\$0.00
Interest Credited	\$2579.72
Interest Charged	\$0.00
Final Equity	\$12899.52
Open Positions	\$0.00

Account Variation

Highest Account Balance	\$13304.20
Lowest Account Balance	\$9856.45
Highest Portfolio Value	\$448.00
Highest Open Drawdown	\$0.00
Highest Closed Drawdown	\$0.00

Account Events

Margin Calls	0
Overdrafts	0

Profitable Timing

Average Trade Length	95
Longest Trade Length	297
Shortest Trade Length	9

Average Loss	\$-13.00	Shortest Trade Length	9
Highest Loss	\$-35.00	Total Trade Length	1142
Lowest Loss	\$-1.00	Unprofitable Timing	
Most Consecutive	1	Average Trade Length	230
Maximum Position Excursions		Longest Trade Length	319
Long Favorable	\$73.00	Shortest Trade Length	144
Short Favorable	\$47.50	Total Trade Length	691
Long Adverse	\$-115.00	Out of Market Timing	
Short Adverse	\$-82.00	Average	27
Trade Efficiency		Longest	81
Average Entry	59.32 %	Total	82
Average Exit	83.96 %	Optimization Variables	
Average Total	43.28 %	OPT1	14.00
		OPT2	N/A
Average Long Entry	64.65 %	OPT3	N/A
Average Long Exit	91.67 %	OPT4	N/A
Average Long Total	56.32 %	OPT5	N/A
		OPT6	N/A
Average Short Entry	53.23 %	OPT7	N/A
Average Short Exit	75.14 %	OPT8	N/A
Average Short Total	28.38 %	OPT9	N/A
		OPT10	N/A

The Explorer

The explorer will scan the market and help us find opportunities. We can enter in a criteria and it will scan the market for us. We will look at 4 explorations.

1. ATR.

The following formulae will help us detect a turning point on the ATR

$H > \text{Ref}(H, -1) \text{ AND } L > \text{Ref}(L, -1) \text{ AND } V > \text{Ref}(V, -1) \text{ AND } V * \text{Typical}() > 100000 \text{ AND } V > 500000 \text{ AND } C > .90 \text{ AND } C < 5 \text{ AND } \text{ATR}(14) > 0.05 \text{ AND } C > \text{Ref}(C, -1)$

The high price is greater than yesterday. The low price is greater than yesterday. The Volume is greater than yesterday. Average volume is greater than 100 000. Today's volume is greater than 500 000. It will pick stocks between 90 cents and \$5.00. The 14 day ATR is greater than 5 cents. The closing Price is between 90 cents and \$5.00. The closing price is also greater than it was yesterday. The search is designed to look for stocks where there has been a turning point in the ATR.

2) Multiple Moving Average.

We can also look for stocks where there has been a Multiple moving average convergence.

First of all we set the following indicators.

MMA 10/45
If(OscP(10,45,E,%)>0,+1,-1)

MMA 12/50
If(OscP(12,50,E,%)>0,+1,-1)

MMA 15/60
If(OscP(15,60,E,%)>0,+1,-1)

MMA 3/30
If(OscP(3,30,E,%)>0,+1,-1)

MMA 5/35
If(OscP(5,35,E,%)>0,+1,-1)

MMA 8/40
If(OscP(8,40,E,%)>0,+1,-1)

MMA TOTAL
+Fml("MMA 3/30")
+Fml("MMA 5/35")
+Fml("MMA 8/40")
+Fml("MMA 10/45")
+Fml("MMA 12/50")
+Fml("MMA 15/60")

Then we set the following exploration

Exploration Formulae For Guppy's MMA

Page 133 Guppy Trading Tactics.

Col A
Ref(C,-1)

Col B
Ref(C,-2)

Col C
Fml("mma 3/30")+Fml("mma 5/35")+Fml("mma 8/40") + Fml("mma 10/45")+Fml("mma 12/50")+Fml("mma 15/60")

Col D
Ref(Fml("mma 3/30")+Fml("mma 5/35")+Fml("mma 8/40") + Fml("mma 10/45")+Fml("mma 12/50")+Fml("mma 15/60"),-1)

Col E

Ref(Fml("mma 3/30")+Fml("mma 5/35")+Fml("mma 8/40") + Fml("mma 10/45")+Fml("mma 12/50")+Fml("mma 15/60"),-2)

Filter

When (colD,>,0)AND When (colE,<=,0)

Once we have scanned the market for Technical information, using market Scan we check for fundamental information.

3. RSI Recovery. This will find stocks that have recently passed back over the 30 line.

RSI(14) > 30 AND Ref(RSI(14),-1)<30

4. This will find stocks that have hit a 52 week high. C>Ref(HHV(H,65),-1)