

NIM : 71220924

Nama : Giovanka Steviano Harry Premono

Saham yang dipilih = IDXENERGY

1. ADRO (Alamtri Resources Indonesia TBK.)

A. Source Code:

```
//@version=6
strategy("Bollinger Band Mean Reversion (Fixed)", overlay=true,
fill_orders_on_standard_ohlc=true)

// Parameter Bollinger Band
length = 30
mult = 1.0
basis = ta.sma(close, length)
dev = mult * ta.stdev(close, length)
upper = basis + dev
lower = basis - dev

// Plot Bollinger Bands
plot(basis, color=color.gray, title="Basis SMA")
plot(upper, color=color.red, title="Upper Band")
plot(lower, color=color.green, title="Lower Band")

// Rentang waktu strategi: 1 Jan 2023 s/d 31 Des 2024 (UTC)
startDate = timestamp("2023-01-01 00:00 +0000")
endDate = timestamp("2024-12-31 23:59 +0000")
inDateRange = (time >= startDate and time <= endDate)

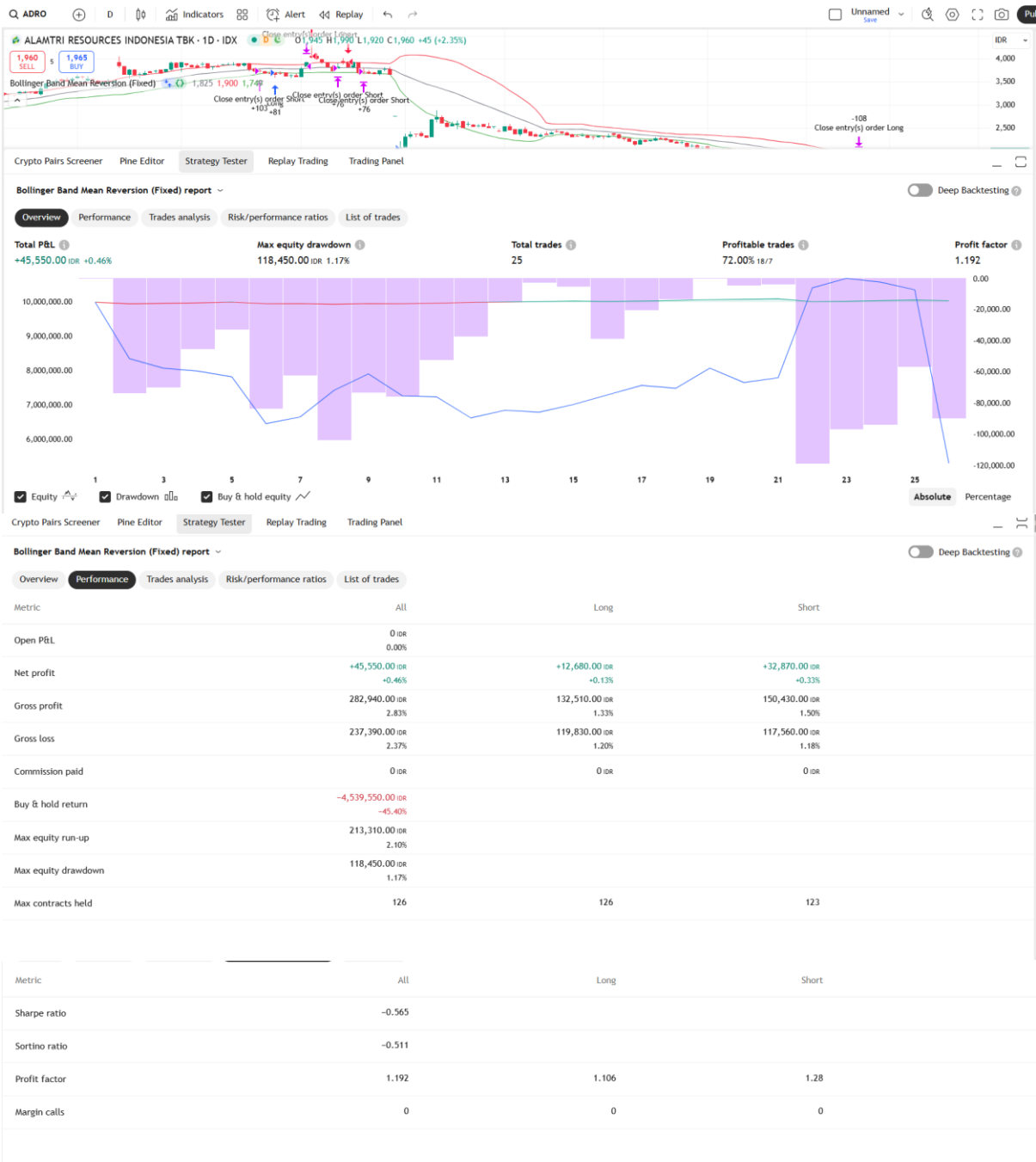
// Entry Long: harga menyentuh band bawah, dan belum posisi Long
if inDateRange and close <= lower and strategy.position_size <= 0
    strategy.entry("Long", strategy.long)

// Exit Long: saat harga kembali ke basis (middle band)
if strategy.position_size > 0 and close >= basis
    strategy.close("Long")

// Entry Short: harga menyentuh band atas, dan belum posisi Short
if inDateRange and close >= upper and strategy.position_size >= 0
    strategy.entry("Short", strategy.short)

// Exit Short: saat harga kembali ke basis (middle band)
if strategy.position_size < 0 and close <= basis
    strategy.close("Short")
```

Chart Pengujian:
B. Draw Down, equity, buy and hold.



Win Rate= 18/25 * 100 = 72%

Sharpe ratio = -0.0003

Profit ratio = 1.189

Bollinger Band Mean Reversion (Fixed) report				
Overview Performance Trades analysis Risk/performance ratios List of trades				
Metric	All	Long	Short	
Total trades	25	13	12	
Total open trades	0	0	0	
Winning trades	18	9	9	
Losing trades	7	4	3	
Percent profitable	72.00%	69.23%	75.00%	
Avg P&L	1,822.00 IDR 0.51%	975.38 IDR 0.17%	2,739.17 IDR 0.89%	
Avg winning trade	15,718.89 IDR 5.23%	14,723.33 IDR 4.92%	16,714.44 IDR 5.55%	
Avg losing trade	33,912.86 IDR 11.63%	29,957.50 IDR 10.52%	39,186.67 IDR 13.10%	
Ratio avg win / avg loss	0.464	0.491	0.427	
Largest winning trade	25,300.00 IDR	24,420.00 IDR	25,300.00 IDR	
Largest winning trade percent	8.46%	8.21%	8.46%	
Largest losing trade	86,520.00 IDR	49,680.00 IDR	86,520.00 IDR	
1D 5D 1M 3M 6M YTD 1Y 5Y All 03:06:00 UTC AD.				
Crypto Pairs Screener Pine Editor Strategy Tester Replay Trading Trading Panel				
Bollinger Band Mean Reversion (Fixed) report				
Overview Performance Trades analysis Risk/performance ratios List of trades				
Metric	All	Long	Short	
Sharpe ratio	-0.003			
Sortino ratio	-0.004			
Profit factor	1.189	1.104	1.275	
Margin calls	0	0	0	

2. PGAS (Perusahaan Gas Negara Tbk.)

A. Source Code:

```
//@version=6
strategy("Tugas Gio Trad strategy", overlay=true, fill_orders_on_standard_ohlc=true)

// Parameter Bollinger Band
length = 25
mult = 1.0
basis = ta.sma(close, length)
dev = mult * ta.stdev(close, length)
upper = basis + dev
lower = basis - dev

// Plot Bollinger Bands
plot(basis, color=color.gray, title="Basis SMA")
plot(upper, color=color.red, title="Upper Band")
plot(lower, color=color.green, title="Lower Band")
```

```
// Rentang waktu strategi: 1 Jan 2023 s/d 31 Des 2024 (UTC)
startDate = timestamp("2023-01-01 00:00 +0000")
endDate   = timestamp("2024-12-31 23:59 +0000")
inDateRange = (time >= startDate and time <= endDate)

// Entry Long: harga menyentuh band bawah, dan belum posisi Long
if inDateRange and close <= lower and strategy.position_size <= 0
    strategy.entry("Long", strategy.long)

// Exit Long: saat harga kembali ke basis (middle band)
if strategy.position_size > 0 and close >= basis
    strategy.close("Long")

// Entry Short: harga menyentuh band atas, dan belum posisi Short
if inDateRange and close >= upper and strategy.position_size >= 0
    strategy.entry("Short", strategy.short)

// Exit Short: saat harga kembali ke basis (middle band)
if strategy.position_size < 0 and close <= basis
    strategy.close("Short")
```

B. Draw Down, equity, buy and hold.



Q PGAS (+) D Indicators Alert Replay

PERUSAHAAN GAS NEGARA TBK · 1D · IDX 0 1,675 H1,675 L1,650 C1,655 -10 (-0.60%) Short

Crypto Pairs Screener Pine Editor Strategy Tester Replay Trading Trading Panel

Tugas Gio Trad strategy report Deep Backtesting

Overview Performance Trades analysis Risk/performance ratios List of trades

Metric	All	Long	Short
Open P&L	0 IDR 0.00%		
Net profit	+656,560.00 IDR +6.57%	+259,090.00 IDR +2.59%	+397,470.00 IDR +3.97%
Gross profit	1,129,740.00 IDR 11.30%	609,545.00 IDR 6.10%	520,195.00 IDR 5.20%
Gross loss	473,180.00 IDR 4.73%	350,455.00 IDR 3.50%	122,725.00 IDR 1.23%
Commission paid	0 IDR	0 IDR	0 IDR
Buy & hold return	-461,040.00 IDR -4.61%		
Max equity run-up	767,510.00 IDR 7.20%		
Max equity drawdown	223,260.00 IDR 2.18%		
Max contracts held	896	896	877

Win rate = $24/38 * 100 = 82\%$

Sharpe ratio = 0.153

Profit ratio = 2.388

Crypto Pairs Screener Pine Editor Strategy Tester Replay Trading Trading Panel

Tugas Gio Trad strategy report Deep Backtesting

Overview Performance Trades analysis Risk/performance ratios List of trades

Metric	All	Long	Short
Total trades	34	16	18
Total open trades	0	0	0
Winning trades	28	12	16
Losing trades	6	4	2
Percent profitable	82.35%	75.00%	88.89%
Avg P&L	19,310.59 IDR 1.92%	16,193.13 IDR 1.60%	22,081.67 IDR 2.21%
Avg winning trade	40,347.86 IDR 4.02%	50,795.42 IDR 5.06%	32,512.19 IDR 3.25%
Avg losing trade	78,863.33 IDR 7.89%	87,613.75 IDR 8.78%	61,362.50 IDR 6.12%
Ratio avg win / avg loss	0.512	0.58	0.53
Largest winning trade	117,150.00 IDR	117,150.00 IDR	93,015.00 IDR

Crypto Pairs Screener Pine Editor Strategy Tester Replay Trading Trading Panel

Tugas Gio Trad strategy report Deep Backtesting

Overview Performance Trades analysis Risk/performance ratios List of trades

Metric	All	Long	Short
Sharpe ratio	0.153		
Sortino ratio	0.212		
Profit factor	2.388	1.739	4.239
Margin calls	0	0	0

3. AKRA (AKR Corproindo TBK.)

A. Source Code:

```
//@version=6
strategy("Tugas Gio Trad Strategy)", overlay=true, fill_orders_on_standard_ohlc=true)

// Parameter Bollinger Band
```

```

length = 30
mult = 1.0
basis = ta.sma(close, length)
dev = mult * ta.stdev(close, length)
upper = basis + dev
lower = basis - dev

// Plot Bollinger Bands
plot(basis, color=color.gray, title="Basis SMA")
plot(upper, color=color.red, title="Upper Band")
plot(lower, color=color.green, title="Lower Band")

// Rentang waktu strategi: 1 Jan 2023 s/d 31 Des 2024 (UTC)
startDate = timestamp("2023-01-01 00:00 +0000")
endDate = timestamp("2024-12-31 23:59 +0000")
inDateRange = (time >= startDate and time <= endDate)

// Entry Long: harga menyentuh band bawah, dan belum posisi Long
if inDateRange and close <= lower and strategy.position_size <= 0
    strategy.entry("Long", strategy.long)

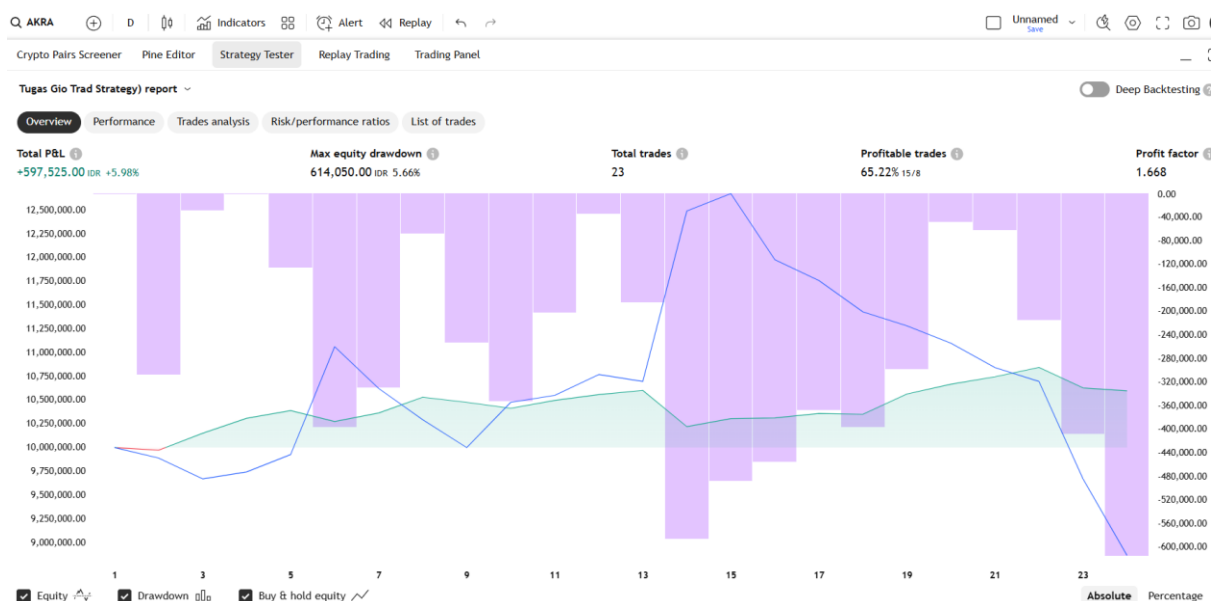
// Exit Long: saat harga kembali ke basis (middle band)
if strategy.position_size > 0 and close >= basis
    strategy.close("Long")

// Entry Short: harga menyentuh band atas, dan belum posisi Short
if inDateRange and close >= upper and strategy.position_size >= 0
    strategy.entry("Short", strategy.short)

// Exit Short: saat harga kembali ke basis (middle band)
if strategy.position_size < 0 and close <= basis
    strategy.close("Short")

```

B. Draw Down, equity, buy and hold.



Q AKRA					Unnamed Save				
Crypto Pairs Screener Pine Editor Strategy Tester Replay Trading Trading Panel									
Tugas Gio Trad Strategy) report					Deep Backtesting				
Overview Performance Trades analysis Risk/performance ratios List of trades									
Metric	All		Long		Short				
Open P&L	0 idr 0.00%								
Net profit	+597,525.00 idr +5.98%		+260,710.00 idr +2.61%		+336,815.00 idr +3.37%				
Gross profit	1,492,155.00 idr 14.92%		597,250.00 idr 5.97%		894,905.00 idr 8.95%				
Gross loss	894,630.00 idr 8.95%		336,540.00 idr 3.37%		558,090.00 idr 5.58%				
Commission paid	0 idr		0 idr		0 idr				
Buy & hold return	-805,860.00 idr -8.06%								
Max equity run-up	898,090.00 idr 8.26%								
Max equity drawdown	614,050.00 idr 5.66%								
Max contracts held	2,040		2,040		1,798				

Win rate = $15/23 * 100 = 65\%$

Sharpe ratio = 0.055

Profit ratio = 1.688

Tugas Gio Trad Strategy) report					Deep Backtesting				
Overview Performance Trades analysis Risk/performance ratios List of trades									
Metric	All		Long		Short				
Total trades	23		12		11				
Total open trades	0		0		0				
Winning trades	15		7		8				
Losing trades	8		5		3				
Percent profitable	65.22%		58.33%		72.73%				
Avg P&L	25,979.35 idr 1.04%		21,725.83 idr 0.86%		30,619.55 idr 1.23%				
Avg winning trade	99,477.00 idr 3.97%		85,321.43 idr 3.40%		111,863.13 idr 4.47%				
Avg losing trade	111,828.75 idr 4.46%		67,308.00 idr 2.69%		186,030.00 idr 7.40%				
Ratio avg win / avg loss	0.89		1.268		0.601				
Largest winning trade	213,480.00 idr		213,480.00 idr		178,500.00 idr				
Largest winning trade percent	8.45%		8.45%		7.04%				

Crypto Pairs Screener Pine Editor Strategy Tester Replay Trading Trading Panel									
Tugas Gio Trad Strategy) report					Deep Backtesting				
Overview Performance Trades analysis Risk/performance ratios List of trades									
Metric	All		Long		Short				
Sharpe ratio	0.055								
Sortino ratio	0.08								
Profit factor	1.668		1.775		1.604				
Margin calls	0		0		0				