RiskMetric Scoring

Advanced Trading Signal Methodology

A Comprehensive Guide to Calculating and Interpreting RiskMetric Scores

June 2025

Overview

What is RiskMetric?

A sophisticated risk assessment system that evaluates trading opportunities for cryptocurrency pairs using a scale from 0 (perfect buy) to 1 (perfect sell)

Why It Matters

Combines current market conditions with historical context to identify rare trading opportunities that traditional metrics might miss

Key Components

- Current Risk Value (0-1)
- Historical Time Spent Analysis
- Rarity-Based Coefficient
- Base Score & Total Score

"The power of RiskMetric lies in identifying rare market conditions that have historically yielded strong results"

Core Concepts

Risk Value Scale (0-1)

A normalized scale where values close to 0 indicate excellent buying opportunities and values close to 1 indicate excellent selling opportunities

Historical Time Analysis

Analysis of how much time a cryptocurrency has historically spent in different risk bands, providing context for current conditions

Rarity-Based Coefficient

A multiplier (1.0-1.6) that gives more weight to rare occurrences, highlighting unusual market conditions with higher potential

Base & Total Score

Base Score (1-5) assigned by risk range, multiplied by the coefficient to produce the final Total Score that guides trading decisions

Formula: Total Score = Base Score × Coefficient

The RiskMetric Value

Definition & Interpretation

- A risk assessment value ranging from 0 to 1
- Values close to 0 indicate excellent buying opportunities
- Values close to 1 indicate excellent selling opportunities

How It's Derived

The risk value is derived from the current market price by looking up the corresponding value in the RiskMetric Google Sheet, which contains price-to-risk mappings for each cryptocurrency.

Data Source

RiskMetric Google Sheet:
https://docs.google.com/spreadsheets/d/1Z9h8bBP13cdcgkcwq32N5Pcx4wiue9iH69uJ0wm9MRY

Risk Bands

10 Risk Bands from 0 to 1

The risk value falls into one of these bands, which are used for historical analysis and coefficient calculation:

0-0.1	0.1-0.2	0.2-0.3	0.3-0.4	0.4-0.5
0.5-0.6	0.6-0.7	0.7-0.8	0.8-0.9	0.9-1

Determining the Risk Band

Example:

- Current Risk Value: 0.325
- Falls in band: 0.3-0.4

Code Implementation:

```
def get_risk_band(risk_value):
    bands = ['0-0.1', '0.1-0.2', '0.2-0.3',
             '0.3-0.4', '0.4-0.5', '0.5-0.6',
             '0.6-0.7', '0.7-0.8', '0.8-0.9', '0.9-1']

    for band in bands:
        lower, upper = map(float, band.split('-'))
        if lower <= risk_value < upper:
            return band
```

Base Score Assignment

Scoring Categories Based on Risk Ranges

Base scores are assigned according to these risk ranges:

0-0.25: Excellent Buy
5 points

0.25-0.35: Good Buy
3 points

0.35-0.45: Buy
2 points

0.45-0.55: Neutral
1 point

0.55-0.65: Sell
2 points

0.65-0.75: Good Sell
3 points

0.75-1.0: Strong Sell
5 points

Example Base Score Assignment

Symbol	Current Risk	Risk Range	Base Score
DOGE	0.325	0.25-0.35	**3**
ETH	0.500	0.45-0.55	**1**
SOL	0.575	0.55-0.65	**2**

Historical Time Analysis

Time Spent in Risk Bands

Analysis of how much time a cryptocurrency has historically spent in different risk bands provides crucial context for evaluating current market conditions.

Why Historical Context Matters

- Identifies rare vs. common market conditions
- Provides perspective on current risk values
- Enables detection of unusual trading opportunities
- Forms the basis for coefficient calculation

Example: DOGE Historical Data

Risk Band	Days in Band	% of Total
0-0.1	152	3.69%
0.1-0.2	919	22.28%
0.2-0.3	**1,224**	**29.68%**
0.3-0.4	854	20.71%
0.4-0.5	503	12.20%
0.5-0.6	310	7.52%
0.6-0.7	93	2.26%
0.7-0.8	40	0.97%
0.8-0.9	18	0.44%
0.9-1.0	11	0.27%
Total	**4,124**	**100%**

Data Source

TimeSpendInRiskMetric Google Sheet:
https://docs.google.com/spreadsheets/d/1fup2CUYxg7Tj3a2BvpoN3OcfGBoSe7EqHIxmp1RRjqg/

Coefficient Calculation

Giving More Weight to Rare Occurrences

The coefficient is a multiplier that gives more weight to rare market conditions, highlighting unusual trading opportunities.

Normalization Process (1.0 to 1.6 scale)

- 1.0 for the most common band (highest days)
- 1.6 for the rarest band (lowest non-zero days)
- Other bands scaled proportionally between 1.0-1.6

1 Identify Key Values

For each symbol, identify the most common band (max days) and rarest band with non-zero days (min days)

2 Apply Formula

```
if days == max_days:
    coefficient = 1.0
elif days == min_days:
    coefficient = 1.6
else:
    coefficient = 1.0 + 0.6 * (max_days - days) / (max_days - min_days)
```

3 Example: DOGE Coefficient Calculation

- Most common band: 0.2-0.3 (1,224 days)
- Rarest band: 0.9-1.0 (11 days)
- Current band: 0.3-0.4 (854 days)

- Formula application:

  1.0 + 0.6 * (1224 - 854) / (1224 - 11)

  = 1.0 + 0.6 * 370 / 1213

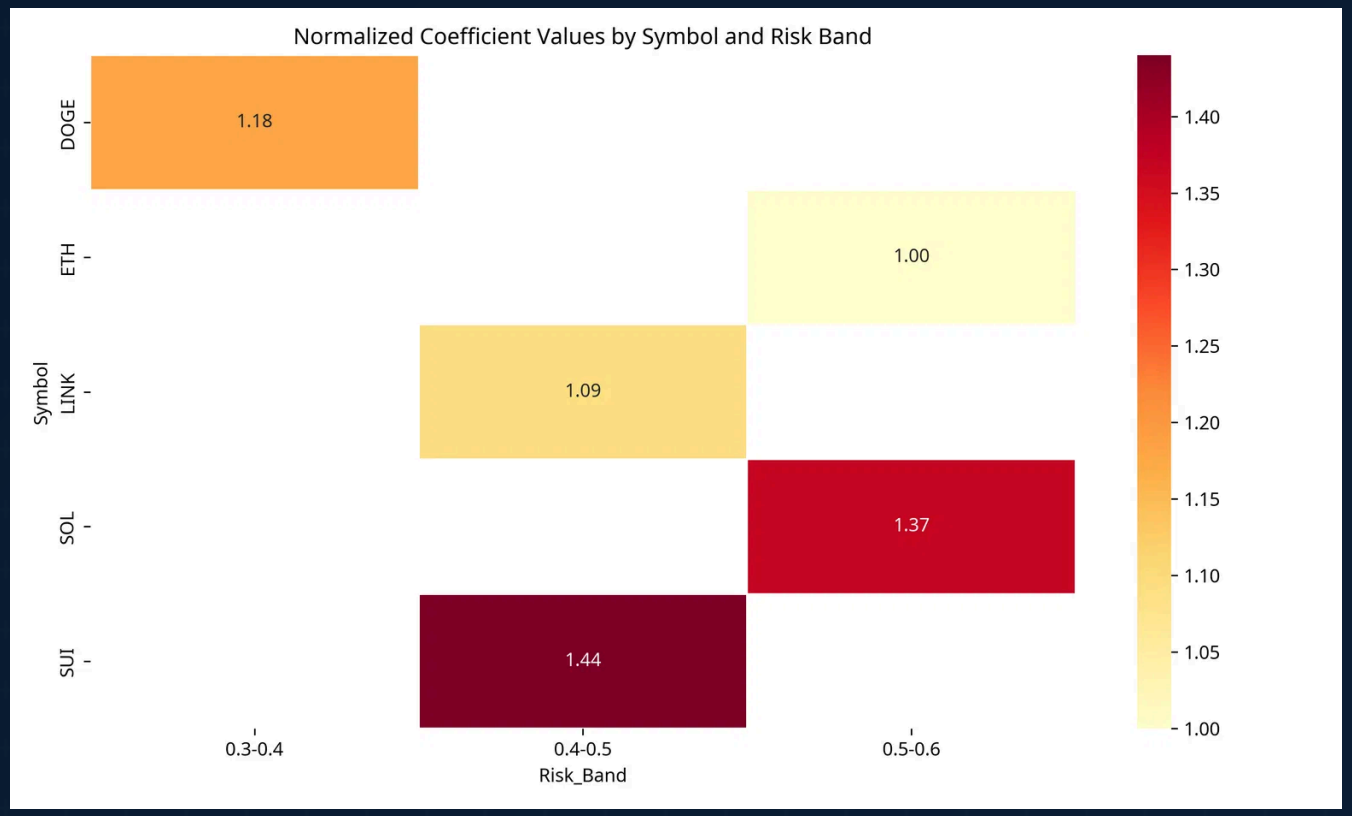
  = 1.18

"The rarer the occurrence, the higher the coefficient, the stronger the signal"

Coefficient Heatmap

Visual Representation of Coefficient Values

The heatmap shows coefficient values across symbols and risk bands, with darker red indicating higher coefficients (rarer occurrences).



Color Coding

Darker red = Higher coefficient (1.6)
Lighter yellow/green = Lower coefficient (1.0)

Key Insights

Extreme bands (0-0.1, 0.9-1) often have highest coefficients
Each symbol has unique coefficient distribution

Interpretation

Higher coefficients indicate stronger potential signals
Look for dark red cells for rare opportunities

Total Score Calculation

Formula

$$\text{Total Score} = \text{Base Score} \times \text{Coefficient}$$

Score Range

- Minimum: 1.0 (Base 1 × Coef 1.0)
- Maximum: 8.0 (Base 5 × Coef 1.6)
- Higher scores indicate stronger signals

Interpretation

- Direction: Based on risk value (< or ≥ 0.5)
- Strength: Based on total score magnitude
- Rarity: Reflected in coefficient component

Signal Categorization

For Buy Signals (Risk < 0.5)

- **Very Strong Buy:** Final Score ≥ 7
- **Strong Buy:** 5 ≤ Final Score < 7
- **Buy:** 3 ≤ Final Score < 5
- **Weak Buy:** 2 ≤ Final Score < 3
- **Neutral:** 0 ≤ Final Score < 2

For Sell Signals (Risk ≥ 0.5)

- **Very Strong Sell:** Final Score ≥ 7
- **Strong Sell:** 5 ≤ Final Score < 7
- **Sell:** 3 ≤ Final Score < 5
- **Weak Sell:** 2 ≤ Final Score < 3
- **Neutral:** 0 ≤ Final Score < 2

Example: DOGE Analysis

Step-by-Step Analysis

Complete walkthrough of RiskMetric scoring for DOGE

1 Current Market Data

Current Price: $0.191151

Current Risk Value: 0.325

2 Risk Band Identification

Risk value 0.325 falls in band: 0.3-0.4

3 Base Score Assignment

Risk range 0.25-0.35 = 3 points (Good Buy)

4 Coefficient Calculation

Risk Band	Days in Band	Total Days	% in Band	Coefficient
0.3-0.4	854	4,124	20.71%	**1.18**

5 Total Score Calculation

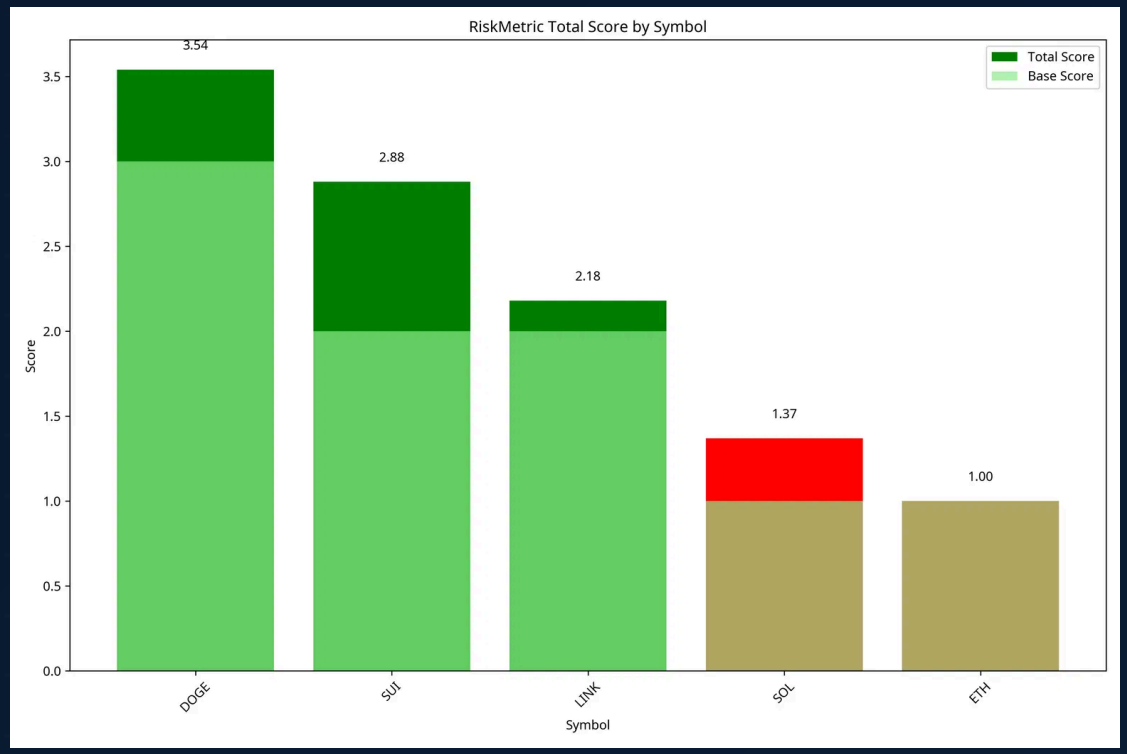
Total Score = Base Score × Coefficient

Total Score = 3 × 1.18 = **3.54**

6 Signal Categorization

Risk < 0.5 and 3 ≤ Final Score < 5 = **Buy**

Comparative Analysis



DOGE: Highest Score

Total Score: **3.54**

Signal: Buy

Good base score (3) with moderate coefficient (1.18)

SUI: Strong Runner-Up

Total Score: **2.88**

Signal: Rare Buy

Moderate base score (2) with high coefficient (1.44)

ETH: Lowest Score

Total Score: **1.00**

Signal: Common Sell

Low base score (1) with minimum coefficient (1.00)

Key Observations

- Base scores vary from 1-3 points across symbols
- Coefficients range from 1.00-1.55
- Buy signals (DOGE, SUI, LINK) have higher total scores
- Sell signals (SOL, ETH) have lower total scores

Implementation Steps

Step-by-Step Process

How to implement the RiskMetric scoring system in your trading workflow

1 **Obtain Current Market Price**

Fetch the latest price from reliable sources in this priority order:

1. Cryptometer API (preferred)
2. TradingView
3. CoinGecko

2 **Retrieve RiskMetric Value**

Look up the corresponding risk value in the RiskMetric Google Sheet based on current price

https://docs.google.com/spreadsheets/d/1Z9h8bBP13cdcgkcwq32N5Pcx4wiue9iH69uJ0wm9MRY/

3 **Determine Risk Band & Base Score**

Identify which risk band the value falls into and assign the corresponding base score

4 **Calculate Coefficient**

Access historical time spent data and calculate the normalized coefficient

https://docs.google.com/spreadsheets/d/1fup2CUYxg7Tj3a2BvpoN3OcfGBoSe7EqHIxmp1RRjqg/

```
# Pseudocode for coefficient calculation
max_days = max(days_in_all_bands)
min_days = min(days_in_all_bands[days_in_all_bands > 0])

if days == max_days:
    coefficient = 1.0
elif days == min_days:
    coefficient = 1.6
else:
    coefficient = 1.0 + 0.6 * (max_days - days) / (max_days - min_days)
```

5 **Calculate Total Score & Determine Signal**

Multiply base score by coefficient and categorize the signal based on total score

Best Practices

Ensuring Optimal Results

Follow these best practices to maximize the effectiveness of the RiskMetric scoring system

Data Freshness Requirements

Always use the most current market prices and ensure RiskMetric data is up-to-date. Stale data can lead to inaccurate signals and missed opportunities.

Dynamic Coefficient Recalculation

Recalculate coefficients periodically (weekly recommended) as historical time spent data changes. Set up automated recalculation to ensure coefficients always reflect the latest historical patterns.

Testing and Validation

Thoroughly test the scoring system with historical data before using it for live trading. Validate results against known good outcomes and adjust parameters if necessary.

Versioning and Performance Tracking

Keep track of methodology versions and their performance. Compare results after one week and update to new versions only when improvements are significant.

Error Handling

Implement robust error handling for cases where data might be missing or API calls fail. Have fallback data sources ready to ensure continuous operation.

Integration with Total Trading Pair Score

RiskMetric as One Component of the Total Score

The RiskMetric score is combined with other data sources to create a comprehensive trading signal

Cryptometer API
Market indicators and technical analysis

+

RiskMetric
Risk assessment with historical context

+

KingFisher
Visual pattern recognition and analysis

=

Total Score
Comprehensive trading signal

Component Weighting

- Each component contributes equally to the total score
- Components are designed to complement each other
- RiskMetric provides unique historical context

Integration Benefits

- More robust trading signals
- Reduced false positives
- Multiple confirmation points for decisions

"The whole is greater than the sum of its parts"

Conclusion

Key Advantages of the RiskMetric Methodology

Historical Context Integration

The methodology uniquely combines current risk values with historical time spent analysis, providing deeper insight than simple point-in-time metrics.

Rarity-Based Signal Amplification

By giving more weight to rare market conditions through the coefficient calculation, the system highlights unusual trading opportunities that might otherwise be missed.

Symbol-Specific Calibration

Each cryptocurrency has its own unique coefficient distribution based on its historical patterns, ensuring signals are properly calibrated to each symbol's characteristics.

Quantitative Scoring with Qualitative Categories

The system provides both precise numerical scores and intuitive signal categories, making it accessible for both algorithmic trading and human decision-making.

Next Steps

- Implement the RiskMetric scoring system in your trading workflow
- Track performance and compare with previous methodologies
- Set up automated data collection and calculation
- Integrate with other components for total trading pair score