SQUARE X

SQUARE X

Multi Asset

Equities
Fixed Income
Forex
Commodities
Exchange Traded Products
Smart Beta & Style ETFs

EXITS

IDENTIFY ROTATIONS & GENERATE INCOME

IMPROVE PERFORMANCE & TIMING

VELOCITY

Modular

Indices
Sectors
Single Stocks
Regions, Thematic and Styles

and all relative weightings

SQUARE
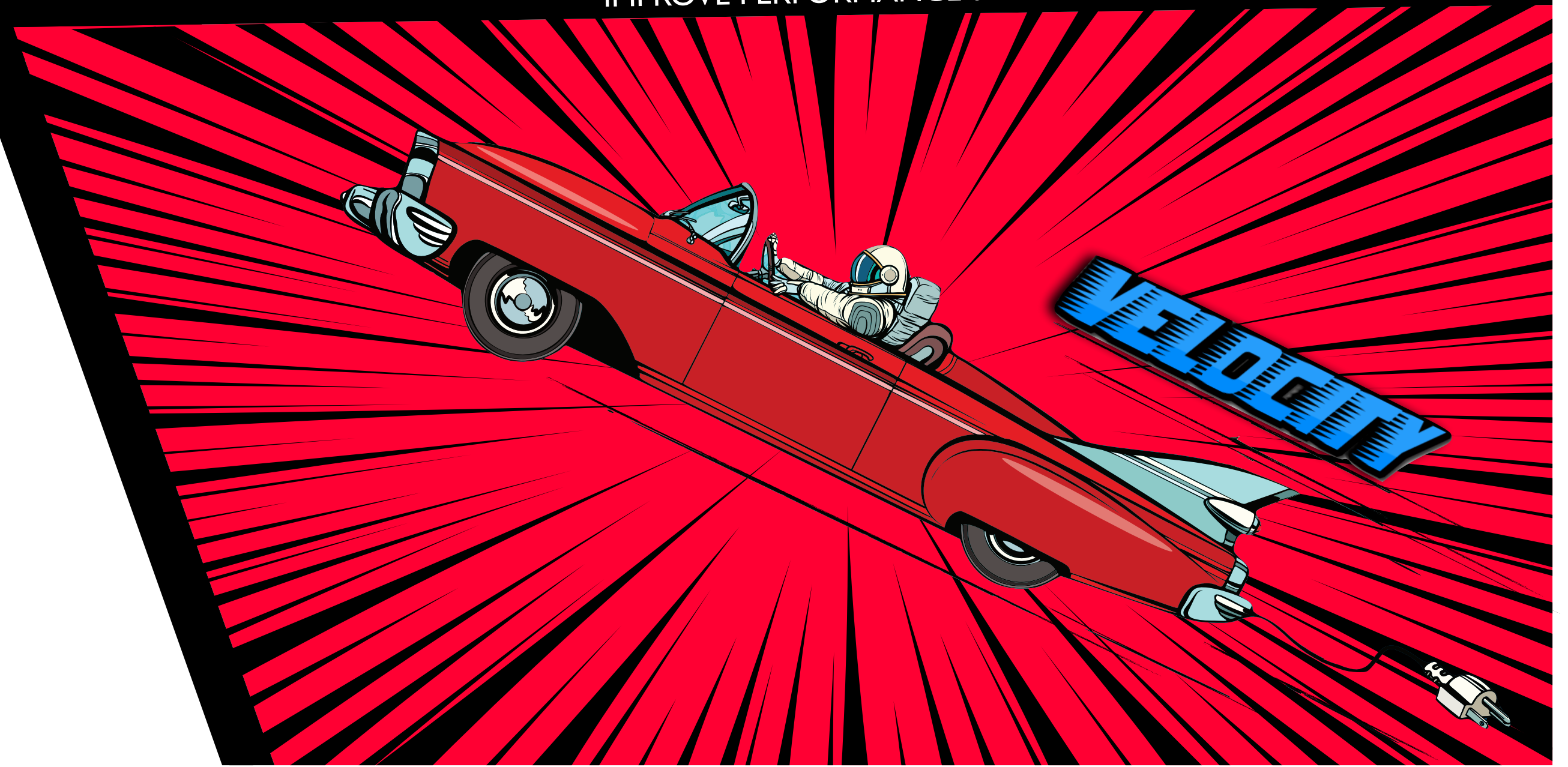
Improve Timing

Identifies speed and direction of Instruments, and opportunities for entries and exits
Velocity assigns risk appetite scores to instruments and identifies regime changes, (overweight / underweight)
Exits identifies moment of trend exhaustion: price action is not accompanied by accelerating / decelerating momentum

Identify Risk (EARLY WARNING SYSTEM)

Velocity - risk confidence-barometer assigns risk scores (between -6 & +6) to individual Instruments
Exits - identify reversal opportunities, allows for capital preservation, position management and rotation

Generate Ideas

Combine Velocity with Exits to distill a coherent view:
Velocity to identify changes in acceleration & direction of asset price-movements, and Exits to signal moment of trend exhaustion

Generate Income

Write call options when Exit Downs occur, write put options when Exit Ups occur & collect premium 85% of the time

Portfolio Monitoring & Benchmark Analysis

Bespoke portfolio creation and daily risk monitoring, benchmark analysis & portfolio performance optimisation

Global Multi Asset Analysis

16,000 instruments across Equities, Fixed Income, Commodities, FX
Regions - Global, US, Europe, Emerging Markets, Asia (ex-Japan), Japan, China
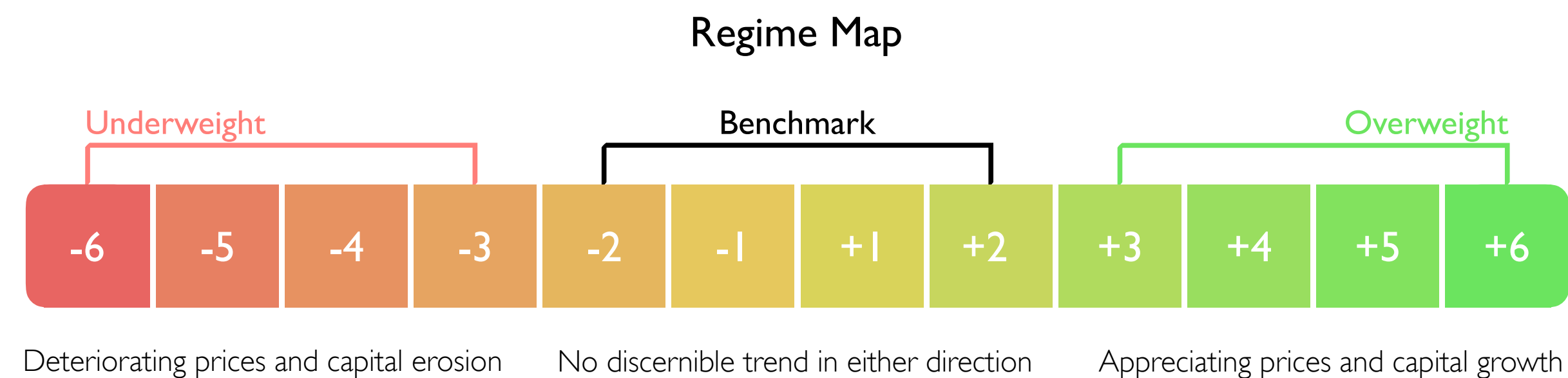Styles and Smart Beta - Min Vol, Value, Growth, Momentum, Quality, ESG and Smart Beta ETF styles
Thematic - Sector and Thematic Analysis per bespoke basket or theme or sector.

Definition

- Velocity is a low frequency risk appetite index (-6 to +6)

- Velocity is slow moving, not binary, and has an average duration of 10-12 periods (on daily & weekly investment time horizons)

- Velocity index has 3 states:

  Score of **+6 to +3** = index overweight
  Score of **+2 to -2** = index benchmark
  Score of **-3 to -6** = index underweight

- HFreq score represents the short term "**speed**" of velocity score

Uses

1. It monitors the speed, direction and acceleration of instruments

2. Scores used to screen and optimise:

   Portfolio construction
   Market timing
   Duration of holding period

3. It helps Active Managers improve decision making by avoiding the pitfalls of momentum-based analysis

Regime Map

Underweight				Benchmark				Overweight			
-6	-5	-4	-3	-2	-1	+1	+2	+3	+4	+5	+6

Deteriorating prices and capital erosion   No discernible trend in either direction   Appreciating prices and capital growth

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S&P 500 Materials Sector

Absolute Performance of Sector re-based to 100

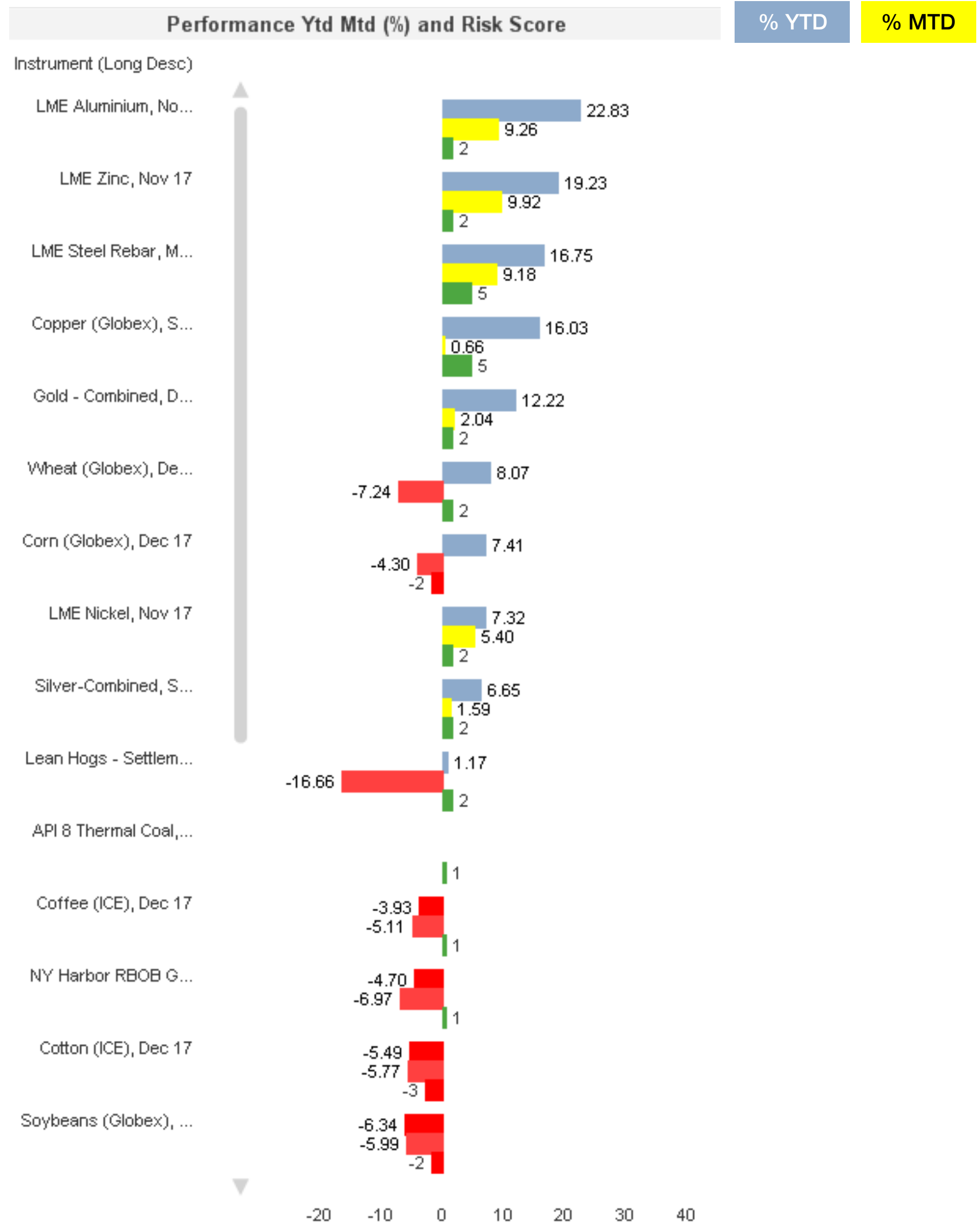|	
■ Overweight	(+6, +5, +4, +3)
■ Benchmark	(+2, +1, -1, -2)
■ Underweight	(-3, -4, -5, -6)

Year

Visualising **snakes** & **ladders** is helpful to grasp how velocity can systematically add value over time

Ladders: Green Arrow - go overweight (+3 to +6) to accelerate performance vs benchmark
Snakes: Red Arrow - avoid or move underweight (-3 to -6) to minimise losses vs benchmark

Above shows how Velocity generates significant sector outperformance, relative to the absolute performance of the Index :
by being **overweight** when Velocity is +3, +4, +5, +6, and being **underweight** *(or avoid)* where the Velocity score is -3, -4, -5, -6.

Performance Ytd Mtd (%) and Risk Score

% YTD   % MTD

Instrument (Long Desc)

Instrument	% YTD	% MTD	Risk
LME Aluminium, No...	22.83	9.26	2
LME Zinc, Nov 17	19.23	9.92	2
LME Steel Rebar, M...	16.75	9.18	5
Copper (Globex), S...	16.03	0.66	5
Gold - Combined, D...	12.22	2.04	2
Wheat (Globex), De...	8.07	-7.24	2
Corn (Globex), Dec 17	7.41	-4.30	-2
LME Nickel, Nov 17	7.32	5.40	2
Silver-Combined, S...	6.65	1.59	2
Lean Hogs - Settlem...	1.17	-16.66	2
API 8 Thermal Coal,...			1
Coffee (ICE), Dec 17	-3.93	-5.11	1
NY Harbor RBOB G...	-4.70	-6.97	1
Cotton (ICE), Dec 17	-5.49	-5.77	-3
Soybeans (Globex), ...	-6.34	-5.99	-2

-20 -10 0 10 20 30 40

Active Portfolio Management Solution

Key Features

Velocity analysis drives systematic benchmark outperformance
Complementary to fundamental stock selection process
Complementary to portfolio construction techniques

Other features

- Identifies pending (overweight, underweight) changes in Regime Map
- Can be applied to any benchmark
- Ability to analyse all component stocks within ETFs

The SQUARE X Service

1. SQUARE X analysis on all component single stocks within your Benchmark
2. Overlay velocity scores, and weightings, to rank single stocks by Regime Map
3. Online access to System to monitor all stocks within your Benchmark
4. Weekly Benchmark-specific reports delivered by Mobile App
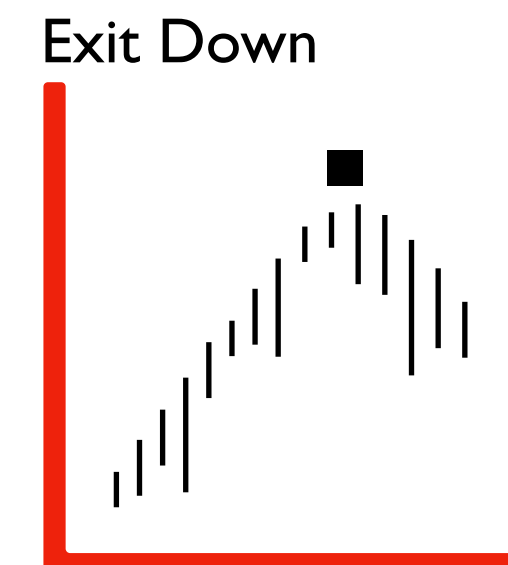5. Bespoke analysis & backtest available
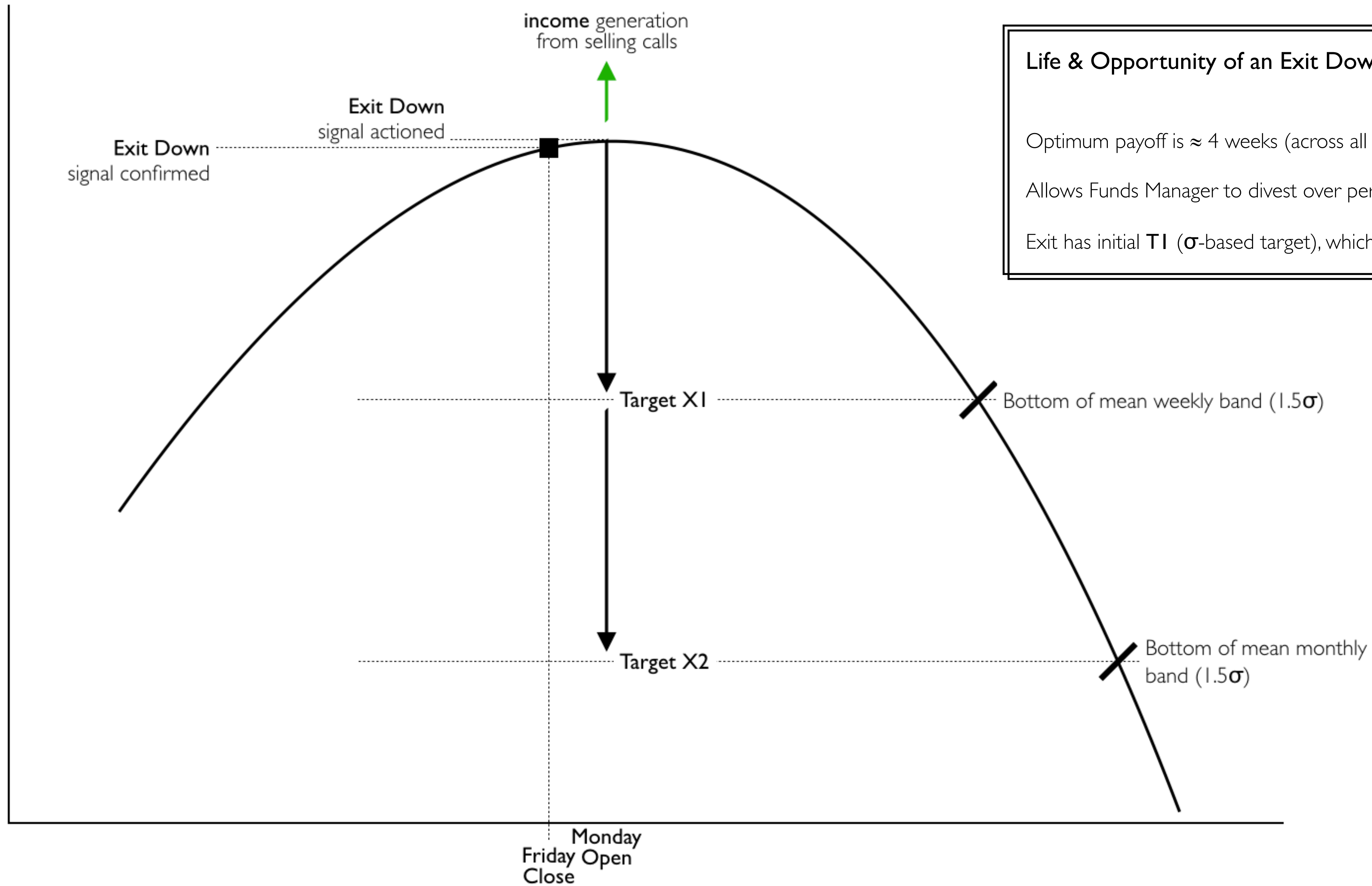
EXITS

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Definition

- Low frequency (weekly timeframe) contrarian signal

- Signals existing-trend exhaustion / mean reversion / cyclical turn

- There are two types of divergence (also known as Exits)

  Exit **Up** - exit shorts / underweight

  Exit **Down** - exit longs / overweight

- Whilst we don't have a defined metric for closing out, we look for a 3-5% move in the instrument
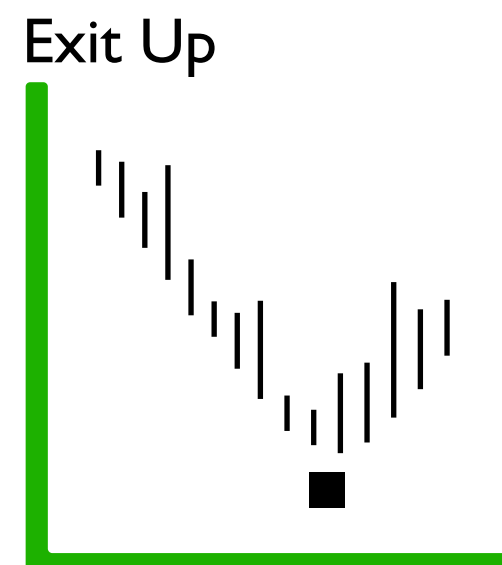
Uses

1. Immediately actionable signal, with high hit rates (88%), with two ways to capture value: Exit Up, Exit Down

2. The optimum duration of an Exit signal is ≈ 4 weeks

3. Exits improve alpha "capture" and return user to **benchmark** from Overweight (Exit Down), or Underweight (Exit Up)

4. Can be used to consider Protective Option Strategies, or contrarian entries

5. Signals actionable on Monday, **only if** weekly signal confirmed Friday close

Exit Up

Exit Down

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income generation
from selling calls

Exit Down
signal confirmed

Exit Down
signal actioned

Target X1 ---- Bottom of mean weekly band (1.5σ)

Target X2 ---- Bottom of mean monthly band (1.5σ)

Monday
Friday Open
Close

Life & Opportunity of an Exit Down

Optimum payoff is ≈ 4 weeks (across all assets)

Allows Funds Manager to divest over period, whilst rotating into alternatives

Exit has initial **T1** (σ-based target), which can open a 2nd **T2** target (Cyclical Turn)

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E-Mini NASDAQ - 29/01/18
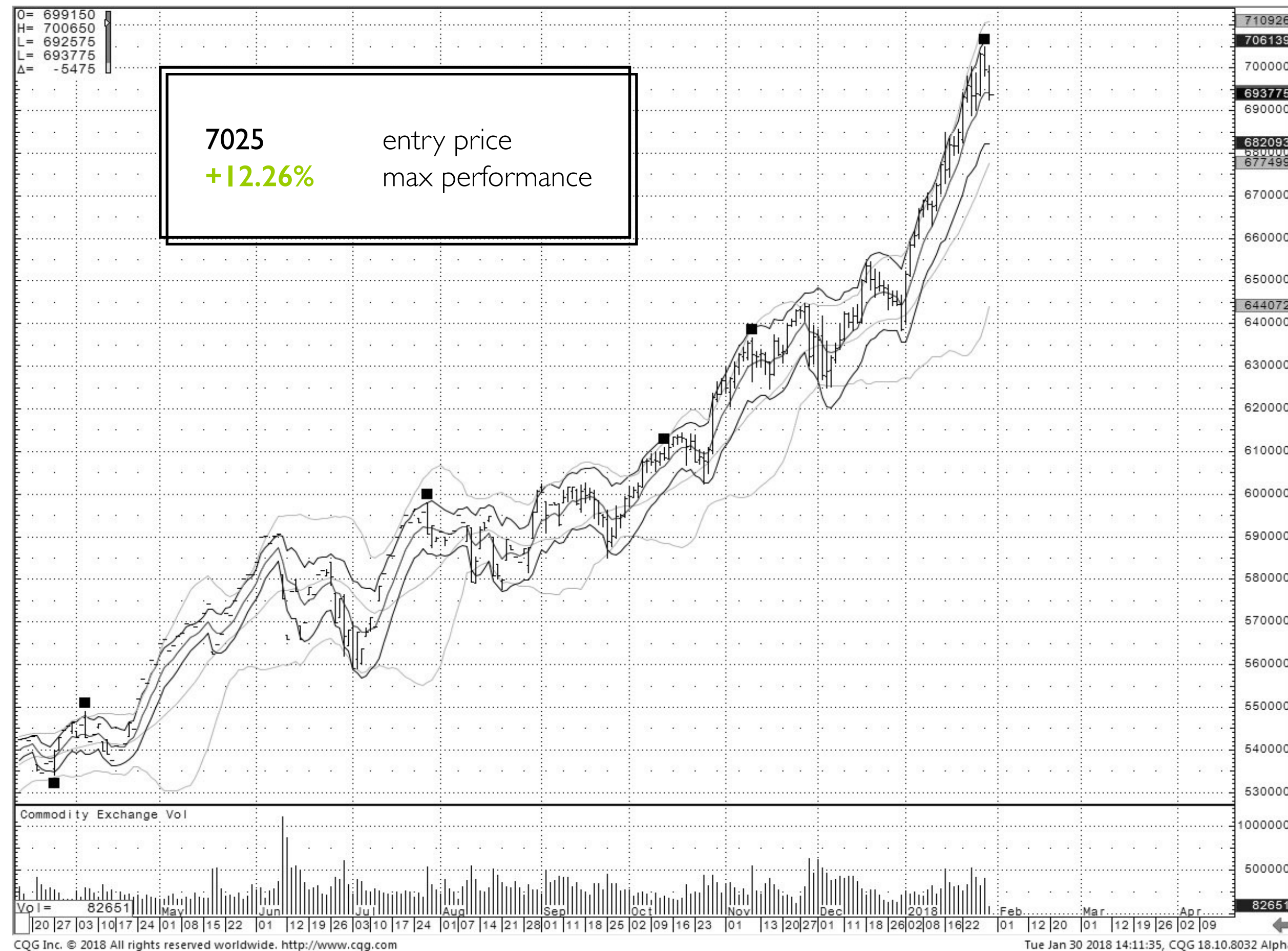
7025   entry price
+12.26%   max performance

Life & Opportunity of an Exit Down

Optimum payoff is ≈ 4 weeks (across all assets)
Allows Funds Manager to divest over period, whilst rotating into alternatives
Exit has initial **T1** (σ-based target), which can open a 2nd **T2** target (Cyclical Turn)

Performance Figures

5.27%   average maximum opportunity captured
          (inclusive of stopped out & losing Exits)

671   total number of signals to date
88.12%   hit rate

+8.25%   performance since 01/01/18
+3.12%   performance from 06/07/17 to 29/12/17

Increased volatility generates improved performance

PnL available to download from www.sqxtech.co.uk
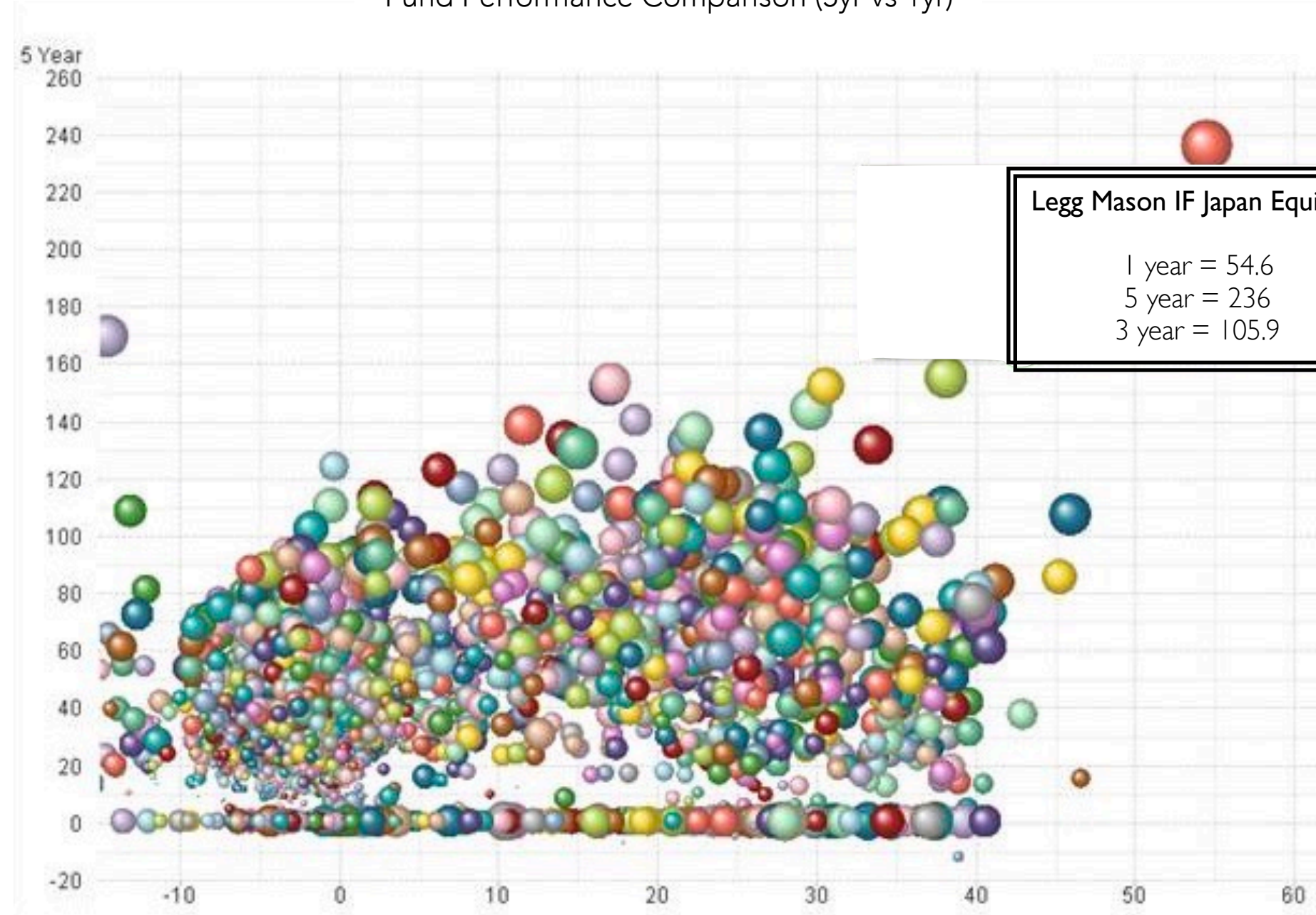
Definition

- Manager screening tool, to aid the fund selection process

- Align investment recommendations with investment objectives & horizons

- Match I.A. sector classifications with velocity regime map, as Armada manager screening tool uses both **Exits** & **Velocity** algorithms

- Directly addresses 4 of the 6 step client advisory process, and is in direct response to changes in regulatory framework (**RDR**, **MiFiD**)

- Maintain an audit trail for suitability, for client's investment recommendations

- Screen funds by   Asset Class
                       Global Regions
                       Velocity Regime Map *(overweight, benchmark, underweight)*
                       Exit Signals *(exit up, exit down)*
                       I.A. Industry Classifications
                       Fund Manager
                       Time series
                       Performance *(1yr, 3yr, 5yr & Sharpe ratio)*
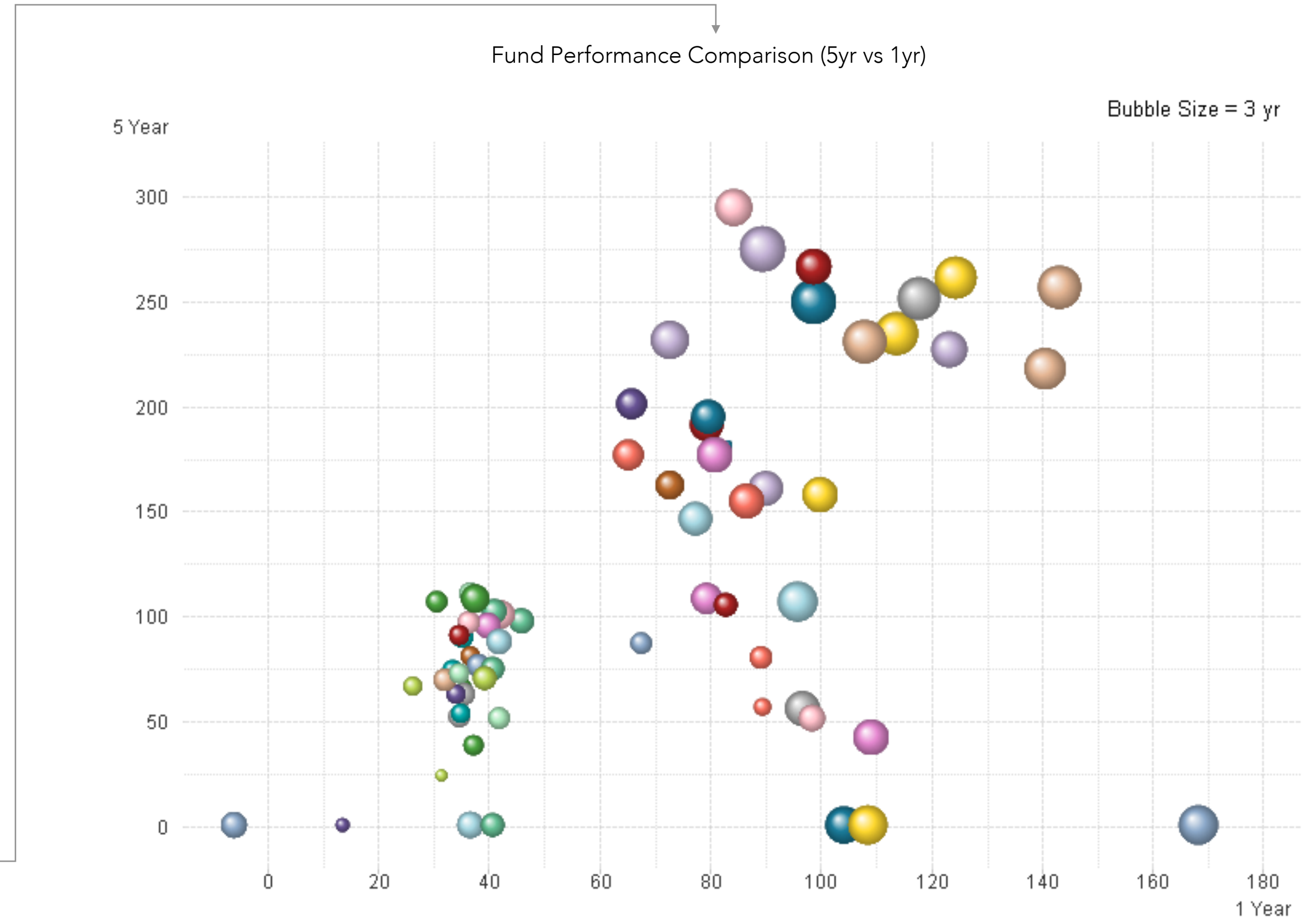
*Armada is designed for Wealth Managers, Pension Funds, IRA's & IFA's*

Fund Performance Comparison (5yr vs 1yr)

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01 - 01 - 17

Exit Down : Japan (Small Cap) ETF

30 - 09 - 16

Fund Performance Comparison (5yr vs 1yr)

Legg Mason IF Japan Equity A

1 year = 54.6
5 year = 236
3 year = 105.9

13 - 07 - 17

Fund Performance Comparison (5yr vs 1yr)

Legg Mason IF Japan Equity X

1 year = -5.5
5 year = 283
3 year = 123

Legg Mason IF Japan Equity A
An outlier in the market, with strong 1 & 5 year performance
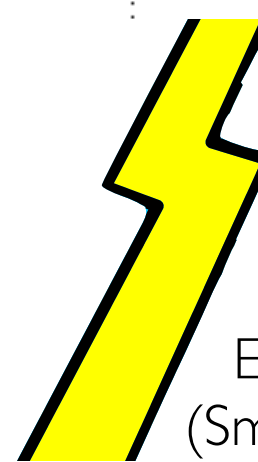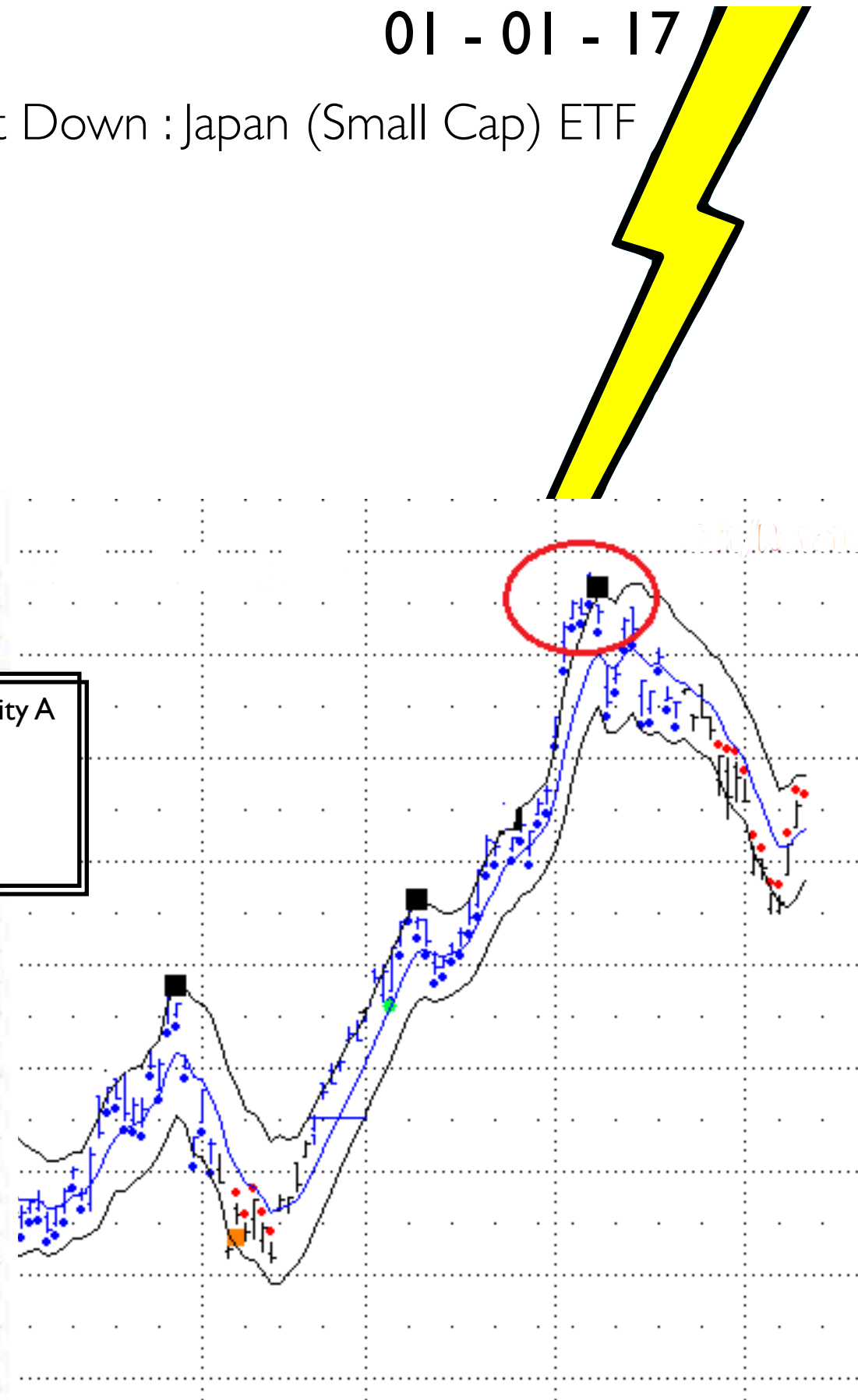
Exit Down in Japan
(Small Cap) ETF
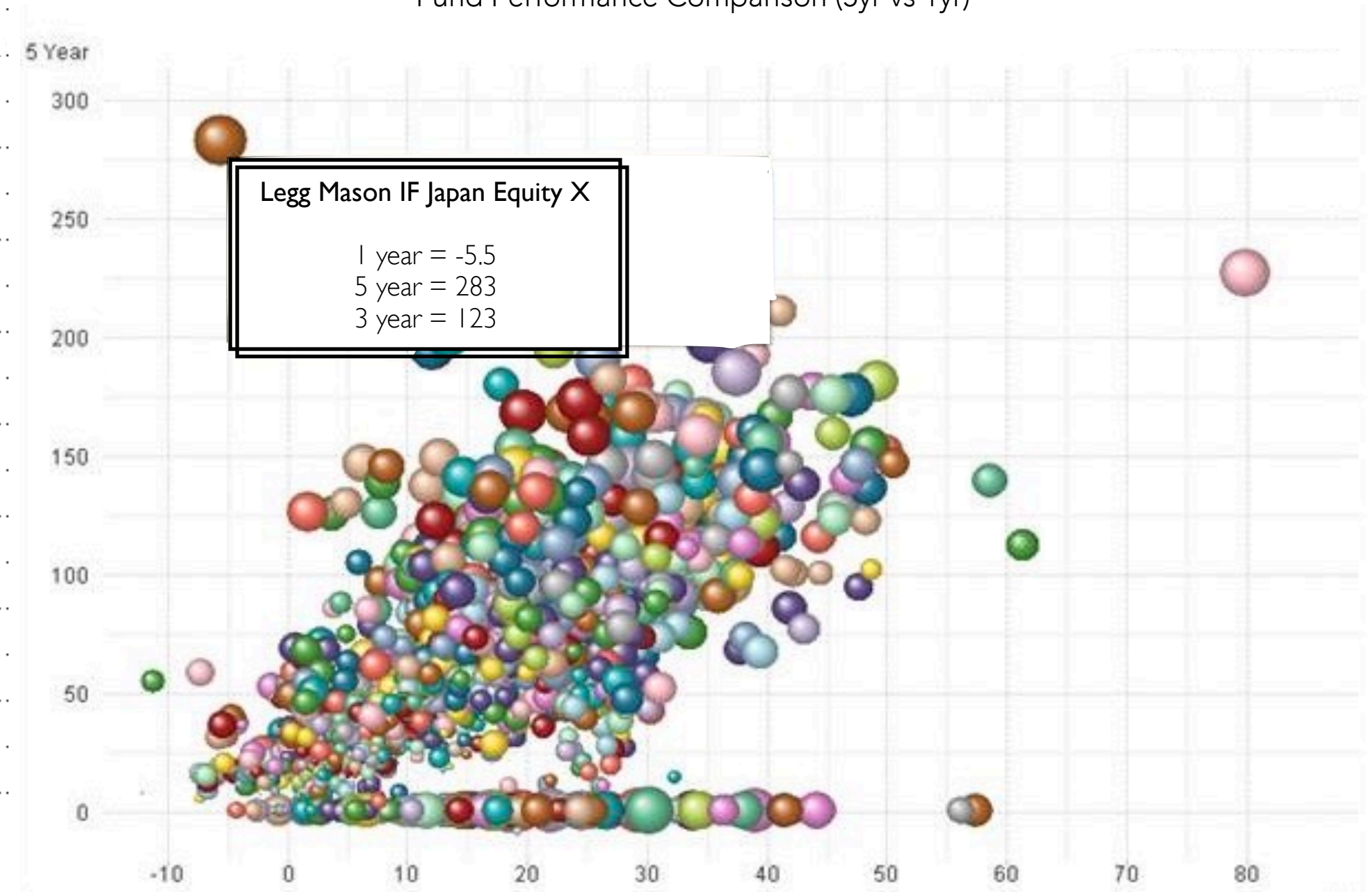
Legg Mason IF Japan Equity X
1 year performance dropped from 54.6 to -5.5 in 7 months

Fixed Income Highlights 17 April 18
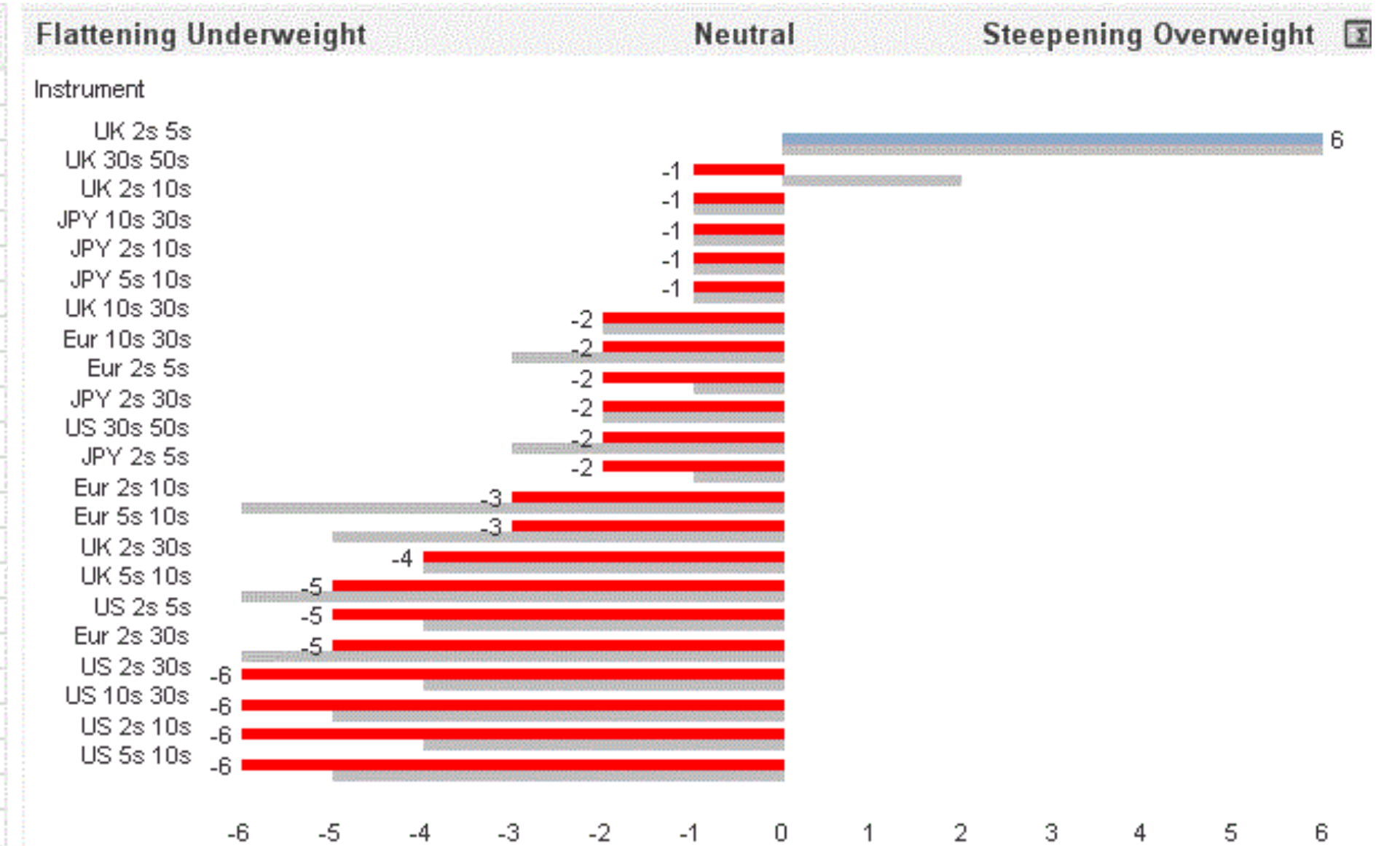
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Government Curve Segments

Asset Class (Overview)

- Fixed Interest (Govt Curve Segments)
- Commodities
- Equity Indices
- Fixed Interest (Benchmark Yields Periphery)
- Fixed Interest (Benchmark Yields Core)
- Fixed Interest (Futures)
- Fixed Interest (Govt Bond Yields)
- Fixed Interest (Govt Yield Spreads)
- Fixed Interest (STIRS)
- Fixed interest (Swap Outright)
- Fixed Interest (Swap Spreads)
- Forex

Asset Class (Sector 1)

- All 2's 5's
- All 2's 10's
- All 2's 30's
- All 5's 10's
- All 10's 30's
- All 30's 50's
- All 5s (Core)
- All 5s (Periphery)
- All 10s (Core)
- All 10s (Periphery)
- All 30s (Core)
- All 30s (Periphery)
- All Yield Spreads
- Generic Govt Yield (Eur)
- Generic Govt Yield (Jpy)

Instrument	LAST	Risk Score (last Fri)	Risk Score (Curr)	Dir	My Portfolio (-1Wk)	My Portfolio Weigh (Curr)
Eur 2s 5s	0.00	-1	-2	↓	Neutral	Neutral
Eur 2s 10s	112.40	-6	-3	↑	Flattening	Flattening
Eur 2s 30s	179.40	-6	-5	↑	Flattening	Flattening
Eur 5s 10s	60.60	-5	-3	↑	Flattening	Flattening
Eur 10s 30s	67.00	-3	-2	↑	Flattening	Neutral
JPY 2s 5s	4.80	-1	-2	↓	Neutral	Neutral
JPY 2s 10s	18.80	-1	-1	←	Neutral	Neutral
JPY 2s 30s	85.70	-2	-2	←	Neutral	Neutral
JPY 5s 10s	14.00	-1	-1	←	Neutral	Neutral
JPY 10s 30s	66.90	-1	-1	←	Neutral	Neutral
UK 2s 5s	38.90	6	6	←	Steepening	Steepening
UK 2s 10s	64.80	-1	-1	←	Neutral	Neutral
UK 2s 30s	101.40	-4	-4	←	Flattening	Flattening
UK 5s 10s	25.90	-6	-5	↑	Flattening	Flattening
UK 10s 30s	36.60	-2	-2	←	Neutral	Neutral
UK 30s 50s	-17.30	2	-1	↓	Neutral	Neutral
US 2s 5s	31.70	-4	-5	↓	Flattening	Flattening
US 2s 10s	47.10	-4	-6	↓	Flattening	Flattening
US 2s 30s	67.80	-4	-6	↓	Flattening	Flattening
US 5s 10s	0.00	-5	-6	↓	Flattening	Flattening
US 10s 30s	20.70	-5	-6	↓	Flattening	Flattening
US 30s 50s	20.70	-3	-2	↑	Flattening	Neutral

Flattening Underweight ... Neutral ... Steepening Overweight

Instrument

- UK 2s 5s — 6
- UK 30s 50s
- UK 2s 10s — -1
- JPY 10s 30s — -1
- JPY 2s 10s — -1
- JPY 5s 10s — -1
- UK 10s 30s — -1
- Eur 10s 30s — -2
- Eur 2s 5s — -2
- JPY 2s 30s — -2
- US 30s 50s — -2
- JPY 2s 5s — -2
- Eur 2s 10s — -3
- Eur 5s 10s — -3
- UK 2s 30s — -4
- UK 5s 10s — -5
- US 2s 5s — -5
- Eur 2s 30s — -5
- US 2s 30s — -6
- US 10s 30s — -6
- US 2s 10s — -6
- US 5s 10s — -6

-6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6
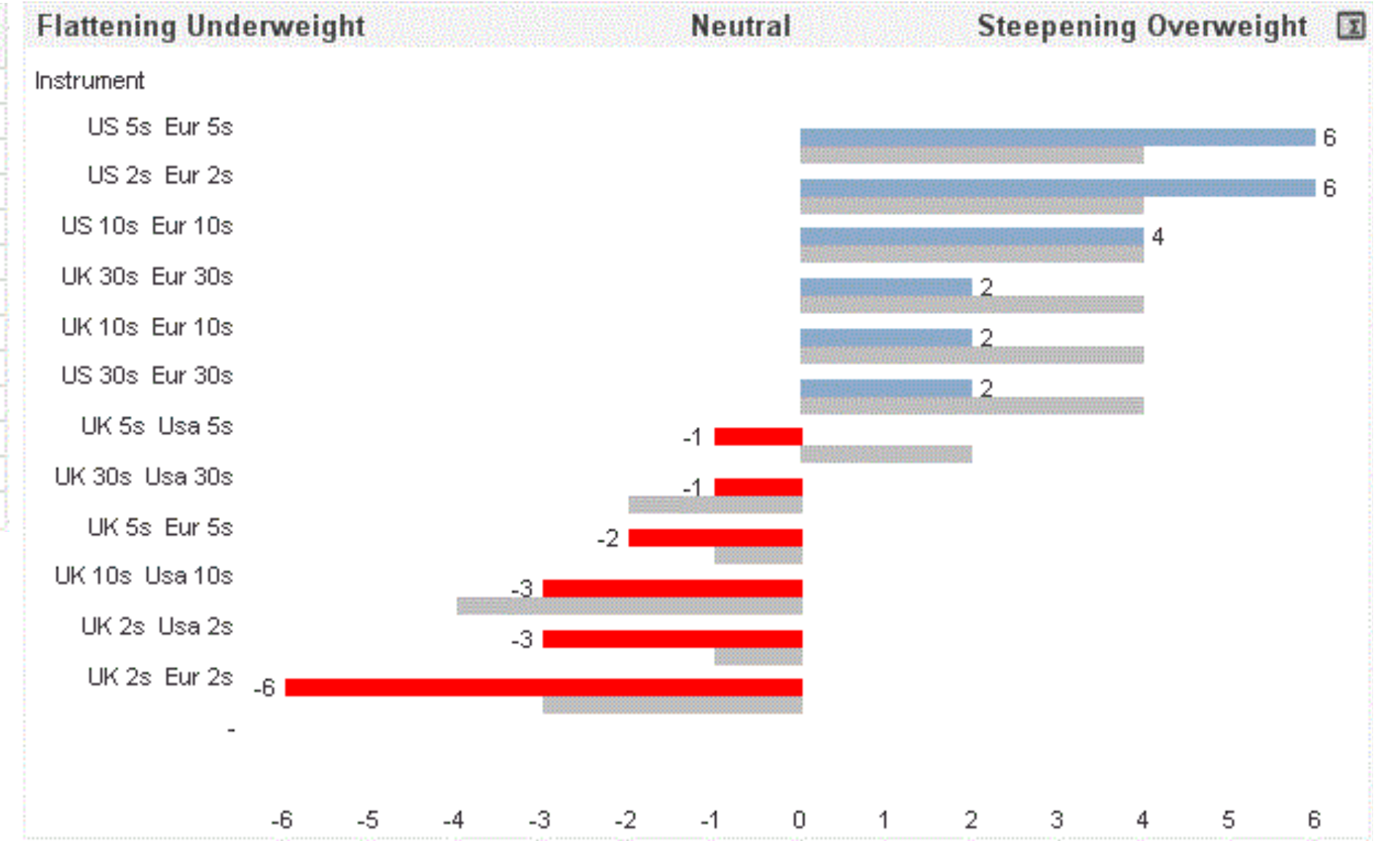
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VELOCITY

Government Yield Spreads

Asset Class (Overview)

- Fixed Interest (Govt Yield Spreads)
- Commodities
- Equity Indices
- Fixed Interest (Benchmark Yields Periphery)
- Fixed Interest (Benchmark Yields Core)
- Fixed Interest (Futures)
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- Fixed Interest (Govt Curve Segments)
- Fixed Interest (STIRS)
- Fixed interest (Swap Outright)
- Fixed Interest (Swap Spreads)
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Asset Class (Sector 1)

- All Yield Spreads
- All 2's 5's
- All 2's 10's
- All 2's 30's
- All 5's 10's
- All 5s (Core)
- All 5s (Periphery)
- All 10's 30's
- All 10s (Core)
- All 10s (Periphery)
- All 30's 50's
- All 30s (Core)
- All 30s (Periphery)
- Generic Govt Yield (Eur)
- Generic Govt Yield (Jpy)

Instrument	LAST	Risk Score (last Fri)	Risk Score (Curr)	Dir	My Portfolio (-1Wk)	My Portfolio Weigh (Curr)
UK 2s Eur 2s	140.20	-3	-6	↓	Widening	Widening
UK 2s Usa 2s	-156.10	-1	-3	↓	Benchmark	Widening
UK 5s Eur 5s	127.30	-1	-2	↓	Benchmark	Benchmark
UK 5s Usa 5s	-148.90	2	-1	↓	Benchmark	Benchmark
UK 10s Eur 10s	92.60	4	2	↓	Narrowing	Benchmark
UK 10s Usa 10s	-138.40	-4	-3	↑	Widening	Widening
UK 30s Eur 30s	62.20	4	2	↓	Narrowing	Benchmark
UK 30s Usa 30s	-122.50	-2	-1	↑	Benchmark	Benchmark
US 2s Eur 2s	296.30	4	6	↑	Narrowing	Narrowing
US 5s Eur 5s	276.20	4	6	↑	Narrowing	Narrowing
US 10s Eur 10s	231.00	4	4	←	Narrowing	Narrowing
US 30s Eur 30s	184.70	4	2	↓	Narrowing	Benchmark
-	-	-	-	←	-	-

Flattening Underweight — Neutral — Steepening Overweight

Instrument	Value
US 5s Eur 5s	6
US 2s Eur 2s	6
US 10s Eur 10s	4
UK 30s Eur 30s	2
UK 10s Eur 10s	2
US 30s Eur 30s	2
UK 5s Usa 5s	-1
UK 30s Usa 30s	-1
UK 5s Eur 5s	-2
UK 10s Usa 10s	-3
UK 2s Usa 2s	-3
UK 2s Eur 2s	-6
-	

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S&P 500 Banks Sector

Z Score Analysis

Instrument (Short Desc)	
Comerica Inc	1.34 / 1.76
People's United Fina...	0.84 / 0.03
Fifth Third Bancorp	0.84 / 0.03
Regions Financial Corp	0.84 / 0.03
SunTrust Banks Inc	0.84 / 0.03
M&T Bank Corp	0.84 / 1.76
BB&T Corp	0.84 / 0.03
Zions Bancorporation	0.84 / 0.46
JPMorgan Chase & Co	0.84 / 1.33
Huntington Bancshar...	-0.64 / 0.03
PNC Financial Servic...	-0.64 / 0.03
KeyCorp	-1.13 / -1.71
Citizens Financial Gr...	-1.13 / -1.28
US Bancorp	-1.13 / -0.41
Wells Fargo & Co	-1.13 / -1.71
Citigroup Inc	-1.13 / -0.41
Bank of America Corp	-1.13 / 0.03

Velocity Risk Scores (Curr and -1Wk)

Instrument (Short Desc)	
Comerica Inc	2 / 2
People's United Financi...	1 / -2
Fifth Third Bancorp	1 / -2
Regions Financial Corp	1 / -2
SunTrust Banks Inc	1 / -2
M&T Bank Corp	1 / 2
BB&T Corp	1 / -2
Zions Bancorporation	1 / -1
JPMorgan Chase & Co	1 / 1
Huntington Bancshares ...	-2 / -2
PNC Financial Services ...	-2 / -2
KeyCorp	-3 / -6
Citizens Financial Grou...	-3 / -5
US Bancorp	-3 / -3
Wells Fargo & Co	-3 / -6
Citigroup Inc	-3 / -3
Bank of America Corp	-3 / -2

SQUARE X

Bloomberg Professional Services
application for terminal

- Square X is developing an application that seamlessly integrates with Bloomberg Terminal Data, Bloomberg Analytics and Bloomberg Functionalities

- It allows Square X to do the following:

  - central point of distribution to global professionals
  - co-mingle propriety **Velocity** & **Exits** content with Bloomberg data
  - upload and update client portfolios seamlessly
  - integrate Bloomberg functions and host Product Specialist chatrooms
  - automate backend to create live, searchable database of instruments

+Bloomberg Technology

Contact Us

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