QMIT

QuantZ Machine Intelligence Technologies

QMIT Equity Market Neutral Index

Index Methodology

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Index Objective

The QMIT Equity Market Neutral Index (the "Index") aims to track the investment signals from QuantZ Machine Intelligence Technologies' ("QMIT") proprietary systematic multi-factor equity market-neutral investment signal model (the "QMIT Model"). QMIT Model's flagship composite investment signals are derived from multi-factor models based on the 18 Enhanced Smart Beta ("ESBs") signals, which are optimized using machine learning ensemble methods.

The Index is owned and managed by QMIT, an expert in the application of machine learning and artificial intelligence technology in systematic multi-factor equity strategies. The Index is calculated and maintained by VettaFi LLC (the "Calculation Agent"), a leader in the indexing solutions.

Index Identifiers and Publication

The Index is calculated and maintained by the Calculation Agent as an Excess Return Index and as a Total Return Index. The respective Index identifiers and core dates are represented in the table below:

Index	BBG Ticker	Currency	Base Date	Base Value
QMIT Equity Market Neutral Excess Return Index	QUMNE	USD	12/31/2018	1,000.00
QMIT Equity Market Neutral Total Return Index	QUMNT	USD	12/31/2018	1,000.00

The initial level of the Index on the 12/31/2018, the Base Date, is 1,000.00. Historical Levels of the Index published by the Calculation Agent for a period prior to the 01/01/2024, the Live Date, have been back-tested.

Index levels are calculated based on Closing Prices as reported by the Eligible Exchanges. The Index is published daily on the website of the Calculation Agent https://www.vettafi.com/indexing/index/qumn. Any publication in relation to the Index (e.g. factsheets, notices, amendments to the methodology) will be available on the website of the Calculation Agent.

Index Universe

The determination of the Index universe (the "Index Universe") is fully rule-based and the Calculation Agent cannot make any discretionary decisions.

On each Rebalance Date, all Eligible Security Types trading on the Eligible Exchanges are ranked in descending order by their Total Market Capitalization calculated as of the Reference

Date. The first 4,000 names in the ranking are then put through the Index Universe Eligibility Criteria filters, removing the companies that are not compliant with at least one of the criteria. The remaining selection of companies will constitute the Index Universe and will be put through the QMIT Model on the respective Rebalance Date.

Eligible Security Types

Included equity securities and organizational structures:

- U.S.-domiciled and listed common shares with primary exchange on one of the Eligible Exchanges.
- American Depository Receipts ("ADRs") listed and traded on at least one of the Eligible Exchanges.
- Dual-listed Canadian-domiciled common shares that are listed on at least one of the Eligible Exchanges.

Excluded equity securities and organizational structures:

- Share classes that are not common shares.
- Exchange-traded funds ("ETFs").
- Mutual funds.
- Closed-end investment companies.
- Pooled investment vehicles.

All issuers of the eligible securities must adhere to U.S. Generally Accepted Accounting Principles (GAAP) reporting standards.

Eligible Exchanges

All eligible securities must be listed on at least one of the following eligible exchanges:

- NYSE.
- NASDAQ.
- PHLX.

Index Universe Eligibility Criteria

Sector Exclusions

Issuers classified under the Biotechnology, Biopharmaceuticals, Biomedical, and REITs sectors under FactSet's Revere Business Industry Classification System (RBICS) are excluded from the Index Universe.

Minimum Total Market Capitalization Requirement

All eligible securities must have a minimum Total Market Capitalization of USD 250 million, calculated using the closing price as of the Reference Date, before any adjustments for stock splits.

Minimum Closing Price Threshold Requirement

All eligible securities must have a closing price at or above USD 3.00 on the exchange that is an Eligible Exchange as of the Reference Date, before any adjustments for stock splits.

Minimum Liquidity Requirement

All eligible securities must have a minimum average daily trading volume ("ADTV") of USD 1.5 million over a trailing 22 Exchange Trading Days as of the Reference Date. ADTV is measured as the sum of average daily trading volumes traded on the respective Eligible Exchange(s).

Every security eligible for inclusion in the Index must have a trading history of at least 251 Exchange Trading Days as of the Reference Date on any of the Eligible Exchange(s).

Maximum Borrowing Cost requirement for the Short Portfolio Inclusion

Only equity securities with a borrowing cost not exceeding Overnight Bank Funding Rate ("OBFR") + 30 basis points (the "Borrowing Cost") would be eligible for the inclusion in the Short Portfolio. The Borrowing Cost for each security is the respective cost to borrow any respective stock sourced from the short interest data provider as of the Rebalance Date. This requirement is applied as the final step in the construction of the Short Portfolio.

The Borrowing Cost requirement does not apply to the Long Portfolio. Securities that do not meet the Maximum Borrowing Cost requirement are eligible for inclusion in the Long Portfolio by the QMIT Model if the rest of the Index Universe Eligibility Criteria are met.

Index Construction

Constituent Selection

On each Reconstitution Date, the Index and the respective Long Portfolio and Short Portfolio constituents are determined in accordance with the following steps:

1) Index Universe determination:

   a. All equity securities that meet the criteria for the Security Type and Exchange Eligibility are ranked in descending order by their Total Market Capitalization

captured as of the Reference Date. The top 4,000 highest ranked names are selected.

b. The Index Universe Eligibility Criteria are then applied to these 4,000 names to determine the final set of constituents in the Index Universe.

2) QMIT then uses the QMIT Model to generate the composite relative scores of all equity securities in the Index Universe. The Index Universe constituents are ranked in descending order based on their composite relative score with 100% corresponding to the highest composite score in the Index Universe.

3) The optimization process selects 75 highest ranking constituents for the Long Portfolio and 75 lowest ranking constituents for the Short Portfolio with their Target Share Weights optimized to be compliant with the single stock, sector and industry constraints on the Selection Date, as well as to ensure market-neutrality of the Index.

4) The selection of the Long and the Short Portfolio and by extension of the Index, is fully rules-based and the Calculation Agent and QMIT cannot make any discretionary decisions on the constituents of the Index.

Constituent Weightings

QMIT's Model signals are used to generate the Weekly Target Weights of the constituent securities of the Index on each Rebalance Date. The Weekly Target Weights are calculated using market data as of the Weight Date and calibrated by the QMIT Model to ensure dollar- and beta- neutrality of the Index, while controlling for the net sector, industry and single stock exposure (the "Weekly Target Weights").

The Weekly Target Weights of any single position in Long or Short Portfolios as at the Rebalance Date will not exceed 1.50%. The aggregate net sector and industry weight in the Index at the Rebalance Date will not exceed 2.50%.

Index Calculation

The Index is designed to capture both upward and downward return potential in selected securities and is comprised of two components: the Long Portfolio and the Short Portfolio. The Long Portfolio at any point in time includes securities selected by the QMIT Model with the strongest price appreciation potential as of the most recent Rebalance Date, while the

Short Portfolio includes securities selected by the QMIT Model with the strongest price depreciation potential as of the most recent Rebalance Date.

The Long and Short Portfolios are calculated in USD and maintained following the Calculation Agent's Index Maintenance Policy.

The Long and the Short Portfolios are calculated on the Gross Total Return basis. Gross Total Return performance accounts for the index constituents' share price changes as well as for respective dividend return. Dividends or other distributions for the Long and the Short Portfolios constituents are reinvested on a proportional basis across the entire respective Long and Short Portfolio constituents using closing prices on the ex-dividend date without consideration for withholding taxes.

The prices of the respective Long and Short Portfolios are calculated on any calculation date that is an Exchange Trading Day, according to the following formulas:

$$LP_t = \left(\frac{\sum_{i=1}^{nP} p_{it} * q_{iRL}}{DL_t} \right)$$

LP_t – Long Portfolio closing level on calculation date t.

p_{it} – Closing price of Long Portfolio constituent i as of calculation date t.

q_{iRL} – Number of shares of Long Portfolio constituent i as of the Rebalance Date R immediately preceding calculation date t.

nP – Number of constituents in the Long Portfolio.

DL_t – Divisor of the Long Portfolio on calculation date t which sets a level of 1000.00 on 12/31/2018.

$$SP_t = \left(\frac{\sum_{i=1}^{nS} p_{it} * q_{iRS}}{DS_t} \right)$$

SP_t – Short Portfolio closing level on calculation date t.

p_{it} – Closing price of Short Portfolio constituent i as of calculation date t.

q_{iRS} – Number of shares of Short Portfolio constituent i as of the Rebalance Date R immediately preceding calculation date t.

nS – Number of constituents in the Short Portfolio.

DS_t – Divisor of the Short Portfolio on calculation date t which sets a level of 1000.00 on 12/31/2018.

The Index is calculated and maintained by the Calculation Agent in two forms: an **Excess Return Index** and a **Total Return Index**.

QMIT Equity Market Neutral Excess Return Index (QUMNE) represents the return generated by the Long and the Short Portfolios and does not include any income from the collateral on the short leg of the strategy.

$$ET_t = ET_{t-1} + TDI_t$$

ET_t – Excess Return Index level on calculation date t.

TDI_t – Total Daily Increment of the Index on calculation date t.

$$TDI_t = [(LP_t - LP_{t-1}) * LongUnits_R] + [(SP_t - SP_{t-1}) * ShortUnits_R]$$

$LongUnits_R$ represents the notional weight of the Long Portfolio in the Index, calculated using closing prices as of the most recent Rebalance Date before calculation date t, according to the formula below:

$$LongUnits_R = \frac{100\% * ER_R}{LP_R}$$

ER_R – Excess Return Index closing level as of the Rebalance Date immediately preceding calculation date t.

LP_R – Long Portfolio closing level as of the Rebalance Date immediately preceding calculation date t.

$ShortUnits_R$ represents the notional weight of the Short Portfolio in the Index, calculated using closing prices as of the most recent Rebalance Date before calculation date t, according to the formula below:

$$ShortUnits_R = \frac{-100\% * ER_R}{SP_R}$$

ER_R – Excess Return Index closing level as of the Rebalance Date immediately preceding calculation date t.

SP_R – Short Portfolio closing level as of the Rebalance Date immediately preceding calculation date t.

Total Return Index represents the return generated by the Long and the Short Portfolios, including the income generated from the collateral on the short leg of the strategy, calculated using Overnight Bank Funding Rate (OBFR) reduced by a Spread of 30 bps.

$$TR_t = TR_{t-1} * \left[\frac{ER_t}{ER_{t-1}} + (OBFR_{t-1} - Spread) * \frac{Days_{t,t-1}}{365} \right]$$

TR_t – Total Return Index level at calculation date t.

$OBFR_{t-1}$ – Overnight Bank Funding Rate effective as of the previous calculation date t-1 sourced from Federal Reserve Bank of New York, [Overnight Bank Funding Rate OBFR](#) data.

$Spread$ = 30 bps.

$Days_{t,t-1}$ – Number of calendar days between t and t-1.

Index Maintenance

Index Rebalancing and Reconstitution

All required market data inputs for defining the Index Universe and for the QMIT Model calculations – excluding Borrowing Cost – are captured on the Reference Date. Borrowing Cost data is captured on the morning of the Reconstitution Date. The closing prices of the selected constituents, which are used to calculate the Target Share Weights, are captured as of the Weight Date.

The Index Universe is determined weekly on the Reconstitution Date using market data from the Reference Date and Borrowing Cost data from the Reconstitution Date. On the same day, the QMIT Model is executed to generate relative rankings of all eligible securities from the Index Universe. Based on these rankings, the constituents of the Long and Short Portfolios are selected, and their respective Target Share Weights are calculated by the QMIT Model. The Index is reconstituted on the Reconstitution Date in accordance with the methodology outlined in the "Index Construction" section. Additions or deletions to the Index are only permitted on the Reconstitution Date.

Following reconstitution, the Index is rebalanced on the Rebalance Date to reflect the updated constituents and their corresponding weights.

Corporate Actions

Corporate Actions processing would be done according to the Calculation Agent's Index Maintenance Policy.

Index Committee

The Index is governed by QMIT for the purpose of meeting the Index Objective. The Index Committee (the "Committee") will be composed of not less than three members of QMIT including QMIT's Chief Investment Officer, Chief Technology Officer and Head of Research. The Committee is responsible for managing & maintaining the Index methodology.

The Committee retains the responsibility for decisions regarding any amendments to the rules of the Index Methodology. Any such amendment of the Index Methodology will be submitted to the Calculation Agent for prior approval and will be implemented in compliance with the Calculation Agent's Index Governance and Methodology Policies, which are available on the Calculation Agent's Index Resources page.

Index Policies

Index calculation is governed by the Calculation Agent's policies and methodologies found on the Index Resources page. For any questions regarding an Index calculation, please contact index.production@vettafi.com.

This methodology is meant to be read in conjunction with supporting documents providing greater detail with respect to the policies, procedures and calculations described herein.

The list of the main supplemental documents for the Calculation Agent's policies, where applicable, can be found in the Methodologies and Governance tabs on the Index Resources page as follows:

Supporting Documents
Index Maintenance Policy
Index Policies
Methodology Policies
Glossary
Index Change and Consultation Policy

In addition to the Calculation Agent's policies, the following provisions are applied to the Index changes in the events of the Index Constituents de-listings, bankruptcies, trading halts / suspensions and unplanned market closures.

Delisting

If an Index Constituent is de-listed from all Eligible Exchanges, it will be removed from the Index at the last available Closing Price effective at the earliest of a) two Exchange Business Days after the delisting notice is received and announced by the Calculation Agent or b) the next Rebalance Date.

Proceeds from the constituent's removal will remain in the index until the next rebalancing.

Bankruptcy

If an Index Constituent filed for bankruptcy, it will be removed from the Index at the last available Closing Price effective at the earliest of a) two Exchange Business Days after the two Exchange Business Days after the Calculation Agent receives information that the company has entered bankruptcy proceedings or b) the next Rebalance Date. Proceeds from the constituent's removal will remain in the index until the next rebalancing. The Index

Constituent will remain ineligible for re-inclusion in the Index Universe until it has emerged from bankruptcy.

Trading Suspension / Halt.

If trading in any Index Constituent candidate is suspended or halted:

a) On the Reference Date – If not a current constituent the candidate will not be eligible for the inclusion as a constituent in the Index Universe.

b) On the Rebalance Date – if the Index Constituent was not a current constituent and was eligible for the Index Universe and selected by the QMIT Model as part of the Long Portfolio or the Short Portfolio prior to the Trading Suspension / Halt announcement, it would be excluded from the Index and it's weight would be allocated pro rata across the other respective Long Portfolio or Short Portfolio components at the respective Rebalance Date.

c) On any other Exchange Trading Day – the current Index Constituent becomes exempt from the regular reconstitution and rebalancing for the duration of Trading Suspension / Halt. During the time when Trading Suspension / Halt is in effect the Index Constituent will be represented in the Index at the last available Closing Price and at the number of shares as of the most recent Rebalance Date when the Trading Suspension / Halt was not in effect. Once the Trading Suspension / Halt is removed, the Index Constituent will become eligible for the regular reconstitution, rebalancing and other Index adjustment procedures.

Unscheduled Market Closure

For the purposes of the Index Calculation the Unscheduled Market Closure event would refer to any situation where an Eligible Exchange is closed for trading due to unplanned event, including but not limited to the extreme weather conditions, epidemics, pandemics or other public health emergencies, systems failures, cyber-attacks, natural or man-made disasters, war, regional conflicts, acts and threats of terrorism, or any similar intervening circumstances.

If Unscheduled Market Closure happens on the Reference Date or the Rebalance Date, the Index will not be reconstituted and rebalanced on the respective Rebalance Date. The Reference Date and its respective Rebalance Date would be moved to the next scheduled Reference Date and the Rebalance Date that is an Exchange Trading Day when there is no

Unscheduled Market Closure. The Index value during this time would be calculated based on the last available Closing Price.

If Unscheduled Market Closure happens on the Exchange Trading Day other than the Reference Date or the Rebalance Date, the Index value for that date is calculated based on the last available Closing Price.

Disclaimers

VettaFi Disclaimer: VettaFi LLC is the calculation agent of the Index. VettaFi is not responsible for any errors or omissions, regardless of the cause, for the results obtained from the use of the Content. In no event shall VettaFi be liable to any party for any direct, indirect, incidental, exemplary, compensatory, punitive, special or consequential damages, costs, expenses, legal fees, or losses (including, without limitation, lost income or lost profits and opportunity costs) in connection with any use of the Content.

QMIT Disclaimer: https://www.quantzqmit.com/disclaimers

Glossary

Closing Price: The official regular hours closing share price of any index constituent derived from the relevant exchange determined according to the respective exchange regulations. If no closing price is available, the Index Calculation Agent shall determine the closing price for the share in question according to the Calculation Agent's Methodologies and Governance Policies, including using the last available closing price.

Divisor: A calculation factor used to maintain the continuity of the Index level following the implementation of corporate actions, index rebalancing events, or other non-market driven actions.

Enhanced Smart Betas ("ESBs"): composite factor cohorts that are distilled from QMIT's library of traditional and alternative financial factors sourced from traditional data providers (Factset).

	ESBs	Acronym	Description
1	Deep Value	DV	Captures excess returns to value stocks based on intrinsic value metrics
2	Relative Value	RV	Captures excess returns to value stocks based on relative valuation metrics
3	Dividends	DIV	Captures excess returns to stocks that pay higher than average dividends
4	Reversals	REV	Captures excess returns to stocks displaying mean reversion
5	Price Momentum	MOM	Captures excess returns to stocks experiencing trend continuation
6	Enhanced Momentum	ENMOM	Captures excess returns to stocks experiencing trend continuation enhanced to adjust for shorts vulnerable to short covering rallies
7	Analyst Revisions	ARS	Captures excess returns to stocks due to earnings momentum resulting from analyst revisions & consensus change.
8	Analyst Ratings & Targets	ART	Captures excess returns to stocks due to revisions in analyst recommendations and target prices
9	Growth Historical	GROH	Captures excess returns to stocks that have higher than average historical growth
10	Earnings Quality	EQ	Captures excess returns to stocks that are characterized by low accruals.
11	Quality – Leverage	LEV	Captures excess returns to stocks with low leverage & related credit metrics
12	Quality – Profitability	PROF	Captures excess returns to stocks with high profitability related metrics
13	Quality – Capital Structure / Usage	CSU	Captures excess returns to firms owing to better capital structure and capital usage decisions
14	Quality – Stability	STAB	Captures excess returns to stocks with more stable financial ratios

15	Quality – Efficiency	EFF	Captures excess returns to stocks characterized by better operating efficiency metrics
16	Size	SIZE	Captures excess returns to smaller firms
17	Short Interest	SIRF	Captures excess returns to stocks with lower short Interest related metrics
18	Safety / Risk	RISK	Captures excess returns to stocks with lower than average volatility, beta, and/ or idiosyncratic risk

Exchange Trading Day: a day on which the relevant exchange is open for trading, excluding days on which trading may be ceased prior to the scheduled exchange closing time and days on which the exchange is open for a scheduled shortened period.

Index Constituent: each share currently included in the Index.

Rebalance Date: Every Friday of every month, that is an Exchange Trading Day. If any respective Friday is not an Exchange Trading Day, then the Reconstitution & Rebalance Day will be the first preceding Exchange Trading Day.

Reconstitution Date: Every Friday of every month, that is an Exchange Trading Day. If any respective Friday is not an Exchange Trading Day, then the Reconstitution & Rebalance Day will be the first preceding Exchange Trading Day.

Reference Date: An Exchange Trading Day preceding the Reconstitution Date.

The QMIT Model: QMIT Optimization and Machine Learning Model, that employs machine learning ensemble learners to optimize the selection across 18 Enhanced Smart Beta factor signals.

Trading Suspension / Halt: Any situation in which the trading of the Index Constituent is intentionally halted or the Index Constituent is suspended from trading for a period of time

Total Market Capitalization: Is the aggregate market value of all outstanding common shares listed on Eligible Exchanges multiplied by the closing prices.

Weight Date: An Exchange Trading Day preceding the Reconstitution Date.