



Fintech

Financial Technology

BETA FT FINTECH AND US BANKS INDEX

GUIDLINE

BETA
FINANCIAL TECHNOLOGIES

TABLE OF CONTENTS

1	INDEX INTRODUCTION	3
2	TERMS AND DEFINITIONS	3
3	INDEX UNIVERSE REQUIRMENTS AND ADJUSTMENTS	4
4	INDEX CALCULATION	7
5	INDEX LEVEL CALCULATION	9
6	REBALANCE	10
7	INFORMATION DISCLOSURE	12

1 INDEX INTRODUCTION

This document (the “Guideline”) is to be used as a guideline with regard to the composition, calculation and maintenance of the BUSBIB Index - Beta FT FinTech and US Banks (the “Index”). **The Index is calculated, administered and published by Beta Financial Technologies (“BFT”) assuming the role as index administrator (the “Index Administrator”) and Calculation Agent (the “Index Calculation Agent”).** The Index is designed to measure and exploit advantages of investment into companies focused on disruption technologies and business models in transportation industry. Index use innovative selection and weighting mechanisms. Portfolio Selection is done through text analysis of regulatory filings and company reports along with scoring momentum effect of each stock.

The BUSBIB Index (“Index”) is a USD (the “Index Currency”) denominated index that uses a rule-based, quantitative, long only asset allocation strategy index.

The Index rebalances quarterly over five Index Business Days between Index Selection Date and Index Rebalancing Day

2 TERMS AND DEFINITIONS

For the purposes calculation of the Beta FT FinTech and US banks Methodology (the "Methodology"), BFT uses the following terms and definitions:

Universe	the list of stocks established by Index Calculation Agent that participates in Index calculation process, and Universe;
Base Universe	is comprised of all stocks which fulfil the Index Universe Requirements set out in Section 2.1 and updates quarterly;
Universe Formation Day	the day, on which the data is collected for the following Universe formation.
Stocks	Securities that signify proportionate ownership in the issuing corporation. This entitles the stockholder to that proportion of the corporation's assets and earnings;
Closing price	the price of a security at the end of the day's business on an Exchange;
Trading day	each day that is Index Business Day in respect of all Index Components presented in the Index;
Exchange	is with respect to the Index and every Index Component, the respective Exchange where the Index Component has its primary listing;
Index	measure that consists of weighted values of the Index Components that

	make up based on guideline and policies;
Index Business Day	each day when all Exchanges are open for business in (USA, New York);
Index Component	each security reflected in the Index;
Index Selection Date	on Selection Day index composition and weights are revised, Index Selection Date k is 15 th Index Business Day (IBD) of each quarter
Index Rebalancing Date	20 th Index Business Day of quarter which is 5 th days after Index Selection Day (k+5) such that all Exchanges are open for business in (USA, New York);
The Index Level	is the closing level of the Index in respect of the relevant Index Business Day
Index Basket	all financial securities presented in the Index after selection date
Basket Cap	is in respect to an Index Component the upper percentage weight of Industry Portfolio in the Index
Initial Start Date (t_0)	28 January 2016
Index Start Level	100
Created and live from	15th July 2021

2.1 The index calculated in accordance with this Methodology has the following names and codes:

Ticker	Name	RIC	ISIN	Currency	Rebalancing
BUSBIB	Beta FT FinTech and US Banks VT Index Index	.BUSBIB		USD	Quarterly

2.2 Terms not specifically defined in this Methodology shall be used in meanings established by other internal documents of the Exchange, as well as laws and other regulatory acts of the Bank of Russia.

2.3 This Methodology, as well as all amendments and supplements thereto, are approved by the BFT and become effective on a date determined by the company. Amendments and additions to the Methodology may be made no more than once a quarter.

3 INDEX UNIVERSE REQUIRMENTS AND ADJUSTMENTS

Each Industry Portfolio weight is subject to an “Basket Cap” to a “Basket Floor”. Each Industry Component is subject to an Index Component Cap and Floor. The Caps and Floors have been

chosen to allow the Index to allocate across the different Industry Portfolios with conviction while aiming to be diversified. Note that Index Components within each Industry Portfolio are equally weighted. The sum of all Index Component weights within each Industry Portfolio as well as the sum of all Industry Portfolios weights should equal to 100%.

3.1 INDEX UNIVERSE REQUIREMENTS

3.1.1 The Companies' with listing on USA exchanges

3.1.2 Stock price of the issuer: ≥ 5 (USD)

3.1.3 Stock Average Daily Trading Volume (ADTV) for last 20 days ≥ 10 mln. (USD)

3.1.4 Market capitalization of the issuer: ≥ 2.5 bn. (USD)

3.1.5 For companies with more than one share line, only the share line with prime equity listing (determined by Factset Inc) Market Capitalisation as of the Selection Day is included in the Index Universe

3.1.6 Description of Index Components Business Activity that the Index can select from **Table (2.1)**:

Table 2.1 Business activity description for the NLP analysis

#	Business activity related to transportation
1	Major US bank providing lending and deposit services for retail, corporate customers
2	Advancing the loan approval process in speed and complexity, and algorithmic loan approva
3	General-purpose platforms that allow consumers to transact using a digital balance within a system oftentimes in multiple channels, such as mobile wallets and peer-to-peer platforms.
4	Automated wealth management services, such as robo-advisers connectivity capabilities.

5	Intermediary platforms connecting company and consumer accounts with financial institutions to enable next generation financial products, such as Banking-as-a-Service (BaaS.)
6	Sensors (e.g. distance measurement, cameras, etc.) that are used for object and collision detection systems, such as traffic sign or pedestrian recognition.
7	Flexible insurance plans, such as usage-based and on demand insurance.
8	Real-time payments and transfers across consumer and merchant accounts nationally and internationally (i.e. cross-border)
9	Product or service related to biometrically-enabled payments.
10	Crowdfunding platforms that allow people to donate or invest in return for a reward and/or equity stake

3.1.7 Beta FT proprietary NLP model is analysing companies profile description and filings through an automated scan of the EDGAR database of annual company-issued filings, specifically: 10-Ks; 20-Fs; 40-Fs; and S-1 filings and Factset data with company description. The scan searches the most recent filing for companies and identifies documents that discuss the search terms in: Chapter 1 (Business) or Chapter 7 (Management’s Discussion and Analysis) of its most recent Form 10-K, Chapter 4 (Information on the Company) of its most recent Form 20-F. If a company has not filed an annual report, the business summary of its most recent S-1 filing is used. The words within a search term may be separated by punctuation, such as a hyphen, but must otherwise be adjacent. Only the securities of those companies identified in this step qualify for inclusion in the universe of eligible securities. Securities that do not include in Item 1 (Business) or Item 7 (Management’s Discussion and Analysis) of its most recent Form 10-K, Item 4 (Information on the Company) of its most recent Form 20-F.

3.2 The determination of the Universe is fully rule-based and the Calculation Agent cannot make any discretionary decisions

- 3.3 The Base Universe is updated annually to consider any material changes including corporate events and IPOs
- 3.4 The Stocks are included in the Index and excluded from the Index during quarterly Index rebalancing
- 3.5 Calculation Agent calculates its indices following predefined algorithm of actions described in Index Management Policy and Corporate Actions Policy.

4 INDEX CALCULATION

4.1 Index Basket Selection

Each Index Basket is combined from TOP-30 companies with highest BFT Momentum Factor Index (BMF) which select highest momentum stocks and refine from overbought high volatility stocks according to Money Flow Index.

4.2 BFT Momentum Factor Index (BMF) Construction

BFT The Momentum Factor Index (BMF) measure strength of the stock price growth. The closer price historical path to the exponential function the higher is Momentum Factor value.

MF of each i - Component is a mean from 181 and 365 Index Business Days Momentum Score (MS)

$$(1.1) \quad MF_{i,t} = \frac{1}{2} * MS_{i,t,t-181} + \frac{1}{2} * MS_{i,t,t-365}$$

$MS_{i,t,t-181}$ Momentum Score of i- Component on 181 Index Business Days from day t

$MS_{i,t,t-365}$ Momentum Score of i- Component on 365 Index Business Days from day t

$$(1.2) \quad MS_{i,t,t-T} = (1 + \beta_{i,t,t-T})^{252} * R_{i,t,t-T}^2$$

With following constraint: for each i-component,

if Volatility Score ($VS_{i,t,t-50}$) is higher/less than ± 2 Standard Deviation

and

During observation period 365 days Money Flow Index ($MFI_{i,t,t-365}$) > 80 later than $MFI_{i,t,t-365} < 20$ than for all such Index Components:

$$MS_{i,t,t-T} = 0$$

$\beta_{i,t,t-T}$ slope coefficient from linear regression i-Component from linear regression specified below

$R^2_{i,t,t-T}$ is the coefficient of determination of i-Component from one factor the linear regression specified below

T time horizon, equal 181 or 365 Index Business Days

Linear regression or Price and monotone growing function to determine strength of momentum through coefficient $\beta_{i,t}$.

$$(1.3) \quad y_{i,t} = \alpha_{i,t} + \beta_{i,t} * x_t$$

Where , $y_{i,t} = \ln(P_{i,t})$ and $X = \{0,1,2,3 \dots\}$

$y_{i,t}$ logarithm of price of i-Component

Volatility Score (VS) calculation

$$(1.4) \quad VS_{i,t,t-50} = (P_{i,t} - \bar{P}_{i,t,t-50}) / \sigma_{i,t,t-50}$$

$\bar{P}_{i,t,t-50}$ average price of i- Component on 50 days' horizon from day t

$\bar{P}_{i,t}$ price of i - Component at day t

$\sigma_{i,t,t-50}$ standard deviation of price of i - Component on 50 days' horizon from day t

Money Flow Index (MFI) calculation

$$(1.5) \quad MFI_{i,t,t-14} = \frac{\text{Positive Money Flow (PMF)}_{i,t,t-14}}{\text{Negative Money Flow (NMF)}_{i,t,t-14} + \text{Positive Money Flow (PMF)}_{i,t,t-14}}$$

$$(1.6) \quad \text{Money Flow}_{i,t} = \text{typical price}_{i,t} * \text{volume}_{i,t}$$

$$(1.7) \text{ typical price}_{i,t} = \frac{\text{Price}_{i,t}^{\text{day high}} + \text{Price}_{i,t}^{\text{day low}} + \text{Price}_{i,t}^{\text{day close}}}{3}$$

$$(1.8) \text{ Positive Money Flow (PMF)}_{i,t,t-14} = \sum_{t-14}^t \text{ Money Flow}_{i,t}$$

Where,

Money Flow_{i,t} is Positive if typical price_{i,t} > typical price_{t-1}

Money Flow_{i,t} is Negative if typical price_{i,t} < typical price_{t-1}

5 Index Level calculation

5.1 The Performance of the Index over the relevant Observation Period is calculated in accordance with the following formula:

$$\text{IndexVT}_o = 100$$

$$(1.9) \text{ IndexVT}_t = \text{IndexVT}_{t-1} \times \left(1 + \text{EXP}_{t-1} \times \left(\frac{\text{ERindex}_t}{\text{ERindex}_{t-1}} - 1 \right) - \text{Syn.Div} \times \frac{\text{Nday}_{t-1,t}}{365} \right),$$

IndexVT_t Index Level of the BFTUT Index for Index Business Day t

IndexVT_{t-1} Index Level of the BFTUT Index for Index Business Day t-1

EXP_{t-1} Level of the Target Exposure for Index Business Day t-1

ERindex_t Level of the Excess Return Index for Index Business Day t

ERindex_{t-1} Level of the Excess Return Index for Index Business Day t-1

Nday_{t-1,t} Number of calendar days from but excluding Index Business Day t-1 to and including Index Business Date t

Syn.Div Synthetic dividend - 3,75% per annum

Index Target Exposure Calculation

$$(1.10) \text{ EXP}_t = \text{MIN} \left(\text{MAX}_{\text{EXP}}; \frac{\text{TV}}{\text{RVMAX}_{t-1}(20d;60d)} \right)$$

$$(1.11) \text{ RVMAX}_{t-1}(20d;60d) = \text{Max}(\text{RV}_{t-1}(20), \text{RV}_{t-1}(60))$$

TV target volatility level (13%)

Max EXP 200%

Realized Volatility Calculation

$$(1.12) RV_t(VW) = \sqrt{\frac{252}{VW} * [\sum_{i=1}^{VW} \left(\ln \left(\frac{ERindex_{t-VW+i}}{ERindex_{t-VW+i-1}} \right) \right)^2]}$$

VW volatility window

Nday_{t-1,t} Number of calendar days from but excluding Index Business Day t-1 to and including Index Business Date t

Excess Return Index Calculation

Initial value of Excess Return Index $ERindex_{t=0} = 100$

On each Index Business Day t, the Excess Return Index will be calculated as follows:

$$(1.13) ERindex_t = ERindex_{t-1} \times (1 + ER_t)$$

Where,

$$(1.14) ER_t = \left(\frac{NI_t}{NI_{t-1}} - 1 \right) - \left(R_{t-1} \times \left(\frac{Nday_{t-1,t}}{365} \right) \right)$$

R_{t-1} 3 Months USD Libor rate at time t-1 (bbg ticker: US0003M Index)

NI_t Net Index level at Index Business Day t

NI_{t-1} Net Index level at Index Business Day t-1

Nday_{t-1,t} Number of calendar days from but excluding Index Business Day t-1 to and including Index Business Date t

Net Index Level calculation

In respect to each Index Business Day t following the Index Start Day other than a Rebalancing Date Net Index Level is calculated according to formula

$$NI_o = 100$$

$$(1.15) NI_t = NI_{t-1} * \left(1 + \left(\frac{PRI}{PRI_{t-1}} - 1 \right) + \sum_{j=1}^N w_{j,t} * D_{j,t} \right)$$

NI_t Net Index Level at Index Business Date t

NI_{t-1}	Net Index Level at Index Business Date t-1
PRI_t	Price Return Index level at Index Business Date t
PRI_{t-1}	Price Return Index level at Index Business Date t-1
$D_{j,t}$	net dividend yield of Index Component j at Index Business Date t
$w_{j,t}$	weight of Index Component j in the Index at Index Business Date t

1.1 Dividends are reinvested into entire index. Please refer to Dividends Reinvestment policy on [website](#)

Weight of Index Component at any date in the Index formula:

$$(1.16) w_{j,t} = \frac{PR_{j,t}}{PR_{j, Sel(k)+5}}$$

$PR_{j,t}$	Level of Price Return of Index Component j at Index Business Date t
$PR_{j, Sel(k)+5}$	Level of Price Return of Index Component j 5 Index Business Days After Index Selection Date k

Net dividend yield formula:

$$(1.17) D_{j,t} = DivCash_{j,t} * \frac{1 - TaxRate_j}{P_{j,t-1}}$$

$P_{j,t-1}$	Closing Price level of Index Component j at Index Business Date t-1
$DivCash_{j,t}$	cash dividend paid by Index Component j at Index Business Date t
$TaxRate_j$	Withholding Tax Rate for the Index Component j in compliance with Dividends Reinvestment Policy

Price Return of Index Component calculation formula:

$$(1.18) PR_{j,t} = PR_{j,t-1} * (1 + (\frac{CCL_{j,t}}{CCL_{j,t-1}} - 1))$$

$PR_{j,t-1}$	Level of Price Return of Index Component j at Index Business Date t-1
--------------	---

$CCL_{j,t}$ Index Component j closing level at Index Business Date t

$CCL_{j,t-1}$ Index Component j closing level at Index Business Date t-1

Index Component Closing Level formula:

(1.19) $CCL_{i,t} = P_{i,t} * FX_t$

$CCL_{i,t}$ Index Component i closing level in at Index Business Date t

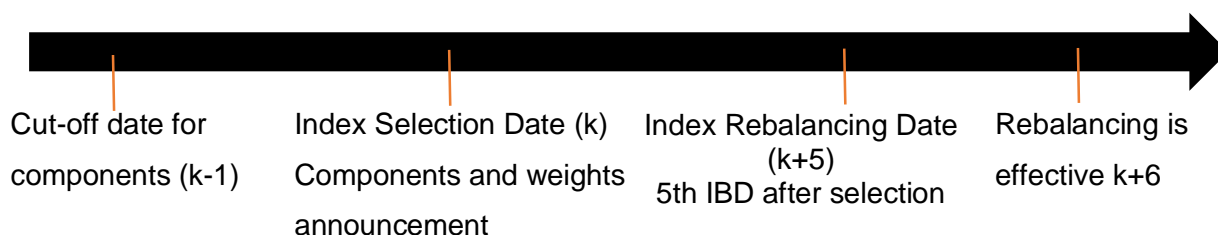
$P_{i,t}$ Price of Index Component i in local currency at Index Business Date t

FX_t FX closing rate from local index component currency into USD in accordance to section Terms and Definitions

6 REBALANCE

6.1 Index Review

The Index Components and weighting are reviewed on a regular basis to ensure a transparent and up-to-date index basket. The actual implementation (“the rebalancing”) is usually conducted at 20th Index Business Day of quarter. Index Rebalancing Date is in 5 Index Business Days after Index Selection Date k. For quarters Calculation agent use March, June, September and December convention.



6.2 On each Index Selection Date Calculation Agent will revise the composition and weights of Index Components. The selection of the Index Components is fully rule-based and the BFT has no discretion.

6.3 Index Rebalancing Date is the day 5 Index Business days after Index Selection Date

6.4 For each Index Component and each Observation Period, the following will be computed on

the quarterly Selection Date Sel(k)

Weighting through momentum optimisation

6.5 On Rebalancing Date k and the optimiser weighting Index Components such that the Components with higher momentum will have higher weight. The Weight of each Index Component is capped by 15%

Weight calculation

For the each i Index Component its weight calculated based on its momentum value

$$(1.20) w_{i,k-1} = \frac{FinM_{i,k-1}}{\sum_i^{N_{k-1}} FinM_{i,k-1}}, \text{ such that } \sum_i^N w_{i,k-1} = 100\%$$

N_{k-1} Number of Index Components at the Index rebalancing

$FinM_{i,k-1}$ Final Momentum Value at the Index rebalancing

$$(1.21) FinM_{i,k-1} = \begin{cases} 1 + NormM_{i,k-1}, & \text{If } NormM_{i,k-1} \geq 0 \\ \frac{1}{1 - NormM_{i,k-1}}, & \text{If } NormM_{i,k-1} < 0 \end{cases}$$

$NormM_{i,k-1}$ Normalised Momentum Value at the Index rebalancing

$$(1.22) NormM_i = \begin{cases} 3, & \text{If } ZvalM_{i,k-1} \geq 3 \\ -3, & \text{If } ZvalM_{i,k-1} < -3 \\ ZvalM_{i,k-1} & \end{cases}$$

$ZvalM_{i,k-1}$ Z-value Momentum of i-Index Component at the Index rebalancing

$$(1.23) ZvalM_{i,k-1} = \frac{(MF_{i,k-1} - \overline{MF_{k-1}})}{\sigma(MF_{k-1})}$$

$MF_{i,k-1}$ BFT The Momentum Factor Index at the Index rebalancing

$$(1.24) \sigma(MF_{k-1}) = \sqrt{\frac{\sum_i^{N_{k-1}} (MF_{i,k-1} - \overline{MF_{k-1}})^2}{N_{k-1} - 1}}$$

N_{k-1} Number of Index Components at the Index rebalancing

$$(1.25) \text{ Where, } MF_{i,k-1} = \frac{1}{2} * MS_{i,k-1,k-182} + \frac{1}{2} * MS_{i,k-1,k-366}$$

$MS_{i,k-1,k-182}$ Momentum Score of i- Component on 181 Index Business Days from day k-1

$MS_{i,k-1,k-366}$ Momentum Score of i- Component on 365 Index Business Days

from day k-1

$$(1.26) \overline{MF}_{k-1} = \frac{\sum_i^N MF_{i,k-1}}{N_{k-1}}$$

N_{k-1} Number of Index Components at the Index rebalancing

7 INFORMATION DISCLOSURE

- 7.1 Disclosure of information stipulated by the Methodology is carried out on the page of BFT in the Internet at the address: (hereinafter referred to as the "**official site**") www.beta-ft.ru .
- 7.2 The text of the Methodology is disclosed on the official website one week after it becomes effective, unless otherwise specified by the decision of BFT.
- 7.3 Information on Index values is disclosed not later than 11:00 A.M. of Moscow time next Trading day.
- 7.4 Information messages about the next revision of the Universe shall be disclosed on the official website one week after the decision of BFT to approve the new Universe comes into effect.
- 7.5 Information messages on the extraordinary revision of the Universe shall be disclosed on the official website one day after the effective date of the decision of BFT to approve the new Universe.
- 7.6 Information subject to disclosure on the official website in accordance with this Methodology may be additionally distributed by other means, including news agencies that distribute data on securities trading on the Exchange.
- 7.7 The application by the Index Calculator of the method described in this document is final and binding. The Index Calculator shall apply the method described above for the composition and calculation of the Index. However, it cannot be excluded that the market environment, supervisory, legal, financial or tax reasons may require changes to be made to this method. In such cases the BFT may make changes to the terms and conditions of the Index and the method applied to calculate the Index that it deems to be necessary and desirable in order to prevent obvious or demonstrable error or to remedy, correct or

supplement incorrect terms and conditions. The Calculation Agent is obliged to provide information on any such modifications or changes to the clients.