NCFX Benchmark Statement: NCFX Currency Beta Indices (NCFX-BI Family of Benchmarks)

NEW CHANGE CURRENCY CONSULTANTS LTD

DOCUMENT AUTHOR:	New Change FX
DOCUMENT OWNER:	New Change FX
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Introduction

This benchmark statement is provided by New Change Currency Consultants Ltd ("New Change FX" or "NCFX" or the "Company") as the administrator of the NCFX-MI Family of Benchmarks and in accordance with Article 27 of Regulation (EU) 2016/1011 of the European Parliament and the Council of 8 June 2016 (the "Benchmark Regulation" or "BMR"). This statement is intended to meet the requirements of the BMR regulation on indices used as benchmarks in financial instruments and financial contracts or to measure the performance of investment funds.

On 27 February 2018, HM Treasury in the UK passed into legislation the Financial Services and Markets Act 2000 (Benchmarks) Regulations 2018, thereby fully adopting the BMR Regulation (EU) 2016/2011. On that date the Financial Conduct Authority (FCA) in the UK granted NCFX permission under Part 4A of the Financial Services and Markets Act 2000 to carry on the regulated activity of administering a benchmark.

The Benchmark Statement below makes reference to Article 27 and 28 of the BMR as well as the technical standards (RTS) accompanying the BMR, published in September 2016, and where applicable makes reference to the specific clause or sub-clause within Articles 27 and 28 of the BMR, or specific Articles and clauses within the RTS relating to disclosure requirements for Benchmark Statements in Section 9.4 of the RTS.

NCFX can be found on the FCA financial services register (https://www.fca.org.uk/firms/financial-services-register) with firm reference number 793983. The FCA is the sole regulatory supervisor for NCFX although the company can also be found on the European Securities and Markets Authority (ESMA) Register of Benchmark Administrators (https://www.esma.europa.eu/databases-library/registers-and-data).

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Benchmark Statement

1. **General Information:**

- The NCFX-BI family of benchmarks qualifies as a Non-significant Benchmark in that it does not satisfy the criteria as either a Critical Benchmark or a Significant Benchmark.

- The NCFX-BI is a family of benchmarks produced by New Change FX to measure the performance of individual currencies against the major trade currencies (USD, EUR and GBP). The benchmarks capture the natural return obtained by investing in assets denominated in a local currency.
- Deviations from a simple, short base, long local currency allocation (i.e. less or more than a 100% hedge ratio) represent an active currency decision. Currency beta is the systematic return available from purchasing currency exposure in a given currency pair.
- NCFX-BI family of benchmarks provide investors and managers with an index tool that measures this systematic return.
- New Change FX has created an index for 21 individual currencies against base (USD, EUR or GBP), calculated from the underlying NCFX-MI benchmarks (see separate NCFX-MI Benchmark Statement) in spot and forwards rates.
- The reason for delivering an independent index is to provide clients with access to a measure that has not been and cannot be affected directly by their own transactions.
- This methodology has been adopted in order to deliver a correct, calculated value for maintaining an open position in local currency through the use of currency forwards, without any manual intervention in the calculation of the value of the position, or the presence of ex-post trade information in the benchmark.

- Contributions must be relevant, timely and fully automated, there is no data submitted from any manual systems.
- Discretion is neither permitted nor possible in creation of the NCFX-BI benchmarks.
- One of the key characteristics of NCFX benchmarks is the absence of human intervention in determining the mid-rate as it is wholly automated.

2. **Methodology and Input Data**

- The starting value of each NCFX-BI index is 100 units of the base currency as of 29th December 2017, i.e. the 27th December 2017 for currencies where the spot date is 29th December 2017, and 28th December for currency with one day settlement such as TRY and CAD.
- The notional amount of each index is expressed in units of the index base. For the USD family of indices, the notional amount is one hundred US dollars expressed in currency terms and USD is the base currency. For the EUR family of indices, EUR is the base currency, and so on.
- See below "A Further Note on Methodology" for more detail.

BMR Article 27,2,(c) – Input Data
- Input date is derived automatically from the FX marketplaces (ECNs) connected to NCFX.   - Input data is collected at 4 pm local time in London, capturing the prevailing executable market mid-rates available in spot and forwards at that time.   - All input data feeds are from the top of the contributor's books for 1 million units of the base currency.

3. **Limitations and Errors**
BMR Article 27,2,(e),(f),(g) and RTS Section 9.4 Article 1,2 – Limitations and Unreliable Data
- NCFX does not offer NCFX-BI benchmarks in currency pairs that exhibit limitations in terms of contributing feeds.   - Each member of the underlying NCFX-MI family of benchmarks requires a minimum of two independent contributing marketplaces (ECNs) to be accepted for use in calculation of the NCFX-BI benchmarks.   - Where, for whatever reason, at least two independent marketplaces are not able to furnish a rate, NCFX will not publish the underlying NCFX-MI benchmark. This will mean that the NCFX-BI benchmark for the related currency pair will not be available either. In the absence of the underlying data, the NCFX-BI benchmark would not be available to users, for valuation purposes, until such time as normal conditions resume and at least two independent marketplaces are able to resume publication of prices in real-time. Users would be notified accordingly.   - In the event of an adverse change of circumstances for a given member of a family of benchmarks, clients would be notified, and the benchmark withdrawn until such time as the underlying NCFX-MI data became available again.   - Given the fully automated nature of the index and its calculation, we have not knowingly had an error in the calculation of the index over the years for which the index values have been available. If an error was identified, we would check the inputs that created the error and check the nature of the error. If the error were deemed to indeed be an error, for example one of the underlying inputs being quoted to the wrong decimal place, the error would be corrected, and the value of the index revised.

4. **Changes and Cessation**
BMR Article 27,1,(c),(d), BMR Article 28 and RTS Section 9.4 Article 1,4 – Benchmark Changes or Cessation
- Although considered extremely unlikely, there may be circumstances in or beyond the control of the administrator that would lead to either a change in the methodology or the cessation of the production of the NCFX-BI family of benchmarks.   - Changes to the methodology in calculating the NCFX-BI benchmarks may lead to changes in the financial contracts and financial instruments that are referenced to them.   - Where it is a change of methodology benchmark users would be given three months' advanced warning ahead of a change in methodology.   - Where the administrator is obliged to stop providing a benchmark for whatever reason, benchmark users would be given three months' notice and the administrator would suggest any credible alternative benchmarks if possible.

A Further Note on Methodology

- The indices are arranged as families. The dollar index family represents a short position in the USD and a long position in one of 21 currency pairs. For a long currency, short index currency position (e.g. short USDCHF), we identify whether the currency pair is quoted in USD or local currency terms.
- When the currency pair is quoted in USD terms, i.e. AUDUSD where the notional amount would normally refer to AUD, we adjust AUD and convert to USD base using the closing forward rate on the last business day of each month when a new 1-month forward position is opened. AUD terms = $100/FP_0$=\$100 equivalent.
- At the end of each month, where the currency pair is quoted in currency terms (non-index base), we sell base currency. We identify the opening forward price and subtract the closing spot price.
  - *For a SELL, Term pips* = $FP_0 - S_1$
    - Where FP_0 is the opening Forward
    - S_1 is the closing Spot
- Where currency pair is quoted in USD terms, i.e. AUDUSD, we buy the base currency and sell the term currency. Pips gain or loss is calculated are calculated:
  - *For a BUY, Term pips = S_1-FP_0*
    - Which we convert into USD base *Term pips/S_1 = Pips in USD (index base currency)*
    - Which we convert into a % return
    - $1 + (pips\ in\ USD/100)$
- At each month end, we multiply the month opening value of the index by the % return
- For Daily pricing we accrue the implied yield and change in spot by capturing the return from buying back the USD forward with the same month end value date.
- daily return $k, T = \left\{ \frac{F1\ k, T-t}{FP} - 1 \right\}$
  - Where F1 k,T-t is the forward outright at time t with the T-t days maturity and the value date is identical to the value date of the opening 1-month Forward FP.
- The daily value of the index is calculated as the opening value of the current month multiplied by the daily return.
- On the last day of the current month, the value of the index on the last day is calculated as the monthly return, and a new 1-month forward position is recorded.