



MACQUARIE

# Macquarie Backwardation Ranking Strategy

August 2014





---

*This material is prepared and distributed in the UK by Macquarie Bank Limited, London Branch (MBLLB) and in the EEA member states (other than the UK) by Macquarie Bank International Limited (MBIL) where required. It is intended only for professional clients and eligible counterparties as defined in the rules of the Financial Conduct Authority. MBLLB is registered in England and Wales (Branch No: BR002678, Company No: FC018220, Firm Reference No: 170934). MBIL is incorporated and registered in England and Wales (Company No. 06309906, Firm Reference No. 471080). The registered office for MBLLB and MBIL is Ropemaker Place, 28 Ropemaker Street, London, EC2Y 9HD. MBLLB is authorised and regulated by the Australian Prudential Regulation Authority. Authorised by the Prudential Regulation Authority and subject to regulation by the Financial Conduct Authority and limited regulation by the Prudential Regulation Authority. Details about the extent of our regulation by the Prudential Regulation Authority are available from us on request. MBIL is authorised by the Prudential Regulation Authority and regulated by the Financial Conduct Authority and the Prudential Regulation Authority.*

The Macquarie Backwardation Ranking Strategy (hereinafter, the *Strategy*) is a generic Weighting Methodology used for calculating Weights used as inputs in the calculation of Excess Return and Total Return indices. An Index Methodology which uses the Weights generated by the Strategy is hereinafter generically called the *Relevant Index Methodology*. An index constructed by applying the Relevant Index Methodology to the set of Weights generated by the Strategy is hereinafter generically called the *Index*. The Strategy is to be generically applied to the Relevant Index Methodology as specified in the Index Specification of the Index.

## Definitions

**Commodity** is each Commodity as defined by the Relevant Index Methodology. The total number of commodities is denoted by  $n$ .

**Contract** is each commodity futures contract as defined by the Relevant Index Methodology.

**Expiration** is the date established by relevant Trading Facility for each Contract and is typically the date on which trading on that particular Contract ceases.

The **Front Month Contract** on an Index Business Day is the contract closest to Expiration but with Expiration succeeding the 10<sup>th</sup> Index Business Day following the current Index Business Day.

**Index Business Days** are the Index Business Days as defined by the Relevant Index Methodology and specified in the Index Specification.

**Index Rebalancing Day** is the Observation Date as defined by the Relevant Index Methodology and specified in the Index Specification.

**Highly Correlated Group** is a set of Commodities determined in the Index Specification

The **One-Year Ahead Contract** on an Index Business Day is the contract closest to expiry with Expiration at least one year following that Index Business Day.

**Ranking Type** in respect of an Index is specified in the Index Specification

**Settlement Prices** are the prices, expressed in US dollars, published by the relevant exchange or trading facility and referred by them as the settlement price for that particular contract. If any Index Business Day is not a business day of the relevant exchange or trading facility, then the Settlement Price of that particular contract will be the most recent available price on the most recent business day of the relevant exchange or trading facility.

**Trading Facility** is an exchange, board of trade, facility or platform designated by the Commodity Futures Trading Commission to trade futures under the Commodity Exchange Act.

## Introduction

The principle behind the Strategy is to generate a set of Weights according to a set of Signals. The Strategy is outlined as follows:

- Section 1 describes how the set of Signals is calculated, and;
- Section 2 describes how the Commodities are ranked;
- Section 3 describes how the Initial Weights are assigned to each Commodity, and;

Section 4 describes the calculation of the Weights using inputs from Section 2 and Section 3.

## Section 1: Signals Calculation

On an Index Rebalancing Day,  $R$ , the Signal  $S_{i,R}$  corresponding to Commodity  $i$  is calculated according to the formula below:

$$S_{i,R} = \left( \frac{P_{i,R}^0}{P_{i,R}^{1Y}} - 1 \right) \times \frac{1}{D}$$

where  $D$  is the number of calendar days between the Expiration of the Front Contract and the Expiration and the Expiration of the One-Year Ahead Contract,  $P_{i,R}^0$  is the Settlement Price for the Front Month Contract and  $P_{i,R}^{1Y}$  is the Settlement Price of the One-Year Ahead Contract on the Index Rebalancing Day  $R$ .

## Section 2: Ranking Commodities

On an Index Rebalancing Day,  $R$ , each Commodity  $i$  is ranked according to the Signal  $S_{i,R}$  corresponding to that Commodity in respect of that Index Rebalancing Day.

If the Ranking Type specified in the Index Specification is “ascending” then the rank of each Commodity will be determined in ascending order with rank 1 going to the Commodity with the highest  $S_{i,R}$ , rank 2 going to the Commodity with the second highest  $S_{i,R}$  and so on until all Commodities have received a rank. In the event that the Signals corresponding to two or more Commodities are equal, the Calculation Agent will determine the Signals in a commercially reasonable manner so as to establish an unambiguous ranking.

If the Ranking Type specified in the Index Specification is “descending”, then the rank of each Commodity will be determined in ascending order with rank 1 going to the Commodity with the lowest  $S_{i,R}$ , rank 2 going to the Commodity with the second lowest  $S_{i,R}$  and so on until all Commodities have received a rank. In the event that the Signals corresponding to two or more Commodities are equal, the Calculation Agent will determine the Signals in a commercially reasonable manner so as to establish an unambiguous ranking.

## Section 3: Assigning Initial Weights

On an Index Rebalancing Day  $R$ , the Initial Weight of a Commodity  $i$  will be determined according to the Ranking Table specified in the Index Specification. The weight for all Commodities that receive ranks not included in the Ranking Table will be equal to zero.

## Section 4: Weights Calculation

Once the Initial Weights in respect of an Index Rebalancing Day  $R$  have been established, the weights of the Index will be determined by following the steps below:

### Step 1:

The Unrestricted Highly Correlated Weight (“UHCW”) is the sum of the weights corresponding to the Commodities in the Highly Correlated Group as determined in the Index Specification.

If the UHCW is equal to or below 35%, the Weight corresponding to each Commodity will be equal to the Initial Weight as calculated according to Section 3. Otherwise, Step 2 will be applied.

### Step2:

If the UHCW is greater than 35%, then the Weight for each Commodity in the Highly Correlated Group will be equal to the Initial Weight corresponding to that Commodity multiplied by the ratio of 35% divided by the UHCW.

The Temporary Weight according to step 2 ( $TW_{i,R,2}$ ) for all other Commodities will be calculated as follows:

$$TW_{i,R,2} = IW_{i,R} \times \frac{65\%}{1 - UHCW}$$

---

If the Temporary Weight for all Commodities not in the Highly Correlated Group is less than or equal to 20%, then the Weight for all Commodities not in the Highly Correlated Group will be equal to their corresponding Temporary Weight. Otherwise, Step 3 will be applied

**Step 3:**

The Weight corresponding to each Commodity in the Highly Correlated Group will be equal to the Weight as determined according to Step 2

The Weight corresponding to any Commodity which had a Temporary Weight greater than or equal to 20% according to step 2 will be 20%

The Temporary Weight for all remaining Commodities will be calculated as follows:

$$TW_{j,R,3} = TW_{j,R,2} \times \frac{\sum_i \max(TW_{i,R,2} - 20\%, 0) + \sum_j TW_{j,R,2}}{\sum_j TW_{j,R,2}}$$

If, after Step 3 has been applied, the Temporary Weight for all remaining Commodities is less than or equal to 20%, then the Weight for each of those Commodities will be equal to the Temporary Weight of those Commodities according to Step 3. Otherwise, the Temporary Weight of each Commodity according to Step 2 will be set to equal the Temporary Weight of that Commodity according to Step 3, and Step 3 will be repeated until all Commodities that are not in the Highly Correlated Group have a Temporary Weight according to Step 3 that is below 20%.

The Strategy and the Index derived from this Strategy is the exclusive property of the Index Sponsor. This document has been provided to you solely for your internal use and you may not, without the prior written consent of the Index Sponsor, distribute, reproduce, in whole or in part, summarise, quote from or otherwise publicly refer to the contents of the Strategy or use it as the basis of any financial instrument. This document does not constitute a prospectus, offer, invitation or solicitation to buy or sell financial instruments and is not intended to provide the sole basis for any evaluation of the securities or any other financial instruments which may be discussed within, referred to or based upon the Strategy. Any offering or potential transaction that may be related to this Strategy will be made separately and subject to distinct documentation and in such case the information contained herein may be superseded in its entirety by such documentation in final form. The contents of this document have not been reviewed by any regulatory authority, and the distribution of this document and availability of related financial instruments in certain jurisdictions may be restricted by law. The Strategy and any financial instruments based on the Strategy may not be suitable for all investors and any investor must make an independent assessment of the appropriateness of any transaction in light of their own objectives and circumstances including the potential risks and benefits of entering into such a transaction. If you are in any doubt about any of the contents of this document, you should obtain independent professional advice.

The Strategy is published for information purposes only and does not create any legally binding obligation on the part of the Index Sponsor and/or its affiliates. The Index Sponsor expressly disclaims (to the fullest extent permitted by applicable law) all warranties (express, statutory or implied) regarding this document and the Strategy, including but not limited to all warranties of merchantability, fitness for a particular purpose of use and all warranties arising from course of performance, course of dealing or usage of trade and their equivalents under applicable laws of any jurisdiction. This document is not a personal recommendation as defined by the Financial Conduct Authority and you should consider whether you can rely upon any opinion or statement contained in this document without seeking further advice tailored for your own circumstances. It is also not investment research, and has not been prepared in accordance with legal requirements designed to promote the independence of such. Any opinions expressed herein may differ from the opinions expressed in other departments including the Research Department. The Index Sponsor may engage in transactions in a manner inconsistent with any views discussed herein.