

Royal Bank of Canada

RBCAMSC4 Index

Strategy Methodology



Capital
Markets

Proprietary and Confidential

Important Information

1. Strategy Administration

The Strategy Administrator appoints the Calculation Agent, which could be an affiliate or an external third party, who has sole discretion over calculation of the Strategy, determination of the inputs necessary to calculate the Strategy and how the Strategy Methodology is applied. It reserves the right to modify, temporarily suspend, or discontinue the Strategy at any time without notice. In certain cases, the Strategy Administrator may be required to make subjective decisions. This will be done in good faith and in a commercially reasonable manner, but, in all cases, is at the sole discretion of the Strategy Administrator.

The Strategy Administrator may cease to administer the Strategy at any time. It may also, at any time, transfer its responsibilities to another party of its choice which could be an affiliate or an external third party.

The Strategy Administrator's determinations with respect to any calculations made by the Calculation Agent and any interpretation and/or application of the Strategy Methodology, are final and binding.

The Strategy Administrator may assign the performance of calculations hereunder to any person or entity, including an affiliate of the Strategy Administrator.

The Strategy Administrator does not guarantee the accuracy, completeness, timeliness or availability of the information contained herein, and is not responsible for any errors or omissions, regardless of the cause. The Strategy Administrator does not make any representation as to the potential success or anticipated results of any transaction linked to the value of the Strategy. The Strategy Administrator disclaims any and all express or implied warranties, including, but not limited to, any warranties of merchantability or fitness for a particular purpose or use. The Strategy Administrator does not sponsor, endorse, sell, promote or manage any investment fund or other investment vehicle that is offered by third parties and that seeks to provide an investment return based on the performance of any index.

2. Changes to Futures Contracts by Listing Exchange

The exchanges may discontinue or suspend calculation or dissemination of information relating to any of the futures contracts comprising the Strategy Components. Any such actions could affect the return of the Strategy. If the situation arises in which the exchanges make changes to, replace, or discontinue a futures contract that is a Strategy Future in the Strategy then the Strategy Administrator reserves the right to take discretionary action to modify the Strategy Methodology. This will be done in good faith and in a commercially reasonable manner, but, in all cases, is at the sole discretion of the Strategy Administrator.

3. Calculation Agent

The Calculation Agent is responsible for calculating the Strategy in accordance with the Strategy Methodology.

The Calculation Agent does not guarantee the accuracy, completeness, timeliness or availability of the information contained herein, and is not responsible for any errors or omissions, regardless of the cause. The Calculation Agent does not make any representation as to the potential success or anticipated results of any transaction linked to the value of the Strategy. The Calculation Agent disclaims any and all express or implied warranties, including, but not limited to, any warranties of merchantability or fitness for a particular purpose or use. The Calculation Agent does not sponsor, endorse, sell, promote or manage any investment fund or other investment vehicle that is offered by third parties and that seeks to provide an investment return based on the performance of any index.

4. Potential conflicts of interest

In certain circumstances, the Strategy Administrator's role as a subsidiary of Royal Bank of Canada and its responsibilities with respect to the Strategy could give rise to conflicts of interest. Even though the Strategy will be calculated in accordance with certain principles, its calculation and maintenance require that certain judgments and decisions be made. The Strategy Administrator will be responsible for these judgments and decisions.

Further, the Strategy Administrator faces a potential conflict of interest between its role as the Strategy Administrator and its active role in trading commodities and derivatives instruments based upon the components of the Strategy.

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Contents

Introduction	1
Strategy Methodology Definitions	2
Strategy Composition Methodology	3
Strategy Calculation Methodology	5
Strategy Information	8

Introduction

The information presented in this document (the “Strategy Methodology”) describes the general methodology for determining the composition and calculation of the Strategy.

The Strategy is comprised of components, with each component referencing a corresponding methodology document (the “Component Strategy Methodology”). The basket composition is updated periodically by applying a weighting rebalance methodology.

Strategy Methodology Definitions

In this document, the following capitalized terms shall have the meanings ascribed opposite to them, unless otherwise stated.¹

Base Level of the Strategy is the Strategy value chosen for the First Calculation Day of the Strategy.

Calculation Agent means RBC Dominion Securities, Inc.

Contract Month is a particular futures contract for a Strategy Future.

First Calculation Day of the Strategy is the first day on which the calculation of the Strategy begins.

Market Disruption Event or **MDE** has the meaning ascribed to it in the Strategy Methodology.

Rebalance Weight refers to the weight of a particular Strategy Component at a given time, defined in the Strategy Methodology.

Strategy is a rules based procedure for constructing an investment portfolio.

Strategy Administrator means RBC Capital Markets, Inc.

Strategy Business Day means any weekday that is not an NYSE holiday.

Strategy Component is a component strategy referenced by the Strategy. Correspondingly defined are the **First Calculation Day of the Strategy Component** and the **Base Level of the Strategy Component**.

Strategy Composition refers to the particular collection and proportion of Strategy Components referenced within the Strategy at a given time.

Strategy Future is a component asset within any of the Strategy Components.

Strategy Methodology has the meaning ascribed to it in the Introduction.

Component Strategy Methodology has the meaning ascribed to it in the Introduction.

Strategy Name is the phrase used to describe a specific instance of the Strategy.

Settlement Price refers to the official settlement price/closing price published by the respective futures exchange for a given futures contract.

Strategy Ticker is the Bloomberg symbol for a specific instance of the Strategy.

¹ These definitions shall be equally applicable to both the singular and plural forms of defined terms.

Strategy Composition Methodology

This section outlines the methodology used to determine the Strategy Composition.

The following notations and definitions are used to describe the Strategy Composition Methodology. Specific parameters used in the implementation of the Strategy are contained within the Strategy Information.

N - denotes the number of Strategy Components included in the Strategy.

UI^i - denotes the i^{th} Strategy Component which is to be allocated a Rebalance Weight. Note that $1 \leq i \leq N$.

$WAC(T)$ - denotes the most recent **Weight Assignment Calculation Day** before Strategy Business Day T . This is the Strategy Business Day on which the Rebalance Weights for all Strategy Components are determined.

$\tilde{w}_{WAC(T)}^i$ - denotes the **Rebalance Weight** for the i^{th} Strategy Component on Weight Assignment Calculation Day $WAC(T)$.

$BD(S, T)$ - denotes the number of Strategy Business Days between the Strategy Business Day S (inclusive) and the Strategy Business Day T (inclusive).

ER_T^i - denotes the level of UI^i on Strategy Business Day T .

$V^i(S, T)$ - denotes the **Volatility Measure** in respect of U^i calculated between Strategy Business Days S and T as:

$$V^i(S, T) = \sqrt{\frac{1}{BD(S, T) - 1} \sum_{t=S}^T \left[\frac{ER_t^i - ER_{t-1}^i}{ER_{t-1}^i} - \frac{1}{BD(S, T) - 1} \sum_{l=S}^T \frac{ER_l^i - ER_{l-1}^i}{ER_{l-1}^i} \right]^2}$$

On each Weight Assignment Calculation Day $WAC(T)$, the following steps are performed:

Step 1: Calculate Signals

For each $1 \leq i \leq N$, calculate $V^i(S, WAC(T))$, denoted as $V_{WAC(T)}^i$, where S is the 62nd Strategy Business Day prior to $WAC(T)$.

Step 2: Calculate Rebalance Weights

For each $1 \leq i \leq N$, the Rebalance Weight $\tilde{w}_{WAC(T)}^i$ for the Strategy Component UI^i is determined as follows:

$$\tilde{W}_{WAC(T)}^i = \frac{1/V_{WAC(T)}^i}{\sum_{j=1}^N 1/V_{WAC(T)}^j}$$

Delays and Interruptions

The Weight Assignment Calculation Day and associated Rebalance Date of the Strategy may be postponed due to the lack of timely available input data required to calculate updated Rebalance Weights. In such instances, the Strategy Administrator has sole and absolute discretion to modify Strategy rules to accommodate any such delays or interruptions.

Strategy Calculation Methodology

The Strategy is a composition of Strategy Components with the Strategy Composition determined according to the Strategy Composition Methodology. Each Strategy Component's composition is described in the corresponding Component Strategy Methodology.

Note that a date is represented using the convention MM/DD/YYYY and a month is represented using the convention MM/YYYY.

Strategy Calculation

This section details the calculations used to determine the daily level of the Strategy given the levels of the Strategy Components and other parameters relevant to the Strategy Calculation.

The Strategy is calculated in US Dollars to an accuracy of 8 decimal places and has an initial value of the Base Level of the Strategy on the First Calculation Day of the Strategy, as specified in Strategy Information.

The following terms and notation are used within this section to define the daily Strategy Calculation. Specific parameters used in the implementation of the Strategy are contained within the Strategy Information.

I_T - denotes the level of the Strategy on Strategy Business Day T .

n - denotes the number of Strategy Components included in the Strategy.

$CD[S, T]$ - denotes the **Calendar Day Count** between dates S (exclusive) and T (inclusive).

UI_T^j - denotes the level of the j^{th} Strategy Component on Strategy Business Day T . Note that $1 \leq j \leq n$.

$R(T)^j$ - denotes the **Rebalance Date** used on Strategy Business Day T for the j^{th} Strategy Component.

$w_{R(T)^j}^j$ - denotes the **Rebalance Weight** assigned to the j^{th} Strategy Component on Rebalance Date $R(T)^j$.

f_T - denotes the **Turnover Cost** used on Strategy Business Day T for the Strategy.

In the absence of a Market Disruption Event, on Strategy Business Day T , the Strategy level is defined by the following iterative formula, with the final result rounded to the eighth decimal place:

$$I_T = I_{T-1} + \sum_{j=1}^n w_{R(T)^j}^j \frac{I_{R(T)^j}}{UI_{R(T)^j}^j} (UI_T^j - UI_{T-1}^j) - I_{T-1} f_{T-1} \frac{CD[T-1, T]}{365}$$

Strategy Component Calculation

Each Strategy Component is calculated according to its respective Component Strategy Methodology.

Calculation and Publication of the Strategy

The Strategy will be calculated and published on each Strategy Business Day by 5:00pm EST. If any relevant information regarding Strategy Futures or Components is not available by 5:00pm EST the Calculation Agent will follow the Adjustment Protocol outlined below.

Adjustment Protocol

In the event that the Strategy Administrator or the Calculation Agent determines that the calculation of the Strategy is not accurate (i.e., does not reflect the value of its underlying components), the Calculation Agent may (including on instruction of the Strategy Administrator) make such adjustments to the calculation of the Strategy as it reasonably believes necessary to re-establish the Strategy Level as an accurate reflection of the underlying variables used in calculating the Strategy. Such adjustments include, but are not limited to, adjustments to the Strategy Components, the Strategy Futures underlying the Strategy Components, and/or any other variable of the Strategy contained herein. The effective date of any such adjustment shall be determined by the Calculation Agent. The circumstances in which the Calculation Agent and/or the Strategy Administrator may make such adjustments include, but are not limited to, the data on which the calculation rests (whether provided by a 3rd party or not).

Market Disruption Events

A “*Market Disruption Event*” (also referred to as “MDE”) is any event, circumstance or cause that the Strategy Administrator determines could have a material adverse effect on a market participant’s ability to take a position in the futures contracts necessary to replicate the Strategy. More specifically, this may include, without limitation, any of the following events to the extent that they have such effect:

- Trading in one or more futures contracts that are part of the Strategy is suspended because the closing or settlement price of the futures contract is at the upper or lower limit of the range of prices within which the closing or settlement price of such futures contract may fluctuate as established by the applicable exchange (i.e. a “limit up” or “limit down” price has occurred).
- The daily Settlement Prices for one or more futures contracts that are part of the Strategy are not available, or the applicable exchange does not, for any reason, announce, report or publish the information necessary for determining the official daily settlement price for such futures contract.
- Any material suspension, halt, stoppage, or delay in trading in one or more futures contracts that are part of the Strategy.
- Any change (i) in law or regulation (including, without limitation, any tax law) or (ii) in the interpretation by any court, tribunal or regulatory authority with competent jurisdiction of any applicable law or regulation (including any action taken by a taxing authority), that the Strategy Administrator determines, in its sole and absolute discretion, (A) makes it illegal to hold, acquire or dispose of any hedge position in respect of the Strategy or (B) results in a material increase in the cost associated with performing obligations in relation to the Strategy (including, without limitation, due to any increase in tax liability, decrease in tax benefit or other adverse effect on the tax position of the Issuer or any of its affiliates or agents).

- Any other circumstance that could lead to a material and/or extraordinary increase in the cost to acquire, establish, re-establish, substitute, maintain, unwind, or dispose of any transaction or asset used for hedging the Strategy or to realize, recover, or remit the proceeds of any such transaction or asset.

The Strategy Administrator is responsible for determining whether a Market Disruption Event has occurred. Under such circumstances when a Market Disruption Event has occurred, the Strategy Administrator shall, in its sole discretion, determine the appropriate course of action, which may include, but is not limited to, the suspension or discontinuance of the Strategy and any constituent thereof, its publication or calculation. Any such action by the Strategy Administrator may be without notice.

Strategy Information

The section contains the specific parameters and specifications of the Strategy and associated Strategy Components.

Strategy Specification

First Calculation Day of the Strategy: 01/07/2008

Base Level of the Strategy: 100

Turnover Cost: 0

Weight Assignment Calculation Day: Any Weight Assignment Calculation Day of the Strategy Components

The **Rebalance Date** $R(T)^j$ is specified as follows:

Strategy Business Day (BD): T	Rebalance Date: $R(T)^j$
Any Strategy Business Day	Corresponding Rebalance Date of the j^{th} Strategy Component

Strategy Component Specification

First Calculation Day and Base Level of the Strategy Components

Strategy Component	First Calculation Day	Strategy Base Level
RBCACOT7 Index	06/11/2007	100
RBCACOT8 Index	08/20/2007	100
RBCAMA04 Index	06/11/2007	100