ActiveViam

FRTB

Database

5.0

Contents

1 Database

This section provides the database definitions in the FRTB Accelerator .

Here are a few points to note about the database descriptions:

- The documentation mentions some constraints, for example NOT NULL and UNIQUE KEY.
  These constraints may not be enforced by all databases and may be difficult to enforce when using views. However, the FRTB Accelerator will assume that the data satisfies these constraints and may behave unpredictably if they are not satisfied.
- The documentation includes the joins used between the tables/views.
  These are provided for informational purposes, though they may optionally be used to construct keys and indices to help maintain data integrity and improve performance.

Each cube in the FRTB Accelerator uses a star schema with many-to-one joins radiating out from a base table. The base tables are as follows:

Cube	Base Table
StandardisedApproachCube	TRADE_BASE

Additionally, there are "isolated" tables that are not part of the star schema but are still used in the cubes.

1.1 Global Database Definition

This section describes tables that are common to all cubes. This includes FX rates and trade booking.

1.1.1 FX Rates

The FX rates are stored in the FX_RATES table.

1.1.2 Trade Booking

The TRADE_MAPPING table maps trades/positions to books and legal entities by **TRADE_ID** and **AS_OF_DATE**.

The multi-level book organizational hierarchy and desk descriptions are in the BOOK_HIERARCHY table which is indexed by **BOOK** and **AS_OF_DATE**.

The multi-level legal entity organizational hierarchy is in the LEGAL_ENTITY_HIERARCHY table which is indexed by **LEGAL_ENTITY** and **AS_OF_DATE**. It is built from the table.

The LEGAL_ENTITY_ATTRIBUTES table provides a description of the legal entities.

1.2 BOOK_HIERARCHY

The BOOK_HIERARCHY table contains the multi-level book organizational structure and the desk-level information.

Column Name	Type	Not Null	Cube Field	Description
AS_OF_DATE	DATE	Y		Timestamp (at close of business) for the data.
BOOK	STRING	Y		Leaf node of the book hierarchy. This matches the last non-_DATAMEMBER_ node in levels 1 - 15.
HIERARCHY_LEVEL1	STRING		Level 1	Node at level 1 of the book hierarchy.
HIERARCHY_LEVEL2	STRING		Level 2	Node at level 2 of the book hierarchy.
HIERARCHY_LEVEL3	STRING		Level 3	Node at level 3 of the book hierarchy.
HIERARCHY_LEVEL4	STRING		Level 4	Node at level 4 of the book hierarchy.
HIERARCHY_LEVEL5	STRING		Level 5	Node at level 5 of the book hierarchy.
HIERARCHY_LEVEL6	STRING		Level 7	Node at level 6 of the book hierarchy.
HIERARCHY_LEVEL7	STRING		Level 6	Node at level 7 of the book hierarchy.
HIERARCHY_LEVEL8	STRING		Level 8	Node at level 8 of the book hierarchy.
HIERARCHY_LEVEL9	STRING		Level 9	Node at level 9 of the book hierarchy.
HIERARCHY_LEVEL10	STRING		Level 10	Node at level 10 of the book hierarchy.
HIERARCHY_LEVEL11	STRING		Level 11	Node at level 11 of the book hierarchy.
HIERARCHY_LEVEL12	STRING		Level 12	Node at level 12 of the book hierarchy.
HIERARCHY_LEVEL13	STRING		Level 13	Node at level 13 of the book hierarchy.
HIERARCHY_LEVEL14	STRING		Level 14	Node at level 14 of the book hierarchy.
HIERARCHY_LEVEL15	STRING		Level 15	Node at level 15 of the book hierarchy.
DESK	STRING		[Booking].[Desks]	The desk to which the book belongs. This will match one of the non-_DATAMEMBER_ nodes in levels 1 - 15.
CATEGORY	STRING			Optional category for the node (and all Descendant nodes).

Column Name	Type	Not Null	Cube Field	Description
FRTB_DESK_MODEL	STRING		[Booking].[FRTB Model]	Specifies whether the desk should be treated as IMA or SA for the capital charge calculations.
PLA_ZONE	STRING		[Booking].[PLA Zone]	Indicates which zone the desk falls into according to the PLA test metrics [MAR32.42].
IRT_DESK	STRING		[Booking].[IRT Desk]	Indicates whether the desk is an IRT desk. ACR is calculated separately for desks flagged as IRT.

1.2.1 Unique Key

Columns
AS_OF_DATE
BOOK

1.2.2 Incoming Joins

Source Table	Source Columns	Target Columns
TRADE_MAPPING	AS_OF_DATE BOOK	AS_OF_DATE BOOK

1.3 FXRATES

The FXRATES table contains all the FX Rates. It is an isolated table and not part of any cube facts.

FX Rates are looked up via the default implementation of **IFXRates** API.

Column Name	Type	Not Null	Description
AS_OF_DATE	DATE	Y	Timestamp (at close of business) for the data.
BASE_CCY	STRING	Y	The left side of the currency pair.
COUNTER_CCY	STRING	Y	The right side of the currency pair.
FX_RATE	DOUBLE	Y	Forex rate between the two currencies.

1.3.1 Unique Key

Columns
AS_OF_DATE
BASE_CCY
COUNTER_CCY

1.4 LEGAL_ENTITY_ATTRIBUTES

The **LEGAL_ENTITY_ATTRIBUTES** table contains a description of the legal entity.

Column Name	Type	Not Null	Cube Field	Description
AS_OF_DATE	DATE	Y	See field in joined table (TRADE_BASE)	Timestamp (at close of business) for the data.
LEGAL_ENTITY	STRING	Y	See field in joined table (TRADE_MAPPING)	The legal entity.
NETTING_SET	STRING		Netting Set	The netting set the legal entity belongs to.

1.4.1 Unique Key

Columns
AS_OF_DATE
LEGAL_ENTITY

1.4.2 Incoming Joins

Source Table	Source Columns	Target Columns
TRADE_MAPPING	AS_OF_DATE LEGAL_ENTITY	AS_OF_DATE LEGAL_ENTITY

1.5 LEGAL_ENTITY_HIERARCHY

The LEGAL_ENTITY_HIERARCHY table contains the multi-level legal entity organizational structure.

Column Name	Type	Not Null	Cube Field	Description
AS_OF_DATE	DATE	Y		Timestamp (at close of business) for the data.
LEGAL_ENTITY	STRING	Y		Leaf node of the book hierarchy. This matches the last non-_DATAMEMBER_ node in levels 1 - 15.
HIERARCHY_LEVEL1	STRING		Level 1	Node at level 1 of the book hierarchy.
HIERARCHY_LEVEL2	STRING		Level 2	Node at level 2 of the book hierarchy.
HIERARCHY_LEVEL3	STRING		Level 3	Node at level 3 of the book hierarchy.
HIERARCHY_LEVEL4	STRING		Level 4	Node at level 4 of the book hierarchy.
HIERARCHY_LEVEL5	STRING		Level 5	Node at level 5 of the book hierarchy.

1.5.1 Unique Key

Columns
AS_OF_DATE
LEGAL_ENTITY

1.5.2 Incoming Joins

Source Table	Source Columns	Target Columns
TRADE_MAPPING	AS_OF_DATE LEGAL_ENTITY	AS_OF_DATE LEGAL_ENTITY

1.6 TRADE_MAPPING

The TRADE_MAPPING store maps trades to books, desks and legal entities.

Column Name	Type	Not Null	Cube Field	Description
AS_OF_DATE	DATE	Y		Timestamp (at close of business) for the data.
TRADE_ID	STRING	Y		Unique Trade (or Position) ID.
BOOK	STRING	Y	[Booking].[Books]	The book to map the trade to (must match the node in the Book Hierarchy).
LEGAL_ENTITY	STRING	Y	[Organization].[Legal Entities]	Legal Entity to map the trade to (must match the node in the Legal Entity Hierarchy).

Column Name	Type	Not Null	Cube Field	Description
TRADE_DATE	DATE		[Dates].[TradeDates]	The date on which the trade took place.

1.6.1 Unique Key

Columns
AS_OF_DATE
TRADE_ID

1.6.2 Incoming Joins

Source Table	Source Columns	Target Columns	Cube
TRADE_BASE	AS_OF_DATE TRADE_ID	AS_OF_DATE TRADE_ID	StandardisedApproachCube

1.6.3 Outgoing Joins

Target Table	Source Columns	Target Columns
BOOK_HIERARCHY	AS_OF_DATE BOOK	AS_OF_DATE BOOK
LEGAL_ENTITY_HIERARCHY	AS_OF_DATE LEGAL_ENTITY	AS_OF_DATE LEGAL_ENTITY
LEGAL_ENTITY_ATTRIBUTES	AS_OF_DATE LEGAL_ENTITY	AS_OF_DATE LEGAL_ENTITY

1.7 Standardised Approach Database Definition

The SA Cube Schema starts with the TRADE_BASE table, which is an index to all the facts in the SA Cube.

1.7.1 Trade Description

The TRADE_MAPPING table places each trade in the organizational hierarchy. See Global section for more details.

The SA_TRADE_DESCRIPTION table provides trade-level data.

1.7.2 Risk Factor Descriptions

The **TRADE_BASE** table references the risk-factor descriptions for all SA facts.

The risk-factor description starts with the RISK_FACTOR_DESCRIPTION table, which contains the description of risk-factor (independent of the underlying).

The RISK_FACTOR_DESCRIPTION contains references to the follow tables:

Risk Class	Underlying Store
GIRR, CSR non-Sec, CSR Sec non-CTP, CSR Sec CTP, Equity, Commodity, FX	UNDERLYING_DESCRIPTION
DRC non-Sec	OBLIGOR
DRC Sec non-CTP	TRANCHE
RRAO	RRAO

1.7.3 Sensitivities

The **TRADE_BASE** store references trade-level sensitivities stores for all SA facts (except RRAO).

RISK_MEASURE	Sensitivity Store
Delta	DELTA
Vega	VEGA
Curvature	CURVATURE
DRC	DRC_BASE

1.8 CSRBUCKET_DESC

The CSRBUCKET_DESC table provides canonical descriptions for the CSR buckets.

Column Name	Type	Not Null	Cube Field	Description
AS_OF_DATE	DATE	Y	See field in joined table (UNDERLY-ING_DESCRIPTION)	Timestamp (at close of business) for the data.
RISK_CLASS	STRING	Y	See field in joined table (UNDERLY-ING_DESCRIPTION)	The risk-class ("CSR non-Sec", "CSR Sec non-CTP", "CSR Sec CTP")
BUCKET	STRING	Y	See field in joined table (UNDERLY-ING_DESCRIPTION)	The Bucket the Underlying belongs to.
RATING_CATEGORY	STRING		- CSR non-Sec Rating Category - CSR Sec non-CTP Rating Category - CSR Sec CTP Rating Category	The canonical name for the bucket rating.
SECTOR_CATEGORY	STRING		- CSR non-Sec Sector Category - CSR Sec non-CTP Sector Category - CSR Sec CTP Sector Category	The canonical name for the bucket sector.

1.8.1 Unique Key

Columns
AS_OF_DATE
RISK_CLASS
BUCKET

1.8.2 Incoming Joins

Source Table	Source Columns	Target Columns
UNDERLYING_DESCRIPTION	AS_OF_DATE RISK_CLASS BUCKET	AS_OF_DATE RISK_CLASS BUCKET

1.9 CURVATURE

The CURVATURE table contains the Curvature shocked prices.

Column Name	Type	Not Null	Cube Field	Description
AS_OF_DATE	DATE	Y	See field in joined table (TRADE_BASE)	Timestamp (at close of business) for the data.
TRADE_ID	STRING	Y	See field in joined table (TRADE_BASE)	Database key for trade/position.
RISK_FACTOR	STRING	Y	See field in joined table (TRADE_BASE)	The underlying risk factor (may be more than one) of the risk class. The risk factor name is expected to encompass the definition of the risk factor per the FRTB specification ([MAR21.3] to [MAR21.14]). This field is optional. If not provided, it must be generated from the 'Underlying' column.

Column Name	Type	Not Null	Cube Field	Description
RISK_CLASS	STRING	Y	See field in joined table (TRADE_BASE)	Defines which risk class this file represents. Valid values are: • GIRR • CSR non-Sec • CSR Sec CTP • CSR Sec non-CTP • Equity • Commodity • FX .
RISK_MEASURE	STRING	Y	See field in joined table (TRADE_BASE)	The risk-measure. Must be set to “Curvature”
SHIFT_UP_PV	DOUBLE	Y	This is a measure	Valuation resulting from parallel shocks up.
SHIFT_DOWN_PV	DOUBLE	Y	This is a measure	Valuation resulting from parallel shocks down.
PVAPPLIED	STRING	Y		Boolean ‘Y’ or ‘N’ to indicate if PV has been removed from sensitivities or not.

Column Name	Type	Not Null	Cube Field	Description
CCY	STRING	Y	PV Currency	The currency code of sensitivities.
RISK_WEIGHT	STRING			Placeholder field. Currently unused.
FXDIVIDER_ELIGIBILITY	STRING			FX Only. Boolean 'Y' or 'N' to indicate if the CVR qualifies for dividing by 1.5.
PRESENT_VALUE	DOUBLE		This is a measure	The (unshocked) Present Value of the instrument.
PRESENT_VALUE_OVERRIDDE	STRING			Flag to indicate which PV value to use; from this table ("Y"), or from SATRADE_DESCRIPTION ("N")

1.9.1 Unique Key

Columns
AS_OF_DATE
TRADE_ID

Columns
RISK_FACTOR
RISK_CLASS
RISK_MEASURE

1.9.2 Incoming Joins

Source Table	Source Columns	Target Columns
TRADE_BASE	AS_OF_DATE TRADE_ID RISK_FACTOR RISK_CLASS RISK_MEASURE	AS_OF_DATE TRADE_ID RISK_FACTOR RISK_CLASS RISK_MEASURE

1.10 DELTA

The DELTA table contains the Delta sensitivities.

Column Name	Not Null	Type	Cube Field	Description
AS_OF_DATE	Y	DATE	See field in joined table (TRADE_BASE)	Timestamp (at close of business) for the data.
TRADE_ID	Y	STRING	See field in joined table (TRADE_BASE)	Database key for trade/position.
RISK_FACTOR	Y	STRING	See field in joined table (TRADE_BASE)	The risk factor of the sensitivity. The risk factor name is expected to encompass the definition of the risk factor per the FRTB specification ([MAR21.3] to [MAR21.14]).
RISK_CLASS	Y	STRING	See field in joined table (TRADE_BASE)	Defines the risk class that the delta data represents: • GIRR • CSR non-Sec • CSR Sec CTP • CSR Sec non-CTP • Equity • Commodity • FX

Column Name	Not Null	Type	Cube Field	Description
RISK_MEASURE	Y	STRING	See field in joined table (TRADE_BASE)	The risk-measure. Must be set to “Delta”
DELTA_SENSITIVITIES	Y	DOUBLE	This is a measure	The delta sensitivity.
CCY	Y	STRING	Delta Currency	Currency of the delta sensitivity.
FXCOMPLEX_TRADE		STRING		FX Only. Boolean ‘Y’ or ‘N’ to indicate if the sensitivity can be converted from one reporting currency to another.
FXOTHER_CCY		STRING		FX Only.
FXDIVIDER_ELIGIBILITY		STRING		FX Only. Boolean ‘Y’ or ‘N’ to indicate if the CVR qualifies for dividing by 1.5.
OPTIONALITY	Y	STRING	Delta Optionality	Indicates whether the instrument has optionality (See BCBS 457 [MAR21.2]). It is set to ‘Y’ for instruments with optionality (and hence with Vega and Curvature risk); set to ‘N’ for trades without optionality (with no Vega and Curvature risk).

Column Name	Not Null	Type	Cube Field	Description
ORIGINAL_OPTIONALITY	Y	STRING		Set to same value as OPTIONALITY

1.10.1 Unique Key

Columns
AS_OF_DATE
TRADE_ID
RISK_FACTOR
RISK_CLASS
RISK_MEASURE

1.10.2 Incoming Joins

Source Table	Source Columns	Target Columns
TRADE_BASE	AS_OF_DATE TRADE_ID RISK_FACTOR RISK_CLASS RISK_MEASURE	AS_OF_DATE TRADE_ID RISK_FACTOR RISK_CLASS RISK_MEASURE

1.11 DRCBASE

The **DRCBASE** table contains the fields used to calculate the Gross JTD. It contains a row for each DRC fact in the SA cube.

Column Name	Type	Not Null	Cube Field	Description
AS_OF_DATE	DATE	Y	See field in joined table (TRADE_BASE)	Timestamp (at close of business) for the data.
TRADE_ID	STRING	Y		Database key for trade/position.
RISK_CLASS	STRING	Y	See field in joined table (TRADE_BASE)	“DRC non-Sec” or “DRC Sec non-CTP”.
RISK_FACTOR	STRING	Y	See field in joined table (TRADE_BASE)	The reference to the Obligor/Tranche (Underlying), maturity, and seniority.

Column Name	Type	Not Null	Cube Field	Description
INSTRUMENT_LGD_TYPE	STRING		[Default Risk Charge].[DRC Instrument LGD Type]	Instrument type for LGD (BCBS 457, [MAR22.12]) equity junior debt senior debt covered bond
DIRECTION	STRING	Y	[Default Risk Charge].[DRC Direction]	'long' or 'short'.
NOTIONAL	DOUBLE		This field is a measure	(optional) This is used to compute GrossJTD for non-Sec when not provided. This is an optional override for the 'Notional' in the Trade Attributes.
PRESENT_VALUE	DOUBLE		This field is a measure	(optional) This is used to compute GrossJTD for non-Sec when not provided. This is an optional override for the 'PresentValue' in the Trade Attributes.

Column Name	Type	Not Null	Cube Field	Description
GROSS_JTD	DOUBLE		This field is a measure	(optional) Gross JTD value; providing this value skips the calculation (using market value and notional).
CCY	STRING	Y	DRC Gross JTD Currency	(optional) Currency code of Gross JTD, Notional, or MarketValue. Required if GrossJTD, Notional, or MarketValue provided.
ADJUSTMENT	DOUBLE		DRC Adjustment (measure)	The adjustment added to the Gross JTD (when `sa.drc.adjustment.apply=true`)
PRESENT_VALUE_OVERRIDDEN	STRING	Y		Flag to indicate which PV value to use; from this table ("Y"), or from SATRADE_DESCRIPTION ("N")

Column Name	Type	Not Null	Cube Field	Description
NOTIONAL_OVERRIDDEN	STRING	Y		Flag to indicate which Notional value to use; from this table (“Y”), or from SATRADE_DESCRIPTION (“N”) Or set to “G” to use GROSS_JTD value from this table instead of calculating from PV and Notional

1.11.1 Unique Key

Columns
AS_OF_DATE
TRADE_ID
RISK_CLASS
RISK_FACTOR

1.11.2 Incoming Joins

Source Table	Source Columns	Target Columns
TRADE_BASE	AS_OF_DATE TRADE_ID RISK_CLASS RISK_FACTOR	AS_OF_DATE TRADE_ID RISK_CLASS RISK_FACTOR

1.12 EQUITY_BUCKET_DESC

The EQUITY_BUCKET_DESC table provides canonical descriptions for the equity buckets.

Column Name	Type	Not Null	Cube Field	Description
AS_OF_DATE	DATE	Y	See field in joined table (UNDERLYING_DESCRIPTION)	Timestamp (at close of business) for the data.
RISK_CLASS	STRING	Y	See field in joined table (UNDERLYING_DESCRIPTION)	The risk-class (set to “Equity”)
BUCKET	STRING	Y	See field in joined table (UNDERLYING_DESCRIPTION)	The Bucket the Underlying belongs to.
MARKET_CAP_CATEGORY	STRING		Equity Market Cap Category	The canonical name for the bucket market cap.
ECONOMY_CATEGORY	STRING		Equity Economy Category	The canonical name for the bucket economy.
SECTOR_CATEGORY	STRING		Equity Sector Category	The canonical name for the bucket sector.

1.12.1 Unique Key

Columns
AS_OF_DATE
RISK_CLASS
BUCKET

1.12.2 Incoming Joins

Source Table	Source Columns	Target Columns
UNDERLYING_DESCRIPTION	AS_OF_DATE RISK_CLASS BUCKET	AS_OF_DATE RISK_CLASS BUCKET

1.13 OBLIGOR

The **OBLIGOR** table contains the description of a DRC non-Sec obligor.

Column Name	Type	Not Null	Cube Field	Description
AS_OF_DATE	DATE	Y	See field in joined table (TRADE_BASE)	Timestamp (at close of business) for the data.

Column Name	Type	Not Null	Cube Field	Description
OBLIGOR_ID	STRING	Y	[Default Risk Charge].[DRC Obligor]	The ID of the obligor.
RISK_CLASS	STRING	Y		Set to “DRC non-Sec”.
OBLIGOR_CATEGORY	STRING	Y	[Default Risk Charge].[DRC non-Sec Bucket]	the bucket to which the obligor belongs.
RATING	STRING	Y	[Default Risk Charge].[DRC non-Sec Rating]	The credit quality of the obligor.
RISK_WEIGHT	DOUBLE		DRC non-Sec JTD Weightings Override measure	Optional override for the DRC non-Sec Obligor risk-weight.
DRC_FUND_TREATMENT	STRING		[Default Risk Charge].[DRC Fund Treatment]	Flag indicating if the obligor cannot be included in offsetting or diversification with other exposures.

1.13.1 Unique Key

Columns
AS_OF_DATE

Columns
OBLIGOR
RISK_CLASS

1.13.2 Incoming Joins

Source Table	Source Columns	Target Columns
RISK_FACTOR_DESCRIPTION	AS_OF_DATE UNDERLYING RISK_CLASS	AS_OF_DATE OBLIGOR RISK_CLASS

1.14 RISK_FACTOR_DESCRIPTION

The RISK_FACTOR_DESCRIPTION table contains the description of risk-factor, independent of the underlying.

The fields used in this table and the purpose depend on the risk-class and risk-measure. See the Implementation and Interpretation Guide for details on each risk-class.

Column Name	Type	Not Null	Cube Field	Description
AS_OF_DATE	DATE	Y	See field in joined table (TRADE_BASE)	Timestamp (at close of business) for the data.

Column Name	Type	Not Null	Cube Field	Description
RISK_FACTOR	STRING	Y	See field in joined table (TRADE_BASE)	The name of the risk factor.
RISK_CLASS	STRING	Y	See field in joined table (TRADE_BASE)	The risk-class (“GIRR”, “CSR non-Sec”, “CSR Sec non-CTP”, “CSR Sec CTP”, “Equity”, “Commodity”, “FX”, “DRC non-Sec”, “DRC Sec non-CTP”, “RRAO”)
RISK_MEASURE	STRING	Y	See field in joined table (TRADE_BASE)	The risk-measure (“Delta”, “Vega”, “Curvature”, “DRC”, “RRAO”)
UNDERLYING	STRING	Y	[Market Data].[Underlying]	The primary component of the risk factor. See datastore references below.
RISK_FACTOR_TYPE	STRING		[Risk].[Risk Factor Types]	The type of the risk-factor CSR Delta: “Bond” or “CDS” Equity Delta: “Spot” or “Repo”
COMMODITY_LOCATION	STRING		[Risk].[Commodity Location]	Commodity only. Commodity delivery location

Column Name	Type	Not Null	Cube Field	Description
UNDERLYING_FXRISK_CCY	STRING		[Risk].[FX Counter Currency]	FX only. The counter currency of the risk-factor currency pair.
SENIORITY	STRING		[Default Risk Charge].[DRC Seniority]	Seniority of the exposure
MATURITY	STRING		[Risk].[Original Maturity]	The tenor or maturity (e.g. “1D”, “2W”, “12M”, “1Y”, or date “YYYY-MM-DD”).
UNDERLYING_MATURITY	STRING		[Risk].[Original Underlying Maturity]	GIRR Vega only. Underlying residual maturity.
ZERO_RISK_WEIGHT	STRING		[Default Risk Charge].[DRC Zero Risk Weight]	Flag, ‘Y’ or ‘N’, indicating if the exposure qualifies for a zero risk-weight (default = N).

1.14.1 Unique Key

Columns
AS_OF_DATE
RISK_FACTOR

Columns
RISK_CLASS
RISK_MEASURE

1.14.2 Incoming Joins

Source Table	Source Columns	Target Columns
TRADE_BASE	RISK_FACTOR RISK_CLASS RISK_MEASURE AS_OF_DATE	RISK_FACTOR RISK_CLASS RISK_MEASURE AS_OF_DATE

1.14.3 Outgoing Joins

Target Table	Source Columns	Target Columns	Risk Class
UNDERLYING_DESCRIPTION	AS_OF_DATE UNDERLYING RISK_CLASS	AS_OF_DATE UNDERLYING RISK_CLASS	“GIRR”, “CSR non-Sec”, “CSR Sec non-CTP”, “CSR Sec CTP”, “Equity”, “Commodity”, “FX”

Target Table	Source Columns	Target Columns	Risk Class
OBLIGOR	AS_OF_DATE UNDERLYING RISK_CLASS	AS_OF_DATE OBLIGOR RISK_CLASS	"DRC non-Sec"
TRANCHE	AS_OF_DATE UNDERLYING RISK_CLASS	AS_OF_DATE TRANCHE RISK_CLASS	"DRC Sec non-CTP"
SECURITY	AS_OF_DATE UNDERLYING RISK_CLASS	AS_OF_DATE SECURITY RISK_CLASS	"DRC Sec CTP"
RRAO	AS_OF_DATE UNDERLYING RISK_CLASS	AS_OF_DATE RRAOCATEGORY RISK_CLASS	"RRAO"
SENIORITY_DESCRIPTION	AS_OF_DATE SENIORITY	AS_OF_DATE SENIORITY	"DRC non-Sec"

1.15 RRAO

The RRAO table contains the description of the RRAO category.

The RRAO category is not part of the specification, however, it is used to group trades whose RRAO may change between jurisdictions.

Column Name	Type	Not Null	Cube Field	Description
AS_OF_DATE	DATE	Y	See field in (TRADE_BASE) table	Timestamp (at close of business) for the data.
RRAOCATEGORY	STRING	Y	RRAO Category	The ID of the RRAO Category.
RISK_CLASS	STRING	Y		Set to “RRAO”.
RESIDUAL_RISK	STRING		RRAO	Flag ‘Y’ or ‘N’ indicating if this RRAO category is subject to residual risk add-on.
EXOTIC_UNDERLYING	STRING		Exotic Underlying	Flag ‘Y’ or ‘N’ indicating an exotic underlying for the RRAO category.
OTHER_RESIDUAL_RISK_TYPE	STRING		Other Residual Risk Type	Optional data indicating the residual Risk type.

1.15.1 Unique Key

Columns
AS_OF_DATE
RRAOCATEGORY
RISK_CLASS

1.15.2 Incoming Joins

Source Table	Source Columns	Target Columns
RISK_FACTOR_DESCRIPTION	AS_OF_DATE UNDERLYING RISK_CLASS	AS_OF_DATE RRAOCATEGORY RISK_CLASS

1.16 SATRADE_DESCRIPTION

The **SATRADE_DESCRIPTION** table contains trade-level data used in the SA calculations.

Column Name	Type	Not Null	Cube Field	Description
AS_OF_DATE	DATE	Y	See field in joined table (TRADE_BASE)	Timestamp (at close of business) for the data.
TRADE_ID	STRING	Y		Database key for trade/position.
SENSITIVITY_SCALE_CATEGC	STRING		Sensitivity Scale Category	The category used to scale the SBM sensitivities. This matches the category in the SensitivityScaling configuration table.
NOTIONAL	DOUBLE		This field is a measure	The Notional of the trade/position (used for RRAO and DRC). *Deprecated* for DRC use

Column Name	Type	Not Null	Cube Field	Description
NOTIONAL_CCY	STRING			Currency code of the Notional. Required if Notional provided.
PRESENT_VALUE	DOUBLE		This field is a measure	The current present value of the trade/position (used in curvature and DRC). *Deprecated*
PVCCY	STRING			Currency code of present value. Required if present value provided.

1.16.1 Unique Key

Columns
AS_OF_DATE
TRADE_ID

1.16.2 Incoming Joins

Source Table	Source Columns	Target Columns
TRADE_BASE	AS_OF_DATE TRADE_ID	AS_OF_DATE TRADE_ID

1.17 SECURITY

The **SECURITY** table

Column Name	Type	Not Null	Cube Field	Description
AS_OF_DATE	DATE	Y		See field in joined table (TRADE_BASE) Timestamp (at close of business) for the data.
SECURITY	STRING	Y	[Default Risk Charge].[DRC Sec CTP Security]	The underlying product of the trade that could be an obligor or a fully qualified tranche (with the series, attachment and detachment).
RISK_CLASS	STRING	Y		Always “DRC Sec CTP”
BUCKET	STRING	Y	[Default Risk Charge].[DRC Sec CTP Bucket]	Obligor or Index the underlying relies on (see BCBS 457, MRA22.40)

Column Name	Type	Not Null	Cube Field	Description
SENIORITY	STRING		[Default Risk Charge].[DRC Sec CTP Seniority]	"Senior" or "Junior".
RATING	STRING		[Default Risk Charge].[DRC Sec CTP Rating]	From AAA to Default.
TYPE	STRING		[Default Risk Charge].[DRC Sec CTP Rating Type]	Rating type : STC or empty for non-STC.
ATTACHMENT	DOUBLE		[Default Risk Charge].[DRC Sec CTP Attachment]	The start of the tranche or empty if non-tranched product.
DETACHMENT	DOUBLE		[Default Risk Charge].[DRC Sec CTP Detachment]	The end of the tranche or empty if non-tranched product.
INSTRUMENT_TYPE	STRING		[Default Risk Charge].[DRC Sec CTP Instrument Type]	Tranche or non-tranched, depending on the Attachement and Detachment fields.
RISK_WEIGHT	DOUBLE			Optional risk-weight, to override value.

1.17.1 Unique Key

Columns
AS_OF_DATE
SECURITY
RISK_CLASS

1.17.2 Incoming Joins

Source Table	Source Columns	Target Columns
RISK_FACTOR_DESCRIPTION	AS_OF_DATE UNDERLYING RISK_CLASS	AS_OF_DATE SECURITY RISK_CLASS

1.18 SENIORITY_DESCRIPTION

The SENIORITY_DESCRIPTION table provides a ranking of seniorities that can be used when calculating the DRC non-Sec net JTD.

Column Name	Type	Not Null	Description
AS_OF_DATE	DATE	Y	Timestamp (at close of business) for the data.
SENIORITY	STRING	Y	Seniority of the exposure.

Column Name	Type	Not Null	Description
RANKING	INTEGER	Y	Ranking to determine relative seniorities of SENIORITY values.

1.18.1 Unique Key

Columns
AS_OF_DATE
SENIORITY

1.18.2 Incoming Joins

Source Table	Source Columns	Target Columns
RISK_FACTOR_DESCRIPTION	AS_OF_DATE SENIORITY	AS_OF_DATE SENIORITY

1.19 TRADE_BASE

The TRADE_BASE table is the base in the SA Cube star schema. Each row in this table represents a fact in the SA Cube.

The unique key in this table makes up the index of the SA Cube.

Column Name	Type	Not Null	Cube Field	Description
AS_OF_DATE	DATE	Y	[Dates].[AsOfDate]	Timestamp (at close of business) for the data.
TRADE_ID	STRING	Y	[Booking].[TradeId]	Unique Trade (or Position) ID
RISK_FACTOR	STRING	Y	[Risk].[RiskFactor]	Risk-factor identifier (unique per risk-class and risk-measure).
RISK_CLASS	STRING	Y	[Risk].[RiskClass]	"Commodity", "CSR non-Sec", "CSR Sec non-CTP", "CSR Sec CTP", "Equity", "FX", "GIRR", "DRC non-Sec", "DRC Sec non-CTP", "RRAO"
RISK_MEASURE	STRING	Y	[Risk].[Measure]	"Delta", "Vega", "Curvature", "RRAO", "DRC"

1.19.1 Unique Key

Columns
AS_OF_DATE
TRADE_ID
RISK_FACTOR
RISK_CLASS
RISK_MEASURE

1.19.2 Outgoing Joins

Target Table	Source Columns	Target Columns	RISK_MEASURE
SA_TRADE_DESCRIPTION	AS_OF_DATE TRADE_ID	AS_OF_DATE TRADE_ID	
RISK_FACTOR_DESCRIPTION	AS_OF_DATE RISK_FACTOR RISK_CLASS RISK_MEASURE	AS_OF_DATE RISK_FACTOR RISK_CLASS RISK_MEASURE	
DELTA	AS_OF_DATE TRADE_ID RISK_FACTOR RISK_CLASS RISK_MEASURE	AS_OF_DATE TRADE_ID RISK_FACTOR RISK_CLASS RISK_MEASURE	“Delta”

Target Table	Source Columns	Target Columns	RISK_MEASURE
VEGA	AS_OF_DATE TRADE_ID RISK_FACTOR RISK_CLASS RISK_MEASURE	AS_OF_DATE TRADE_ID RISK_FACTOR RISK_CLASS RISK_MEASURE	"Vega"
CURVATURE	AS_OF_DATE TRADE_ID RISK_FACTOR RISK_CLASS RISK_MEASURE	AS_OF_DATE TRADE_ID RISK_FACTOR RISK_CLASS RISK_MEASURE	"Curvature"
DRC_BASE	AS_OF_DATE TRADE_ID RISK_FACTOR RISK_CLASS	AS_OF_DATE TRADE_ID RISK_FACTOR RISK_CLASS	"DRC"

1.20 TRANCHE

The **TRANCHE** table contains the description of a DRC Sec non-CTP tranche.

Column Name	Type	Not Null	Cube Field	Description
AS_OF_DATE	DATE	Y	See field in joined table	Timestamp (at close of business) for the data.
TRANCHE	STRING	Y	[Default Risk Charge].[DRC Sec non-CTP Tranche]	ID of the tranche.
RISK_CLASS	STRING	Y		Set to “DRC Sec non-CTP”.
BUCKET	STRING	Y	[Default Risk Charge].[DRC Sec non-CTP Bucket]	The DRC bucket.
SENIORITY	STRING	Y	[Default Risk Charge].[DRC Sec non-CTP Seniority]	Seniority of the tranche.
RATING	STRING		[Default Risk Charge].[DRC Sec non-CTP Rating]	The credit rating of the tranche.
TYPE	STRING		[Default Risk Charge].[DRC Sec non-CTP Rating Type]	The rating type used alongside the rating to determine the SEC-ERBA risk-weight.
REGION	STRING		[Default Risk Charge].[DRC Sec non-CTP Region]	The region used to determine the Bucket.
ASSET_CLASS	STRING		[Default Risk Charge].[DRC Sec non-CTP Asset Class]	The asset class used to determine the Bucket.
ATTACHMENT	DOUBLE		[Default Risk Charge].[DRC Sec non-CTP Attachment]	Attachment point (Decimal values are expected).

Column Name	Type	Not Null	Cube Field	Description
DETACHMENT	DOUBLE		[Default Risk Charge].[DRC Sec non-CTP Detachment]	Detachment point (Decimal values are expected).
RISK_WEIGHT	DOUBLE		DRC Sec non-CTP JTD Weightings Override measure	Optional override for the DRC Sec non-CTP Tranche risk-weight.

1.20.1 Unique Key

Columns
AS_OF_DATE
TRANCHE
RISK_CLASS

1.20.2 Incoming Joins

Source Table	Source Columns	Target Columns
RISK_FACTOR_DESCRIPTION	AS_OF_DATE UNDERLYING RISK_CLASS	AS_OF_DATE TRANCHE RISK_CLASS

1.21 UNDERLYING_DESCRIPTION

The UNDERLYING_DESCRIPTION table contains the description of the principal component of the SBM risk-factors.

Each row in the table describes one of the following depending on the risk class:

Risk Class	Underlying
(link to risk-class specific documentation)	(link to risk-class specific underlying)
GIRR	yield, inflation, or cross-currency basis curve
FX	FX rate
Equity	equity or equity issuer
CSR non-Sec	relevant issuer credit spread curve
CSR Sec non-CTP	tranche credit spread curves
CSR Sec CTP	underlying credit spread curves
Commodity	distinct commodity

Column Name	Type	Not Null	Cube Field	Description
AS_OF_DATE	DATE	Y	See field in joined table (TRADE_BASE)	Timestamp (at close of business) for the data.
UNDERLYING	STRING	Y	See field in joined table (RISK_FACTOR_DESCRIPTION)	The primary component of the SBM risk factor.
RISK_CLASS	STRING	Y	See field in joined table (TRADE_BASE)	The risk-class ("GIRR", "CSR non-Sec", "CSR Sec non-CTP", "CSR Sec CTP", "Equity", "Commodity", "FX").
BUCKET	STRING	Y		The Bucket the Underlying belongs to.
GIRR_CURVE_TYPE	STRING		[Market Data].[GIRR Curve Types]	GIRR Delta and Vega only. The Curve type ("Yield", "Basis", or "Inflation").
GIRR_CCY	STRING		[Risk].[Currencies]	GIRR only. The currency of the curve. This is also the Bucket.
CSRQUALITY	STRING		[Market Data].[CSR Quality]	CSR only. The credit quality of the curve ("Senior IG", IG", "HY", or "NR").

Column Name	Type	Not Null	Cube Field	Description
CSRSECTOR	STRING		[Market Data].[CSR Sector]	CSR only. The relevant sector of the curve.
CSRRATING	STRING		[Market Data].[CSR Rating]	CSR non-Sec only. “high” for AA- and above covered bonds.
EQUITY_MARKET_CAP	STRING		[Market Data].[Equity Market Cap]	Equity only. The equity issuer market cap (“Large”, “Small”, “Other”).
EQUITY_ECONOMY	STRING		[Market Data].[Equity Issuer Economy]	Equity only. The equity issuer economy (“Emerging”, “Advanced”, “Other”).
EQUITY_SECTOR	STRING		[Market Data].[Equity Sector]	Equity only. The equity issuer sector.
POOL	STRING		[Market Data].[CSR Sec non-CTP Pool]	CSR Sec non-CTP only. The underlying pool for the tranche.
ATTACHMENT	DOUBLE		[Market Data].[CSR Sec non-CTP Attachment]	CSR Sec non-CTP only. Attachment point for the tranche.

Column Name	Type	Not Null	Cube Field	Description
DETACHMENT	DOUBLE		[Market Data].[CSR Sec non-CTP Detachment]	CSR Sec non-CTP only. Detachment point for the tranche.
UNDERLYING_FXORIGINAL_CCY	STRING			FX only. Set to the same as UNDERLYING.

1.21.1 Unique Key

Columns
AS_OF_DATE
UNDERLYING
RISK_CLASS

1.21.2 Incoming Joins

Source Table	Source Columns	Target Columns
RISK_FACTOR_DESCRIPTION	AS_OF_DATE UNDERLYING RISK_CLASS	AS_OF_DATE UNDERLYING RISK_CLASS

1.21.3 Outgoing Joins

Target Table	Source Columns	Target Columns	Risk Class
CSRBUCKET_DESC	AS_OF_DATE RISK_CLASS BUCKET	AS_OF_DATE RISK_CLASS BUCKET	“CSR non-Sec”, “CSR Sec non-CTP”, “CSR Sec CTP”
EQUITY_BUCKET_DESC	AS_OF_DATE RISK_CLASS BUCKET	AS_OF_DATE RISK_CLASS BUCKET	“Equity”

1.22 VEGA

The VEGA table contains the Vega sensitivities.

Column Name	Type	Not Null	Cube Field	Description
AS_OF_DATE	DATE	Y	See field in joined table (TRADE_BASE)	Timestamp (at close of business) for the data.
TRADE_ID	STRING	Y		Database key for trade/position.
RISK_FACTOR	STRING	Y	See field in joined table (TRADE_BASE)	The underlying risk factor (may be more than one) of the risk class. The risk factor name is expected to encompass the definition of the risk factor per the FRTB specification ([MAR21.3] to [MAR21.14]). This field is optional. If not provided, it must be generated from the 'Underlying' column.
RISK_CLASS	STRING	Y	See field in joined table (TRADE_BASE)	Defines the risk class that the vega data represents.
RISK_MEASURE	STRING	Y	See field in joined table (TRADE_BASE)	The risk-measure. Must be set to "Vega".
VEGA_SENSITIVITIES	DOUBLE	Y		Sensitivity value.

Column Name	Type	Not Null	Cube Field	Description
CCY	STRING	Y	Vega Currency	The currency of the Vega sensitivities.

1.22.1 Unique Key

Columns
AS_OF_DATE
TRADE_ID
RISK_FACTOR
RISK_CLASS
RISK_MEASURE

1.22.2 Incoming Joins

Source Table	Source Columns	Target Columns
TRADE_BASE	AS_OF_DATE TRADE_ID RISK_FACTOR RISK_CLASS RISK_MEASURE	AS_OF_DATE TRADE_ID RISK_FACTOR RISK_CLASS RISK_MEASURE