



Technical Workshop: EDS – DI1, FRC and DAP Spread Trading

AGENDA

Product's Specifications

Trading

Trade & Position Management

Fee Schedule

Risk Treatment and LiNe

Sinacor

Product's Specifications

PROJECT

What is?

Launch 2 new types of Strategies on 3 Products (DI1, DAP e FRC) with *execution report* (Leg's prices/quantities published on real time + Specific Fee Schedule on EDS (based on potential P&L) + New Fee schedule on individual Contracts

Strategies:

- **FRA (UP Neutral):** combines 2 maturities, calibrating quantities in order to neutralize Leg's Unit Prices (trade FRA)
- **DV01 Neutral:** combines 2 maturities, calibrating quantities in order to neutralize Leg's DV01



SPECIFICATIONS

	DI1 STRATEGIES		DAP STRATEGIES		FRC STRATEGIES	
	DV01 Neutral	UP Neutral (FRA)	DV01 Neutral	UP Neutral (FRA)	DV01 Neutral	UP Neutral (FRA)
Ticker	DII + MYMYMY	DIF + MYMYMY	DAI + MYMYMY	DAF + MYMYMY	FRI + MYMYMY	FRF + MYMYMY
Quotation	Maturitie's price differential	Forward Price between maturities	Maturitie's price differential	Forward Price between maturities	Maturitie's price differential	Forward Price between maturities
Tick Size	0.005% for EDS which Nearby month's maturity is up to 5 Years and 0.01% for EDS which Nearby month's maturity is above 5 years		0.01%		0.01%	
Rount-lot	5 contracts		5 contracts		10 contracts	
Ratio	$\text{Ratio} = \frac{DV01_{\text{Deferred}}}{DV01_{\text{Nearby}}}$ (Fixed: Daily update)	$\text{Ratio} = \frac{UP_{\text{Deferred}}}{UP_{\text{Nearby}}}$ (Fixed: Daily update)	$\text{Ratio} = \frac{DV01_{\text{Deferred}}}{DV01_{\text{Nearby}}}$ (Fixed: Daily update)	$\text{Ratio} = \frac{UP_{\text{Deferred}}}{UP_{\text{Nearby}}}$ (Fixed: Daily update)	$\text{Ratio} = \frac{DV01_{\text{Deferred}}}{DV01_{\text{Nearby}}}$ (Fixed: Daily update)	Ratio = 1: 1
Leg's Quantities	$QTT_{\text{Deferred}} = QTT_{\text{Traded}}$ $QTT_{\text{Nearby}} = QTT_{\text{Deferred}} \times \text{Ratio}$ (rounded to closest Round-lot)		$QTT_{\text{Deferred}} = QTT_{\text{Traded}}$ $QTT_{\text{Nearby}} = QTT_{\text{Deferred}} \times \text{Ratio}$ (rounded to closest Round-lot)		$QTT_{\text{Deferred}} = QTT_{\text{Traded}}$ $QTD_{\text{Nearby}} = QTD_{\text{Deferred}} \times \text{Ratio}$ (rounded to closest Round-lot)	$QTT_{\text{Deferred}} = QTT_{\text{Traded}}$ $QTT_{\text{Nearby}} = QTT_{\text{Traded}}$
Leg's Price	$P_{\text{Deferred}} = P^*_{\text{Deferred}}$ $P_{\text{Nearby}} = P_{\text{Deferred}} - P_{\text{Traded}}$	$P_{\text{Deferred}} = P^*_{\text{Deferred}}$ $P_{\text{Nearby}} = P_{\text{Traded}}$ and P_{Deferred} compounding	$P_{\text{Deferred}} = P^*_{\text{Deferred}}$ $P_{\text{Nearby}} = P_{\text{Deferred}} - P_{\text{Traded}}$	$P_{\text{Deferred}} = P^*_{\text{Deferred}}$ $P_{\text{Nearby}} = P_{\text{Traded}}$ and P_{Deferred} compounding	$P_{\text{Nearby}} = P^*_{\text{Nearby}}$ $P_{\text{Deferred}} = P_{\text{Nearby}} + P_{\text{Traded}}$	$P_{\text{Nearby}} = P^*_{\text{Nearby}}$ $P_{\text{Deferred}} = P_{\text{Traded}}$ and P_{Nearby} compounding
Outcome	DI1 Contracts		DAP Contracts		FRC Strategies	

P^* = reference tunnel price on trading instant

UP – DI1

What is?

Unit Price (UP) is the present value of maturity considering the traded rate or the settlement rate and represents the financial amount of the maturity.

How to calculate?

Calculate Unit Price on **DI Future**, in accordance with the following formula:

$$UP_{DI1} = \left(\frac{100,000}{(1 + Rate_{DI1})^{\frac{n}{252}}} \right)$$

Where:

- UP_{DI1} is the unit price in points, rounded to 2nd decimal place;
- $Rate_{DI1}$ is the settlement price on calculation date, expressed as a percentage;
- n is the number of business days between the calculation date and the day preceding the expiration date;

UP – DAP

What is?

Unit Price (UP) is the present value of maturity considering the traded rate or the settlement rate and represents the financial amount of the maturity.

How to calculate?

Calculate Unit Price on **DAP Future**, in accordance with the following formula:

$$UP_{DAP} = \left(\frac{100,000}{(1 + Rate_{DAP})^{\frac{n}{252}}} \right)$$

Onde:

- UP_{DAP} is the unit price in points, rounded to 2nd decimal place;
- $Rate_{DAP}$ is the settlement price on calculation date, expressed as a percentage;
- n is the number of business days between the calculation date and the day preceding the expiration date;

UP – FRC

What is?

Unit Price (UP) is the present value of maturity considering the traded rate or the settlement rate and represents the financial amount of the maturity.

How to calculate?

Calculate Unit Price on **FRC Strategy**, in accordance with the following formula:

$$UP_{FRC} = \left(\frac{50,000}{1 + (Rate_{frc} \times \frac{(n_{frc} - n_{basismaturity})}{360})} \right)$$

Where:

- UP_{FRC} is the unit price in points, rounded to 2nd decimal place;
- $Rate_{frc}$ is the closing price on calculation date, expressed as a percentage;
- n_{frc} is the number of days between the calculation date and the day preceding the expiration date;
- $n_{basismonth}$ is the number of days between the calculation date and the day preceding the DDI's basis month expiration date.

RATIO – UP NEUTRAL (FRA)

What is?

Is the ratio between Nearby maturity related to Deferred Maturity. Ratio is used to calculate leg's quantities that comes from Strategy trade.

How to calculate?

Division between Deferred month's Unit Price and Nearby month's Unit Price, Truncated on 6th decimal place:

$$\text{Ratio} = \frac{\text{UP}_{\text{Deferred month}}}{\text{UP}_{\text{Nearby month}}}$$

Update Dynamic

Ratio is daily calculated in the end of each trade session and published on B3's website: https://www.b3.com.br/en_us/market-data-and-indices/data-services/market-data/reports/derivatives-market/indicators/eds-ratios/

UP NEUTRAL – LEG'S PRICE RULES

DI1 and DAP

After the trade, the leg's price will be determined in accordance to the following rule:

- Deferred month's price will be the tunnel reference price on trading moment
- Nearby month's price will be calculated in accordance with the following formula :

$$Price_{Nearbymonth} = \left(\left(\frac{(1 + Price_{Deferredmonth})^{\frac{n_{deferredmonth}}{252}}}{(1 + Price_{Traded})^{\frac{n_{deferredmonth} - n_{nearbymonth}}{252}}} \right)^{\frac{252}{n_{nearbymonth}}} \right) - 1$$

- $Price_{Nearbymonth}$ is the nearby month's price, expressed as a percentage;
- $Price_{Deferredmonth}$ is the deferred month's tunnel reference price on trading moment, expressed as a percentage;
- $n_{deferredmonth}$ is the number of business days between the trading date and the day preceding the deferred month's expiration date;
- $Price_{Traded}$ is the traded price on strategy;
- $n_{nearbymonth}$ is the number of business days between the trading date and the day preceding the nearby month's expiration date.

UP NEUTRAL – LEG'S PRICE RULES

FRC

After the trade, the leg's price will be determined in accordance to the following rule:

- Nearby Month's price será o Price do seu centro de banda no momento do registro da operação
- Deferred Month's price will be calculataed in accordance with the following formula:

$$\text{Price}_{\text{deferredmonth}} = \left(\left(1 + \text{Price}_{\text{nearbymonth}} \times \frac{(n_{\text{nearbymonth}} - n_{\text{basismonth}})}{360} \right) \times \left(1 + \text{Price}_{\text{traded}} \times \frac{(n_{\text{deferredmonth}} - n_{\text{nearbymonth}})}{360} \right) - 1 \right) \times \frac{360}{(n_{\text{deferredmonth}} - n_{\text{basismonth}})}$$

- $\text{Price}_{\text{deferredmonth}}$ is the deferred month's price, expressed as a percentage;
- $\text{Price}_{\text{nearbymonth}}$ is the nearby month's tunnel reference price on trading moment, expressed as a percentage;
- $n_{\text{nearbymonth}}$ is the number of days between trade date, inclusive and nearby month's expiration date, exclusive;
- $n_{\text{basismonth}}$ is the number of days between trade date, inclusive and DDI's basis month expiration date, exclusive;
- $\text{Price}_{\text{traded}}$ is the traded price on strategy;
- $n_{\text{deferredmonth}}$ is the number of days between trade date, inclusive and deferred month's expiration date, exclusive;

EXAMPLE – UP NEUTRAL DI1F23 AND DI1F25 – DIFF23F25

Nearby Month

DI1F23:

- Ratio Calculation Date: 04/01/2021
- Business Days to expiration (01/02/2023): 441
- Settlement Price: 6.51%
- UP: 89,550.25

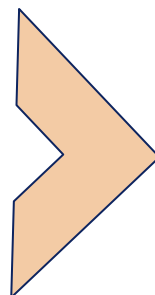
$$UP_{DI1} = \left(\frac{100,000}{(1 + 6.51\%)^{\frac{441}{252}}} \right) = 89,550.25$$

Deferred Month

DI1F25:

- Ratio Calculation Date: 04/01/2021
- Business Days to expiration (01/02/2025): 944
- Settlement Price: 8,20%
- UP: 74,436.10

$$UP_{DI1} = \left(\frac{100,000}{(1 + 8.20\%)^{\frac{944}{252}}} \right) = 74,436.10$$



Strategy

DIFF23F25:

Truncated on 6th decimal place

Ratio:

$$\text{Ratio} = \frac{UP_{\text{Deferred month}}}{UP_{\text{Nearby month}}} = \frac{74,436.10}{89,550.25} = 0.831221$$

- Ratio validity: 04/05/2021 to 04/09/2021
- Quantity F25: Traded Quantity
- Quantity F23: Traded Quantity x Ratio, rounded to closest round-lot multiple
- Price: F25: Tunnel reference price on traded moment
- Price F23:
$$= \left(\left(\frac{(1 + \text{Price}_{F25})^{\frac{944}{252}}}{(1 + \text{Price}_{\text{traded}})^{\frac{944 - 441}{252}}} \right)^{\frac{252}{441}} \right) - 1$$
- Side (Buy or Sell) F25: Same as traded on strategy
- Side (Buy or Sell) F23: Opposite on traded on strategy

EXAMPLE – UP NEUTRAL DI1F23 AND DI1F25 – DIFF23F25

Strategy

DIFF23F25:

Ratio:

$$\text{Ratio} = \frac{UP_{\text{Deferred month}}}{UP_{\text{Nearby month}}} = \frac{74,436.10}{89,550.25} = 0.831221$$

- Ratio validity: 04/05/2021 to 04/09/2021
- Quantity F25: Traded Quantity
- Quantity F23: Traded Quantity x Ratio, rounded to closest round-lot multiple
- Price: F25: Tunnel reference price on traded moment

$$\text{Price F23} = \left(\left(\frac{(1 + \text{Price}_{F25})^{\frac{944}{252}}}{(1 + \text{Price}_{\text{traded}})^{\frac{944-441}{252}}} \right)^{\frac{252}{441}} \right) - 1$$

- Side (Buy or Sell) F25: Same as traded on strategy
- Side (Buy or Sell) F23: Opposite on traded on strategy

BUY DIFF2325
Price: 1.150%
Qty: 10,000

DI1F25 BUY

Price: 3.10%
Qty: 10,000

DI1F23 SELL

Price: $\left(\left(\frac{(1 + 3.10\%)^{\frac{944}{252}}}{(1 + 1.15\%)^{\frac{944-441}{252}}} \right)^{\frac{252}{441}} \right) - 1 = 5.37\%$

Qty: 10,000 x 0.831221 = 8,310
Rounded to Round-lot

SELL DIFF2325
Price: -0.250%
Qty: 5,000

DI1F25 SELL

Price: 2.10%
Qty: 5,000

DI1F23 BUY

Price: $\left(\left(\frac{(1 + 2.10\%)^{\frac{944}{252}}}{(1 + (-0.25\%)^{\frac{944-441}{252}}} \right)^{\frac{252}{441}} \right) - 1 = 4.85\%$

Qty: 5,000 x 0.831221 = 4,155
Rounded to Round-lot

EXAMPLE – UP NEUTRAL DAPK25 AND DAPQ26 – DAFK25Q26

Nearby Month

DAPK25:

- **Ratio Calculation Date:** 04/01/2021
- **Business Days to expiration (05/15/2025):** 1,034
- **Settlement Price:** 3.11%
- **UP:** 88,191.06

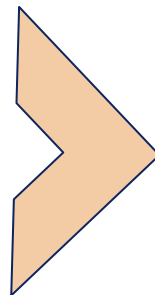
$$UP_{DAP} = \left(\frac{100,000}{(1 + 3.11\%)^{\frac{1,034}{252}}} \right) = 88,191.06$$

Deferred Month

DAPQ26:

- **Ratio Calculation Date:** 04/01/2021
- **Business Days to expiration (08/17/2026):** 1,352
- **Settlement Price:** 3.36%
- **PU:** 83,752.48

$$UP_{DAP} = \left(\frac{100.000}{(1 + 3.36\%)^{\frac{1,352}{252}}} \right) = 83,752.48$$



Strategy

DAFK25Q26:

• **Ratio:**

$$\text{Ratio} = \frac{UP_{\text{Deferred month}}}{UP_{\text{Nearby month}}} = \frac{83,752.48}{88,191.06} = 0.949670$$

- **Ratio validity:** 04/05/2021 to 04/09/2021
- **Quantity FQ26:** Traded Quantity
- **Quantity K25:** Traded Quantity x Ratio, rounded to closest round-lot multiple

• **Price: Q26:** Tunnel reference price on traded moment

• **Price K25:** = $\left(\left(\frac{(1 + \text{Price}_{Q26})^{\frac{1,352}{252}}}{(1 + \text{Price}_{\text{traded}})^{\frac{1,352 - 1,034}{252}}} \right)^{\frac{252}{1,034}} \right) - 1$

- **Side (Buy or Sell) Q26:** Same as traded on strategy
- **Side (Buy or Sell) K25:** Opposite on traded on strategy

EXAMPLE – UP NEUTRAL DAPK25 AND DAPQ26 – DAFK25Q26

Strategy

DAFK25Q26:

• Ratio:

$$\text{Ratio} = \frac{UP_{\text{Deferred month}}}{UP_{\text{Nearby month}}} = \frac{83,752.48}{88,191.06} = 0.949670$$

- **Ratio validity:** 04/05/2021 to 04/09/2021
- **Quantity FQ26:** Traded Quantity
- **Quantity K25:** Traded Quantity x Ratio, rounded to closest round-lot multiple
- **Price: Q26:** Tunnel reference price on traded moment
- **Price K25:**
$$= \left(\left(\frac{(1 + \text{Price}_{Q26})^{\frac{1,352}{252}}}{(1 + \text{Price}_{\text{traded}})^{\frac{1,352 - 1,034}{252}}} \right)^{\frac{252}{1,034}} \right) - 1$$
- **Side (Buy or Sell) Q26:** Same as traded on strategy
- **Side (Buy or Sell) K25:** Opposite on traded on strategy

BUY DAFK25Q26 Price: 1.150% Qty: 10,000

BUY DAPQ26 Price: 2.00% Qty: 10,000

SELL DAPK25

Price: $\left(\left(\frac{(1 + 2.00\%)^{\frac{1,352}{252}}}{(1 + 1.15\%)^{\frac{1,352 - 1,034}{252}}} \right)^{\frac{252}{1,034}} \right) - 1 = 2.26\%$

Qty: 10,000 x 0.949670 = 9,495

Rounded to Round-lot

SELL DAFK25Q26 Price: -0.250% Qty: 5,000

SELL DAPQ26 Price: 2.10% Qty: 5,000

BUY DAPK25

Price: $\left(\left(\frac{(1 + 2.10\%)^{\frac{1,352}{252}}}{(1 + (-0.25\%)^{\frac{1,352 - 1,034}{252}}} \right)^{\frac{252}{1,034}} \right) - 1 = 2.83\%$

Qty: 5,000 x 0.949670 = 4,750

Rounded to Round-lot

EXAMPLE - UP NEUTRAL FRCF23 AND FRCF25 – FRFF23F25

Nearby Month

FRCF23:

- Ratio Calculation Date: 04/01/2021
- Days to DDI's basis month expiration (05/03/2021): 32
- Days to expiration (01/02/2023): 641
- Closing Price: 2.00%
- UP: 48,363.69

$$UP_{FRC} = \left(\frac{50,000}{1 + (2.00\% \times \frac{(641 - 32)}{360})} \right) = 48,363.69$$

Deferred Month

FRCF25:

- Ratio Calculation Date: 04/01/2021
- Days to DDI's basis month expiration (05/03/2021): 32
- Days to expiration (01/02/2025): 1,372
- Closing Price: 3.00%
- UP: 44,977.51

$$UP_{FRC} = \left(\frac{50,000}{1 + (3.00\% \times \frac{(1,372 - 32)}{360})} \right) = 44,977.51$$

Strategy

FRFF23F25:

- Ratio:
Ratio = 1
- **Quantity F25:** Traded Quantity
- **Quantity F23:** Traded Quantity
- **Price: F23:** Tunnel reference price on traded moment
- **Price F25:** $\left(\left(1 + Price_{F23} \times \frac{(641-32)}{360} \right) \times \left(1 + Price_{traded} \times \frac{(1,372-641)}{360} \right) - 1 \right) \times \frac{360}{(1,372 - 32)}$
- **Side (Buy or Sell) F25:** Same as traded on strategy
- **Side (Buy or Sell) F23:** Opposite on traded on strategy

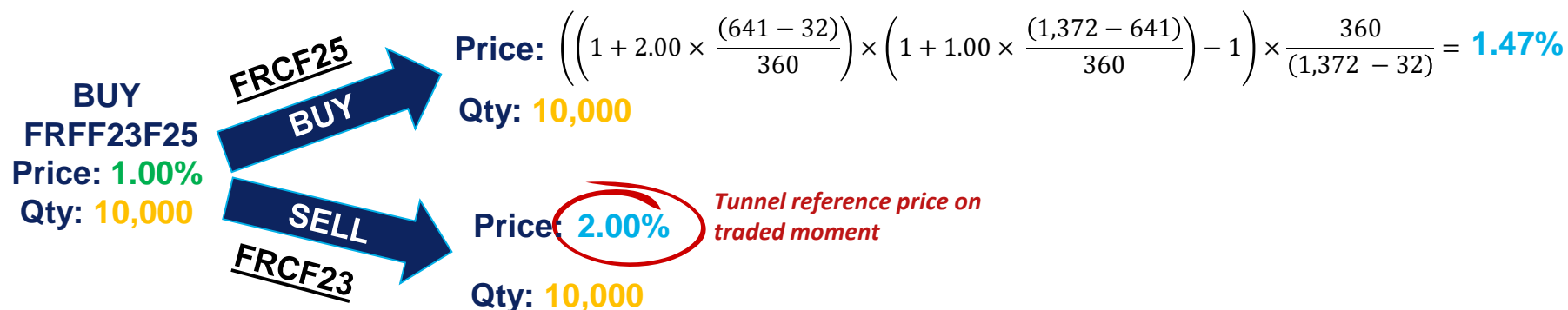
EXAMPLE - UP NEUTRAL FRCF23 AND FRCF25 – FRFF23F25

FRFF23F25:

- Ratio:**

$$\text{Ratio} = 1$$

- Quantity F25:** Traded Quantity
- Quantity F23:** Traded Quantity
- Price: F23:** Tunnel reference price on traded moment
- Price F25:** $\left(\left(1 + \text{Price}_{F23} \times \frac{(641-32)}{360} \right) \times \left(1 + \text{Price}_{\text{traded}} \times \frac{(1,372-641)}{360} \right) - 1 \right) \times \frac{360}{(1,372-32)}$
- Side (Buy or Sell) F25:** Same as traded on strategy
- Side (Buy or Sell) F23:** Opposite on traded on strategy



DV01 – DI1

What is?

It is a risk metric that measure the price change of a bond in response to 1 bp (0.01%) change in yield

How to calculate?

Calculate DV01 on **DI Future**, in accordance with the following formula:

$$DV01_{DI1} = \left(\frac{100,000}{(1 + Rate_{DI1})^{\frac{n}{252}}} \right) - \left(\frac{100,000}{(1 + Rate_{DI1} + 0.01\%)^{\frac{n}{252}}} \right)$$

Onde:

- $DV01_{DI1}$ is the value in BRL of DV01, rounded to 2nd decimal place;
- $Rate_{DI1}$ is the settlement price on calculation date, expressed as a percentage;
- n is the number of business days between the calculation date and the day preceding the expiration date

DV01 – DAP

What is?

It is a risk metric that measure the price change of a bond in response to 1 bp (0.01%) change in yield

How to calculate?

Calculate DV01 on **DAP Future**, in accordance with the following formula:

$$DV01_{DAP} = \left(\frac{100,000}{(1 + Rate_{DAP})^{\frac{n}{252}}} \right) - \left(\frac{100,000}{(1 + Rate_{DAP} + 0.01\%)^{\frac{n}{252}}} \right)$$

Onde:

- $DV01_{DAP}$ is the value in BRL of DV01, rounded to 2nd decimal place;
- $Rate_{DAP}$ is the settlement price on calculation date, expressed as a percentage;
- n is the number of business days between the calculation date and the day preceding the expiration date

DV01 – FRC

What is?

It is a risk metric that measure the price change of a bond in response to 1 bp (0.01%) change in yield

How to calculate?

Calculate DV01 on **FRC Future**, in accordance with the following formula:

- If the calculation is made any day, except on the third-to-last trading session of the month:

$$DV01_{FRC1} = \left(\frac{50,000}{1 + (\text{Rate}_{frc} \times \frac{(n_{frc} - n_{Vctobaseddi})}{360})} \right) - \left(\frac{50,000}{1 + (\text{Rate}_{frc} + 0.01\%) \times \frac{(n_{frc} - n_{Vctobaseddi})}{360}} \right)$$

If the calculation is made on the third-to-last trading session of the month:

$$\text{Rate}_{frasinthetic} = \left(\frac{1 + \left(\text{RateDDI}_{Vctoleg} \times \frac{n_{Vctoleg}}{360} \right)}{1 + \left(\text{RateDDI}_{2ndVcto} \times \frac{n_{2ndVctoddi}}{360} \right)} - 1 \right) \times \left(\frac{360}{n_{Vctoleg} - n_{2ndVctoddi}} \right)$$

$$DV01_{FRC2} = \left(\frac{50,000}{1 + (\text{Rate}_{frasinthetic} \times \frac{(n_{frc} - n_{2ndVctoddi})}{360})} \right) - \left(\frac{50,000}{1 + (\text{Rate}_{frasinthetic} + 0.01\%) \times \frac{(n_{frc} - n_{2ndVctoddi})}{360}} \right)$$

DV01 – FRC

Onde:

- $DV01_{FRC1}$ is the DV01 USD value when the calculation is made on any trading day, except for the third-to-last trading session of the month, rounded to 2nd decimal place;
- $Taxa_{frc}$ is the FRC's closing rate, expressed as a percentage;
- n_{frc} is the number of days between calculation day, inclusive, and FRC's expiration day, exclusive;
- $n_{Vctobaseddi}$ is the number of days between calculation day, inclusive, and DDI Base maturity, exclusive;
- $Rate_{frasinthetic}$ is the FRC price when the calculation is made on on the third-to-last trading trading session of the month, rounded to 2nd decimal place;
- $RateDDI_{Vctoleg}$ is the DDI's settlement price with same maturity as designated FRC to be calculated;
- $RateDDI_{2ndVcto}$ is the 2nd DDI's settlement price, that is, DDI maturity that will become the next Base maturity;
- $n_{Vctoleg}$ is the number of days between calculation day, inclusive, and DDI's expiration day;
- $n_{2ndVctoddi}$ is the number of days between calculation day, inclusive, and 2nd DDI maturity, exclusive;
- $DV01_{FRC2}$ is the DV01 USD value when the calculation is made on the third-to-last trading trading session of the month, rounded to 2nd decimal place;

RATIO – DV01 NEUTRAL

What is?

Is the ratio between Nearby maturity related to Deferred Maturity. Ratio is used to calculate leg's quantities that comes from Strategy trade.

How to calculate?

Division between Deferred month's DV01 and Nearby month's DV01, Truncated on 6th decimal place:

$$\text{Ratio} = \frac{\text{DV01}_{\text{Deferred month}}}{\text{DV01}_{\text{Nearby month}}}$$

Update Dynamic

Ratio is daily calculated in the end of each trade session and published on B3's website: https://www.b3.com.br/en_us/market-data-and-indices/data-services/market-data/reports/derivatives-market/indicators/eds-ratios/

DV01 NEUTRAL – LEG'S PRICE RULES

DI1 and DAP

After the trade, the leg's price will be determined in accordance to the following rule:

- Deferred month's price will be the tunnel reference price on trading moment
- Nearby month's price will follow the formula:

$$Price_{nearbymonth} = Price_{Deferredmonth} - Price_{traded}$$

- $Price_{nearbymonth}$ is the nearby month's price, expressed as a percentage;
- $Price_{Deferredmonth}$ is the deferred month's tunnel reference price on trading moment, expressed as a percentage;
- $Price_{traded}$ is the traded price on strategy;

DV01 NEUTRAL – LEG'S PRICE RULES

FRC

After the trade, the leg's price will be determined in accordance to the following rule:

- Nearby month's price will be the tunnel reference price on trading moment
- Deferred month's price will follow the formula:

$$Price_{Deferredmonth} = Price_{nearbymonth} + Price_{traded}$$

- $Price_{Deferredmonth}$ is the nearby month's price, expressed as a percentage;
- $Price_{nearbymonth}$ is the deferred month's tunnel reference price on trading moment, expressed as a percentage;
- $Price_{traded}$ is the traded price on strategy.

EXAMPLE - DV01 NEUTRAL DI1F23 AND DI1F25 – DIIF23F25

Nearby Month

DI1F23:

- **Ratio Calculation Date:** 04/01/2021
- **Business Days to expiration (01/02/2023):** 441
- **Settlement Price:** 6.51%
- **DV01:** R\$ 14.71

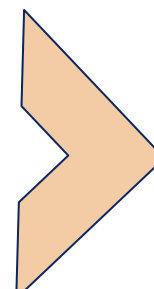
$$DV01_{DI1} = \left(\frac{100,000}{(1 + 6.51\%)^{\frac{441}{252}}} \right) - \left(\frac{100,000}{(1 + 6.51\% + 0.01\%)^{\frac{441}{252}}} \right) = R\$ 14.71$$

Deferred Month

DI1F25:

- **Ratio Calculation Date:** 04/01/2021
- **Business Days to expiration (01/02/2025):** 944
- **Settlement Price:** 8.20%
- **DV01:** R\$ 25.77

$$DV01_{DI1} = \left(\frac{100,000}{(1 + 8.20\%)^{\frac{944}{252}}} \right) - \left(\frac{100,000}{(1 + 8.20\% + 0.01\%)^{\frac{944}{252}}} \right) = R\$ 25.77$$



Strategy

DIIF23F25:

• **Ratio:**

Truncated on 6th decimal place

$$\text{Ratio} = \frac{DV01_{\text{Deferred month}}}{DV01_{\text{Nearbymonth}}} = \frac{25.77}{14.71} = 1.751869$$

- **Ratio validity:** 04/05/2021 to 04/09/2021
- **Quantity F25:** Traded Quantity
- **Quantity F23:** Traded Quantity x Ratio, rounded to closest round-lot multiple
- **Price: F25:** Tunnel reference price on traded moment
- **Price F23:** Price F25 – Traded Price
- **Side (Buy or Sell) F25:** Same as traded on strategy
- **Side (Buy or Sell) F23:** Opposite on traded on strategy

EXAMPLE - DV01 NEUTRAL DI1F23 AND DI1F25 – DIIF23F25

DIIF23F25:

- **Ratio:**

$$\text{Ratio} = \frac{\text{DV01}_{\text{Deferred month}}}{\text{DV01}_{\text{Nearbymonth}}} = \frac{25.77}{14.71} = 1.751869$$

- **Ratio validity:** 04/05/2021 to 04/09/2021
- **Quantity F25:** Traded Quantity
- **Quantity F23:** Traded Quantity x Ratio, rounded to closest round-lot multiple
- **Price: F25:** Tunnel reference price on traded moment
- **Price F23:** Price F25 – Traded Price
- **Side (Buy or Sell) F25:** Same as traded on strategy
- **Side (Buy or Sell) F23:** Opposite on traded on strategy



EXAMPLE - DV01 NEUTRAL DAPK25 AND DAPQ26 – DAIK25Q26

Nearby Month

DAPK25:

- **Ratio Calculation Date:** 04/01/2021
- **Business Days to expiration (05/15/2025):** 1,034
- **Settlement Price:** 3.11%
- **DV01:** R\$ 35.09

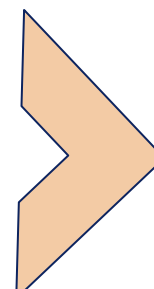
$$DV01_{DAP} = \left(\frac{100,000}{(1 + 3.11\%)^{\frac{1,034}{252}}} \right) - \left(\frac{100,000}{(1 + 3.11\% + 0.01\%)^{\frac{1,034}{252}}} \right) = R\$ 35.09$$

Deferred Month

DAPQ26:

- **Ratio Calculation Date:** 04/01/2021
- **Business Days to expiration (08/17/2026):** 1,352
- **Settlement Price:** 3,36%
- **DV01:** R\$ 43,46

$$DV01_{DAP} = \left(\frac{100,000}{(1 + 3.36\%)^{\frac{1,352}{252}}} \right) - \left(\frac{100,000}{(1 + 3.36\% + 0.01\%)^{\frac{1,352}{252}}} \right) = R\$ 43.46$$



Strategy

DAIK25Q26:

- **Ratio:**

Truncated on 6th decimal place

$$\text{Ratio} = \frac{DV01_{\text{Deferredmonth}}}{DV01_{\text{Nearbymonth}}} = \frac{43.46}{35.09} = 1.238529$$

- **Ratio validity:** 04/05/2021 to 04/09/2021
- **Quantity Q26:** Traded quantity
- **Quantity K25:** Traded Quantity x Ratio, rounded to closest round-lot multiple
- **Price: Q26 :** Tunnel reference price on traded moment
- **Price K25:** Price Q26 – Traded Price
- **Side (Buy or Sell) Q26:** Same as traded on strategy
- **Side (Buy or Sell) K25:** Opposite on traded on strategy

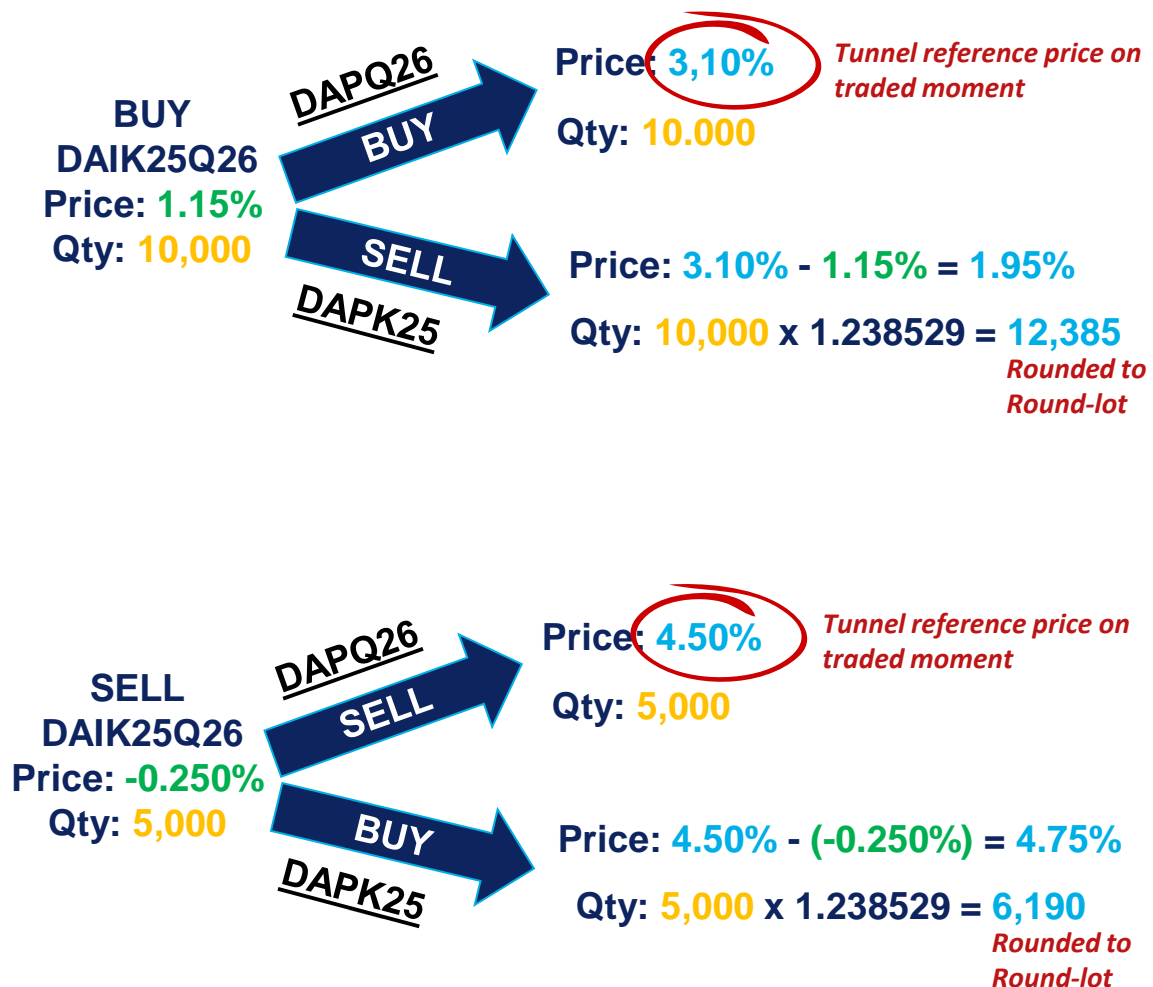
EXAMPLE - DV01 NEUTRAL DAPK25 AND DAPQ26 – DAIK25Q26

Strategy

DAIK25Q26:

- **Ratio:**

$$\text{Ratio} = \frac{\text{DV01}_{\text{Deferredmonth}}}{\text{DV01}_{\text{Nearbymonth}}} = \frac{43.46}{35.09} = 1.238529$$
- **Ratio validity:** 04/05/2021 to 04/09/2021
- **Quantity Q26:** Traded quantity
- **Quantity K25:** Traded Quantity x Ratio, rounded to closest round-lot multiple
- **Price: Q26 :** Tunnel reference price on traded moment
- **Price K25:** Price Q26 – Traded Price
- **Side (Buy or Sell) Q26:** Same as traded on strategy
- **Side (Buy or Sell) K25:** Opposite on traded on strategy



EXAMPLE - DV01 NEUTRAL FRCF23 AND FRCF25 – FRIF23F25

Nearby Month

FRCF23:

- **Ratio Calculation Date:** 04/01/2021
- **Days to DDI's basis month expiration (05/03/2021):** 32
- **Days to expiration (01/02/2023):** 641
- **Closing Price:** 3,11%
- **DV01:** USD 7.63

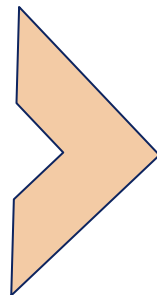
$$DV01_{FRC} = \left(\frac{50,000}{1 + (3.11\% \times \frac{(641 - 32)}{360})} \right) - \left(\frac{50,000}{1 + (3.11\% + 0.01\%) \times \frac{(641 - 32)}{360}} \right) = USD 7.63$$

Deferred Month

FRCF25:

- **Ratio Calculation Date:** 04/01/2021
- **Days to DDI's basis month expiration (05/03/2021):** 32
- **Days to expiration (01/02/2025):** 1,372
- **Closing Price:** 3.00%
- **DV01:** USD 15.05

$$DV01_{FRC} = \left(\frac{50,000}{1 + (3.00\% \times \frac{(1,372 - 32)}{360})} \right) - \left(\frac{50,000}{1 + (3.00\% + 0.01\%) \times \frac{(1,372 - 32)}{360}} \right) = USD 15.05$$



Strategy

FRFF23F25:

• **Ratio:**

Truncated on 6th decimal place

$$\text{Ratio} = \frac{DV01_{deferredmonth}}{DV01_{Nearbymonth}} = \frac{15.05}{7.63} = 1.972415$$

- **Ratio validity:** 04/05/2021 to 04/09/2021
- **Quantity F25:** Traded Quantity
- **Quantity F23:** Traded Quantity x Ratio, rounded to closest round-lot multiple
- **Price: F23 :** Tunnel reference price on traded moment
- **Price F25:** Price F23 + Traded Price
- **Side (Buy or Sell) F25:** Same as traded on strategy
- **Side (Buy or Sell) F23:** Opposite on traded on strategy

EXAMPLE - DV01 NEUTRAL FRCF23 AND FRCF25 – FRIF23F25

Strategy

FRFF23F25:

• Ratio:

$$\text{Ratio} = \frac{DV01_{\text{deferredmonth}}}{DV01_{\text{Nearbymonth}}} = \frac{15.05}{7.63} = 1.972415$$

- **Ratio validity:** 04/05/2021 to 04/09/2021
- **Quantity F25:** Traded Quantity
- **Quantity F23:** Traded Quantity x Ratio, rounded to closest round-lot multiple
- **Price: F23 :** Tunnel reference price on traded moment
- **Price F25:** Price F23 + Traded Price
- **Side (Buy or Sell) F25:** Same as traded on strategy
- **Side (Buy or Sell) F23:** Opposite on traded on strategy



HIGHLIGHTS

EDS Project (*Exchange Defined Strategies*)

- Launching 2 new types of Strategies on DI1, DAP and FRC:
 - UP Neutral (FRA)
 - DV01 Neutral
- A new Fee schedule (based on Potential P&L) will be applied to Strategies
- A new fee schedule methodology will be Applied to individual Contracts (DI1, DAP e FRC) as well
- Execution report (Leg's price/quantities information) will be disseminated in real time
- Ratio of each DI1,FRC and DAP's strategy will be daily calculated in the end of each trade session
- Combinations will be defined by B3

Trading

TRADING HOURS AND TYPE OF ORDERS

Contract		Ticker	Pre Open	Regular Hours	
			Opening	Opening	Closing
DV01 Neutral	DI1	DII	8:55	9:00	18:00
	DAP	DAI	8:55	9:00	18:00
	FRC	FRI	8:55	9:00	18:00
UP Neutral	DI1	DIF	8:55	9:00	18:00
	DAP	DAF	8:55	9:00	18:00
	FRC	FRF	8:55	9:00	18:00

- EDS's trading is independent on outright's trading
- All type of orders are accepted, except RLP, GTC, GTD, MOC and MOA

TUNNELS

EDS's trading will be under tunnels's rules . The auction, rejection tunnels and hard limit will be derived from the tunnels of the individual contracts (outright) that make up the Strategy

Strategy		Auction Tunnel	Rejection Tunnel	Hard Limit	Description
DV01 Neutral	DI1	✘	✔	✔	Diference between minimum and maximum bandwidth of individual Contracts/maturities
	DAP	✔	✔	✔	
	FRC	✔	✔	✔	
UP Neutral	DI1	✘	✔	✔	Forward Rate beetwen minimum and maximum bandwidth of individual Contracts/maturities
	DAP	✔	✔	✔	
	FRC	✔	✔	✔	

EXAMPLE DV01 NEUTRAL DAPF22 AND DAPF23 – DAIF22F23

Contract		Hard Limit (-)	Rejection (-)	Auction (-)	Reference Price	Auction (+)	Rejection (+)	Hard Limit (+)
Future	DAPF22	-3.08	-1.28	-0.58	-0.08	0.42	1.12	2.92
	DAPF23	-1.32	0.49	1.19	1.69	2.19	2.89	4.68
Strategy	DAIF22F23	-4.24	-0.63	0.77	1.77	2.77	4.17	7.76

EDS upper tunnels = Upper deferred month's tunnel – Lower nearby month's tunnel

$$2.77 = 2.19 - (-0.58)$$

EDS lower tunnels = Upper lower month's tunnel – Upper nearby month's tunnel

$$0.77 = 1.19 - 0.42$$

- EDS's tunnels are calculated based on difference between individual Contracts

EXAMPLE UP NEUTRAL DAPF22 AND DAPF23 – DAIF22F23

Contract		Hard Limit (-)	Rejection (-)	Auction (-)	Reference Price	Auction (+)	Rejection (+)	Hard Limit (+)	Business days to expiration
Future	DAPF22	-3,08	-1,28	-0,58	-0,08	0,42	1,12	2,92	300
	DAPF23	-1,32	0,49	1,19	1,69	2,19	2,89	4,68	540
Strategy	DAFF22F23	0,93	2,75%	3,45	3,95	4,45	5,15	6,92	

EDS upper tunnels = Forward Rate between individual maturities' Upper tunnels

EDS lower tunnels = Forward Rate between individual maturities' Lower tunnels

FILES AND MESSAGES

trading messages/files will not be change and will keep the same structure, with no fields inclusion.

BVBG.086: information about the instruments, Strategies and Individual Contracts will be Always segregated

BVBG.028: all characteristics and atributes of the strategies, except the **ratio**

EDS's statistics will not be disseminated on individual Contracts's Market Data

	Strategy	Individual Contracts
BVBG.086	Strategie's informations/statistics during the trading session	Individual Contracts's informations/statistics during the trading session
BVBG.028	Strategies's charecteristics	Individual Contracts's charecteristics

INSTRUMENT

Similar to FRC Strategy, that already exists:

EDS DV01 Neutral		EDS UP Neutral	
Instrument Type	Strategy	Instrument Type	Strategy
Product	2 - COMMODITY	Product	2 - COMMODITY
Security Type	5 - FUTURO	Security Type	5 - FUTURO
Security Sub Type	90 - STRATEGY	Security Sub Type	90 - STRATEGY
Segmento	5 - FINANCIAL	Segmento	5 - FINANCIAL
Mercado	2 - FUTURE	Mercado	2 - FUTURE
Security Category	93 - EDS DV01	Security Category	94 - EDS PU NTR

MARKET DATA

- **Security List Message (35=y)**

All the new strategies will be disseminated on market data through Security List (35=y) message. Message will send informations to identify the strategies, the maturities that make up the strategie and quantities of each maturity. Following table shows the main **tags** to identify the strategies:

# Tag	Name	Description	Example
55	Symbol	Strategy symbol (ticker)	55=DAIF222F33
555	NoLegs	Number of maturities that make up the strategy. For DV01 and UP Neutral the number will always be 2.	555=2
600	LegSymbol	Leg's Symbol (ticker)	600=DAPF22 600=DAPF23
623	LegRatioQty	Contracts' quantities inside the strategy. Positive numbers indicate BUY, Negative numbers indicate SELL	623=-1 623=5
624	LegSide	Indicate the side (Buy or Sell) of each maturity. Buy = 1 SELL = 2	624=2 624=1

➤ Tag #623 demands template update, as indicated in [EC-021/2022](#)

MARKET DATA

- Trade (269=2)

For all strategies' trades, the published information will be related to the strategy, and not to individual contracts/maturity.

# Tag	Name	Description	Example
269	MDEntryType	trading message. Expected number: 2.	269=2
48	SecurityID	Strategie's Instrument ID	48=100000124722
270	MDEntryPx	Strategie's traded price	270=1.77
271	MDEntrySize	Strategie's quantity	271=1
288	MDEntryBuyer	Brokerage house's number of BUY side	288=100
289	MDEntrySeller	Brokerage house's number of SELL side	289=100

EXECUTION REPORT & LEG'S PRICES

- **Execution Report (35=8)**

For each strategy trade, participants will receive 3 Execution Reports (35=8), 1 to confirm the strategy trade + 2 with both legs informations (price and quantity). There is no change on Execution Report's structure. There is Only the inclusion of 2 new execution reports related to legs.

Execution Report			
#	Instrument	Quantity	Price
1	Strategy	Traded Quantity	Traded price
2	Nearby Month	Nearby month quantity	Nearby month price
3	Deferred Month	Deferred month quantity	Deferred month price

- Entry Point Messaging Guidelines ([Click Here](#)) - page 115 – 15.6.1 EDS Execution Report
- Message Specs ([Click Here](#)) –tag SecondaryExecID in the session 3.4
- EntryPoint's specifications ([Click Here](#))

Trade & Position Management

TRADE MANAGEMENT

- The allocation process will be made at the strategy level, just as it already happens for rollovers, FRP, FRC and other EDSs.
- The allocation process will follow the same rules as the FRC allocation:
 - Allocated quantity must respect the round multiplier registered in the strategy instrument;
 - It will not be allowed the partial give-up.
- The necessary values for the calculation of the break of the strategies' legs will be informed in the trade capture message (bvmf.012) and in the give-up message (bvmf.019). They will be prices and quantities of the main strategy, long and short legs, and ratio (delta field).
- The allocation reconciliation process via files will be the same as that adopted for the other products.

POSITION MANAGEMENT

- Position management system will be the responsible for breaking the main strategy into the final legs.
- The strategy trades screen and the bvbq.027 file will demonstrate the break between the allocation made at the strategy level and the legs generated.
- All calculations and rounding criteria will be disclosed in the contract related to new EDSs.
- The Position Management system will consider the most specific leg level to calculate the effective position corresponding to the future market. Example: a FRC EDS will be broken into two FRC legs and each of the legs will still suffer another break in the respective DDI legs.

Fee Schedule

AGENDA

DI1 Fee Changes

Current Fee Model – Non Daytrade

Current Fee Model – Daytrade

New Outright Trading Fee Model

Calendar Spreads Fees

Discount Based on Previous Month *ADV*

DDI and FRC Fee Changes

Current Fee Model

New Outright Trading Fee Model

Calendar Spreads Fees

Discount Based on Previous Month *ADV*

AGENDA

DI1 Fee Changes

Current Fee Model – Non Daytrade

Current Fee Model – Daytrade

New Outright Trading Fee Model

Calendar Spreads Fees

Discount Based on Previous Month *ADV*

DDI and FRC Fee Changes

Current Fee Model

New Outright Trading Fee Model

Calendar Spreads Fees

Discount Based on Previous Month *ADV*

Current fee model is complex and cost over risk ratio is unbalanced across different maturities. Front months are relatively expensive, while back months are relatively cheap.

DI1 Current Fee Model – Non Daytrade

$$\text{Unitary cost} = 100.000 \times \left[\left(1 + \frac{\bar{P}}{100} \right)^{\frac{\text{Maturity}}{252}} - 1 \right]$$

Unitary cost_{Exchange fee}
Unitary cost_{Registration fee}

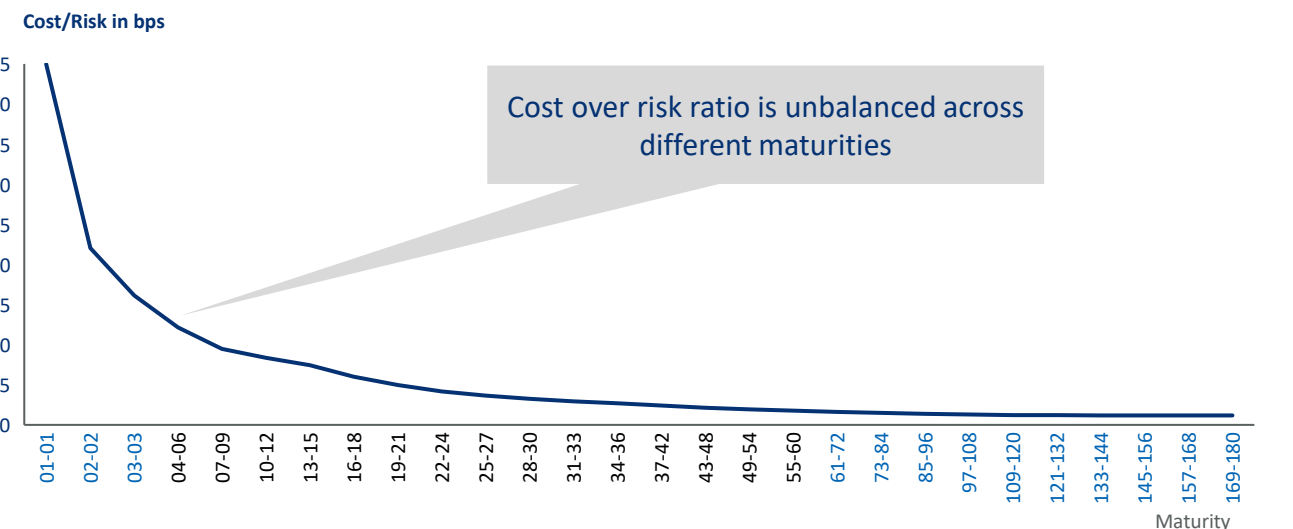
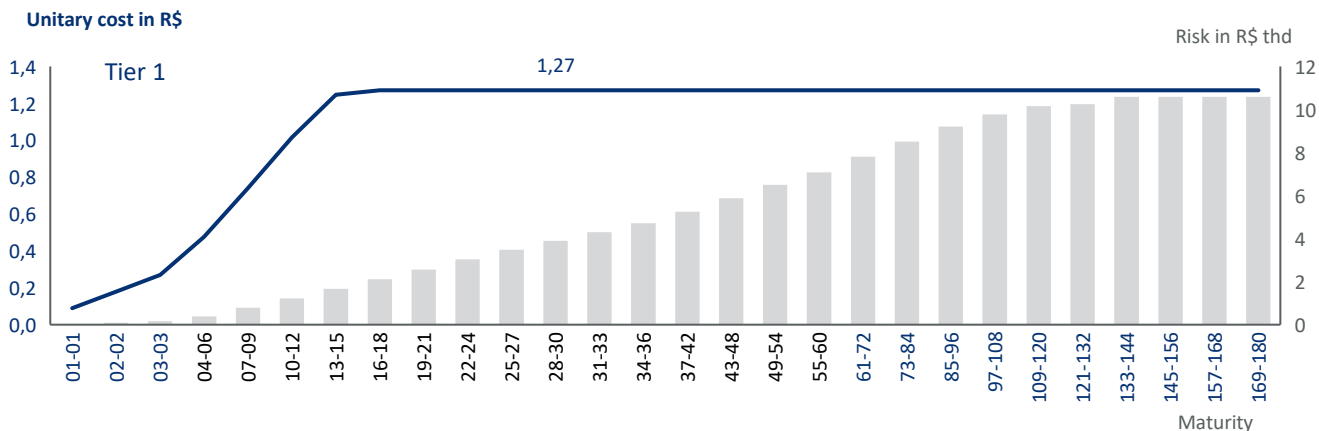
P: defined based on given ADV and progressive table

Maturity: Capped at 290 days

Fee schedule

Tier	ADV		Exchange Fees (%)	Registration Fees (%)
	From	Up to		
Faixa 1	1	5.000	0,0006059	0,0004934
Faixa 2	5.001	20.000	0,0005049	0,0004112
Faixa 3	20.001	35.000	0,0004712	0,0003837
Faixa 4	35.001	55.000	0,0004376	0,0003563
Faixa 5	55.001	100.000	0,0003703	0,0003015
Faixa 6	100.001	170.000	0,0003366	0,0002741
Faixa 7	170.001	260.000	0,0003029	0,0002467
Faixa 8	260.001	520.000	0,0002693	0,0002193
Faixa 9	520.001	1.000.000	0,0002020	0,0001645
Faixa 10	Acima de 1.000.000		0,0001346	0,0001096

For contracts with maturity of 290 days or more, minimum Exchange fee is R\$0,50 and minimum Registration fee is R\$0,41.



Cost = 2 X trade fee (buy + sell)
Risk: Maximum theoretical margin

AGENDA

DI1 Fee Changes

Current Fee Model – Non Daytrade

Current Fee Model – Daytrade

New Outright Trading Fee Model

Calendar Spreads Fees

Discount Based on Previous Month *ADV*

DDI and FRC Fee Changes

Current Fee Model

New Outright Trading Fee Model

Calendar Spreads Fees

Discount Based on Previous Month *ADV*

Discount percentages are variable, according to the maturity. Cost over risk ratio is balanced across different maturities.

DI1 Current Fee Model – Daytrade

$$Unitary\ cost = 100.000 \times \left[\left(1 + \frac{P}{100} \right)^{\frac{Maturity}{252}} - 1 \right]$$

Unitary cost Exchange fee
Unitary cost Registration fee

P: as defined based on given ADV and progressive table

Maturity: Capped at 290 days

Fee schedule

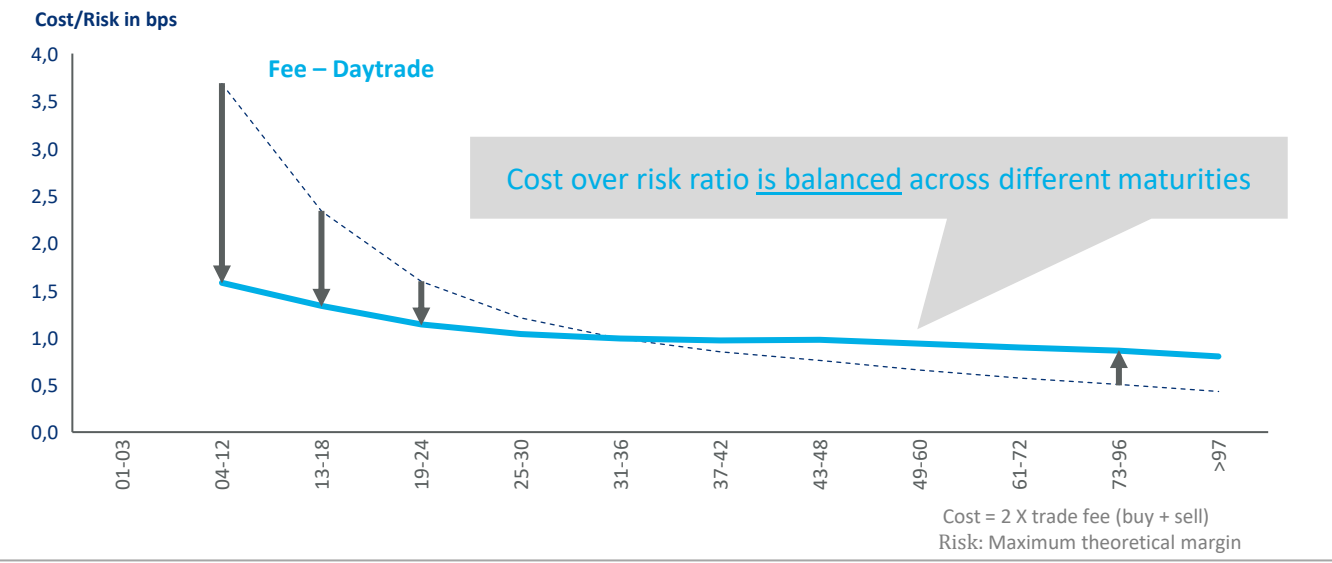
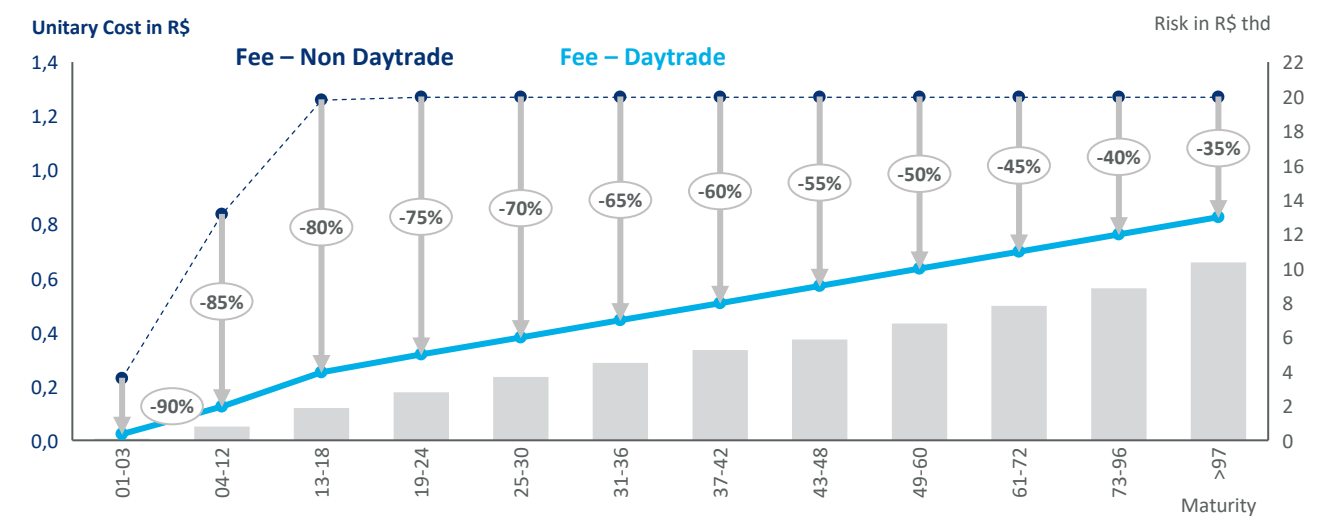
Tier	From	ADV Up to	Exchange Fees (%)	Registration Fees (%)
Faixa 1	1	5.000	0,0006059	0,0004934
Faixa 2	5.001	20.000	0,0005049	0,0004112
Faixa 3	20.001	35.000	0,0004712	0,0003837
Faixa 4	35.001	55.000	0,0004376	0,0003563
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Faixa 7	170.001	260.000	0,0003029	0,0002467
Faixa 8	260.001	520.000	0,0002693	0,0002193
Faixa 9	520.001	1.000.000	0,0002020	0,0001645
Faixa 10	Acima de 1.000.000		0,0001346	0,0001096

Day Trade

Discount percentages are variable, according to the maturity.

Tier	Discount %	Tier	Discount %
01-03	90%	37-42	60%
04-12	85%	43-48	55%
13-18	80%	49-60	50%
19-24	75%	61-72	45%
25-30	70%	73-96	40%
31-36	65%	> 96	35%

Maturity: Number of months between the trade date and the contract expiration date.



Cost = 2 X trade fee (buy + sell)
Risk: Maximum theoretical margin

AGENDA

DI1 Fee Changes

Current Fee Model – Non Daytrade

Current Fee Model – Daytrade

New Outright Trading Fee Model

Calendar Spreads Fees

Discount Based on Previous Month *ADV*

DDI and FRC Fee Changes

Current Fee Model

New Outright Trading Fee Model

Calendar Spreads Fees

Discount Based on Previous Month *ADV*

New Outright Trading fee model

DI1 fee model will no longer be an exponential formula. It will be based on separate tables, one that will provide the risk factor and another the volume based discount.

Current Fee Model

$$\text{Unitary Cost} = 100.000 \times \left[\left(1 + \frac{\bar{P}}{100} \right)^{\frac{\text{Maturity}}{252}} - 1 \right]$$

Unitary cost_{Exchange fee}
Unitary cost_{Registration fee}

P: as defined based on given ADV and progressive table

Maturity: Capped at 290 days

Fee schedule

Tier	ADV		Exchange Fees (%)	Registration Fees (%)
	From	Up to		
Faixa 1	1	5.000	0,0006059	0,0004934
Faixa 2	5.001	20.000	0,0005049	0,0004112
Faixa 3	20.001	35.000	0,0004712	0,0003837
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Faixa 9	520.001	1.000.000	0,0002020	0,0001645
Faixa 10	Acima de 1.000.000		0,0001346	0,0001096

Day Trade

Discount percentages are variable, according to the maturity.

Tier	Discount %	Tier	Discount %
01-03	90%	37-42	60%
04-12	85%	43-48	55%
13-18	80%	49-60	50%
19-24	75%	61-72	45%
25-30	70%	73-96	40%
31-36	65%	> 96	35%

New fee Model

$$\text{Unitary Cost} = \text{Risk Factor}_{\text{maturity}} \times (1 - \text{Discount}_{\text{based on monthly ADV}}) \times \text{R\$ } 1,00$$

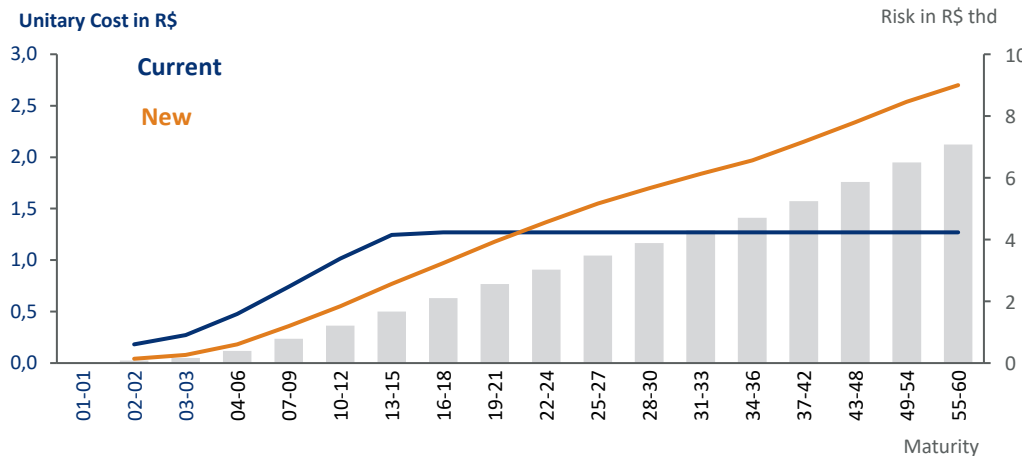
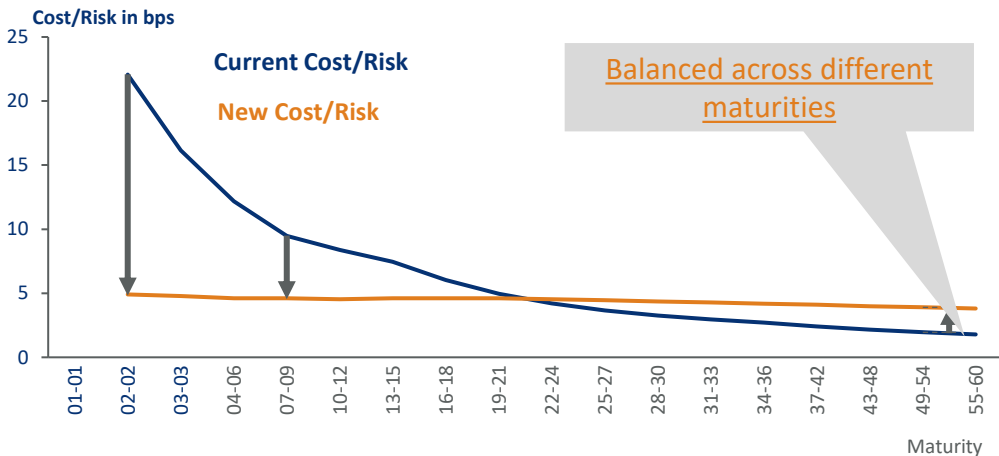
Single fee calculated which will be split between trading and post-trading

Risk Factor per maturity: Table based on risk across different maturities.

Maturity	Risk Factor (FR)	Maturity	Risk Factor (FR)	Maturity	Risk Factor (FR)
01-01	0,01	25-27	1,55	85-96	3,20
02-02	0,04	28-30	1,70	97-108	3,43
03-03	0,08	31-33	1,84	109-120	3,52
04-06	0,18	34-36	1,97	121-132	3,59
07-09	0,36	37-42	2,15	133-144	3,66
10-12	0,55	43-48	2,34	145-156	3,73
13-15	0,77	49-54	2,54	157-168	3,80
16-18	0,97	55-60	2,70	169-180	3,88
19-21	1,18	61-72	2,86		
22-24	1,37	73-84	3,04		

Day trades have 70% linear discount over non day trade fees.

Current Fee Model Vs New fee Model



Volume based discount will continue to be applied. However, ADV will no longer be based on weekly but Monthly trades. Furthermore, the model is more simple to be calculated.

Current Fee Model

$$\text{Unitary Cost} = 100.000 \times \left[\left(1 + \frac{\bar{P}}{100} \right)^{\frac{\text{Maturity}}{252}} - 1 \right]$$

Unitary cost Exchange fee
Unitary cost Registration fee

The unit cost is based on \bar{P} and average daily volume ADV_{week}

$$1) ADV_{weekly} = \frac{\sum Q_j \times \left(\frac{n}{252} \right)}{N};$$

Q_j is the quantity of contracts traded for contract month j

n is the number of business days between the trade date and the contract expiration date

2) Once ADV has been determined, it is applied to the fee schedule in force on the trade date to obtain the average price (\bar{P}) of the exchange and registration fees, calculated progressively as shown in the following table date

ADV Semanal		Exchange Fee	Registration Fee
From	To		
1	5.000	0,0006059	0,0004934
5.001	20.000	0,0005049	0,0004112
20.001	35.000	0,0004712	0,0003837
35.001	55.000	0,0004376	0,0003563
55.001	100.000	0,0003703	0,0003015
100.001	170.000	0,0003366	0,0002741
170.001	260.000	0,0003029	0,0002467
260.001	520.000	0,0002693	0,0002193
520.001	1.000.000	0,0002020	0,0001645
Acima de 1.000.000		0,0001346	0,0001096

The average exchange fee and registration fee can be expressed mathematically as follows:

$$\bar{P} = \frac{\min(ADV, U_1) \times V_1 + \sum_{i=2}^{n-1} [\max((\min(ADV, U_i) - U_{i-1}), 0) \times V_i] + \max(ADV - U_{n-1}, 0) \times V_n}{ADV}$$

where:

ADV is ADV calculated as described above

U is the upper limit (cap) for each tier

V is the value of the fee to be calculated

i is a variable that denotes the tier number

New fee Model

$$\text{Unitary Cost} = \text{Risk Factor per maturity} \times (1 - \text{Discount based on monthly ADV}) \times R\$ 1,00$$

Single fee calculated which will be split between trading and post-trading

Discount is based on monthly $ADV_{monthly}$

$$1) ADV_{monthly} = \frac{\sum Q_j \times FR_j}{N};$$

Q_j = # Contracts of Maturity j traded on previous month

FR_j = Risk Factor of maturity j on previous month. Table based on risk across different described in slide above

n = # of trading sessions on previous month

2) Once ADV has been determined, it is applied to the fee schedule in force on the trade date to obtain Discount% of the trading Cost.

Monthly ADV Tier		Tier Discount	Reduction
From	To		
1	3.000	0%	
3.001	12.000	15%	450
12.001	21.000	20%	1.050
21.001	35.000	30%	3.150
35.001	60.000	40%	6.650
60.001	100.000	45%	9.650
100.001	160.000	50%	14.650
160.001	350.000	55%	22.650
300.001	650.000	70%	75.150
Acima de 650.000		80%	140.150

The Discount% can be expressed mathematically as follows:

$$\text{Discount\%} = \text{Tier Discount} - \frac{\text{Tier Additional}}{\text{Monthly ADV}}$$

Attention: In order to obtain the final ADV is still necessary to addition the ADV of calendar spreads which will be described in following slides.

AGENDA

DI1 Fee Changes

Current Fee Model – Non Daytrade

Current Fee Model – Daytrade

New Outright Trading Fee Model

Calendar Spreads Fees

Discount Based on Previous Month *ADV*

DDI and FRC Fee Changes

Current Fee Model

New Outright Trading Fee Model

Calendar Spreads Fees

Discount Based on Previous Month *ADV*

Calendar spreads fees

Calendar spread fee will be calculated by subtracting the maturity risk factor between longer and shorter legs, and then adjusting by a fixed factor. Investor volume discount also applies.

$$\text{Fee per calendar spread} = {}^1 [\text{Risk Factor}_{\text{Longer maturity}} - \text{Risk Factor}_{\text{Shorter maturity}}] \times \text{adjustment factor} \times {}^3 (1 - \text{Discount}_{\text{Monthly ADV}}) \times \text{R\$ } 1,00$$

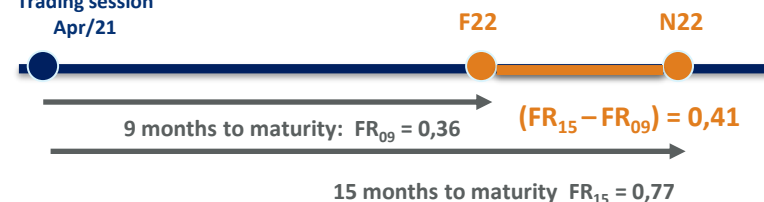
Daytrade get additional 70% discount

1 Risk Factor per Maturity

Maturity	Risk Factor(FR)	Maturity	Risk Factor(FR)
01-01	0,01	37-42	2,15
02-02	0,04	43-48	2,34
03-03	0,08	49-54	2,54
04-06	0,18	55-60	2,70
FR₀₉ 07-09	0,36	61-72	2,86
10-12	0,55	73-84	3,04
FR₁₅ 13-15	0,77	85-96	3,20
16-18	0,97	97-108	3,43
19-21	1,18	109-120	3,52
22-24	1,37	121-132	3,59
25-27	1,55	133-144	3,66
28-30	1,70	145-156	3,73
31-33	1,84	157-168	3,80
34-36	1,97	169-180	3,88

Example

Trading session
Apr/21



2 Calendar spread adjustment factor

DV: 2
PU neutral: 2.5

3 Discount based on Monthly ADV

Monthly ADV Tier		Tier Discount	Reduction
From	To		
1	3.000	0%	
3.001	12.000	15%	450
12.001	21.000	20%	1.050
21.001	35.000	30%	3.150
35.001	60.000	40%	6.650
60.001	100.000	45%	9.650
100.001	160.000	50%	14.650
160.001	350.000	55%	22.650
300.001	650.000	70%	75.150
Acima de 650.000		80%	140.150

$$\text{Discount\%} = \text{Tier Discount} - \frac{\text{Tier Additional}}{\text{Montly ADV}}$$

Exemple

Supposing the ADV on previous month was 190.000. The Discount% would be:

$$\text{Discount\%} = 55\% - \frac{22.650}{190.000} = 43\%$$

Calendar spreads fees - Example

Calendar spread fee will be calculated by subtracting the maturity risk factor between longer and shorter legs, and then adjusting by a fixed factor. Investor volume discount also applies.

$$\text{Fee per calendar spread: } ^1[\text{Risk Factor}_{\text{Longer maturity}} - \text{Risk Factor}_{\text{Shorter maturity}}] \times ^2\text{Calendar spread adjustment factor} \times ^3(1 - \text{Discount}_{\text{Monthly ADV}}) \times \text{R\$ } 1,00$$

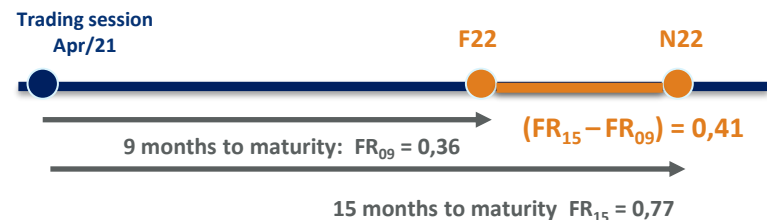
Daytrade get additional 70% discount

Examples

Calendar spread DV: N22-F22.

Trading session: Apr/21.

%Discount = 43%



Risk Factor per Maturity

Maturity	Risk Factor(FR)	Maturity	Risk Factor(FR)
01-01	0,01	37-42	2,15
02-02	0,04	43-48	2,34
03-03	0,08	49-54	2,54
04-06	0,18	55-60	2,70
07-09	0,36	61-72	2,86
10-12	0,55	73-84	3,04
13-15	0,77	85-96	3,20
16-18	0,97	97-108	3,43
19-21	1,18	109-120	3,52
22-24	1,37	121-132	3,59
25-27	1,55	133-144	3,66
28-30	1,70	145-156	3,73
31-33	1,84	157-168	3,80
34-36	1,97	169-180	3,88

FR₀₉ 07-09 0,36

FR₁₅ 13-15 0,77

Fee via EDS's

$$\text{R\$ } 1,00 \times ^1(FR_{16} - FR_{10}) \times ^2\text{adjustment factor} \times ^3(1 - \text{Discount}_{\text{Monthly ADV}})$$

$$\text{R\$ } 1,00 \times 0,41 \times 2 \times (1 - 43\%) = \text{R\$ } 0,471$$

Fee trading each leg separately

$$(\text{Fee}_{\text{shorter maturity}} \times \text{Qty}_{\text{shorter maturity}} + \text{Fee}_{\text{longer maturity}}) \times (1 - \text{Discount}_{\text{Monthly ADV}})$$

$$(0,36 \times 1,66 + 0,77) \times (1 - 43\%) = \text{R\$ } 0,78$$

$$* \text{Qty}_{\text{shorter maturity}} = \frac{\text{DVO}_{1\text{longer maturity}}}{\text{DVO}_{1\text{shorter maturity}}}$$

▲ EDS (-) Trading separately

$$\text{R\$ } 0,471 (-) \text{R\$ } 0,786 = -\text{R\$ } 0,315 (-40\%)$$

AGENDA

DI1 Fee Changes

Current Fee Model – Non Daytrade

Current Fee Model – Daytrade

New Outright Trading Fee Model

Calendar Spreads Fees

Discount Based on Previous Month *ADV*

DDI and FRC Fee Changes

Current Fee Model

New Outright Trading Fee Model

Calendar Spreads Fees

Discount Based on Previous Month *ADV*

Discount Based on Previous Month *ADV*

The discount of the new model is based on previous month *ADV*. The discount calculated will be valid for the following month.

ADV Monthly

$$ADV_{\text{Monthly}} = ADV_{\text{Outrights}}_{\text{monthly}} + ADV_{\text{Calendar Spreads}}_{\text{Monthly}}$$

$$ADV_{\text{Outrights}}_{\text{monthly}} = \frac{\sum(Q_i \times FR_i)}{N}$$

$$ADV_{\text{Calendar Spread}}_{\text{Monthly}} = \frac{\sum(QE_j \times FRE_j)}{N}; \text{ where } FRE_j = FR_{\text{LongerTerm}_j} - FR_{\text{ShorterTerm}_j}$$

Q_i = # Contracts of Maturity i traded on previous month

FR_i = Risk Factor of maturity i on previous month;

QE_j = # Calendar spreads j traded on previous month;

$FR_{\text{LongerTerm}_j}$ = Long term leg risk factor of calendar spread j on previous month

$FR_{\text{ShorterTerm}_j}$ = Short term leg risk factor of calendar spread j on previous month

n = # of trading sessions on previous month

Example – *ADV* calculated based on trading apr/21. It will be valid for the following month.

Day of trading	Book	Trading	Qty	Risk Factor (FR)	Qty X FR
1	Outrights	F25	300.000	2,34	702.000
1	Calendar Spread	N22-F22	80.000	0,41	32.800
2	Outrights	F25	200.000	2,34	468.000
2	Calendar Spread	N22-F22	40.000	0,41	16.400
Outrights Total					1.170.000
Calendar Spread Total					49.200
# of trading sessions month					22
ADV Outrights (A)					53.182
ADV Calendar Spread (B)					2.236
ADV Monthly (A+B)					55.418

Discount based on Monthly *ADV*

Monthly <i>ADV</i> Tier		Tier Discount	Reduction
From	To		
1	3.000	0%	
3.001	12.000	15%	450
12.001	21.000	20%	1.050
21.001	35.000	30%	3.150
35.001	60.000	40%	6.650
60.001	100.000	45%	9.650
100.001	160.000	50%	14.650
160.001	350.000	55%	22.650
300.001	650.000	70%	75.150
Acima de 650.000		80%	140.150

$ADV = 55.418$
 Tier Discount = 40%
 Reduction = 6.650

$$Discount\% = Tier\ Discount - \frac{Tier\ Additional}{Monthly\ ADV}$$

$$Discount\% = 40\% - \frac{6.650}{55.418} = 28\%$$

AGENDA

DI1 Fee Changes

Current Fee Model – Non Daytrade

Current Fee Model – Daytrade

New Outright Trading Fee Model

Calendar Apreads fees

Discount Based on Previous Month *ADV*

DDI and FRC Fee Changes

Current Fee Model

New Outright Trading Fee Model

Calendar Spreads Fees

Discount Based on Previous Month *ADV*

AGENDA

DI1 Fee Changes

Current Fee Model – Non Daytrade

Current Fee Model – Daytrade

New Outright Trading Fee Model

Calendar Apreads fees

Discount Based on Previous Month *ADV*

DDI and FRC Fee Changes

Current Fee Model

New Outright Trading Fee Model

Calendar Spreads Fees

Discount Based on Previous Month *ADV*

Current fee model is complex and cost over risk ratio is unbalanced across different maturities. Trading is highly concentrated up to the 12th maturity month.

DDI/FRC Current Fee Model

$$\text{Unitary cost} = 50.000 * \left[\frac{P}{100} \times \frac{\text{term}}{360} \right] \times \text{Dollar}$$

Unitary cost_{Exchange fee}
Unitary cost_{Registration fee}

P: defined based on given ADV and progressive table

Term = term of the operation, limited to a minimum of 30 and maximum of 270 days. For the FRC, the term of the operation is given by the difference between the term of the longer and shorter legs of the contract;

Dollar = the offered PTAX foreign exchange rate on the last day of the month prior to that of the transaction.

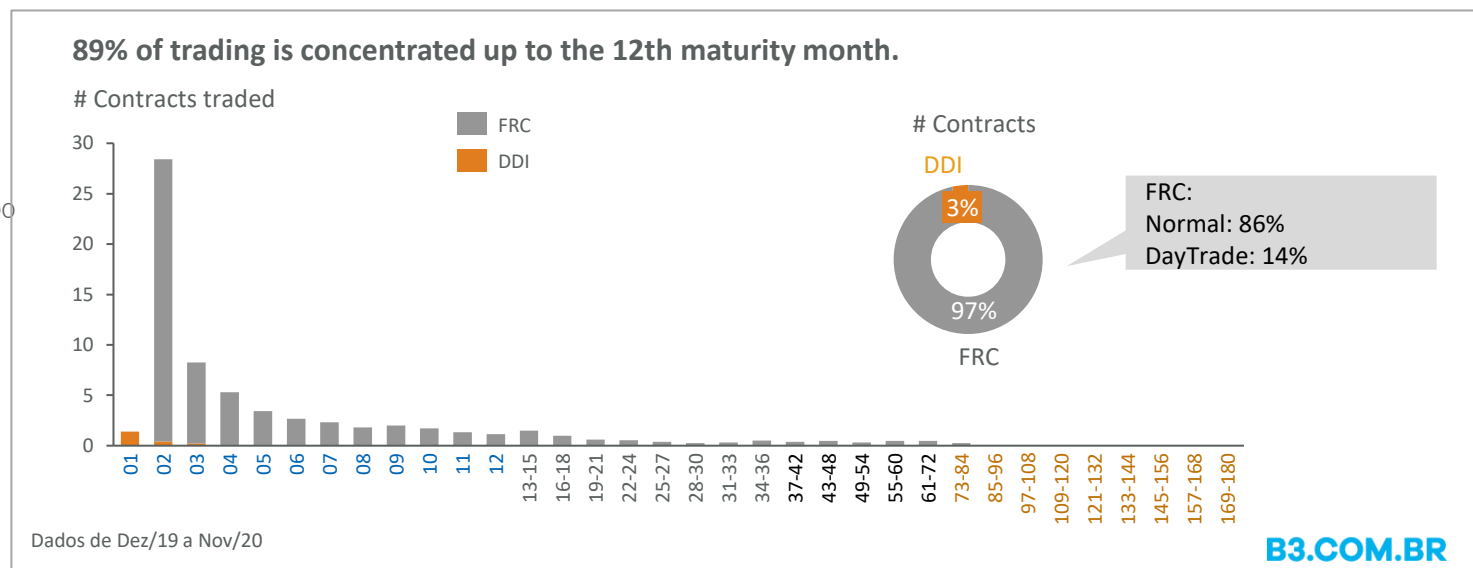
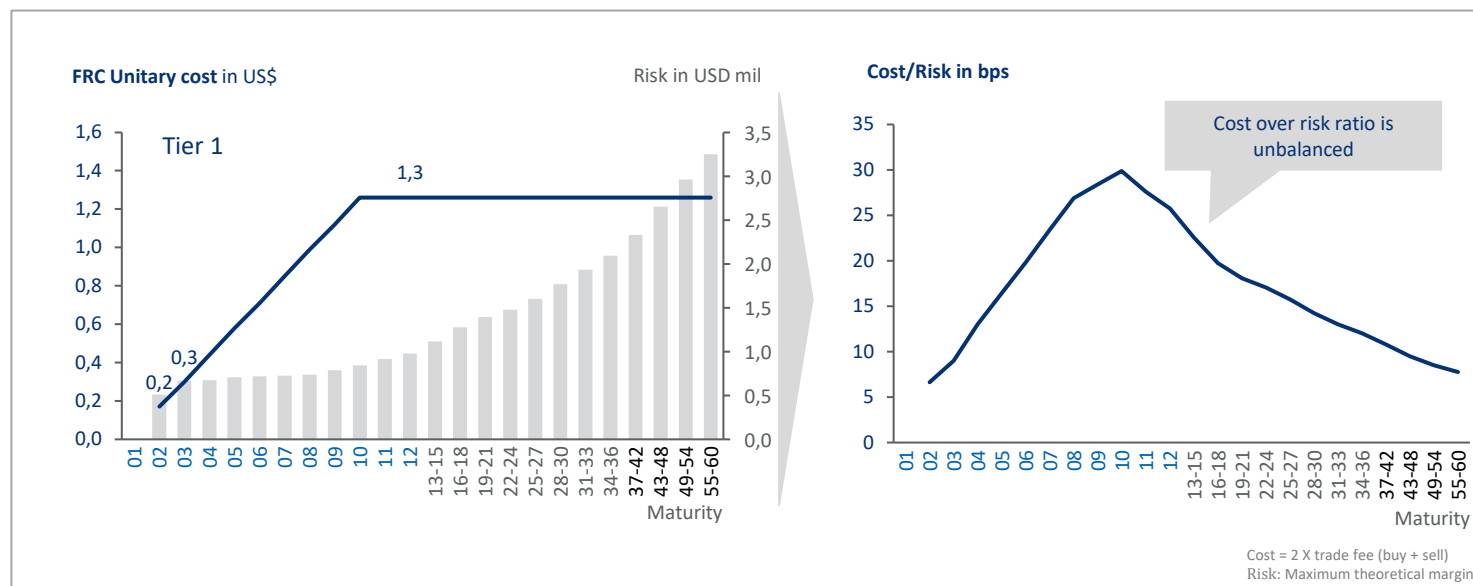
Fee schedule

Tier	ADV		Exchange fee	Registration fee variable	*Registration fee variable
	From	To			
Tier 1	1	100	0,0016816	0,0015925	0,0319502
Tier 2	101	1.000	0,0015135	0,0014332	
Tier 3	1.001	1.400	0,0014574	0,0013801	
Tier 4	1.401	3.400	0,0013453	0,0012739	
Tier 5	3.401	14.850	0,0012892	0,0012209	
Tier 6	Acima de 14.851		0,0011771	0,0011147	

*This fee is not charged for DI x US Dollar spread futures contracts which term is less than 90 days.

Day Trade

50% of the unit cost calculated for the exchange fee and the variable registration fee of the futures.



AGENDA

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Calendar Apreads fees

Discount Based on Previous Month *ADV*

DDI and FRC Fee Changes

Current Fee Model

New Outright Trading Fee Model

Calendar Spreads Fees

Discount Based on Previous Month *ADV*

New Outright Trading Fee Model

DDI and FRC fee model will no longer be a complex formula. It will be based on separate tables, one that will provide the risk factor and another the volume based discount.

$$\text{Current unitary cost} = 50.000 * \left[\frac{P}{100} * \frac{\text{term}}{360} \right] * \text{Dollar}$$

Unitary cost Exchange fee
Unitary cost Registration fee

P: defined based on given ADV and progressive table

Term = term of the operation, limited to a minimum of 30 and maximum of 270 days. For the FRC, the term of the operation is given by the difference between the term of the longer and shorter legs of the contract;

Dollar = the offered PTAX foreign exchange rate on the last day of the month prior to that of the transaction.

Day Trade: 50% of discount over unitary cost

$$\text{New Unitary Cost} = \text{Risk Factor per maturity} * (1 - \text{Discount based on monthly ADV}) * \text{dollar}$$

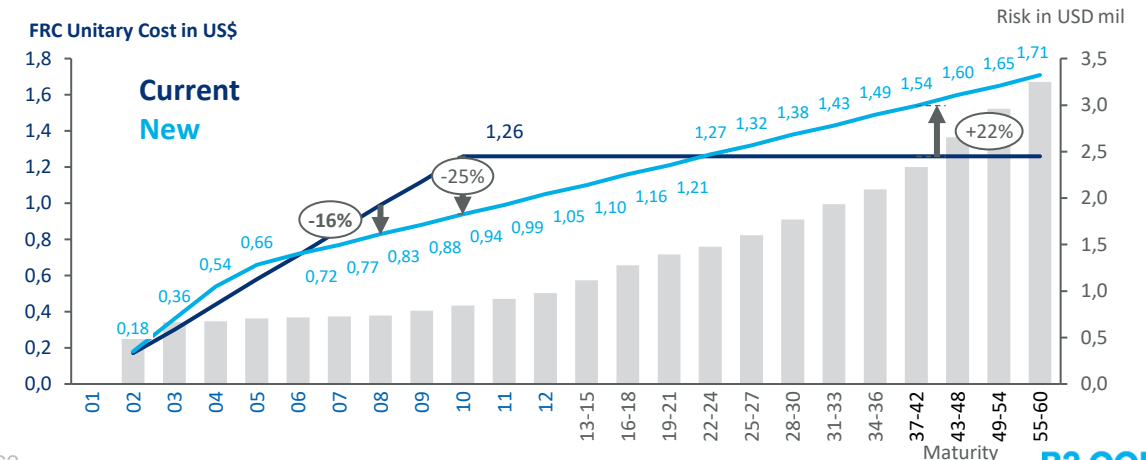
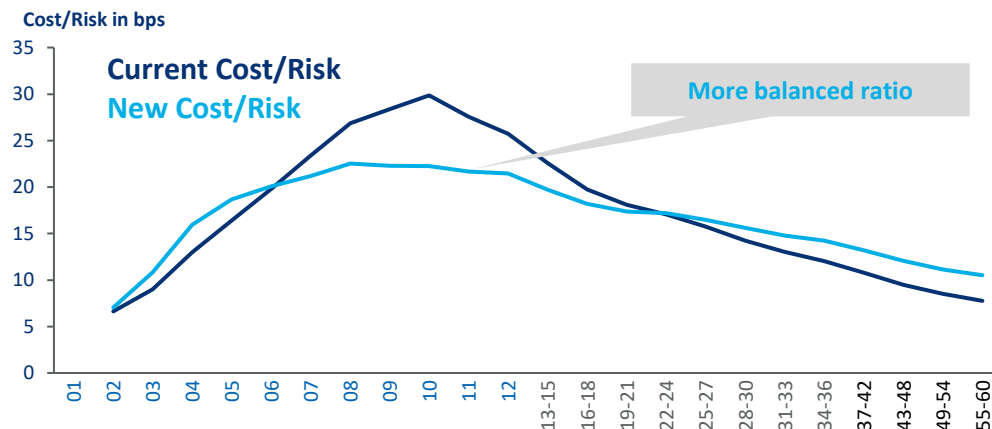
Single fee calculated which will be split between trading and post-trading

Risk Factor per maturity: Table based on risk across different maturities

Maturity	Risk Factor (FR)	Maturity	Risk Factor (FR)	Maturity	Risk Factor (FR)
01	0,14	13-15	1,10	61-72	1,76
02	0,18	16-18	1,16	73-84	1,82
03	0,36	19-21	1,21	85-96	1,87
04	0,54	22-24	1,27	97-108	1,93
05	0,66	25-27	1,32	109-120	1,98
06	0,72	28-30	1,38	121-132	2,04
07	0,77	31-33	1,43	133-144	2,09
08	0,83	34-36	1,49	145-156	2,15
09	0,88	37-42	1,54	157-168	2,20
10	0,94	43-48	1,60	169-180	2,26
11	0,99	49-54	1,65		
12	1,05	55-60	1,71		

Day Trade: 70% additional discount

Current Fee Model Vs New fee Model



Volume based discount will continue to be applied. However, ADV will no longer be based on weekly but Monthly trades. Furthermore, the model is more simple to be calculated.

Current Fee Model

$$\text{Current unitary cost} = 50.000 * \left[\frac{P}{100} \times \frac{\text{term}}{360} \right] \times \text{Dollar}$$

The unit cost is based on \bar{P} and average daily volume ADV_{week}

$$1) ADV_{\text{weekly}} = \frac{\sum Q_j \times \left(\frac{n}{252} \right)}{N};$$

Q_j is the quantity of contracts traded for contract month j

n is the number of business days between the trade date and the contract expiration date

2) Once ADV has been determined, it is applied to the fee schedule in force on the trade date to obtain the average price (P) of the exchange and registration fees, calculated progressively as shown in the following tables

Tier	ADV		Exchange fee	Registration fee variable	*Registration fee variable
	From	To			
Tier 1	1	100	0,0016816	0,0015925	0,0319502
Tier 2	101	1.000	0,0015135	0,0014332	
Tier 3	1.001	1.400	0,0014574	0,0013801	
Tier 4	1.401	3.400	0,0013453	0,0012739	
Tier 5	3.401	14.850	0,0012892	0,0012209	
Tier 6	Acima de 14.851		0,0011771	0,0011147	

The average exchange fee and registration fee can be expressed mathematically as follows:

$$\bar{P} = \frac{\min(ADV, U_1) \times V_1 + \sum_{i=2}^{n-1} [\max((\min(ADV, U_i) - U_{i-1}), 0) \times V_i] + \max(ADV - U_{n-1}, 0) \times V_n}{ADV}$$

where:

ADV is ADV calculated as described above

U is the upper limit (cap) for each tier

V is the value of the fee to be calculated

i is a variable that denotes the tier number

New fee Model

$$\text{New Unitary Cost} = \text{Risk Factor}_{\text{maturity}} \times (1 - \text{Discount}_{\text{based on monthly ADV}}) \times \text{dollar}$$

Single fee calculated which will be split between trading and post-trading

Discount is based on monthly ADV_{monthly}

$$1) ADV_{\text{monthly}} = \frac{\sum Q_j \times FR_j}{N};$$

Q_j = # Contracts of Maturity j traded on previous month

FR_j = Risk Factor of maturity j on previous month. Table based on risk across different described in slide above

n = # of trading sessions on previous month

2) Once ADV has been determined, it is applied to the fee schedule in force on the trade date to obtain **Discount%** of the trading Cost.

ADV		Tier Discount	Reduction
From	to		
1	250	0%	0
251	1.000	10%	25
1.001	2.500	20%	125
2.501	5.000	25%	250
5.001	9.000	30%	500
9.001	13.000	40%	1.400
13.001	25.000	50%	2.700
25.001	50.000	55%	3.950
50.001	75.000	60%	6.450
Acima de 75.000		75%	17.700

The Discount% can be expressed mathematically as follows:

$$\text{Discount\%} = \text{Tier Discount} - \frac{\text{Tier Additional}}{\text{Monthly ADV}}$$

Remark: final ADV includes ADV of calendar spreads, which will be described in the following slides.

AGENDA

DI1 Fee Changes

Current Fee Model – Non Daytrade

Current Fee Model – Daytrade

New Outright Trading Fee Model

Calendar Apreads fees

Discount Based on Previous Month *ADV*

DDI and FRC Fee Changes

Current Fee Model

New Outright Trading Fee Model

Calendar Spreads Fees

Discount Based on Previous Month *ADV*

Calendar spread fee will be calculated by subtracting the maturity risk factor between long and short legs, adjusted by a fixed factor. Investor volume discount also applies.

$$\text{Fee per maturity: } ^1[\text{Risk Factor}_{\text{Longer maturity}} - \text{Risk Factor}_{\text{Shorter maturity}}] \times ^2\text{Calendar spread adjustment factor} \times ^3(1 - \text{Discount}_{\text{Monthly ADV}}) \times \text{Dollar}$$

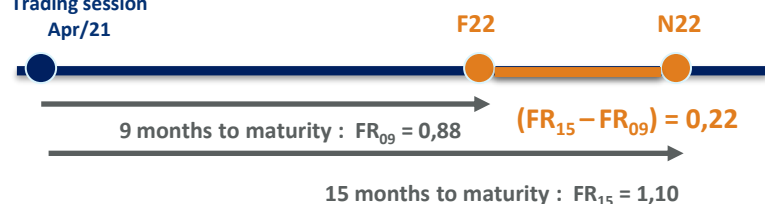
Daytrade get additional 70% discount

1 Risk Factor per Maturity

Maturit y	Risk Factor(FR)	Maturit y	Risk Factor(FR)
01	0,14	28-30	1,380
02	0,18	31-33	1,430
03	0,36	34-36	1,490
04	0,54	37-42	1,540
05	0,66	43-48	1,600
06	0,72	49-54	1,650
07	0,77	55-60	1,710
08	0,83	61-72	1,76
FR₀₉	0,88	73-84	1,82
10	0,94	85-96	1,87
11	0,99	97-108	1,93
12	1,05	109-120	1,98
FR₁₅	1,10	121-132	2,04
16-18	1,16	133-144	2,09
19-21	1,21	145-156	2,15
22-24	1,27	157-168	2,20
25-27	1,32	169-180	2,26

Example

Trading session
Apr/21



2 Calendar spread adjustment factor

DV: 4
PU neutral: 4

3 Desconto Progressivo por ADV mensal

Monthly ADV Tier		Tier Discount	Reduction
From	To		
1	250	0%	0
251	1.000	10%	25
1.001	2.500	20%	125
2.501	5.000	25%	250
5.001	9.000	30%	500
9.001	13.000	40%	1.400
13.001	25.000	50%	2.700
25.001	50.000	55%	3.950
50.001	75.000	60%	6.450
Acima de 75.000		75%	17.700

$$\text{Discount}\% = \text{Tier Discount} - \frac{\text{Tier Additional}}{\text{Monthly ADV}}$$

Example

Supposing the ADV on previous month was 30.000. The Discount% would be:

$$\text{Discount}\% = 55\% - \frac{3.950}{30.000} = 42\%$$

Calendar spread fee will be calculated by subtracting the maturity risk factor between longer and shorter legs, adjusted by a fixed factor. Investor volume discount also applies.

$$\text{Fee per maturity: } {}^1[\text{Risk Factor}_{\text{Longer maturity}} - \text{Risk Factor}_{\text{Shorter maturity}}] \times {}^2\text{Calendar spread adjustment factor} \times {}^3(1 - \text{Discount}_{\text{Monthly ADV}}) \times \text{Dollar}$$

Daytrade get additional of the 70% discount

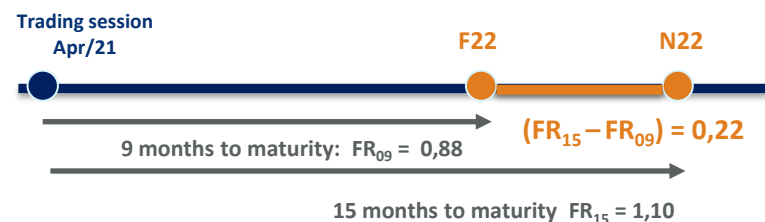
Example

Calendar spread DV: N22-F22.

Trading session: Apr21.

Dollar = 5.6973

%Discount = 42%



Risk Factor per Maturity

Vcto	Fator Risco (FR)	Vcto	Fator Risco (FR)
01	0,14	28-30	1,380
02	0,18	31-33	1,430
03	0,36	34-36	1,490
04	0,54	37-42	1,540
05	0,66	43-48	1,600
06	0,72	49-54	1,650
07	0,77	55-60	1,710
08	0,83	61-72	1,76
FR ₀₉	09, 0,88	73-84	1,82
	10, 0,94	85-96	1,87
	11, 0,99	97-108	1,93
	12, 1,05	109-120	1,98
FR ₁₅	13-15, 1,10	121-132	2,04
	16-18, 1,16	133-144	2,09
	19-21, 1,21	145-156	2,15
	22-24, 1,27	157-168	2,20
	25-27, 1,32	169-180	2,26

Fee per maturity via EDS's

$${}^1(FR_{16} - FR_{10}) \times {}^2\text{adjustment factor} \times {}^3(1 - \text{Discount}_{\text{Monthly ADV}}) \times \text{dollar}$$

$$0,22 \times 4 \times (1-42\%) \times 5.6973 = \text{R\$ } 2,91$$

Fee per maturity not via EDS's (legs traded separately)

$$(\text{Fee}_{\text{shorter maturity}} \times \text{Qty}_{\text{shorter maturity}} + \text{Fee}_{\text{longer maturity}}) \times (1 - \text{Discount}_{\text{Monthly ADV}}) \times \text{dollar}$$

$$0,88 \times 1,56 + 1,10 \times (1-42\%) \times 5.6973 = \text{R\$ } 8,17$$

* $\text{Qty}_{\text{shorter maturity}} = \frac{\text{DVO}_{\text{longer maturity}}}{\text{DVO}_{\text{shorter maturity}}}$

▲ EDS (-) Non EDS

$$\text{R\$ } 2,91 (-) \text{R\$ } 8,17 = \text{-R\$ } 5,26 (-64\%)$$

AGENDA

DI1 Fee Changes

Current Fee Model – Non Daytrade

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New Outright Trading Fee Model

Calendar Apreads fees

Discount Based on Previous Month *ADV*

DDI and FRC Fee Changes

Current Fee Model

New Outright Trading Fee Model

Calendar Spreads Fees

Discount Based on Previous Month *ADV*

Discount Based on Previous Monthly ADV

The discount of the new model is based on previous month *ADV*. The discount calculated will be valid for the following month.

ADV Monthly

$$ADV_{\text{Monthly}} = ADV_{\text{Outrights}}_{\text{month}} + ADV_{\text{Calendar Spreads}}_{\text{Month}}$$

$$ADV_{\text{Outrights}}_{\text{monthly}} = \frac{\sum(Q_i \times FR_i)}{N}$$

$$ADV_{\text{Calendar Spread}}_{\text{Monthly}} = \frac{\sum(QE_j \times FRE_j)}{N}; \text{ where } FRE_j = FR_{\text{LongerTerm}_j} - FR_{\text{ShorterTerm}_j}$$

Qi = # Contracts of Maturity i traded on previous month

FRi = Risk Factor of maturity i on previous month;

QEj = # Calendar spreads j traded on previous month;

FR_{LongerTerm_j} = Long term leg risk factor of calendar spread j on previous month

FR_{ShorterTerm_j} = Short term leg risk factor of calendar spread j on previous month

n = # of trading sessions on previous month

Example –ADV calculated based on trading apr/21. It will be valid for the following month.

Day of trading	Book	Trading	Qty	Risk Factor (FR)	Qty X FR
1	Outrights	F25	50.000	1,60	80.000
1	Calendar Spread	N22-F22	80.000	0,22	17.600
2	Outrights	F25	20.000	1,60	32.000
2	Calendar Spread	N22-F22	40.000	0,22	8.800
Outrights Total					112.000
Calendar Spread Total					26.400
# of trading sessions month					22
ADV Outrights (A)					5.091
ADV Calendar Spread (B)					1.200
ADV Monthly (A+B)					6.291

Discount based on Monthly ADV

Monthly ADV Tier		Tier Discount	Reduction
From	To		
1	250	0%	0
251	1.000	10%	25
1.001	2.500	20%	125
2.501	5.000	25%	250
5.001	9.000	30%	500
9.001	13.000	40%	1.400
13.001	25.000	50%	2.700
25.001	50.000	55%	3.950
50.001	75.000	60%	6.450
Acima de 75.000		75%	17.700

ADV de 6.291
Tier Discount = 30%
Reduction = 500

$$Discount\% = Tier\ Discount - \frac{Tier\ Additional}{Monthly\ ADV}$$

$$Discount\% = 30\% - \frac{500}{6.291} = 22\%$$

Risk Treatment and LiNe

RISK TREATMENT – POST TRADING

POST TRADE: no changes in risk calculation

- **Allocated trades (CORE0):**
 - Legs are represented and evaluated individually.

- **Non allocated trades (CORE1):**
 - Legs are represented individually;
 - Evaluated together to risk calculations on CORE1.

RISK TREATMENT- PRE TRADING (LINE)

PRE trading – LINE Limits:

- **TMOC/TMOV**: consider strategies's legs individually;
- **SPCI/SPVI**: consider strategies's legs individually;
- **SFD**: consider strategies's legs individually;
- **RMKT**: verification considers consider strategies's legs together;
- **SDP**: Strategies are not considered.

Limit	Strategy	Legs
TMOC/TMOV		✓
SPCI/SPVI		✓
SFD		✓
RMKT	✓	

RISK TREATMENT- PRE TRADING (LINE)

SPCI/SPVI: Potential Buy (or Sell) balance by Instrument

- Control is based on each strategies' leg;
 - Leg's Quantities are calculated based on Strategy specification.
 - Example:
 - a) Buy **OFFER** with 100 Contracts of the Strategy DI1J21 com DI1J22.
 - DI1J21 (nearby month): sell 4,000 contracts
 - DI1J22 (deferred month): buy 100 contracts
 - b) Sell **TRADE** of 50 DI1J22
- Limits:
- DI1J21: **SPVI = 4.000** (a)
 - DI1J22: **SPCI = 100** (a) - 50 (b) = **50**

RISK TREATMENT- PRE TRADING (LINE)

TMOC/TMOV: Maximum Buy (or Sell) Offer Size

- Control is based on each strategies' s leg;
- Example:
 - Limit DI1J21: TMOV = 3,500
 - Limit DI1J22: TMOC = 1,000
 - Send a buy offer of 100 Contracts of the Strategy DI1J21 and DI1J22
 - DI1J21 (nearby month): sell 4,000 contracts
 - DI1J22 (deferred month): buy 100 contracts
 - TMOV Limit DI1J21 (3,500) is lesser than sent quantity in the offer (4,000)
 - **Rejected Offer**

RISK TREATMENT- PRE TRADING (LINE)

SFD: Day Trade Financial Balance

- Control is based on each strategies' s leg;
- Prices and Quantities are obtained with trade information.
- Example:
 - a) Buy Trade of 100 Contracts on Strategy DI1J21 and DI1J22
 - DI1J21 (nearby month): sell 4,000 contracts
 - DI1J22 (deferred month): buy 100 contracts
 - b) Sell Trade of 50 DI1J22
- SFD Consumption of DI1J22 considers:
 - a) Buy 100 Contracts of DI1J22 coming from trade (a) and its traded rate; and
 - b) Sell 50 DI1J22 coming from trade (b) and its traded rate.

RISK TREATMENT- PRE TRADING (LINE)

RMKT: Risk Measure

- Limits consider both strategies' legs together;
- Leg's Quantities are calculated based on Strategy specification;
- Risk is equivalent to the sum of each leg's risks, considering its quantities.

RISK TREATMENT- PRE TRADING (LINE)

RMKT: Risk Measure

- Example:
 - Buy offer of 100 Contracts in Strategy of DI1J21 and DI1J22
 - DI1J21 (nearby month): sell 4,000 contract of DI1J21
 - DI1J22 (deferred month): buy 100 contract of DI1J22
- Individual risks of each strategy's leg in each risk scenario

Instrument	Scen. 1	...	Scen. 634	Scen. 635	...	Scen. N
DI1J21	15	...	5	6	...	
DI1J22	1,600	...	-1,000	-360	...	

- Strategy's Risk

Strategy	Scen. 1	...	Scen. 634	Scen. 635	...	Scen. N
DI1J21 / DI1J22	+100,000	...	-120,000	-60,000	...	

- Consumption in the worst risk scenario (634)
 - **RMKT = $-\min(100,000, \dots, -120,000, -60,000, \dots) = 120,000$**

Sinacor

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- **SINACOR met all the Strategies specifications on 22.1 version (release expected on Mar/22)**
- **This or any later version will be ready to treat the new Products without requiring any activation**