

ROADMAP

# INDEX OPTIONS



[B]<sup>3</sup>

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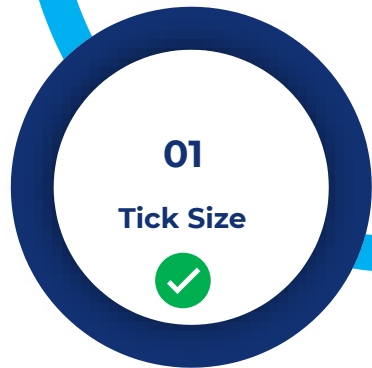
## Ibovespa Options

Main Initiatives

## Roadmap Ibovespa Options

### Fee Incentive for Structured Ibovespa Derivatives Transactions

50% discount on specific Ibovespa Derivatives Transactions



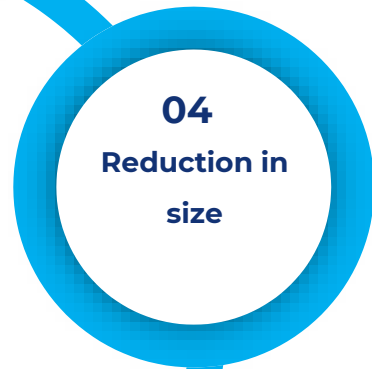
### Tick Size

Change of Ibovespa Options tick size from 1 to 5 points



### Trading on Expiration

Procedure to allow trading the Index Options on expiration date  
Expected 11/25/2024



### Reduction in size

Reduction of Ibovespa Options size  
Expected 11/25/2024



### Weekly Options

Launch of Ibovespa Weekly Options  
Expected 11/25/2024

**Launch of VIX Brazil** - B3 recently launched the S&P/B3 Ibovespa VIX



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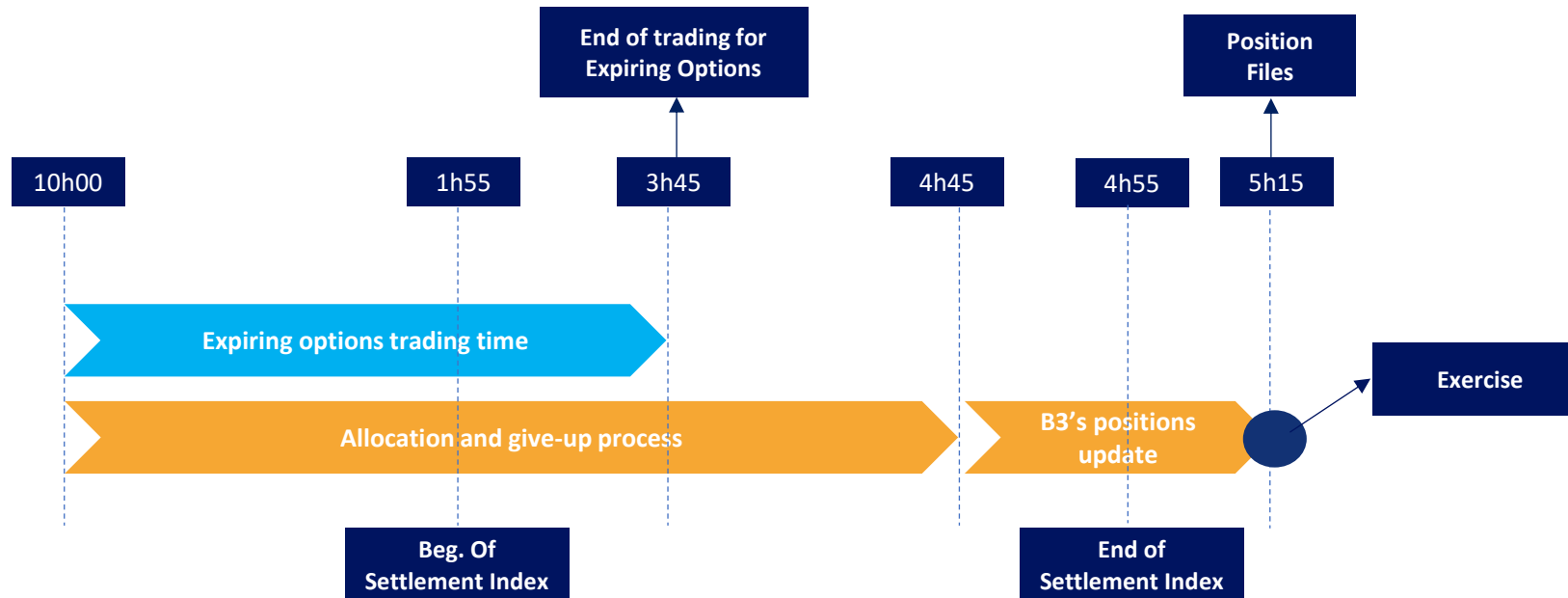
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## Trading on expiration date

Index Options (IBRX-50, Small Cap, and Ibovespa)



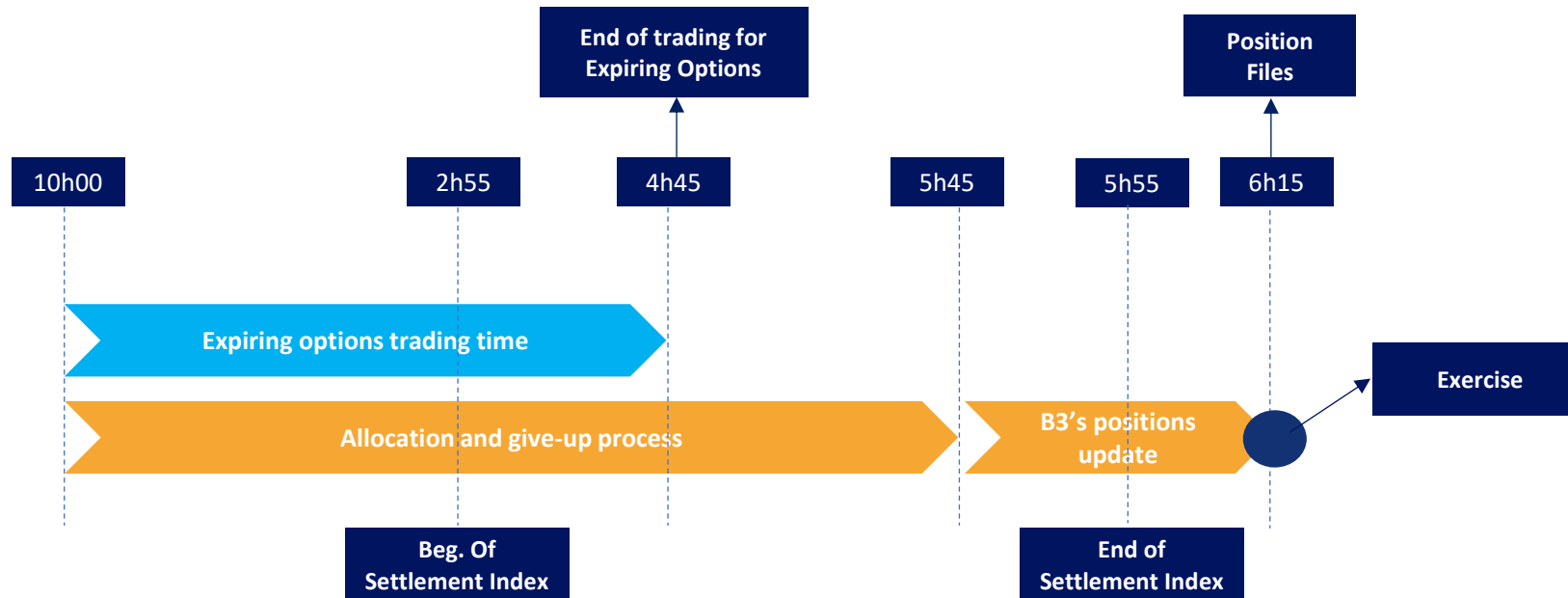
## Trading window, allocation/give-up and exercise for Index Options (March to October)



### Important messages

- Index options will begin trading on the expiration date
- Exercise will be **15 minutes after** the current
- Expiring options will trade for **1h50** of the **Settlement Index** calculation and **will not** trade on the **last 1h10** of the calculation
- The process will be launched for all Index Options (IBRX-50, Small Cap, and Ibovespa)
- Estimated launch November 25<sup>th</sup>

## Trading window, allocation/give-up and exercise for Index Options (November to March)



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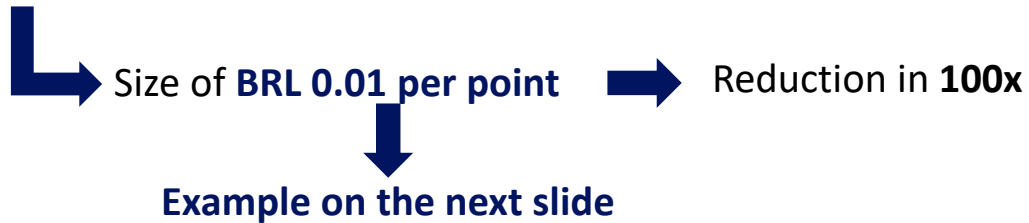
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**Reduction in size of the contract**

Ibovespa Options

## Reduction in size of Ibovespa Options

Size (points per contracts)	Contract	Mean Premium (per contract)	% Underlying	Tick Size	Round- lot	Size per point	Minimum Premium	
1:1	ETF Ibovespa Options	BRL 2.30	1.8%	0.01	1	BRL 1	BRL 0.01	Current contracts
1:1	Ibovespa Options	BRL 1,400	1.1%	5	1	BRL 1	BRL 5	
1:100	Ibovespa Options	BRL 14	0.011%	5	1	BRL 0.01	BRL 0.05	Project



### Important messages

- Quotation will remain in Index points. The change will be on the total financial volume (in BRL) of the trade
- On the UMDF channels, the size of the contract will be included as “*pricedivisor*” with value equal to 100. **Therefore, it must be applied as a divisor to represent the correct value of the option**
- On the BVBG.028 and BVBG.086, the size of the contract will be included as “<PricFctr>100</PricFctr>”
- Estimated launch November 25<sup>th</sup>



## Example for financial volume calculations in BRL after size reduction of Ibovespa Options

**Current** { **Example for financial volume calculation**

$Total\ Financial\ Volume\ (BRL) = Premium\ in\ points \times ContractMultiplier \times Number\ of\ Contracts\ Traded$

**Example:**

- Premium in points (quoted): 1,400 points
- Number of Contracts Traded: 50 contracts
- *ContractMultiplier*: 1 (fixed at 1)

$Total\ Financial\ Volume\ (BRL) = 1,400 \times 1 \times 50 = BRL\ 70,000.00$

**After** { **Example for financial volume calculation**

$Total\ Financial\ Volume\ (BRL) = \frac{Premium\ in\ points \times ContractMultiplier \times Number\ of\ Contracts\ Traded}{PriceDivisor}$

**Example:**

- Premium in points (quoted): 1,400 points
- Number of Contracts Traded: 50 contracts
- *ContractMultiplier*: 1 (fixed at 1)
- *PriceDivisor*: 100 (fixed at 100)

$Total\ Financial\ Volume\ (BRL) = \frac{1,400 \times 1 \times 50}{100} = BRL\ 700.00$

### Important Messages

- On Market data channels (UMDF), the size of the contract will be included on the field “*pricedivisor*” at value 100
- On BVBG.028 e BVBG.086 files, the size of the contract will be represented by the field “<PricFctr>100</PricFctr>”

**Important:** There are no changes to the Futures Contracts; however, please see below an illustration of how the calculation is done on the financial volume (BRL) based on the field “*ContractMultiplier*”

### Example for financial volume calculation

*Total Financial Volume (BRL) = Index Price in points × ContractMultiplier × Number of Contracts Traded*

#### Example for WIN:

- Index Price in points (quoted): 135,560 points
- Number of Contracts: 2 contracts
- *ContractMultiplier*: 0.2 (fixed at 0.2)

$$Total\ Financial\ Volume\ (BRL) = 135,560 \times 0.2 \times 2 = BRL\ 54,224.00$$

#### Example for SML:

- Index Price in points (quoted): 2,118,10 points
- Number of Contracts: 5 contracts
- *ContractMultiplier*: 10 (fixed at 10)

$$Total\ Financial\ Volume\ (BRL) = 2,118.10 \times 10 \times 5 = BRL\ 105,905.00$$



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## Launch of Weekly Options

Ibovespa Options

# Ibovespa Weekly Options

## Specifications

Expiration  
**Every  
Wednesday**  
*Except on Monthly expirations*

Operational  
**= Monthly**  
*For Trading, Post, and  
Exercise*

Ticker Structure  
**Same pattern as  
Weekly SSO**  
**IBOVA160W1**

Number of strikes\*  
*\*To be defined*

**5 to 6**  
Maturities open  
  
Other expirations  
can be created by  
demand

**Considerations**

- Differently for stocks, it will have expirations on the 3<sup>a</sup> Wednesday (W3)
- No changes in files layouts
- Contract will be BRL 0.01 per point, displayed the same as the monthly
- There will be trading on expiration date

**Expected Launch  
25/11/2024**



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## Improvement on Pricing

Ibovespa Options



## Current Pricing:

$$call_{BS} = S_0 \cdot N(d_1) - K \cdot e^{-rT} \cdot N(d_2)$$

$$d_1 = \frac{\ln(S_0/K) + \left(r + \frac{\sigma^2}{2}\right) \cdot T}{\sigma \cdot \sqrt{T}}$$

$$put_{BS} = -S_0 \cdot N(-d_1) + K \cdot e^{-rT} \cdot N(-d_2)$$

$$d_2 = \frac{\ln(S_0/K) + \left(r - \frac{\sigma^2}{2}\right) \cdot T}{\sigma \cdot \sqrt{T}} = d_1 - \sigma\sqrt{T}$$

$S_0$  : Underlying

$K$  : Strike

$T$  : Time to expiration

$\sigma$  : Implied Volatility

$r$  : Continuous interest rate

## Yield Inclusion “q”

$$call_{BS} = S_0 \cdot e^{-qT} \cdot N(d_1) - K \cdot e^{-rT} \cdot N(d_2)$$

$$d_1 = \frac{\ln(S_0/K) + (r - q + \frac{\sigma^2}{2}) \cdot T}{\sigma \cdot \sqrt{T}}$$

$$q = \ln\left(1 + \frac{TxCY}{100}\right)$$

$S_0$  : Underlying

$K$  : Strike

$T$  : Time to expiration

$\sigma$  : Implied Volatility

$r$  : Continuous interest rate

$q$  : Yield

$Pre$  : Value of Fixed rate Curve (PRE) to Options Expiration

$Futuro_{Ind}$  : Value of Ibovespa Futures at Options expiration

$Ibovespa_{Liq}$  : Ibovespa Settlement value

$$put_{BS} = -S_0 \cdot e^{-qT} \cdot N(-d_1) + K \cdot e^{-rT} \cdot N(-d_2)$$

$$d_2 = \frac{\ln(S_0/K) + (r - q - \frac{\sigma^2}{2}) \cdot T}{\sigma \cdot \sqrt{T}} = d_1 - \sigma\sqrt{T}$$

$$TxCY = \left( \left( \frac{\left(1 + \frac{Pre}{100}\right)^T}{Futuro_{Ind} / Ibovespa_{Liq}} \right)^{1/T} - 1 \right) * 100$$



**Thank you!**

**In case of questions, please contact  
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