## Brazilian Mercantile & Futures Exchange

### Presentation Plan

- **Institutional Organization**
- **Derivatives Clearinghouse**
  - Facts and Figures
  - Participant Structure
  - Safeguards Structure
  - Risk Management Tools
  - Collateral Composition
Brazilian Mercantile & Futures Exchange

Institucional Organization
• Located in São Paulo, Brazil
• Not-for-profit organization
• Private association
• Systemically important clearinghouse
  • Registration, clearing, and settlement
• Self-regulated organization
• Prudential regulation
  • National Monetary Council (CMN)
  • Brazilian Central Bank (BACEN)
• Market supervision
  • Brazilian Securities Comission (CVM)
• The largest derivatives marketplace in Latin America
BM&F Services

• TRADING AND REGISTRATION SYSTEMS
  • Open outcry
    • Derivatives contracts
  • Electronic platforms
    • GTS (derivatives)
    • WTr (mini derivatives)
    • SISBEX (securities)
  • Registration facility
    • OTC derivatives (swaps and exotic options)

• CLEARING SYSTEMS
  • Derivatives
  • Foreign Exchange
  • Securities

• SETTLEMENT BANK
  • Settlement facilities for brokers and Clearing Members
BM&F Corporate Structure

- General Meeting of Members
- Deliberative Committee FX
- Advisory Board
- Advisory Committees
- Board of Governors
- Other Committees risk
- CEO
  - Derivatives Clearinghouse
  - Securities Clearinghouse
  - FX Clearinghouse
  - Technical & Planning
  - Trading
  - Information Technology
  - Legal Affairs & Auditing
  - Institutional Relations & Administration
  - Press & Media
  - Credit, Participant Registration, Comptroller and Human Resources
  - Business & Market Development
  - Internacional Relations Settlement Bank
BM&F Clearinghouses

BM&F Equity – USD281 million

- Derivatives Clearinghouse 1986
- FX Clearinghouse 2002
- Securities Clearinghouse 2004

Settlement Bank

- Systemic risk buffer for the Brazilian Payment System
- Segregated capital
- Independent financial safeguard structure
- Individualized risk management systems
- Combined market surveillance
Brazilian Mercantile & Futures Exchange

Risk Management
Decision-Making
Structure
Risk Management Decision-Making Structure

Brazilian Mercantile & Futures Exchange

Board of Governors

CEO
Mr. Edemir Pinto

Internal Risk Committee

Advisory Committee for Risk Analysis

Strategical

Tactical
Risk Management Decision-Making Structure

• Internal Risk Committee

CEO
Mr. Edemir Pinto

Internal Risk Committee

Trading
Derivatives Clearinghouse
Technical & Planning
FX Clearinghouse
Securities Clearinghouse
Agricultural Markets
Risk Management Decision-Making Structure

• Internal Risk Committee
  • Major attributions
    • Development, management, and improvement of internally-developed risk systems
    • Analysis of the macroeconomic environment and definition of stress scenarios to be used in margin calculations
    • Monitoring of leverage and concentration limits
    • Discussion of the Advisory Committee for Risk Analysis’ suggestions
Risk Management Decision-Making Structure

- Advisory Committee for Risk Analysis - Members

- ABN Amro Bank
- Anbid
- Banco do Brasil
- BankBoston
- Bradesco
- Banco BBM
- Caixa Econômica Federal
- Citibank
- CSFB
- Deutsche Bank
- HSBC
- ING Bank N.V.
- Itaú
- JP Morgan Chase
- Pactual
- Rabobank
- Santander
- Unibanco
- Votorantin
- WestLB
- PUC-RJ (Catholic University of Rio de Janeiro)
Brazilian Mercantile & Futures Exchange

Derivatives Clearinghouse

Facts and Figures
# Derivatives Clearinghouse – Main Products

<table>
<thead>
<tr>
<th>FINANCIAL DERIVATIVES</th>
<th>OTC DERIVATIVES</th>
<th>COMMODITY DERIVATIVES</th>
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<tbody>
<tr>
<td><strong>FUTURES &amp; OPTIONS</strong></td>
<td><strong>SWAPS</strong></td>
<td><strong>FUTURES &amp; OPTIONS</strong></td>
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<td>- STOCK INDEXES</td>
<td>- INTEREST RATES</td>
<td>- CRYSTAL SUGAR</td>
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<td>- DOMESTIC INTEREST RATE</td>
<td>- EXCHANGE RATES</td>
<td>- ANHYDROUS ALCOHOL</td>
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<td>- FOREIGN INTEREST RATE</td>
<td>- PRICE INDICES</td>
<td>- COTTON</td>
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<tr>
<td>- U.S. DOLLAR/REAL EXCHANGE RATE</td>
<td><strong>FLEXIBLE OPTIONS</strong></td>
<td>- FEEDER CATTLE</td>
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<tr>
<td>- EURO/REAL EXCHANGE RATE</td>
<td>- IBOVESPA</td>
<td>- LIVE CATTLE</td>
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<tr>
<td>- INFLATION INDEXES</td>
<td>- U.S. DOLLAR</td>
<td>- ARABICA COFFEE</td>
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<tr>
<td>- SOVEREIGN DEBT BONDS (C-BOND, GLOBAL 40)</td>
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<td>- ROBUSTA-CONILLON COFFEE</td>
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<td>- CORN</td>
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<td>- SOYBEAN</td>
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<tr>
<td><strong>STRUCTURED PRODUCTS</strong></td>
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<td><strong>SPOT</strong></td>
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<tr>
<td>- VOLATILITY TRADING</td>
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<td>- GOLD</td>
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BM&F Derivatives Clearinghouse

Derivatives Clearinghouse - Product Breakdown

Financial Volume

- I.D. x U.S. Dollar Spread: 25.43%
- OTC Market: 2.36%
- Agricultural Commodities: 0.12%
- Exchange Rates: 21.78%
- Indices: 2.47%
- Foreign Debt Bonds: 0.10%
- Domestic Interest Rates: 47.73%
- Gold: 0.01%

May/05
Derivatives Clearinghouse - Highlights

- Average daily volume: 1,000,000 contracts
- Average daily notional financial volume: USD45 billion
- Open interest: 10.6 million contracts
- Open interest notional financial value: USD435 billion
- Value deposited as collateral: USD24 billion

Participation by type of investor (Feb/04 – Jan/05)

- Financial Institution: 61.89%
- Institutional Investors: 20.15%
- Foreign Investors: 8.49%
- Private Individual: 7.88%
- Others: 1.59%
Brazilian Mercantile & Futures Exchange

Derivatives Clearinghouse

Participant Structure
• **Settlement**: netting at the level of Clearing Members

• **Risk management**: always monitors the risk of Clearing Members, Brokerage Houses, Locals and end customers
Brazilian Mercantile & Futures Exchange

Derivatives
Clearinghouse
Safeguards Structure
BM&F Derivatives Clearinghouse

Derivatives Clearinghouse - Safeguard Structure

BM&F

- Clearing Member
  - Brokerage House
    - Customer
    - DEFAULT

- Clearing Member
  - Brokerage House
    - Customer
BM&F Derivatives Clearinghouse

Derivatives Clearinghouse - Safeguard Structure

- BM&F Equity
  - Clearing Fund
    - Special Clearing Member Fund
    - Clearing Member Proprietary Collateral
    - Brokerage House Proprietary Collateral
    - Customer Collateral
  - Clearing Member
    - Brokerage House
    - Customer
Brazilian Mercantile & Futures Exchange

Derivatives Clearinghouse

Risk Management Tools
Margin Calculation Systems

- Liquid Contracts
- Iliquid Contracts
Margin Calculation Systems

- Characteristics of “Liquid Contracts”
  - Daily marking-to-market
  - Positions can be closed out within a short period of time at market prices
  - Standardized contracts

- Characteristics of “Illiquid Contracts”
  - Swap and forward contracts (OTC products)
  - Nonstandardized contracts
  - It may not be possible to close out the positions within a short period of time
In operation since 2001

Developed by BM&F to effectively assess risk on an overall portfolio basis

It is a PORTFOLIO-BASED margin system which calculates margins for futures and options on futures

It is a present value stress testing model

Very flexible, can assess risk of futures contracts, options, and any combination between them through stress testing and scenario analysis
Margin Calculation System for Liquid Contracts

• The system estimates the expected losses/gains associated with each risk factor given the stress scenarios

• The stress scenarios are determined on a weekly basis by the BM&F Internal Risk Committee or whenever deemed necessary
  • Those scenarios are based on (but not only):
    • current volatility levels of economic and financial variables
    • option market implied volatilities
    • analysis of the macroeconomic outlook
    • estimation and forecast using econometric models (e.g. EVT models)
Brazilian Mercantile & Futures Exchange

Derivatives Clearinghouse

Collateral Composition
### BM&F Derivatives Clearinghouse

#### Derivatives Clearinghouse - Collateral Composition

**REQUIRED AMOUNT:** USD 12,472,997,383.56

<table>
<thead>
<tr>
<th>ASSET</th>
<th>DEPOSITED (USD)</th>
<th>%</th>
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<tbody>
<tr>
<td>Federal Government Bonds</td>
<td>10,013,976,509.58</td>
<td>63.19</td>
</tr>
<tr>
<td>Federal Government Bonds (USD-indexed)</td>
<td>2,290,040,487.82</td>
<td>17.82</td>
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<tr>
<td>Letters of Credit</td>
<td>2,199,043,682.96</td>
<td>13.07</td>
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<tr>
<td>Bank CDs</td>
<td>476,650,717.88</td>
<td>2.35</td>
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<tr>
<td>Shares of Stocks</td>
<td>660,704,890.27</td>
<td>2.69</td>
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<tr>
<td>Gold</td>
<td>152,696,288.85</td>
<td>0.72</td>
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<tr>
<td>Other Assets</td>
<td>30,463,023.26</td>
<td>1.59</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>15,823,575,600.63</td>
<td>100%</td>
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As of 21/03/2005