

Role and functioning of commodity derivatives in a liberalized market economy

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Flow of Presentation



- History and evolution of futures trading
- Commodity futures-concept and practice
- Are futures the perfect markets ?
- Economic benefits of commodity derivatives
- Integration of financial markets
- Conclusion

History and evolution of futures trading

Evolution of the Commodity Futures Market



Unorganised

- Barter system.
- No acceptable means of payment.
- The need of money as the token of exchange was felt

Organised physical APMC markets

- Lack of regulated markets,
- Lack of better market information system
- Large number of intermediaries.
- Monopoly of transportation system
- Lack of better post harvest management of produce, storage facilities, etc

Contract/ corporate farming

- Not upto the expectations
- Not able to attract a large number of participants.
- Need was felt to have a platform - hedge & price discovery.

Futures market

- Futures trading - improved trading in physical markets.
- Function- price discovery & hedging
- A systematic trading & surveillance system.
- Regulated trading on legal grounds.
- The buyer & the seller have to obey the bye-laws

Global history of futures trading



- Trading in rice tickets - Japan - early 17th century
- Forward markets - London - end of the 17th century
- Forward markets -US, Canada, Japan and Egypt – 18th century
- Options traded on exchange- US - 1973
- Chicago Board of Trade – 1848; trading in futures type contracts in 1865
- New York Board of Cotton - 1870
- Chicago Mercantile Exchange- set up -1919

Indian Market – A trip down memory lane

| | |
|-------------|--|
| 1875 | Bombay Cotton Trade Association |
| 1900 | Gujarat vapari mandali (now BCE) |
| 1919 | Calcutta hessian Exchange |
| 1920 | Futures trading in Gold in B.B.A until mid-1950's |
| 1921 | East India Cotton Association |
| 1927 | East India Jute trade Association |
| 1957 | IPSTA – Spices |
| 1966 | Complete ban |
| 1980 | Khusro Committee- Cotton, Jute, Potatoes |
| 1994 | K.N Kabra Committee – 1994 |
| 2000 | National Agriculture Policy |

2002-3 **3 National Level Multi Commodity Exchange**
over 100 Commodities allowed for futures trading

The four committees

Shroff Committee, 1950
Scrutinized the comments of stakeholders and revised the draft Futures Market Regulation Bill

Dantwalla committee, 1966
Reviewed the functioning of the FMC amidst changing economic conditions in the country

Khusro Committee, 1980
Studied the feasibility of introducing futures trading in selected commodities and recommended reintroduction of futures trading in major commodities

Kabra Committee, 1994
Examined the role of futures trading amidst changing economic scenario.. Recommended allowing futures trading in 17 commodity groups & strengthening of the FMC, and amendments to FCRA, 1952 to allow options trading in goods

Futures Trading vs. Traditional Marketing



| | Traditional Agri Marketing | Futures Trading | Benefits |
|---------------------------|---|--|---|
| Trading on | Commodities | Futures contracts (underlying commodities) | Emergence of Reference Price |
| Trading Mode | Open outcry auction system | Electronic matching of Trade | Prevents collusion among traders |
| Buyers and Sellers | Local or nearby areas | National level | Discovery of price on national level |
| Price Discovery | Price for the day depending on local fundamentals | Price discovery depends on national fundamentals | Efficient decision by value chain players |
| Participation | Producer and sellers are price takers | Producer/consumers/investors/arbitrageurs together discovers price | Participative price discovery |
| Counter Party Risk | Payment mode is on buyers discretion | Assured payments to sellers | Ensures payment made to sellers |

Commodity Futures- Concept and Practice

What is a futures contract



A futures contract is a binding agreement between a seller and a buyer to give (seller) and to take (buyer) delivery of the underlying commodity (or a financial instrument) at a specified future date with agreed upon payment terms.

The main functions of an Exchange traded futures contract are

- **Trade Guarantee**
- **Risk Management**
- **Price Discovery**
- **Transactional Efficiency**
- **Liquidity**

Critical components of a Commodity Futures Contract



- Commodity Specification – Contract Month
- Trading Unit , Additional Quotation
- Margins – Initial, Special, and Additional
- Price Quote (Basis), Tick Size, Price Circuit
- Maximum allowable open position
- Delivery – Center, Quality, Logic (sellers/buyers/both)
- Penal Provisions

What is a futures exchange ?



- *Futures Exchange is a central marketplace with established rules and regulations where buyers and sellers meet to trade futures and options on futures contracts.*

WHY FUTURES MARKETS ?

- Improve Economic Infrastructure of the Nation
- Encouraging ecosystem for efficient discovery of prices
- Assigning appropriate economic value to the contribution of ecosystem participants
- Transfer of risk among the participants

Commodity Futures Markets in India



| Participation | 2000 | 2007 |
|---------------------------------------|--------|-------------------------|
| Modern Exchanges | Absent | High (3 National level) |
| Commodity stakeholders (actual users) | Low | Medium |
| Institutional brokers | Absent | Medium |
| Banks | Absent | About to be permitted |
| FII's & Mutual Funds | Absent | About to be permitted |
| Companies/corporations | Absent | Medium |
| Practices | | |
| Professional clearing | Absent | Medium |
| Electronic trading | Absent | High (3 National level) |
| Settlement Guarantee Fund | Absent | High |

Exchanges as SRE's



- Memorandum & Articles; to govern matters relating to company affairs, board and management
- Bye Laws: Overall framework for regulating trading and settlements
- Rules: Matters relating to membership
- Business Rules: Micro details relating to trading, clearing and settlement, delivery, arbitration etc.
- Contract specification with delivery and settlement procedure

Major features of modern exchange



- Automated screen-based trading
- National reach
- Order driven trading system
- Transparent, Objective and Fair system of order matching
- Identity of the trader undisclosed
- Daily Turnover limits for Buy and Sell for each User linked to deposit
- Flexibility in placing orders
- Complete Online Market Information
- Square-off facility

Are futures the perfect markets?

In contrast to forward markets....



In contrast to a forward cash contract market, futures exchanges provide:

1. Rules of conduct
2. An organized market place
3. Standardized trading
4. A focal point for the collection and dissemination of information
5. A mechanism for settling disputes among traders without resorting to the costly and often slow legal system; and
6. Guaranteed settlement of contractual and financial obligations

Adapted from 'Introduction to Futures Markets', The Texas A&M University System.

Legal Frame Work

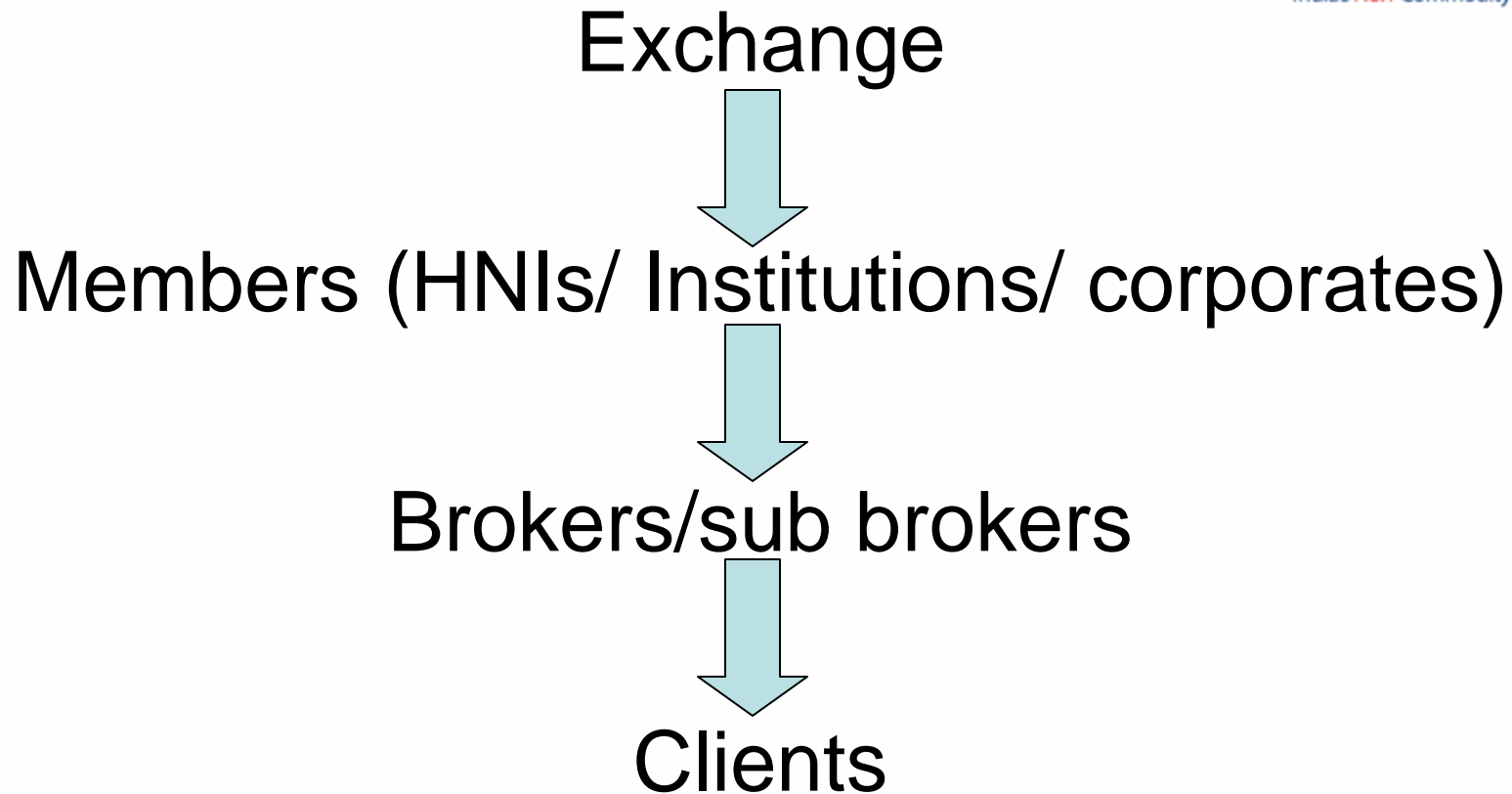


Ministry of Consumer Affairs, Food and Public Distribution

Forward Markets Commission
FC(R) Act 1952
FCRR 1954
Regulations

Multi Commodity Exchange of India Limited
Bye-Laws and Business rules

Exchange's participants-A bird's eye view



Participants in Commodity



~~Futures~~

Current Participants

- Farmers/Producers
- Traders
- Importers/Exporters
- Processors/consumers
- Commodity Financers
- Corporates having price risk exposure in commodities

Potential Participants

- Mutual Funds
- Pension Funds
- Banks
- Foreign Institutional Investments
- Financial Institutions Participation

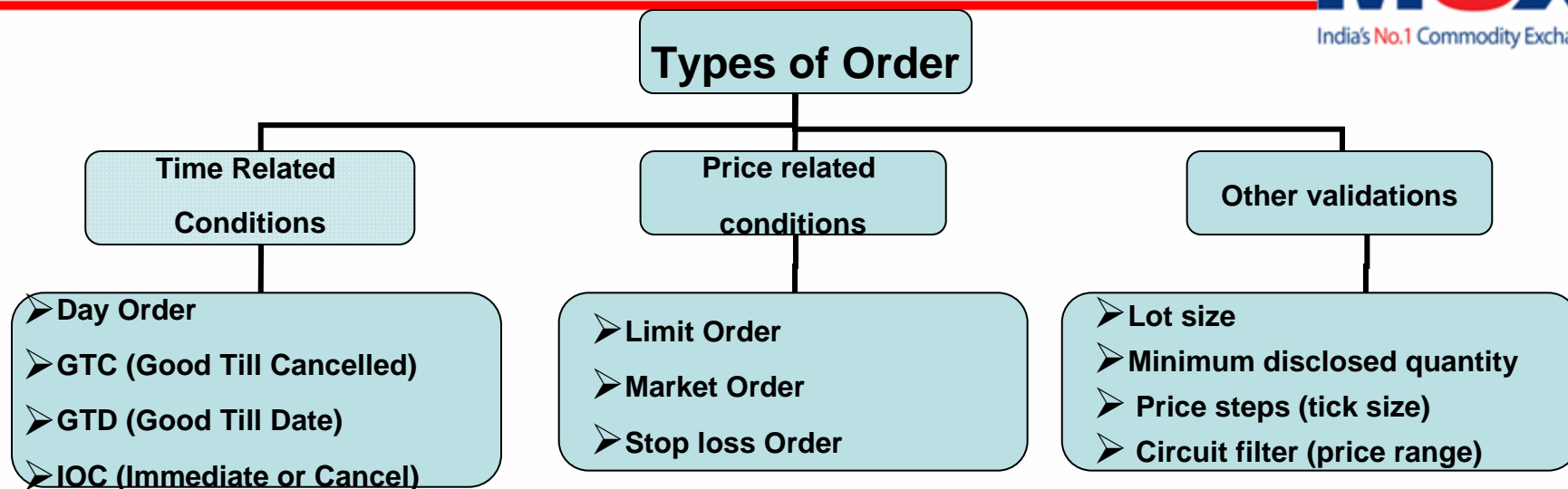
Functioning of MCX

MCX – An Overview



- Demutualised, Independent & Electronic (Commenced Nov 10, '03)
- No. 1 Commodity Exchange of India with around 80% market share in FY 2007-08
 - Average daily turnover - Rs. 15,000 Crores in over 50+ commodities
 - Highest Daily Turnover - Rs. 22,774 Crores on 5th March 2008
- Operations from over 600 cities with over 1800 members & 48000+ Trading stations with connectivity through VSAT, Internet, leased line, CTCL etc.
- Real-time price & information dissemination through website, India Post (Gramin Suchna Kendra) and info vendors.
- 11 International Strategic Alliances
- First Indian Commodity Exchange to become Associate Member of FIA
- Only Commodity Exchange in the World to have ISO/IEC 27001:2005 certification.
- Among the leading commodity exchanges globally (in terms of contracts) in less than three years
 - No.1 in Silver futures trading globally
 - No.2 in Natural Gas & Copper futures trading globally
 - No.3 in Gold & Crude Oil futures trading globally

Basics of Trading



Features of TWS

- | | |
|-------------------------------|--|
| ▪ Online Ticker | Spot and Futures prices |
| ▪ Contract Information Screen | Displays contract specifications |
| ▪ Market Watch Screen | Market Movement |
| ▪ Contract Market Summary | Depth of the market (Top 5 bid and ask) |
| ▪ Order Book | Shows Only Pending, Executed, Submitted, Rejected and Cancelled Status |
| ▪ | |
| ▪ Trade Book | Select commodity, contract, Client Type |
| ▪ Net positions | Client wise/Contract wise |
| ▪ Surveillance Watch Screen | Displays Margin utilization/MTM monitoring |
| ▪ Bhav Copy | |
| ▪ Online backup | |

TWS Snapshot



MCX Trader Workstation Ver 3.0.0.7 (Powered By FT-Engines)

08 Nov 2006 04:21:27 PM

File View Market Orders Trades Tools Window Help

MANCIX 1332.42 (+1.74) MCXCOMDEX 2157.48 (-6.30)

COMMODITIES AHMSPOTSLV

Market Watch - VOLT

| Symbol | Expiry Date | Tender | Close | % | LTP | Buy... | Buy Pri... | Sell Pr... | Sell... | Underl... | Open | High | Low | OI | Pr |
|------------|-------------|--------|----------|-------|----------|--------|------------|------------|---------|-----------|----------|----------|----------|----------|----|
| GOLD | 05DEC2006 | | 9136.00 | -0.18 | 9120.00 | 200 | 9119.00 | 9120.00 | 100 | 9114.00 | 9142.00 | 9143.00 | 9112.00 | 1286600 | 10 |
| GOLD | 05FEB2007 | | 9280.00 | -0.23 | 9259.00 | 100 | 9257.00 | 9259.00 | 100 | 9114.00 | 9280.00 | 9280.00 | 9251.00 | 167200 | 10 |
| GOLD | 05APR2007 | | 9435.00 | -0.37 | 9400.00 | 100 | 9382.00 | 9439.00 | 100 | 9114.00 | 9437.00 | 9437.00 | 9385.00 | 7000 | 10 |
| GOLDM | 05DEC2006 | | 9142.00 | -0.14 | 9129.00 | 30 | 9127.00 | 9128.00 | 10 | 9114.00 | 9145.00 | 9149.00 | 9120.00 | 115680 | 10 |
| GOLDM | 05JAN2007 | | 9240.00 | -0.23 | 9219.00 | 20 | 9218.00 | 9220.00 | 10 | 9114.00 | 9240.00 | 9240.00 | 9211.00 | 17700 | 10 |
| GOLDM | 05FEB2007 | | 9320.00 | -0.15 | 9306.00 | 10 | 9293.00 | 9310.00 | 20 | 9114.00 | 9328.00 | 9328.00 | 9292.00 | 1080 | 10 |
| SILVER | 05DEC2006 | | 18926.00 | -0.25 | 18879.00 | 30 | 18876.00 | 18880.00 | 90 | 18762.00 | 18920.00 | 18925.00 | 18852.00 | 258750 | 1 |
| SILVER | 05MAR2007 | | 19449.00 | -0.51 | 19350.00 | 30 | 19365.00 | 19384.00 | 30 | 18762.00 | 19437.00 | 19437.00 | 19350.00 | 11640 | 1 |
| SILVER | 05MAY2007 | | 19882.00 | -1.02 | 19680.00 | 30 | 19680.00 | 19836.00 | 30 | 18762.00 | 19860.00 | 19860.00 | 19661.00 | 2280 | 1 |
| SILVERM | 30NOV2006 | | 18949.00 | -0.23 | 18905.00 | 10 | 18905.00 | 18909.00 | 30 | 18762.00 | 18978.00 | 18978.00 | 18880.00 | 29055 | 1 |
| SILVERM | 28FEB2007 | | 19458.00 | -0.38 | 19385.00 | 15 | 19380.00 | 19409.00 | 5 | 18762.00 | 19371.00 | 19446.00 | 19371.00 | 3460 | 1 |
| CRUDEOIL | 15NOV2006 | | 2675.00 | -0.75 | 2655.00 | 2200 | 2653.00 | 2655.00 | 2300 | 2642.00 | 2662.00 | 2662.00 | 2644.00 | 1450500 | 1 |
| CRUDEOIL | 15DEC2006 | | 2759.00 | -0.72 | 2739.00 | 200 | 2739.00 | 2740.00 | 400 | 2642.00 | 2745.00 | 2750.00 | 2732.00 | 372000 | 1 |
| CRUDEOIL | 15JAN2007 | | 2844.00 | -0.91 | 2818.00 | 100 | 2817.00 | 2820.00 | 100 | 2642.00 | 2820.00 | 2824.00 | 2812.00 | 28700 | 1 |
| NATURALGAS | 20NOV2006 | | 351.70 | -1.05 | 348.00 | 500 | 348.00 | 348.20 | 1500 | 347.70 | 349.70 | 350.50 | 347.00 | 1260500 | 1 |
| NATURALGAS | 20DEC2006 | | 371.50 | -0.94 | 368.00 | 500 | 367.60 | 368.20 | 500 | 347.70 | 370.00 | 371.50 | 367.10 | 485000 | 1 |
| NATURALGAS | 19JAN2007 | | 376.70 | -0.72 | 374.00 | 500 | 373.20 | 373.80 | 2000 | 347.70 | 371.60 | 376.70 | 371.60 | 138500 | 1 |
| ZINC | 30NOV2006 | | 204.45 | 0.22 | 204.90 | 10000 | 204.80 | 204.95 | 25000 | 205.55 | 205.00 | 207.65 | 202.25 | 7895000 | 1 |
| ZINC | 29DEC2006 | | 203.25 | 0.37 | 204.00 | 5000 | 203.90 | 204.20 | 5000 | 205.55 | 204.40 | 206.30 | 201.30 | 1485000 | 1 |
| ZINC | 31JAN2007 | | 202.85 | 0.52 | 203.90 | 5000 | 202.10 | 203.95 | 5000 | 205.55 | 204.90 | 206.00 | 201.00 | 150000 | 1 |
| COPPER | 30NOV2006 | | 334.65 | -0.43 | 333.20 | 1000 | 333.15 | 333.20 | 1000 | 332.60 | 334.15 | 334.25 | 332.30 | 16455000 | 1 |
| COPPER | 28FEB2007 | | 338.55 | -0.30 | 337.55 | 1000 | 337.40 | 337.55 | 1000 | 332.60 | 338.10 | 338.90 | 336.50 | 2049000 | 1 |
| COPPER | 30APR2007 | | 342.10 | -1.29 | 337.70 | 1000 | 337.00 | 338.25 | 2000 | 332.60 | 335.75 | 338.90 | 335.75 | 17000 | 1 |
| MENTHAOIL | 30NOV2006 | | 629.70 | -1.38 | 621.00 | 360 | 620.90 | 621.00 | 360 | 624.80 | 629.90 | 631.40 | 611.70 | 1170720 | 1 |
| MENTHAOIL | 30DEC2006 | | 644.30 | -1.55 | 634.30 | 1080 | 634.10 | 634.50 | 720 | 624.80 | 645.00 | 646.60 | 625.60 | 1276920 | 1 |
| MENTHAOIL | 31JAN2007 | | 657.20 | -1.55 | 647.00 | 360 | 645.00 | 646.90 | 360 | 624.80 | 657.80 | 658.70 | 633.10 | 128520 | 1 |

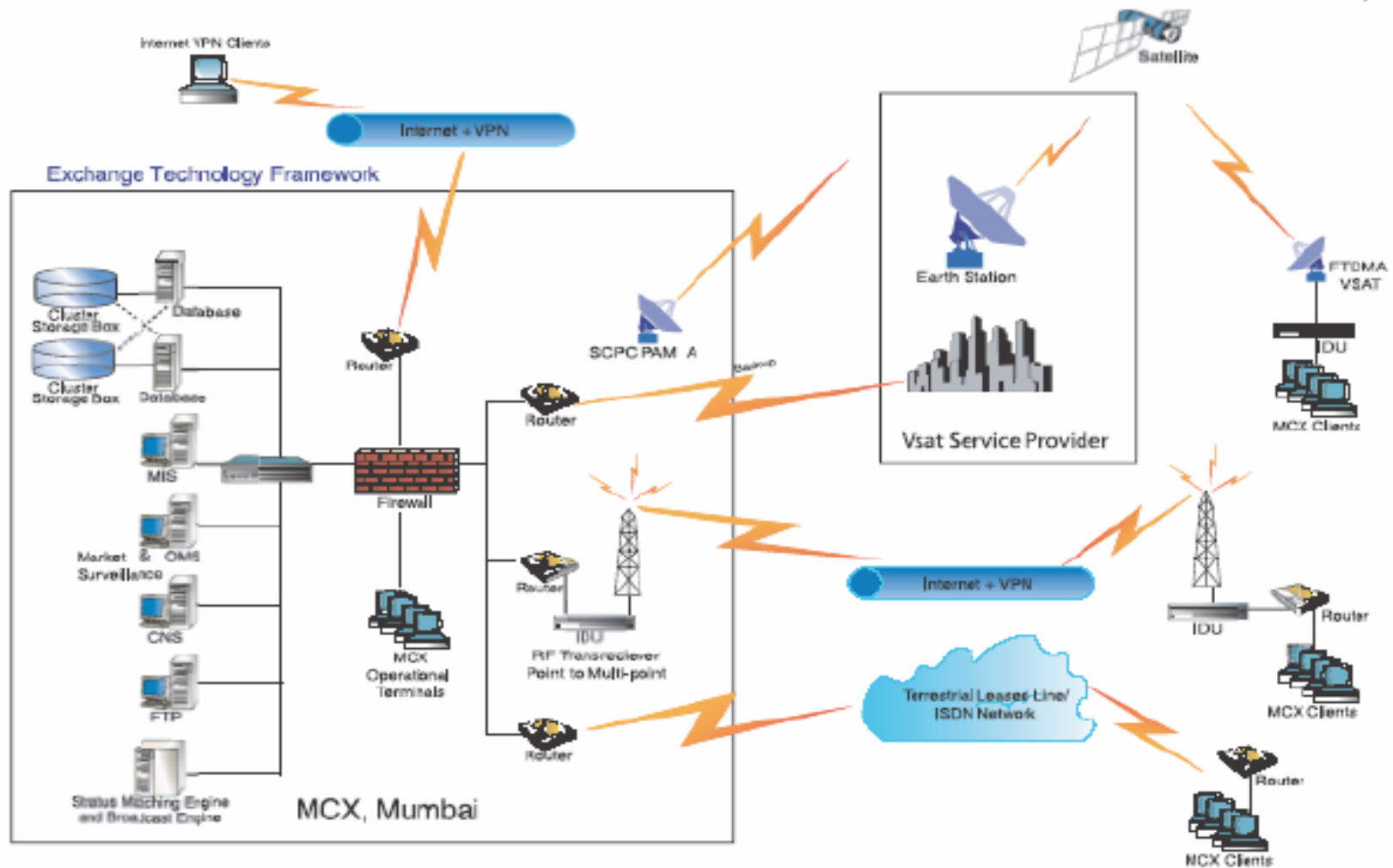
User : 2135 Member Id : 21000 Market Status : Open Qty in : Units
 14:17:45 PM 08/11/2006 Daily Price for Zinc Cash is 205.93 /t (4.600*0.44 68)



9/10/2008

24

Technology



Membership



Types of Membership

- Trading-cum-Clearing Member (TCM)
- Institutional Trading-cum-Clearing Member (ITCM)
- Professional Clearing Member (PCM)
- Trading Member (TM)

Eligibility Conditions for Membership

- Indian National
- Age not less than 21 years
- Net worth requirements as prescribed by the Exchange from time to time

Registration with Forward Markets Commission (FMC)

- Member is activated for trading on receipt of of Unique Membership Code (UMC) from FMC

Connectivity to the Exchange

- Members have 3 options to connect with the Exchange for their trading activities
- Internet
- VSAT
- Leased Line

Margins

| <u>Type of Margin</u> | <u>Description</u> |
|-----------------------|---|
| Initial Margin | Online, upfront, minimum VaR based margin across all open positions SUBJECT to minimum margin % AND Incremental margins levied on DPR Relaxations |
| Additional Margin | Margin levied as an Exchange / Regulatory RMS Shall be applicable across all the open market positions |
| Special Margin | Margin levied over and above the initial & additional margins Such margins may be levied on either on long or short open positions |
| Incremental Margin | Online margins levied during the tender period of the contract on all the open positions till the time of expiry of the contract |
| Delivery Margin | Margins levied on all the open positions marked for delivery |

- The margin is calculated on **the contract wise net open positions & at end client level**
- Real Time alerts for margin utilization beyond specified percentages (60%, 75%, 90%)
- Spread Benefit on Spread Contracts (75%)

Accepted Collaterals



A member can deposit collaterals in the form of

- = Cash
- = Bank Guarantee (BG)
- = Pledge of Warehouse Receipt (WR)
- = Fixed Deposit Receipt (FDR)
- = Pledge of Securities (SEC)

Rules for Collateral Deposits

- All the above collaterals, **except cash**, are subject to their respective upper caps.
- Maximum eligible deposit in the form of BG / FDR is 3 times the cash deposit.
- If a member maintains a minimum cash deposit of Rs. 50.00 Lacs and provides an undertaking for the same, no upper cap shall be applicable for BG / FDR.
- Warehouse receipts are governed by the interim commodity level limits & the total limit criteria (maximum *50 crores across all commodities*).
- Securities are governed by the interim scrip level limits & the total limit

9/10/2008 criteria (maximum *25 crores across all scrips*).

Risk Management at MCX



Price Risk Management

- Circuit Filters

Exposure Risk Management

- Maximum Open Position Limits
- Mark-To-Market Daily

Financial Obligation Risk Management

- Initial Margin Deposit
- Delivery Period Margin Requirement
- Special Margin Deposits

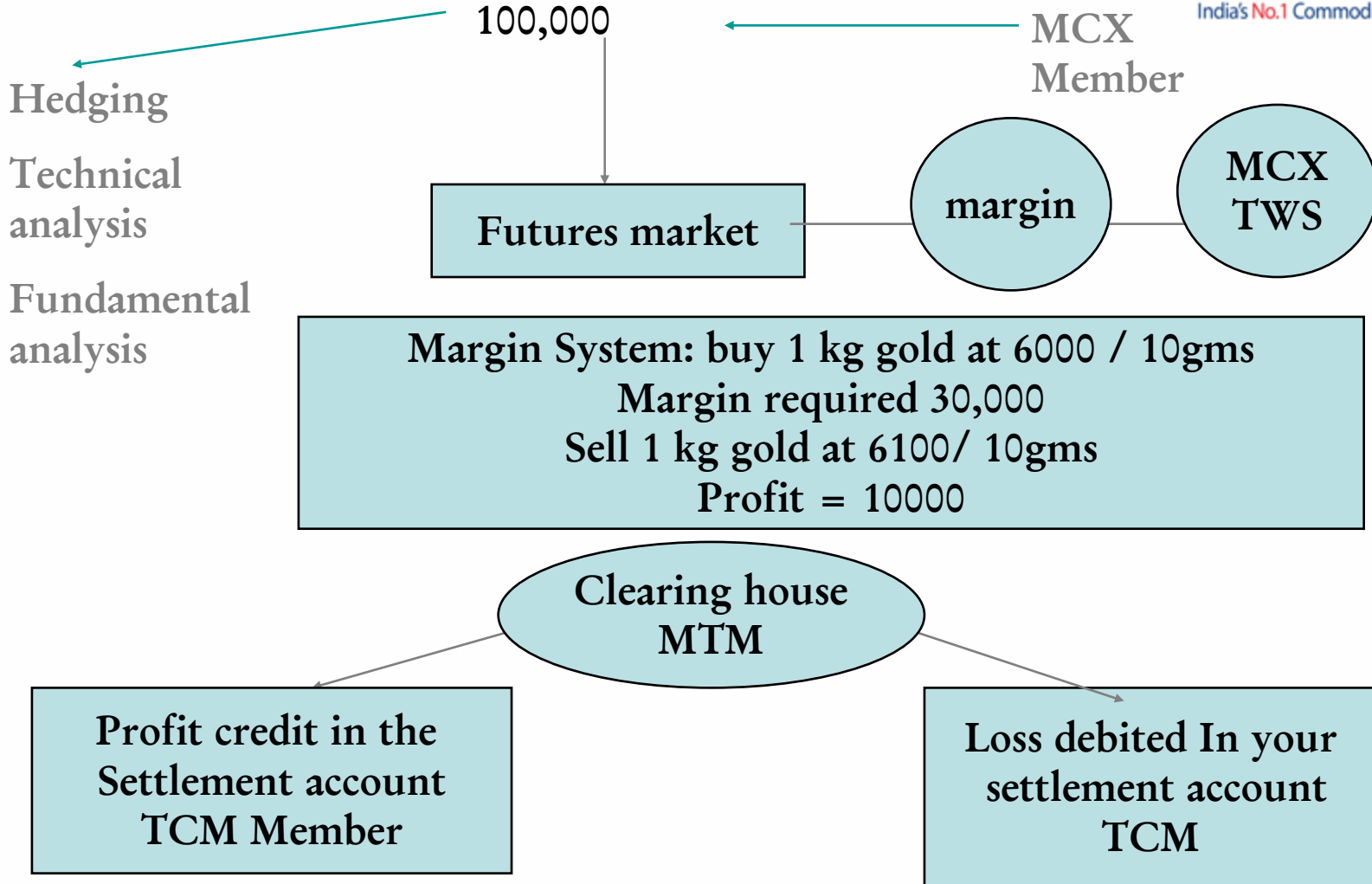
Quality Default Risk Management

- Certificate by Approved Surveyors

Delivery Default Risk Management

- Penalty
- Due-Date Rate Settlements

How to Enter in this Market



Hedging
 Technical analysis
 Fundamental analysis

MCX Member

100,000
 Futures market

margin
 MCX TWS

Margin System: buy 1 kg gold at 6000 / 10gms
 Margin required 30,000
 Sell 1 kg gold at 6100 / 10gms
 Profit = 10000

Clearing house
 MTM

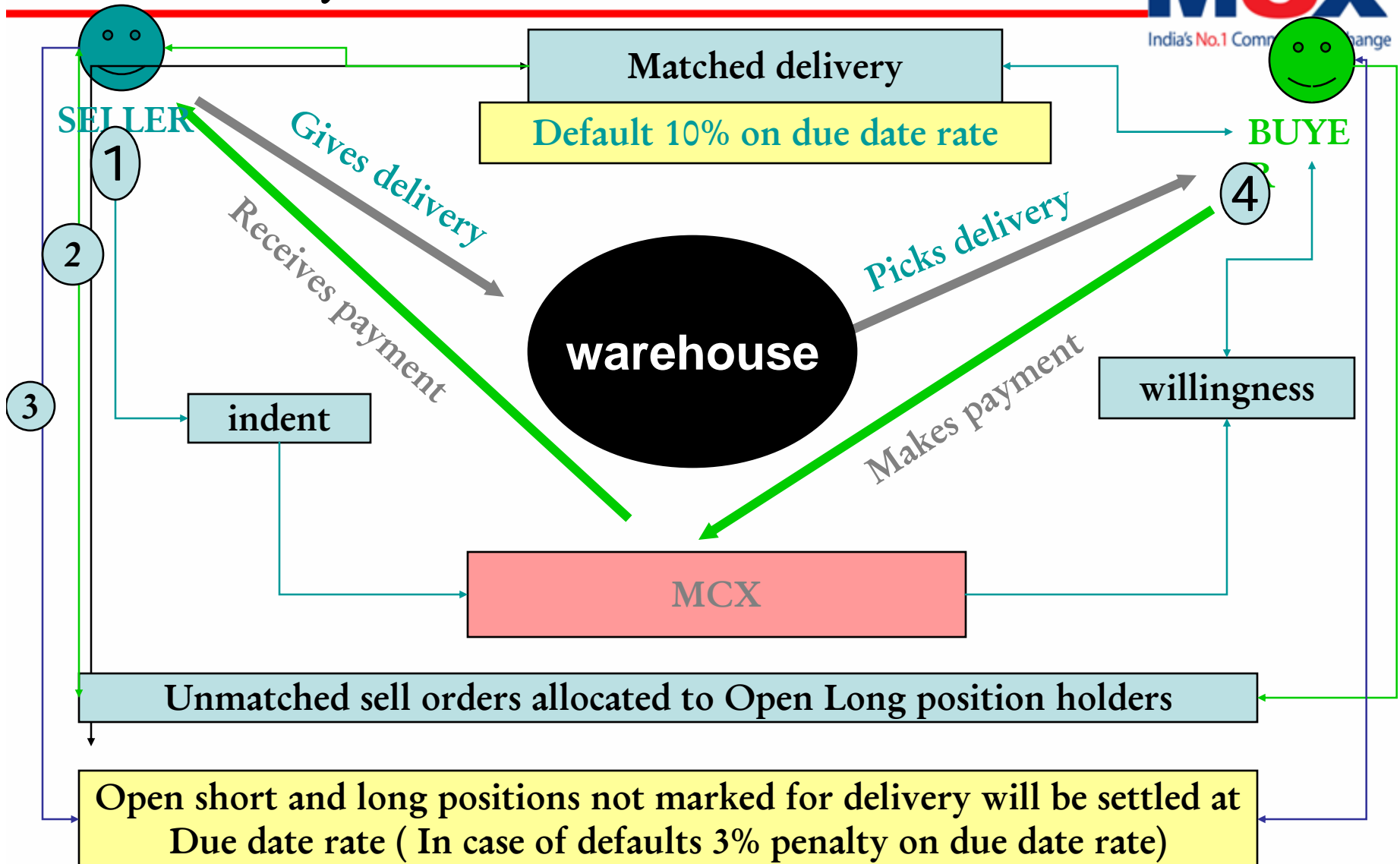
Profit credit in the
 Settlement account
 TCM Member

Loss debited In your
 settlement account
 TCM

110000

90000

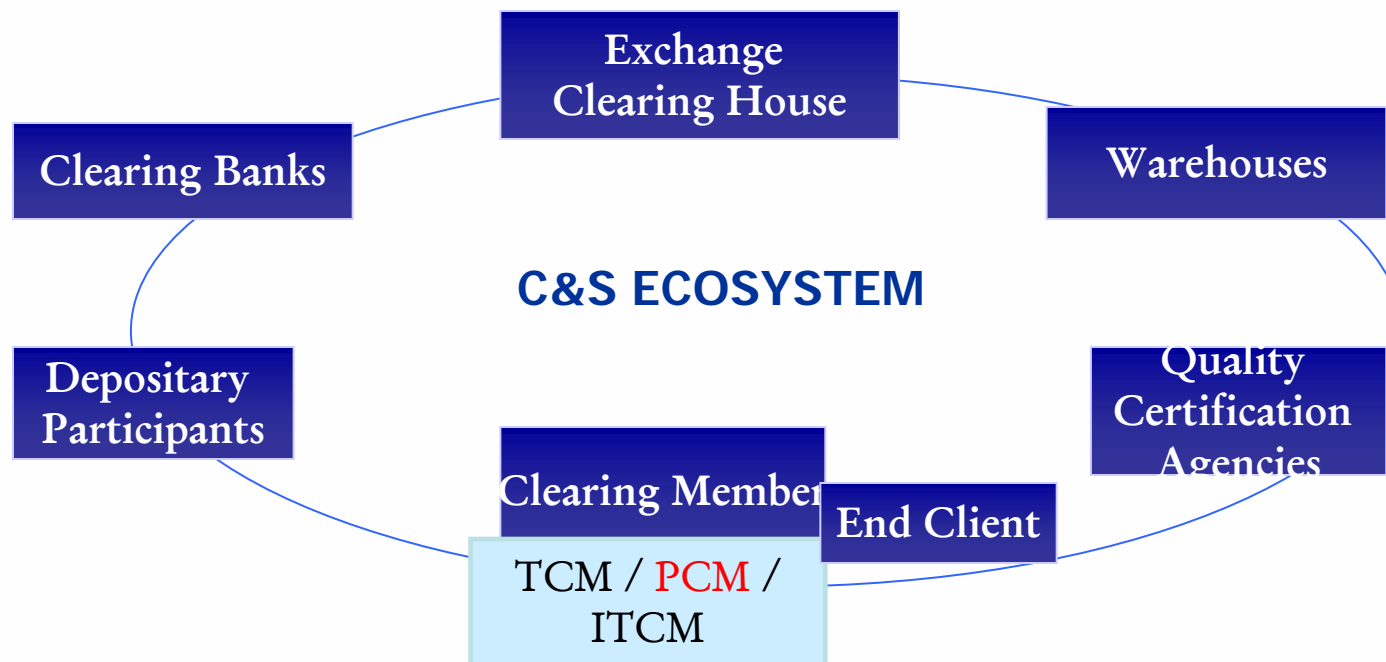
Delivery Procedures



Clearing & Settlement

Clearing & Settlement Department (C&S) acts as an interface between the Exchange and its members, processing transactions of the members for the trades executed during the trading sessions.

The C&S Department is responsible for generating and providing the trading & delivery obligations of the members, the upload/download of the bank data, imposition of the various margins, tracking funds collection towards member obligations.



Settlement

Daily Settlement

- Daily Settlement implies the settlement of MTM profit/ loss on a daily basis (T + 1).
- Exchange computes the MTM profit/ loss for the day for all the members.
- Exchange sends debit/credit instructions to the member's settlement account with the clearing banks for MTM pay-in/ pay-out obligation on T + 1 basis.

Final Settlement

- Final Settlement implies the settlement at the expiry of a contract.
- Based on the delivery logic provided in the contract specification for a commodity, the delivery intentions are accepted by the Exchange during the tender period.

- All the valid intentions for delivery are marked for delivery.

Market Surveillance



- **Monitoring:**

- large Open positions at Member / Client level
- large losses / profits
- the circular trading & abnormal trading
- Position of the repeat defaulters

- **Tracking:**

- Global / domestic markets for price / volatility / margins
- Data on fundamentals / government policies

Economic Benefits of Commodity Derivatives

Benefits of Futures Trading



- Efficient Price discovery
- Price risk management
- Credit mobilization
- Integration of rural, urban and global markets
- Increased awareness about quality standards
- Rising investment in market related infrastructure (e.g., standardization/quality testing/warehousing)

Benefit – Investment, employment generation and penetration of financial services to rural India.

Participation of Farmers in Futures Trading



- Direct participation by farmers
 - Large farmers or more farmers growing cash crops
- Other solutions
 - National Spot Exchange
 - Pooling of produce and participation by an external agency, eg: e-Choupal
 - Participation by corporates & procuring from farmers eg: Markfed, Cargill, Australian Wheat Board, Britannia, etc.
 - Participation by FCI as a Commodity Pool
 - Participation by farmers themselves after pooling of produce through aggregator

Does the farmer benefit directly or indirectly?



- Large farmers do get this price directly
- Small farmer could use consolidator for direct participation – banks/ warehouse/ pool operators
- Spot – futures - High correlation - enables the farmers to get futures linked prices in spot market
- Long-term price curve empowers farmers
- Value chain gets empowered by the price information emanating from futures markets – Shrinks marketing margins - Removes redundant participants in the chain
- Markets cause development of infrastructure which encourages value addition – Improves price realization – Reduced wastage
- Ultimate solution – **National Spot Exchange**

Direct Benefits of Futures Trading



- National Market
 - Around 5,00,000 participants in futures market across India from over 1000 cities
- Expected future prices of commodities known in advance
 - A farmer can plan his crop and sales by looking at prices prevailing in the futures market
- Easy availability of finance
 - Based on hedged positions farmers can get easy financing from the banks
 - Streamlined supply chain enhances farmers realisation
- Risk Management
 - Farmers can sell in the contract expiring close to the harvest date, to lock-in the current price.

Indirect Benefits of Futures Trading



- Futures and Spot move in tandem
 - Farmers benefits either directly from futures or indirectly from spot
- Access to National Reference Price
 - Integration of domestic market through the reference price
 - Increased awareness of quality standard
 - Improved return and reduced wastage
 - Formation of efficient value chain
 - Providing Scientific Warehousing services
 - Development of collateral management
 - Stimulate infrastructure development
 - Eg. Quality testing & certification , logistics, and information dissemination

Indian Industry: Annualized Risk Exposure



| Industry (data of 1500 companies) | Estimated Market Size (Rs Cr.) | % of Raw Material cost to Market Size | Underlying commodities |
|---|--------------------------------|---------------------------------------|--|
| Agro/ FMCG/ Edible Oils | 3,38,738 | 80% | Oilseeds, Edible oils, Sugar, Mentha oil, Grains, Spices, Pulses, Fiber etc. |
| Chemicals & Packaging | 24,274 | 65% | PVC, HDPE, PPTQ etc |
| Metals/Mining, Engineering/Industrial G; Auto/Auto Ancil.& Construction | 2,50,000 | 65% | Gold, Silver, Copper, Aluminium, Zinc, Rubber etc. |
| Oil/Petrol/Refineries | 3,46,536 | 85% | Crude oil, Natural gas etc. |

Industry in India today runs the raw material price risk,
Using Futures at MCX platform corporates can hedge this risk

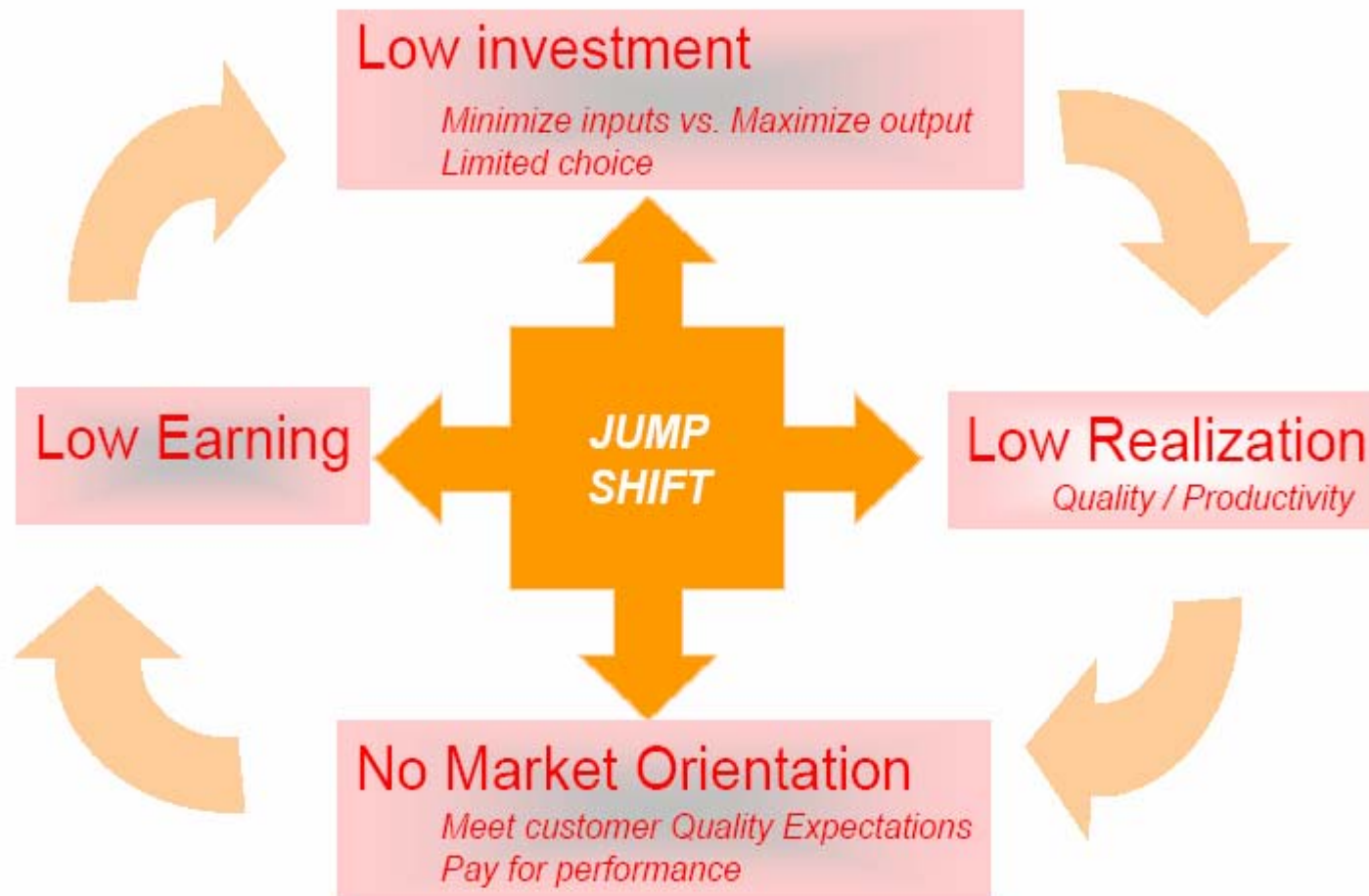
Annualized volatility



India's No.1 Commodity Exchange

| Annualized volatility | | | |
|--|--------|-------|-------|
| Particulars | Period | | |
| | 2006 | 2007 | 2008 |
| Annualized volatility of MCX Comdex | 17.804 | 12.17 | 20.49 |
| Annualized volatility of NSE Nifty | 26.402 | 25.7 | 37.8 |
| Annualized volatility of MCX Metal index | 30.216 | 15.12 | 23.15 |
| Annualized volatility of MCX Agri index | 12.659 | 9.07 | 28.01 |
| Note: All figures are in percentages For 2008, data is up to June | | | |

Market remain “inside out” focused



Commodity Price Risk Management



- Reduces risks and locks cost.
- Results in better cash flow management
- Mechanism to identify, measure, manage and monitor risk.
- Removes speculative element in the business by mitigating exchange rate risk.
- Protects business margins
- Enhances efficiency and competitiveness

Current status: Broken links in Agri chain



Production



Supply chain



Processing



Marketing



- Poor extension
- Quality inputs
- Low productivity
- Non demand linked production

- Lack of storage
- Poor transportation
- High wastages
- Multiple intermediaries

- Low processing
- Lack of quality
- Poor returns
- Low capacity utilization

- Poor infrastructure
- Lack of grading
- No linkages
- Non transparency in prices

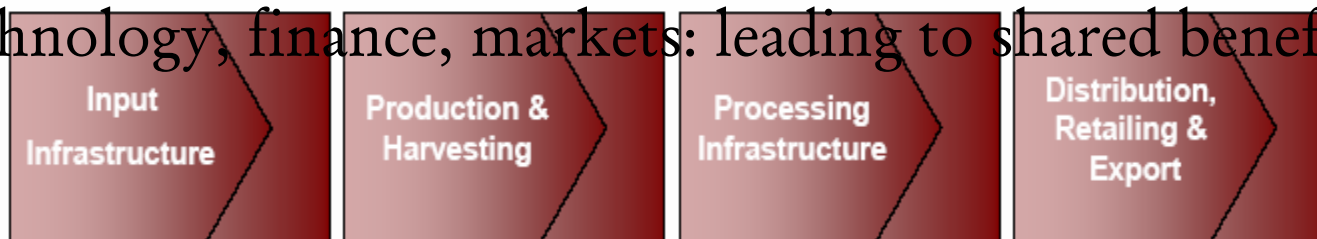
Each segment working in an isolated manner resulting in multiple losses across the value chain

Need for integrated supply networks

- In the present era of globalization & privatization
 - Competition no longer among firms but among supply chains
 - Efficiencies of scale

An integrated supply chain provides access to knowledge,

technology, finance, markets: leading to shared benefits



Market segmentation, consumers demand & low cost strategy -driving factors for supply chain collaboration

Key characteristic of successful supply chain: efficiency, flexibility, innovation, responsiveness

Futures market-Reaching global scale and potential

Fix complete chains

Bullet approach to an “integrated” approach

- Fix chains
- Create tailored, end-to-end solutions for crops: from “farm-gate to consumer-plate”

Ensure market-linked changes

Production focus to marketing focus

- Grow what consumers will eat in future (local and export)
- Innovate to ensure customer value (not just convenience)
- States to focus on few chains and have global aspirations

Public Private Partnership

Stand Alone to webs of alliance

- Farmer-government-private sector collaboration to optimise resource allocation/risk mitigation
- Catalyse change by crafting distinct roles for each stakeholder

Price Discovery

Buyer(s) and Seller(s) together set the price

| | | |
|-------------|-------------|------------------|
| Many Buyers | Auction | Futures Exchange |
| One Buyer | Negotiation | Reverse Auction |
| | One Seller | Many Sellers |

Price Discovery

- Prices made through trades in an open marketplace are recorded.
- The prices are transmitted immediately to be seen (discovered) by all
- Commodity Exchanges do not determine prices

Price discovery @ MCX



India's No.1 Commodity Exchange

| Commodity | Sowing period | Spot price (sowing) | Predicted Futures prices (sowing) | Converged Spot & futures price (harvest) | Prediction accuracy |
|----------------------------|---------------|---------------------|-----------------------------------|--|---------------------|
| Mentha Oil (Rs/kg) | Apr-07 | 588.33 | 537.00 | 519.00 | 3.47 |
| Chana (Rs/qtl) | Dec-07 | 2759.00 | 2230.00 | 2246.00 | 0.71 |
| Refined Soy Oil (Rs/10 kg) | Aug-07 | 487.60 | 478.00 | 512.00 | 6.64 |

Note: Signs are ignored to emphasize on the strength of the relationship

Futures and spot prices are the monthly average prices of a particular contract on MCX of a particular month

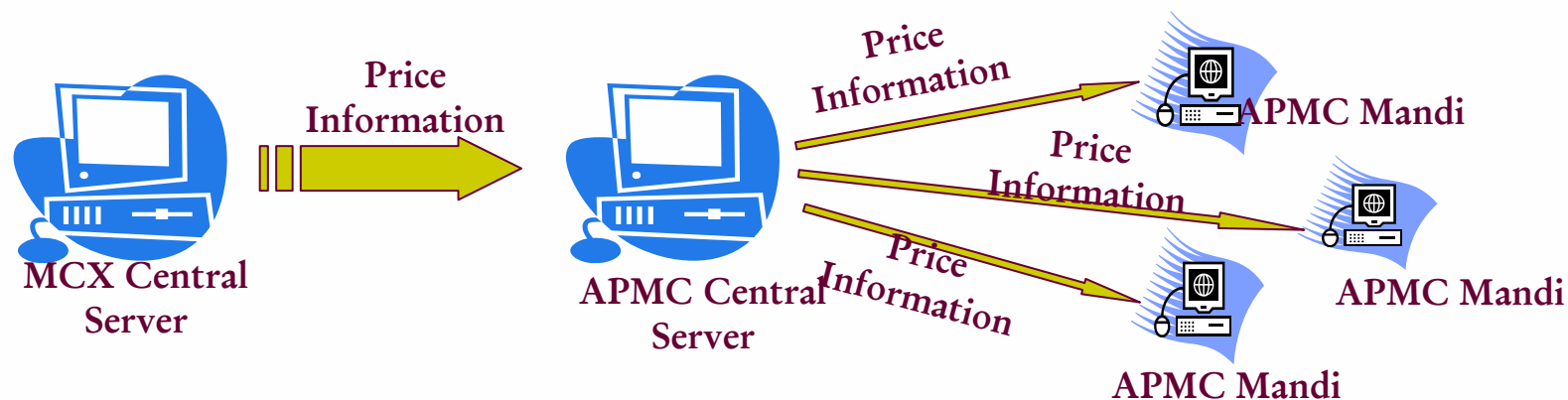
Prediction accuracy is % deviation between predicted futures price at the time of sowing and converged spot and futures prices post harvest

Source: CMIE, India harvest

Price Dissemination by MCX



- Ticker Boards installed in some markets
- Availability of Futures & Spot prices of commodities on SMS
- MCX real time price feed is disseminated through
 - CNBC Aawaaz, ZEE Business News, DD News, TV9
 - Approx. 50 national & local newspapers
 - Rural kiosks supported by institutions like MSSRF, “Gramin Suvidha Kendra”, Kerala State IT Mission etc.
 - Available on web-portals displaying the commodity market information; e.g. www.agmarknet.nic.in
- Distribution Channels – TV, Internet, Newsprint, Bank Branches, Post Offices, Co-operatives, Block Offices, Telephone Exchanges query No., Warehouses, Procurement agencies, Mandis, Sarpanch, etc.



Use of Price Information

| Players | Action | Benefit |
|-----------------------|---------------------------------------|-------------------------------|
| Price Discovery | | |
| Farmers | Follow Futures Prices | Decide on cropping |
| Farmers | Follow Futures Prices | Decide on time of sale |
| Price Risk Management | | |
| Farmers | Sell in futures for upcoming crop | Protection against price fall |
| Farmers & Traders | Sell in futures for Stored Quantity | Protection against price fall |
| Exporters | Buy in futures for Export Commitment | Protection against price rise |
| Domestic Users | Buy in futures for Input requirements | Protection against price rise |

Integration of fragmented spot markets



| Commodity | Pre-futures (2004) | | Post- futures (2005) | |
|-----------|--------------------|---------------------------------|----------------------|---------------------------------|
| | Price correlation | Intra-seasonal price difference | Price correlation | Intra-seasonal price difference |
| Rice | 0.00-23.00 | 4.84 | 0.00-70.00 | 4.32 |
| Tur | 0.00-27.00 | 7.47 | 0.00-80.00 | 6.18 |
| Wheat | 0.00-82.00 | 10.59 | 0.00-94.00 | 8.79 |
| Urad | 0.00-0.61 | 23.88 | 0.00-0.85 | 23.81 |

Note: All figures in percentage

Price correlation refers to the range of correlation in prices among different spot markets

The period of analysis is one season pre futures (2004) and one season post futures (2005).

Season refers to the crop season for all the commodities. The respective crop seasons for the respective crops can be classified as:

Rice- July to June (Kharif crop)

Tur- July to June(Kharif crop)

Wheat- November to October(Rabi crop)

Urad-July to June(Kharif crop)

Intra-seasonal price difference is arrived at by taking the average of percentage deviation in prices of different spot markets in a crop season (pre and post futures) mentioned above

9/10/2008
Source: CMIE, India harvest

Volatility in spot prices before and after MCX futures



| Commodity | Time period | Pre-MCX | Time period | Post MCX |
|-----------|-----------------------|---------|-----------------------|----------|
| Chana | 14 Feb,01-15 June,04 | 12.01% | 16 June, 04-27 Nov 07 | 11.62% |
| Rubber | 2 Feb,99-31 Dec,03 | 1.51% | 2 Jan, 04-30 Nov,07 | 1.09% |
| Potato | 3 Nov, 04-3 Mar, 06 | 5.82% | 9 Mar, 06-14 Dec, 07 | 0.90% |
| Rice | 18 Mar, 02-16 Jun, 04 | 0.81% | 2 Sept, 04-20 Feb, 08 | 0.72% |
| Urad | 1 Jan, 01-15 Jun, 04 | 2.80% | 16 Jun, 04-31 Jan, 07 | 1.80% |

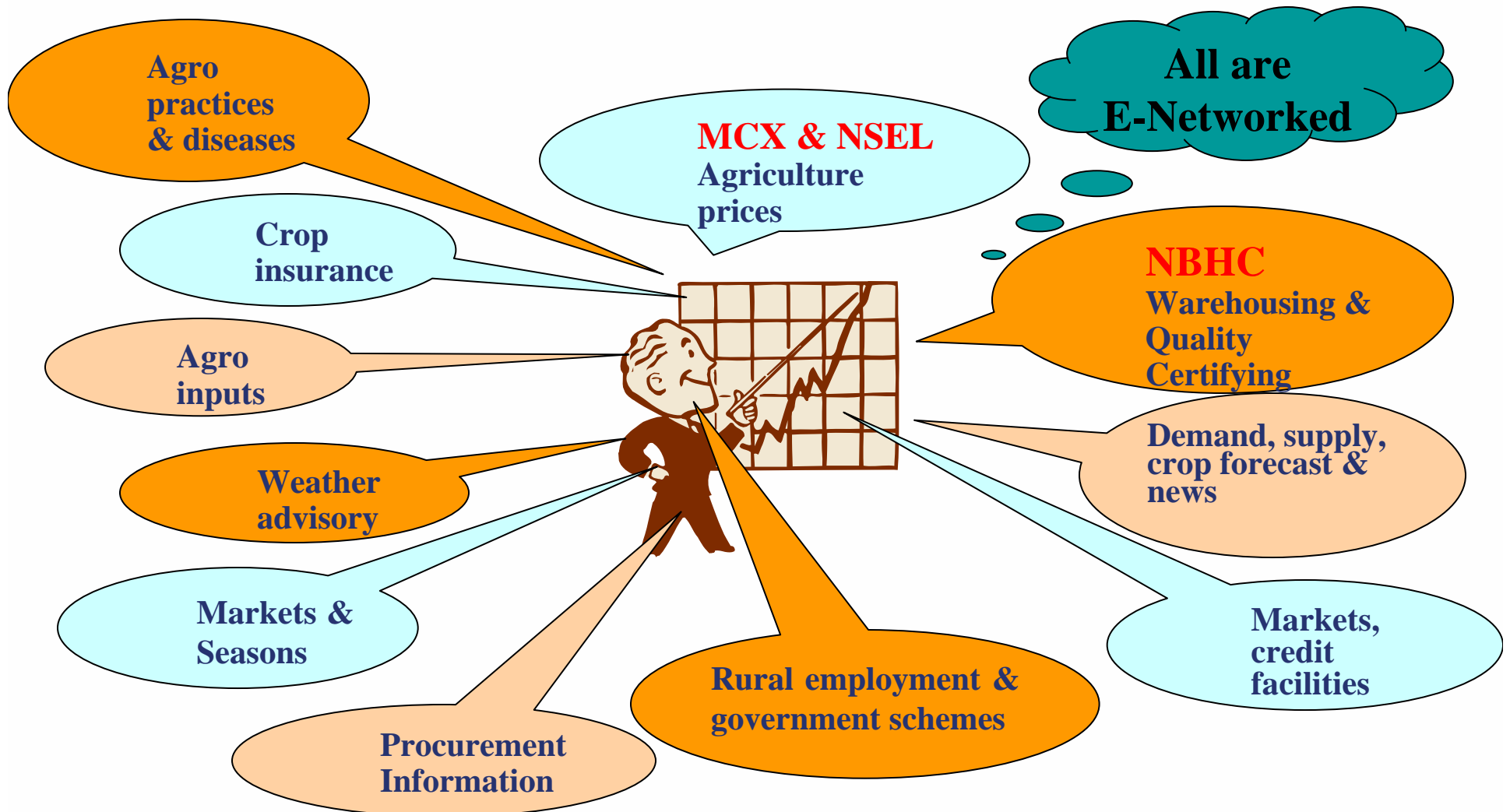
Source: AGMARKNET, www.agmarknet.nic.in

Prices of commodities pertain to respective delivery centers.

For wheat, rice, tur and urad—Delhi

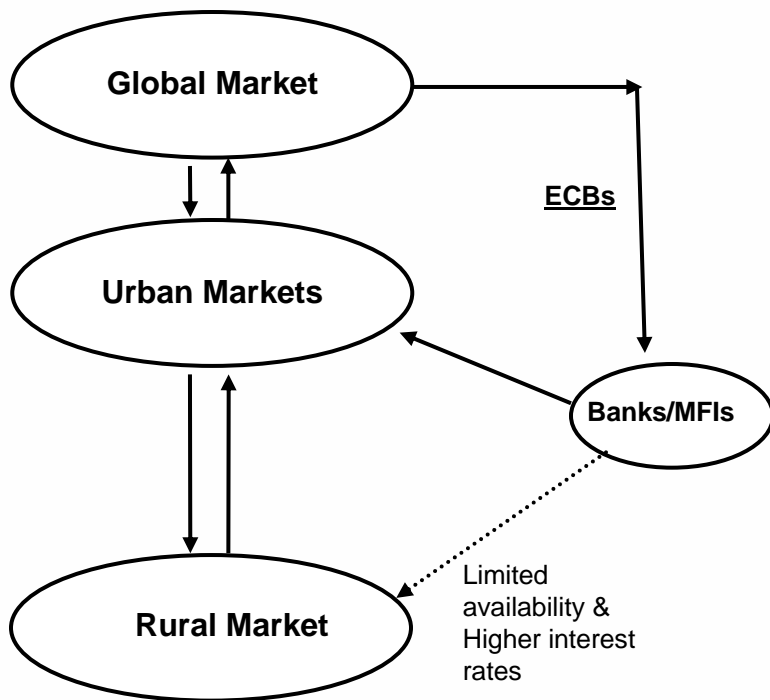
For Chana-Indore, Rubber-Kottayam, Potato-Agra and Turmeric- Nizamabad

Commodity derivatives: Efficient markets



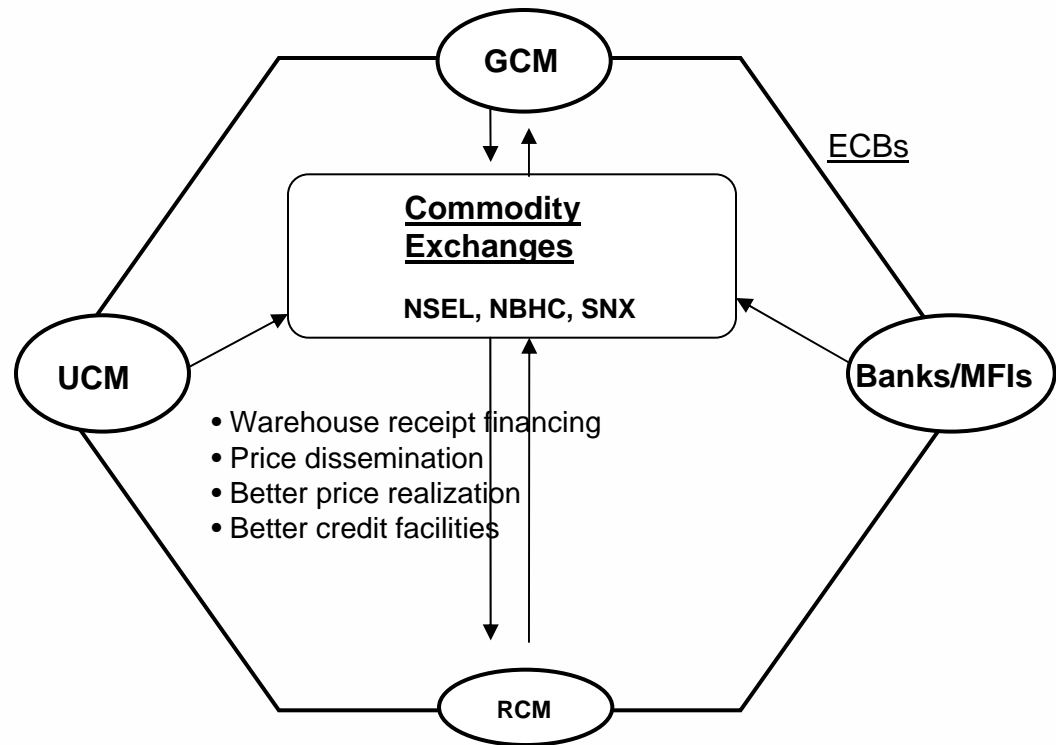
Commodity futures-linking the rural and the global markets

Pre Commodity Exchanges



Note: GCM- Global commodity markets, UCM- Urban commodity market, RCM- Rural commodity market, MFIs- Micro finance Institution, ECBs- External commercial borrowings.

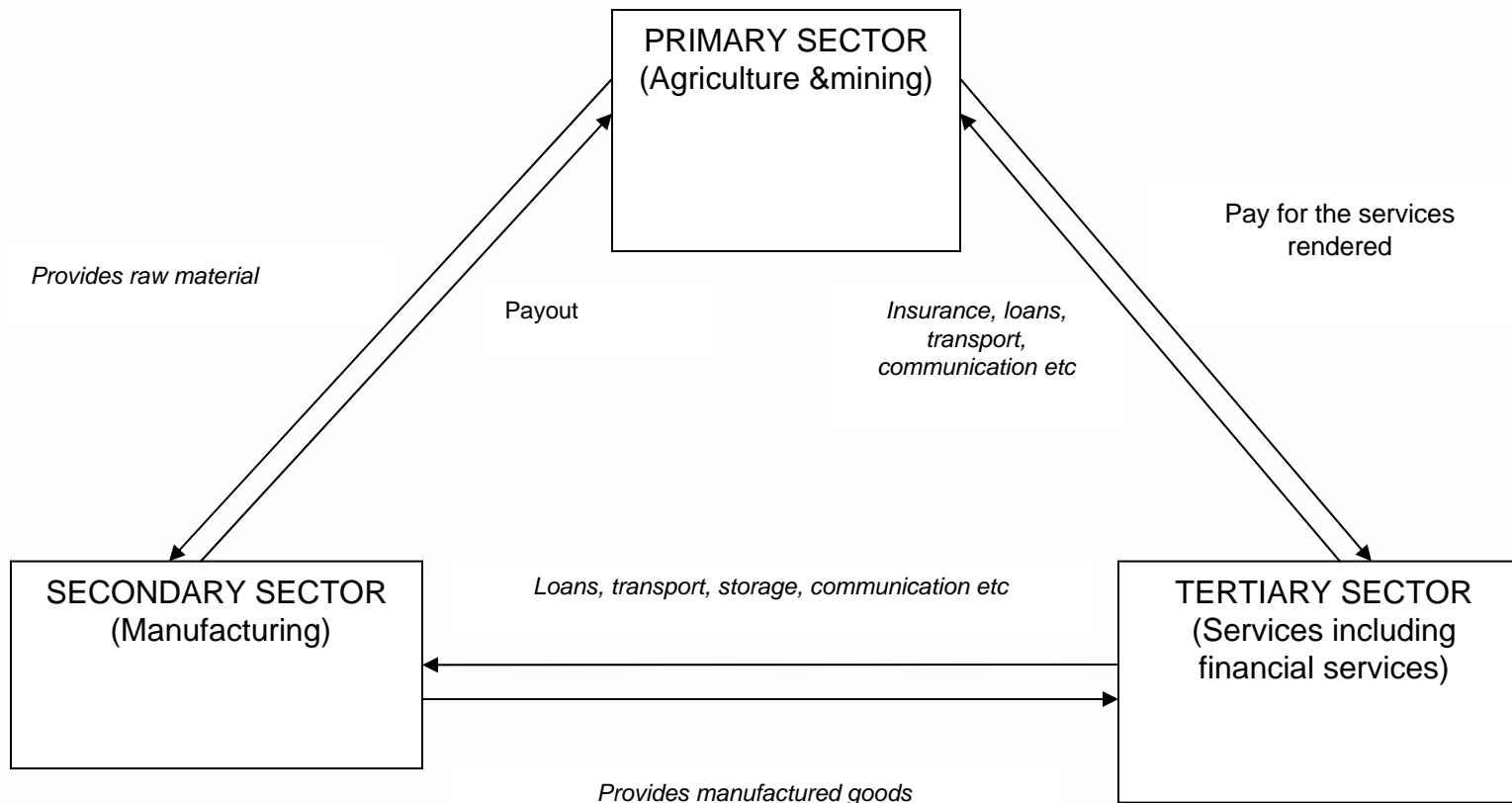
Post Commodity Exchanges



Note: GCM- Global commodity markets, UCM- Urban commodity market, RCM- Rural commodity market, MFIs- Micro finance Institution, ECBs- External commercial borrowings, NSEL – National spot Exchange, NBHC – National Bulk Handling corporation, SNX – Safal National Exchange of India Ltd.

Integration of financial markets

Linkages Among Different Sectors of an Economy



Correlation between commodity prices & equity prices



| Company | Associated metal | Correlation % |
|---------------------|-------------------------|----------------------|
| Sterlite Industries | Copper | 70.32 |
| Apollo Tyre | Rubber | 57.38 |
| Ceat Ltd. | Rubber | 54.35 |
| Bajaj Hindustan | Sugar | 54.00 |

Note: The period considered is from the date of inception of these respective commodities contracts on MCX platform till June 2008. For agri commodities spot prices are considered for correlation calculation and for metals MCX futures are considered.

Correlation between cotton prices & equity prices

Correlation between cotton prices and stock prices of related firms

| Correlation | Arvind | Raymond | Alok Ind | Bannari Spinning Mills | Deepak Spinning |
|--------------------|---------|---------|----------|------------------------|-----------------|
| Cotton Long | -64.96% | -52.74% | -22.30% | -30.37% | -66.84% |
| Cotton Medium | -66.00% | -62.61% | -27.18% | -45.73% | -73.60% |

Source: Compiled from spot prices of MCX and BSE closing prices of above respective companies.

Data from April 13, 2005 to June 20, 2008

MCX efforts in creating market linkages

Retail chains,
 distributors



Farmers



Industry including food
 processing units,
 manufacturers



Speculators,
 arbitrageurs



Hedgers

Growth Opportunities for Indian Commodity Markets



- Amendments in FCRA
 - Indexes (MCX Comdex)
 - Options
- Participation of Banks, FIIs & Mutual funds
- Privatization of APMC's
- Addition of more energy, metals & agri commodities
- Electronic spot market & E-linking of mandies
- Global tie-ups
- Liberalized agriculture international trade
- Phasing out of Administered Pricing Mechanism
- Institutionalization of Agriculture - Contract Farming - Corporate Farming
- Greater rural penetration

Conclusions

- Commexes- essential function- efficient allocation of primary sector resources
- Stabilizing the prices-enabling information flow-wider participation
- Improves the market infrastructure
- Enables 'market inclusive' growth- Essential precursor to financial inclusion
- Overall strengthening of financial markets
 - portfolio diversification
 - hedging risks
- Efficient markets (financial/commodities) → financial stability → economic stability → political stability

Thank You!

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