Agricultural commodity markets in India

Susan Thomas
susant@igidr.ac.in
http://www.igidr.ac.in/~susant

November 2, 2002
Motivation

• Finance can touch millions of households through the mechanism of agricultural spot and futures markets.

• We have gone far on the equity market; can we make similar progress on the commodities markets?

• In India, commodity futures markets were banned in the 1960s. Now we seek a greater role for commodity futures. The two biggest problems today are cotton and sugar. Future: Wheat and rice.
Outline of this talk

1. Price discovery in castorseed futures
2. The Muzaffarnagar jaggery futures – a case study in market design
3. The existing market design of the spot market
4. What can we do different?
1. Is it just a gambling den?
What does the castor futures market do?

- There are multiple futures markets for castor – Ahmedabad, Bombay, Rajkot being some of these.
- We asked the following questions:
  1. Do futures markets play a role in the price discovery function in India?
  2. Do the futures markets in different locations discover prices simultaneously or no?
- We analyse Ahmedabad and Bombay because these are the two market with the longest history of data available.
Contracts traded on the market

- C1: Mar
- C2: Jun
- C3: Sep
- C4: Dec

Harvest

- Sep
- Dec
- Mar
- Jun
- Sep
- Dec
Results

- Result 1: Futures do lead spot.
  1. We find that the futures prices lead the spot price in three out of the four contracts.
  2. Spot leads the futures price for the March contract.

  The March contract trades in the harvest season, and here the spot price is getting the information about harvest first.

- Result 2: Bombay leads Ahmedabad.
  1. The Bombay futures prices lead the Ahmedabad market in three out of the four contracts.
  2. Ahmedabad leads Bombay for the March contract.

  Once again, this could be because the harvest information is closer to Ahmedabad and that is where price discovery happens first.
2. A detailed look at futures markets: jaggery at Muzaffarnagar
The jaggery futures market at Muzaffarnagar

- The Vijay Beopar Commodities Ltd. (VBCL) in Muzaffarnagar has the most volume of the multiple jaggery futures markets in India.
- It is an open outcry market, where brokers start the trading with the ringing of a bell at 9:00am.
- The brokers trade futures contracts on jaggery with maturities from one to six months.
- Most of the trading takes place in the near month contract.
Participants at VBCL

- Traders and brokers are registered with the exchange to trade on the floor. Traders can have clearing and settlement obligations with the clearing corporation; brokers have these obligations with traders. Traders and brokers play an active role in linking information between the spot and futures by taking speculative positions.

- “Nontrading members” are those who do not have direct access to the floor. They can place orders through brokers or trading members. These can be jaggery dealers of U.P. or whole-sale dealers from Gujarat or Maharashtra and typically play the role of hedgers.

- There was no evidence of farmers directly trading these contracts.

- There is a lack of emphasis on arbitrage because it is quite difficult getting in and out of positions on the spot market.
Clearing and settlement at the exchange.

- When the exchange closes at the end of the trading day, clearing and margin calculation is done both by the traders as well as the clearing house of the exchange.
- Daily Mark–To–Market margins are calculated and collected before 1P.M. the next day.
- The contracts are technically physically settled. However, in the last seven years, physical settlement has never happened.
- Disputes about specific trades are settled by the exchange staff.
Governance at the exchange

- VBCL is a limited liability company, owned by a local money-lender.
- The exchange is staffed and run by a team of non-brokers.
- The board of the exchange comprises at least fourteen members, most of which are brokers. The only non-broker community on the board are those nominated by the Forwards Markets Commission (FMC). (Four out of 18.)
- A club of senior brokers dominates all policy decisions and contingencies.
3. Spot markets for commodities
Mandis at the district level

- **Mandis** are official markets set up at a specific location to trade a set of agricultural commodities.
- They are sanctioned and “governed” by a **mandi board** which can be a committee or a trust.
  These are, in turn, governed by a state government **state mandi board**.
- Most mandis trade at least one **primary commodity**.
- The physical infrastructure of the mandi consists of a yard with platforms or open sheds where farmers bring their crops to sell to traders.
Participants at the mandis

- Traders are licensed by the mandi to buy from the farmers.
- Farmers are the main sellers of produce at the mandis.
- Wholesale dealers are some of the main buyers of produce at the mandis.
Trading and clearing

- The crop is weighed and identified when it comes to the mandi for the first time. The quantity is recorded by the mandi.
- The seller gathers price quotes from the traders and sells to the most profitable trader.
- Traders clear trades with sellers and buyers on the spot. If the trade is for a primary commodity, the traders pay the *minimum support price* of the crop.
- If there is a dispute about crop quality between the trader and either the buyer or the seller, the mandi inspector is the final arbitrator of the problem.
- At the end of the day, the inspectors collect volumes and price information from the traders. They are charged *fees* as a fraction of the value of business done.
Settlement

- Typically, the traders take delivery from the seller and give delivery to the buyer.
- The mandi does not have any warehousing facility to stock the crops.
- There are third parties who build, maintain and rent out warehouse space near mandis.
Governance

- The mandi boards are elected representatives from the farmer community.
- The board has an elected chairman and secretary. The staff and the inspectors are hired by the management to run the mandi.
- There are no traders on the board.
- Representatives on the board of the mandis at large districts or at the state mandi boards is a more political issue.
4. What are the problems?
Primitive institutions

- Trading
  1. Open outcry
  2. Fragmented across multiple small trading floors
  3. Lack of transparency - trust

- Clearing
  1. First attempts at margins are there. But there is no clearing corporation, no novation, no realtime.
     So it works like BSE of 1992.

- Settlement
  1. Messy issues of physical grade verification

- Governance problems
  1. Ownership, management control and trading rights generally go together.
  2. FMC has limited supervisory capacity.
  3. The spot market is largely unregulated.
Exchange institutions

- Many small exchanges
- Lack of IT
- Low revenue stream - does not support investment
- No nationwide trading platforms
- Inefficient to have one exchange per commodity
5. How can we do things differently?
Warehouse receipts

- Ideally, the warehouse industry should do grade verification, and issue “warehouse receipts”

- Settlement in the spot/derivatives markets should be based on warehouse receipts.

- This requires growth of the warehousing industry.
Design 1 – warehouse receipts as securities

- Warehouse receipts can be dematerialised at NSDL
- Then everything else about trading, clearing, settlement can be done on the equity market, with 0 cost.
- Nationwide order match, novation at clearing corporation, depository settlement, governance, etc.
- This could also support physically settled derivatives.
- Hurdles: (a) Warehouse receipts (b) Turf.
Design 2 – cash settled futures

- NSE MIBID/MIBOR was a tool for obtaining data out of a non-transparent market – by polling dealers.
- This technology can be used to produce reference rates on various commodity spot markets.
- Once we have a reference rate, we can do derivatives based on cash settlement (e.g. the stock index futures/options).
- Here, the entire institutional capacity of the equity derivatives market can be utilised for the commodity markets.
- Hurdles: (a) Nationwide information capture and processing system to make reference rates, and (b) Turf.
Design 3 – build a new exchange

- “National commodities exchange”
- Trade multiple commodity futures
- Much like an NSE for commodities.
- Hurdles: Difficulties of building a new NSE.
Design 4 – tinker at old exchanges

- Apart from these three alternatives, there is always the alternative of going into existing exchanges and trying to improve matters.
- Hurdles: (a) Conflicts of interest in governance, (b) lack of professional boards and management teams and (c) revenue streams cannot support technology to build shiny new systems.
Thank you