Données haute fréquence
Analyse et modélisation statistique multi-échelle de séries chronologiques financières

Cours de Master - Paris 6
Transparents Partie I
Marchés - Produits financiers

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Different market types: OTC deals

Over The Counter (OTC) deals (direct deal)

- Data collected by Reuters, Bloomberg, Bridge, ...
- Generally hard to use for statistical analysis
  - hard to get
  - often not liquid enough
  - often not homogeneous (depends on the agents involved)
Organized markets (exchanges: generally private companies)

- Data collected by Reuters, Bloomberg, ... AND by the exchanges
- Many are very liquid and homogenous
- Some exchanges
  - Nyse (New-York Stock Exchange)
  - Nyse-Liffe (London International Financial Futures Exchange)
  - Nyse-Euronext (French stocks)
  - Eurex (Frankfurt)
  - CME (Chicago)
  - CBOT (Chicago)

⇒ Two different structures: pit or electronic
Different market types: Organized markets

- Pit markets
  - Less and less common
  - Brokers and "locals"

- Electronic markets
  - More and more common
  - Orderbook-based system
  - Never opened 24h/24h ("overnight" effect)

⇒ Both can be active on the same assets
⇒ Influence of pit markets on electronic markets
The different types of agents generally correspond to different behavior on the markets

- Investors
- Hedgers
- ”Market makers”
  - Can be assigned by a market (still the case for Nyse)
  - Arbitrageurs
- Arbitrageurs (hedge funds):
  - long/short,
  - cta (Commodity Trading Advisors)
  - ...
Different types of assets

Main ”classes”

- Forex (Foreign Exchange)
- STIR : Short Term Interest Rates
- LTIR : Long Term Interest Rates (Bonds)
- Stocks (+ indices)
- Commodities
- Energy
- ...

⇒ Spots or Derivatives
Different types of assets: Spots

- Products are dealt at the same moment as the deal
- Short selling?
- Can be not convenient for Arbitrageurs or Hedgers
Different types of assets : FX Spots

- It is ONLY OTC
- 24h/24h data
- Extremely liquid (50% of FX exchange is on the spot)
- Base of many early statistical analysis
- OTC $\implies$ High frequency flow trading!
Large number of stocks
  Most of them are not very liquid

Short selling?

When you use the data DON’T forget
  Dividends
    4 times a year in the US
    Price decreases ($\simeq 0.5\%$)

Splits
IR, Commodities, Energies ... spots are not very liquid and generally much less liquid than the Futures
Different types of assets: Derivatives

- **Options**
  - Non homogenous data (in the money/out the money)
  - Hard to use for statistical analysis
  - Implicit volatility trading

- **Futures/Forwards**
  - Organized market ⇒ Futures
  - OTC ⇒ Forwards
  - Generally **very liquid**
  - Homogeneity? Yes after **Rolling**
  - Collateral account system for counterpart default risk
    - initial margin
    - Account updated every night
    - SXE: 1/5 to 1/7
    - FX: 1/100
There is always a tick size!

- It is fixed by the market
- It has a large influence on the dynamics
  - "Small" (perceived) tick sizes (e.g., Futures on DAX, stock markets, ...)
  - "Large" (perceived) tick sizes (e.g., Bund, Futures on EuroStoxx, ...)

- Rules can be complex and can change through time!