

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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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)
 - ...

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

- 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!

Different types of assets : Stocks Spot

- 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

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

- **Futures/Forwards**
 - Organized market \Rightarrow Futures
 - OTC \Rightarrow 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 !