10th session

17th April 2014

International Financial Markets, ISEG   Paula Albuquerque

- Market Orders, Limit Orders.

- **STOP ORDER** – It is used to stop losses when prices move against the position. Traders buy after price rises to the stop price and sell when price falls to the stop price.

  - A stop order may be executed at a price different from the stop price, if prices move quickly.

  - Stop orders add *momentum* to the market. They are sell orders when prices are falling and buy orders when prices are rising. Accelerate price changes → destabilizing effect

International Financial Markets, ISEG

- **MARKET-IF-TOUCHED ORDER (very rare)** – Order to buy when prices fall to the *touch price* or to sell when prices rise to the *touch price* . →stabilizing effect

- Contrary to a limit order, it fills at the best available price.

International Financial Markets, ISEG

- Specially with limit orders and with stop orders it is important to specify their <u>validity.</u>

- Quantity instructions. For example <u>all-or-non</u>e and minimum acceptable quantity.

- Market structures

  - Rules that regulate trading: who can trade, what can be traded, the location and the timing of the trades, the information that is revealed.

  - Continuous Markets *vs* call markets

    - advantage of continuous markets: flexibility – traders may try to trade at any time.

    - advantage of call markets: increases liquidity at the same time and place.

International Financial Markets, ISEG

- Execution systems.
  - <u>Quote-driven</u> (dealers) *vs* <u>order-driven</u> (order precedence rules).
    - Order-driven markets

    Buy and sell orders are matched without intermediaries, (except maybe brokers) based on order precedence rules.
      - (Usually) Auction markets: <u>Call markets</u> *vs* <u>Continuous auctions</u>

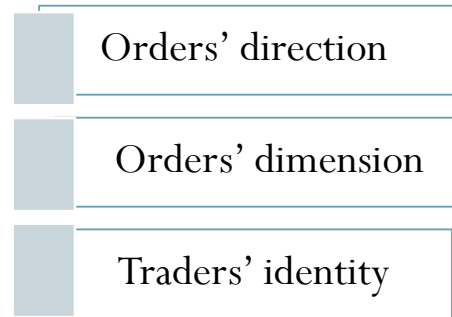   Basic types of orders: limit orders and market orders.
      - One type of order-driven markets are Crossing Networks: call systems that cross orders at predetermined times; orders submitted without price. Price derived from the asset's primary markets.
  - Foreign exchange market: *quote-driven*.
  - Sometimes dealers trade in *order-driven* markets. In this case they trade with who accepts the order.

- Hybrid markets

- Revealed Information – Transparency

  - Capability of market participants to obtain information about the trading process.

    - The forecast of the evolution of prices depends on the revealed information.

    - The information may be about the time of execution of the order and may allow the assessment of the performance of a broker.

    - Sold information may be a significant part of the revenue.

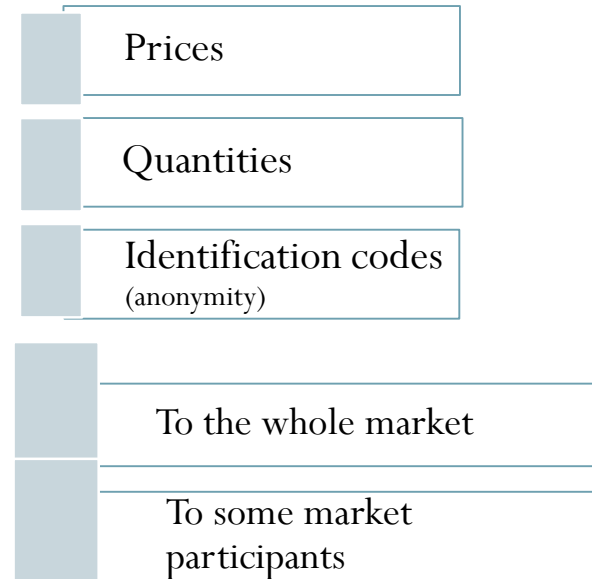International Financial Markets, ISEG

- Markets with electronic trading systems facilitate the registration of information.

- A market is said to be <u>transparent</u> when the public has complete information.

- Markets that show only the best bid and the best ask show "the top of the book".

- Markets that show the standing orders at each price are "open book" markets.

- Transparency is of particular interest to those that do not possess private information.

International Financial Markets, ISEG

- Information: <u>Pre-trade</u> or <u>Post-trade</u> (Fig 1.3 De Jong & Rindi)

POST-TRADE INFORMATION -

| Orders' direction |
| Orders' dimension |
| Traders' identity |

PRE-TRADE INFORMATION <

| Prices |
| Quantities |
| Identification codes (anonymity) |
| To the whole market |
| To some market participants |

International Financial Markets, ISEG

- Comparison of Quote-driven and Order-driven markets with respect to Transparency
  - Quote-driven markets tend to be more fragmented, different dealers may quote different prices and these are not necessarily made public.
  - Order-driven markets with a limit order book tend to be less fragmented. However, the limit order book is not necessarily open.

International Financial Markets, ISEG

- Why do people trade financial assets?

  - <u>Utilitarian traders (Liquidity traders)</u>: traders who want some benefit besides profit. They want to solve a problem that originates outside the financial market.

    - To invest.
    - To borrow.
    - To diversify risk.
    - To exchange.
    - To gamble.
    - To hedge.

  - <u>Profit-motivated traders</u>

    - Speculators.
    - Dealers.

International Financial Markets, ISEG

- Investors and borrowers
  - People face intertemporal *cash flow* problems when their incomes and expenses do not coincide.
  - Financial assets are used to invest: stocks, bonds, deposits, currencies…
  - Borrowers use debt instruments: bonds, mortgage notes, bank loans…
  - Individuals and small firms cannot issue debt because the public does not know if they are creditworthy. They have to borrow money from financial institutions. Financial institutions are organized to determine in a less costly way than the public if their customers are creditworthy.
  - Both investors and borrowers prefer low transaction costs. High transaction costs reduce the incentive to move money from one point in time to another. More liquid markets have lower transaction costs.
  - The expected return of an investment is the <u>unconditional</u> <u>expectation</u> since these market participants are utilitarian traders, not informed traders.

- Asset Exchangers
  - They use the markets to exchange assets that they own for other assets that are of immediate use to them (foreign exchange, for instance). In the limit all trades are asset changes, but here the term is used for trades motivated by the existence of a current use for the acquired item.
  - The asset exchangers prefer low transaction costs.

- Hedgers
  - Hedgers prefer low transaction costs.

- Gamblers
  - Gamblers bet on future events (sporting events, lotteries, card games… and fianancial instruments). They are uninformed traders. They may not be aware (believe they are pursuing other objectives). Gamblers prefer low transaction costs.

- Tax Avoiders

International Financial Markets, ISEG

- Speculators

  - Informed traders

    - They acquire information that they use to forecast the prices and buy when they expect the prices to rise and sell when they expect the prices to fall. Price different from the expected value based on the *fundamentals*.

    - The informed speculators that trade based on fundamental values, incorporate information in prices, causing prices to move toward fundamental values.

  - Parasitic traders

    - They acquire information about what the other traders will do. They are uninformed with respect to *fundamentals*.

    - Included in this group are the *traders* that create rumors or price manipulators that trade to create prices and volumes that they hope others will misinterpret.

International Financial Markets, ISEG

- Dealers
  - Supply liquidity.
  - Charge the *spread to* impatient *traders* for liquidity.
  - Look for the prices that equalize demand and supply.
  - Not necessarily informed about *fundamentals.*

- **The informed traders and market efficiency**   ⇘ Harris: chap.10
  - <u>Market Value</u>: price at which you trade.
  - <u>Fundamental Value</u>: "true" value, intrinsic value, fundamental value. Expected present value of all present and future benefits and costs associated with holding a financial asset.
  - Different from perfect foresight values. Fundamental values depend only on information that is currently available.
  - Prices are perfectly informative if they equal fundamental values. The difference between fundamental value and market value is <u>noise</u>.

- Efficient markets - very informative prices.

- Fundamental value is not observable $\Rightarrow$ not evident if prices are informative or noisy.

- Fundamental values reflect all the available information $\Rightarrow$ only change with the arrival of new information $\Rightarrow$ unpredictable

- When price changes cannot be predicted $\rightarrow$ random walk.

- INFORMED TADERS use information
  - Public
  - Private

- They buy when they think the asset is undervalued and sell when they think it is overvalued. Expectation of profit.

- Lose money if:
  - Their fundamental value estimates are wrong.
  - The price moves away from the fundamental value (short run).

- By trading, they influence the price .
  - Buy ⇨ ↗P.   If buy when P < *V,* P tends to *V.*
  - Sell ⇨ ↘P.   If sell when P > *V,* P tends to *V.*

- Their fundamental value estimates may be different, the price reflects an average of their estimates.

- The price is usually more informative than the individual estimates.

International Financial Markets, ISEG

- $E_i(V) = V + e_i \qquad E(e_i) = 0$ (unbiased expectations).

- $D_i = a.[E_i(V)-P]$

- $\Sigma_i\, D_i = 0 \quad \Leftrightarrow \quad \Sigma_i\, a.[E_i(V)-P] = 0 \quad \Leftrightarrow \quad a.\Sigma_i E_i(V) - NaP = 0$

$P = \Sigma_i E_i(V)\, /N$

- $P = \Sigma_i\, (V + e_i)/N \quad = \quad V + \Sigma_i\, e_i /N$

- If forecast errors are independent from each other, the law of large numbers implies that the market forecast error should tend to zero (expected value) as N gets large.

International Financial Markets, ISEG

- In the LR those with the best estimates make the largest profits. → Trade aggressively → influence more the market.

- More liquid markets → smaller effect of trades on prices → informed traders may profit more from the differences relative to fundamental values.

- To minimize the price impacts of their trades, they may define strategies.

- If their private information is short-lived or if it is shared by other informed traders, they should trade aggressively.

- If they believe their informative advantage will last some time, they should dissimulate.

- Informed traders do not profit systematically if they trade only with each other. Uninformed traders.

- Uninformed traders prefer not to trade with the informed. asymmetric information.

- Markets with many uninformed participants – even if in aggregate they lose a lot, individually they do not lose a lot. The informed traders may profit much, they compete to obtain information. Informative prices.

- Informative prices ⇨ profit opportunities?

- Creation of opportunity:

  - News. Fundamental values change.

  - Uninformed make prices change.

- Difficult to find if P changed because new information arrived and the informed traders reacted or because the uninformed are on the same side of the market.

- The information incorporated in prices depends on the acquisition costs and on the profit potential.

- Weak-form Efficiency: the actual prices reflect all the information in past prices. Prices follow a random walk.

- Semistrong-form Efficiency: the actual prices reflect all the public information (past prices, volumes and news).

- Strong-form Efficiency: the actual prices reflect all public and private information.

- Efficiency in a microestrutural perspective : prices reflect all the information that traders can acquire and profitably trade upon.

- Trade-off between the interest of the informed traders and of the uninformed:
  - More informative prices lead to more efficient allocation decisions.
  - The utilitarian purposes of the uninformed traders are also important to the economy: move money through time, hedge…

- Measures like the publication of information reduces the potential for profit by the informed traders without reducing the information content of prices.