

# The impact of COVID-19 on European Market Microstructure

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**EURONEXT**

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# THE LEADING PAN-EUROPEAN EXCHANGE POWERING ACCESS TO CAPITAL MARKETS

- SINGLE ORDER BOOK
- SINGLE COLLEGE OF REGULATORS
- HARMONISED RULE BOOK
- FEDERAL MODEL
- 8.2 BN EUROS AVG DAILY VOLUME
- 69% MARKET SHARE ON OUR LISTED STOCKS (2019)



**EURONEXT REGULATED MARKETS**



Euronext Tech SME initiative



Technology centre



Euronext Central Securities Depository (CSD)

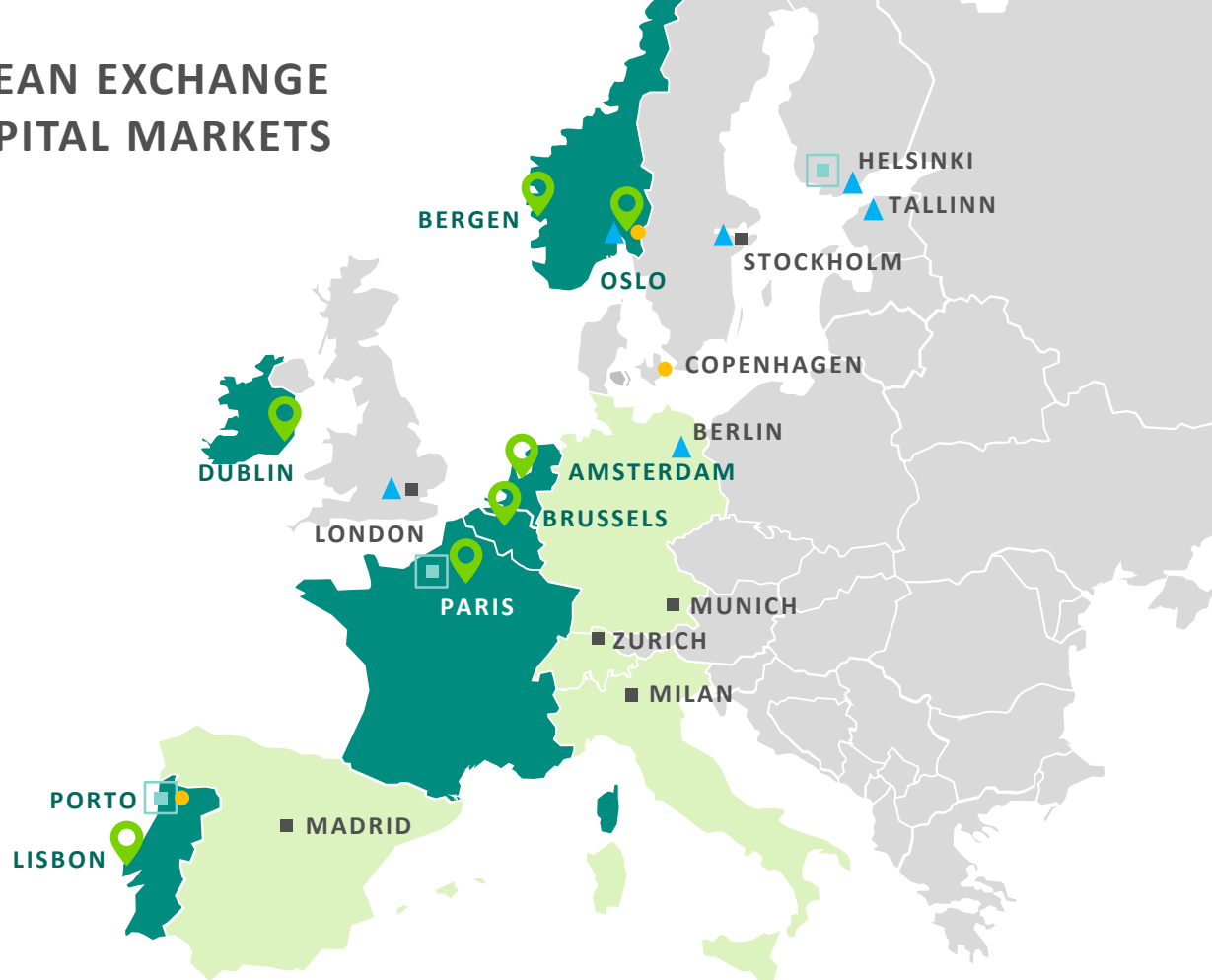


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# CONTENTS

## **Part 1: EUROPEAN COVID-19 CRISIS TIMELINE & MARKET PERFORMANCE**

## **Part 2: THE ORDERBOOK REACTION TO COVID-19: BID-ASK SPREADS, AVAILABLE DEPTHS AND THE RESULTING COST OF TRADING**

- Spreads from 2008 to 2018 in Europe
- Spreads and volatility from 2008 to 2018

## **Part 3: TYPES OF TRADING (LIT/DARK/OTC), MARKET FRAGMENTATION, AND TRADING PHASES DURING THE COVID-19 CRISIS**

- Fragmentation in Europe

## **Part 4: HOW MARKET PARTICIPANTS REACTED TO THE COVID-19 CRISIS**

- On average retail investors showed strong buying flows, unlike institutional investors
- In the long run, institutional investors drive outperformance of stocks more than other participants

## **Conclusion: MARKET RESILIENCY AND HETEROGENEITY OF MARKET PARTICIPANTS**

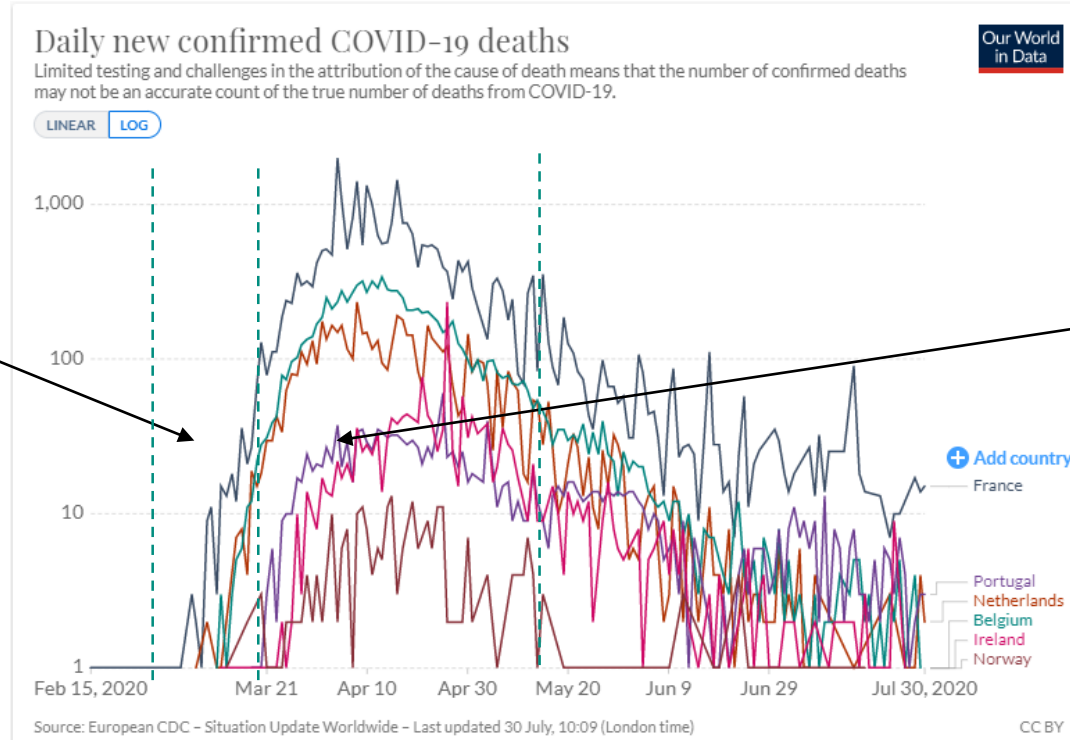
**PART 1:**  
**EUROPEAN COVID-19 CRISIS TIMELINE &  
MARKET PERFORMANCE**

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# CONTINENTAL EUROPEAN COVID-19 CRISIS TIMELINE

Period 1:  
“Financial Market Drop”,  
18 February  
to 18 March

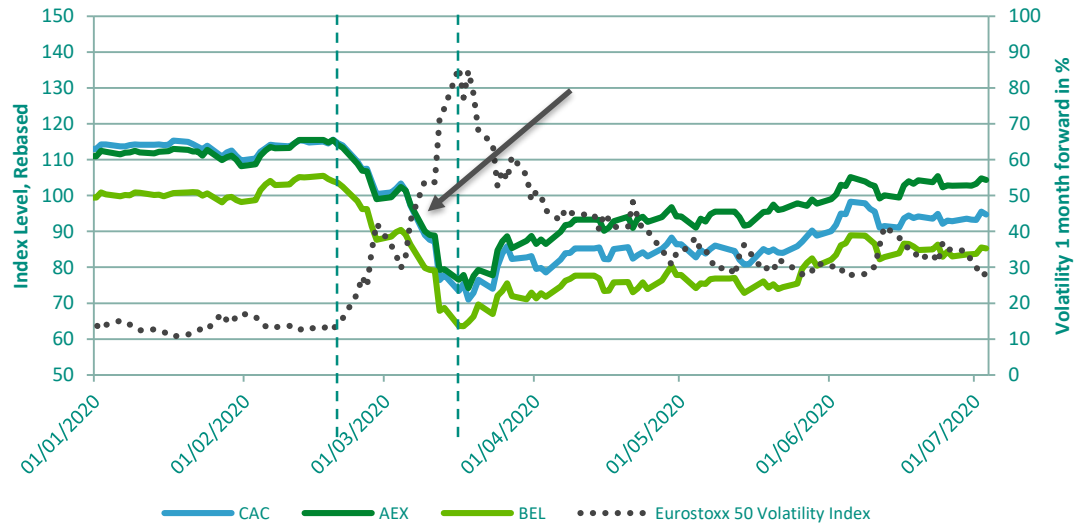


Period 2:  
“Real Economy shock”,  
17 March to 10 May:  
Belgium and France under  
confinement, Netherland  
and Germany under much  
stricter rules

# CONTINENTAL EUROPEAN COVID-19 CRISIS TIMELINE

- While Covid fatalities rose until 10 April in France, Belgium and the Netherlands, the worst market drop was observed from 18 February to 18 March, when our main indices dropped by -35%. At the end of July, main indices were down -15% compared to pre-crisis levels.
- During the same time, the V2X VSTOXX® index, which represents the implied volatility of the EURO STOXX 50® index, was multiplied by 5 from 15 to 80%.

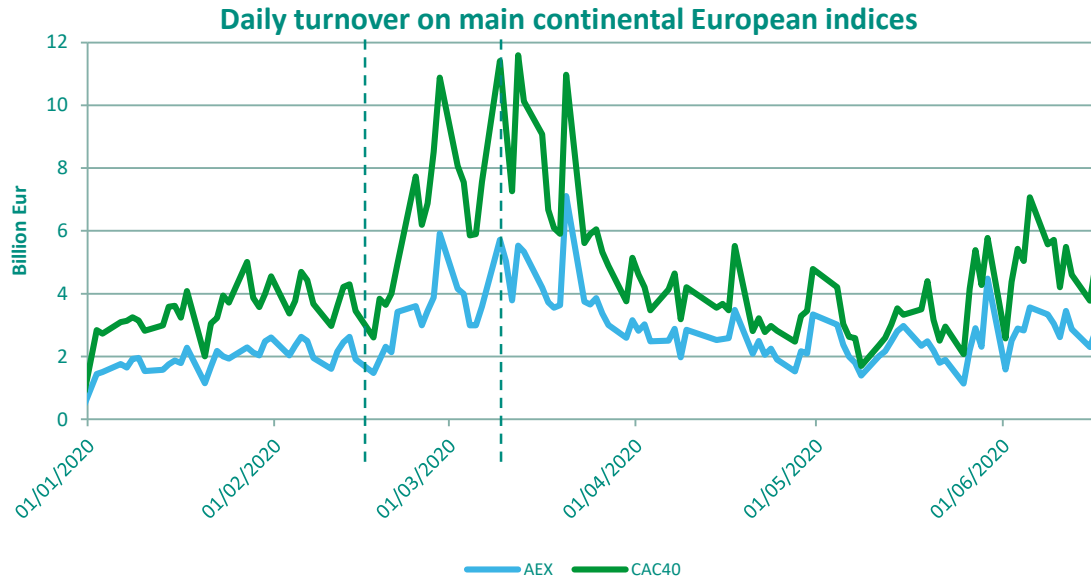
Main European continental indices and volatility level



Source: Bloomberg

# CONTINENTAL LIQUIDITY DURING THE EUROPEAN COVID-19 CRISIS

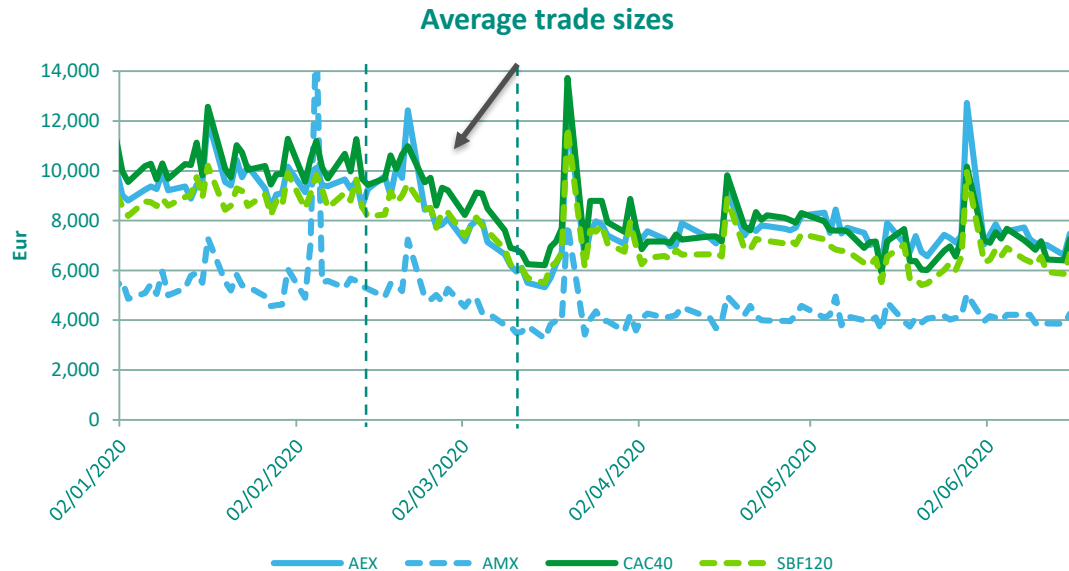
- During the market drop, daily turnover more than doubled on continental European indices.
- In addition to this rise in turnover, the nature of this liquidity has become different after the crisis.



Source: Euronext

# CONTINENTAL LIQUIDITY DURING THE EUROPEAN COVID-19 CRISIS

- Paradoxically, while daily turnover doubled during the worst of the crisis, the elementary average trade size almost halved from 10k to 6k Eur, and has remained at a low level since then.
- This means that the number of trades per day almost quadrupled during the worst of the crisis.





# CONTINENTAL LIQUIDITY DURING THE EUROPEAN COVID-19 CRISIS

## From 18 February to 18 March 2020:

- Continental indices lost -35%
- Daily turnover doubled
- Average trade sizes halved
- Number of daily trades quadrupled

## From 18 February to 30<sup>th</sup> June 2020:

- Continental indices lost -15%
- Daily turnover almost reverted to pre-crisis levels
- Average trade sizes are down -40%

**PART 2:**  
**THE ORDERBOOK REACTION TO COVID-19:**  
**BID-ASK SPREADS, AVAILABLE DEPTHS AND**  
**THE RESULTING COST OF TRADING**

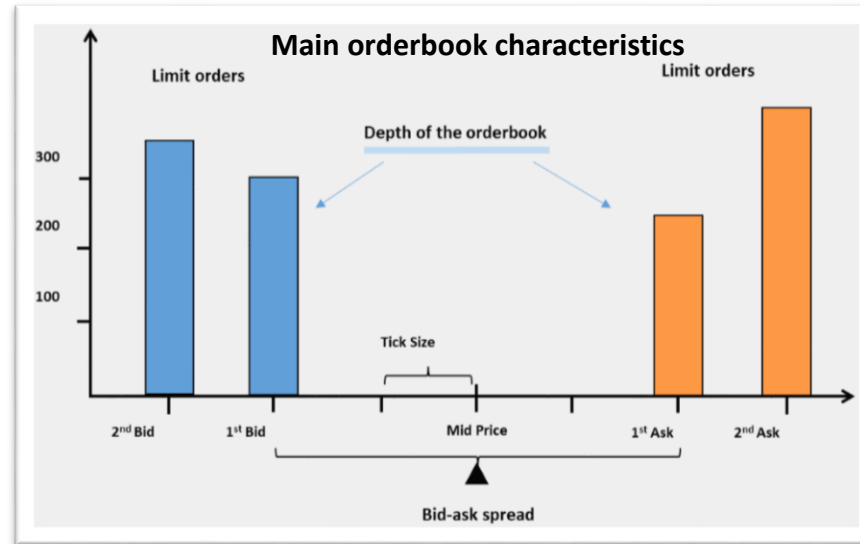
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# THE ORDERBOOK REACTION TO COVID-19: BASIC DEFINITIONS

The liquidity of the orderbook can be represented by 2 key characteristics:

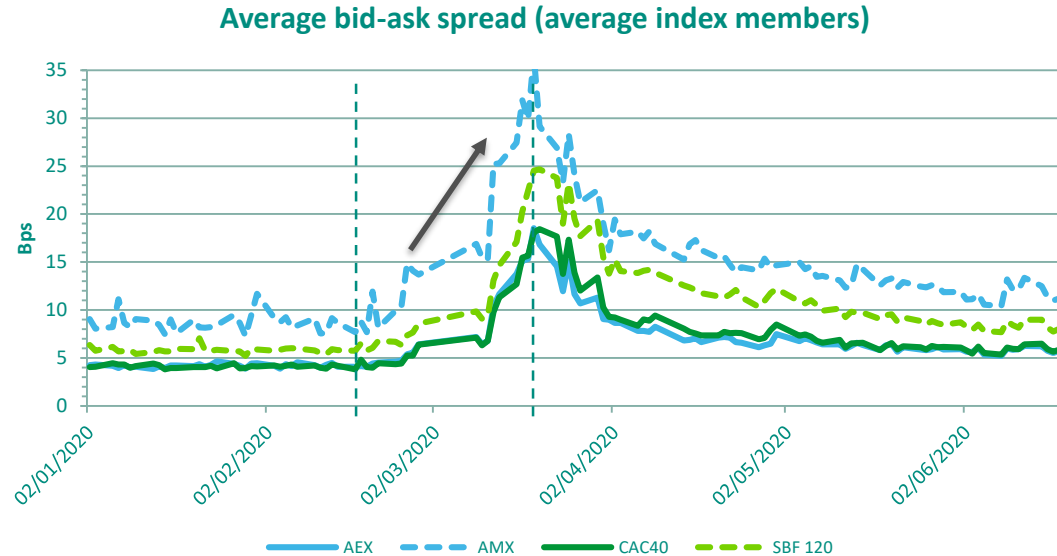
- The **bid-ask spread** reflects the cost for trading immediately (aggressively) versus passive trading
- The **depth of the orderbook** displays the average liquidity available at the best limits



Source: MOOC Introduction to market microstructure

# EUROPEAN BID-ASK REACTION TO COVID-19

- On large caps, bid-ask spreads multiplied by approximately 4 between 18 February and 18 March, from 4 to 18 bps, on both the French and the Dutch large-cap indices CAC 40® and AEX-Index®. The same relative increase was observed on smaller capitalisations.
- At the end of June, bid-ask spreads are +25% larger compared to pre-crisis levels (4.1 to 5.2 bps).

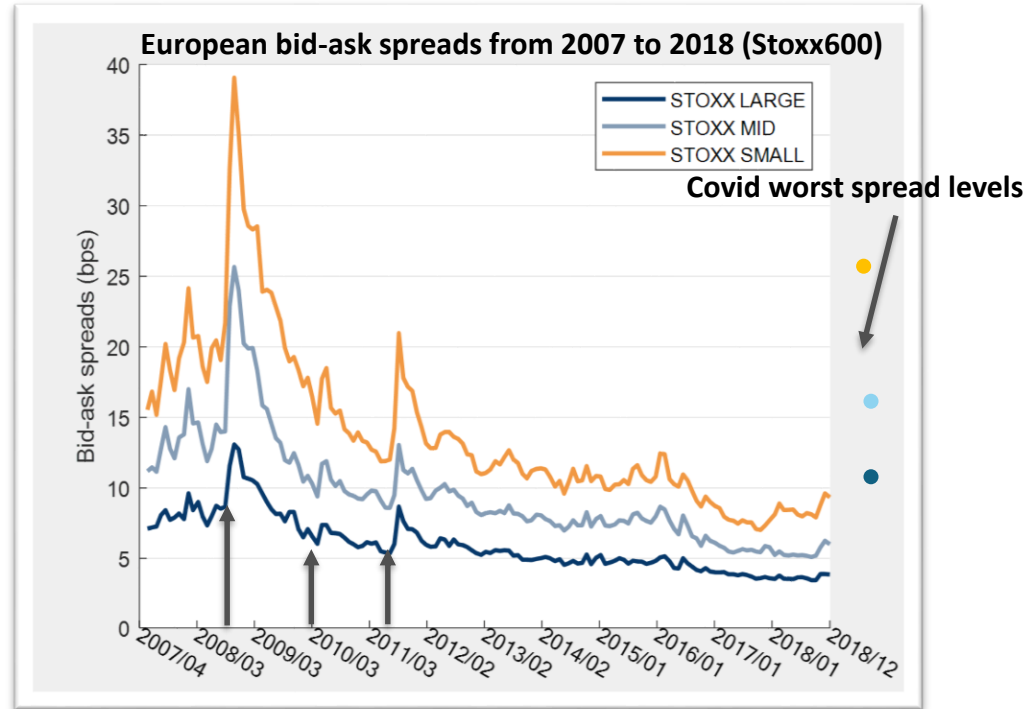


Source: Euronext

# EUROPEAN BID-ASK LONG-TERM FLUCTUATIONS

From 2007 to 2018, between MIFID I and MIFID II, European bid-ask spreads tightened overall, but widened during all crises

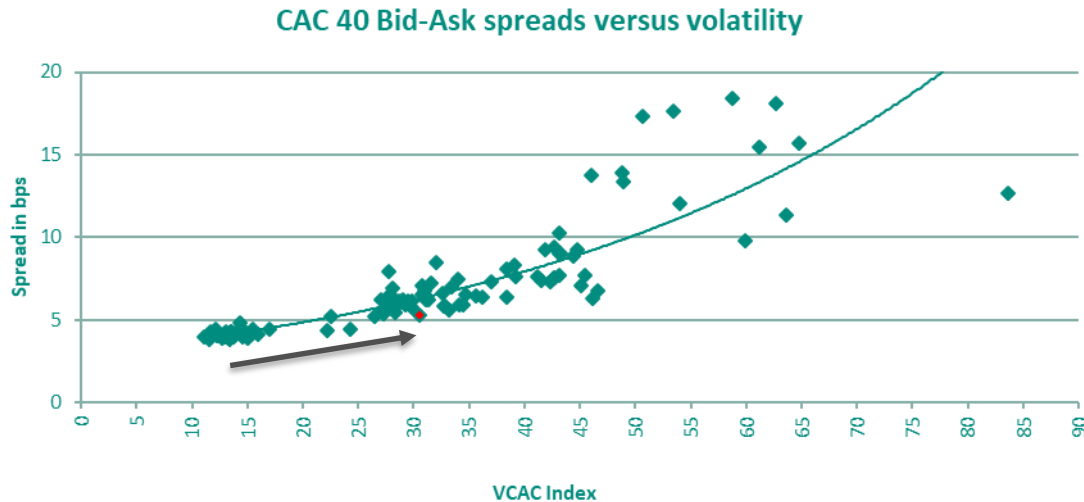
- Late 2008-end 2009: Great financial crisis
- May 2010 and August 2011: European crises led by Greek and Italian debt



Source: MOOC introduction to market microstructure

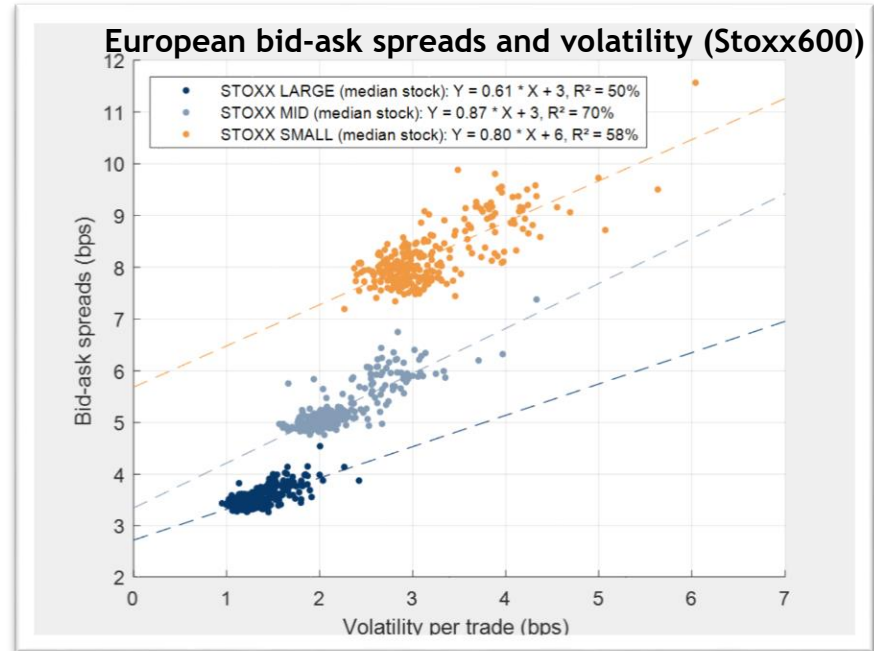
# BID-ASK SPREADS WIDEN WITH VOLATILITY OVER 2020

- Greater volatility translates into a greater risk for the market maker and therefore a greater reward is required. That is why larger volatility is often associated with wider bid-ask spreads.
- In late June, the bid-ask spread on the CAC 40® reached 5.2 versus 4.8 bps before the crisis while implied volatility on the CAC40 1Month options increased from 15 to 30%, corroborating the relationship between volatility and spreads.



# BID ASK SPREADS WIDEN WITH VOLATILITY OVER THE LONG TERM

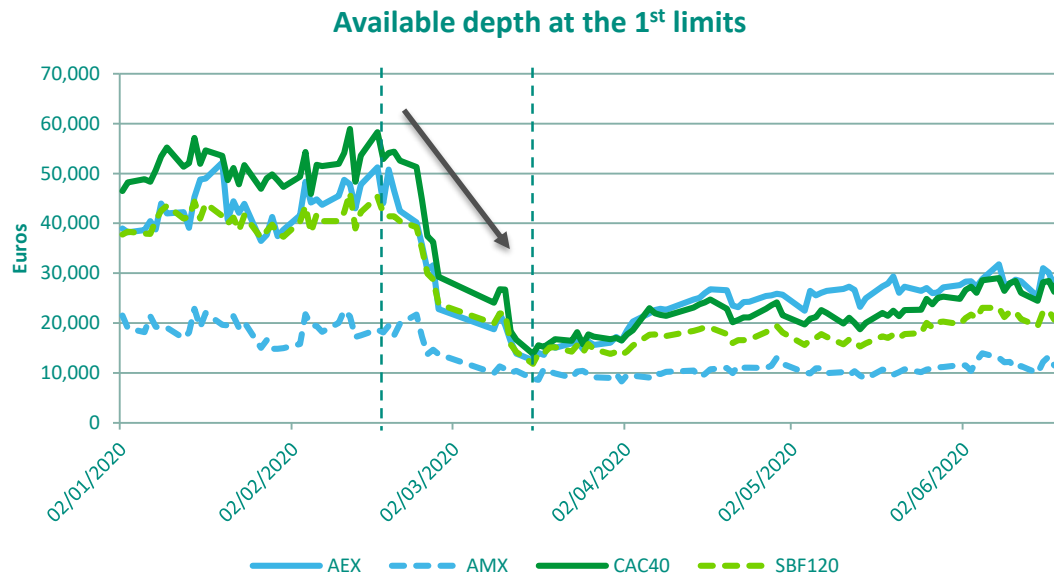
- Looking at larger European indices such as the STOXX® Europe 600 from 2007 to 2018, we observe a strong relationship between volatility and the corresponding bid-ask spread.
- Whatever the market capitalisation of the stock, when volatility increases, the bid-ask spreads also widen.



Source: MOOC introduction to market microstructure

# THE COVID-19 CRISIS PERSISTENTLY HARMED THE DEPTH OF ORDERBOOKS

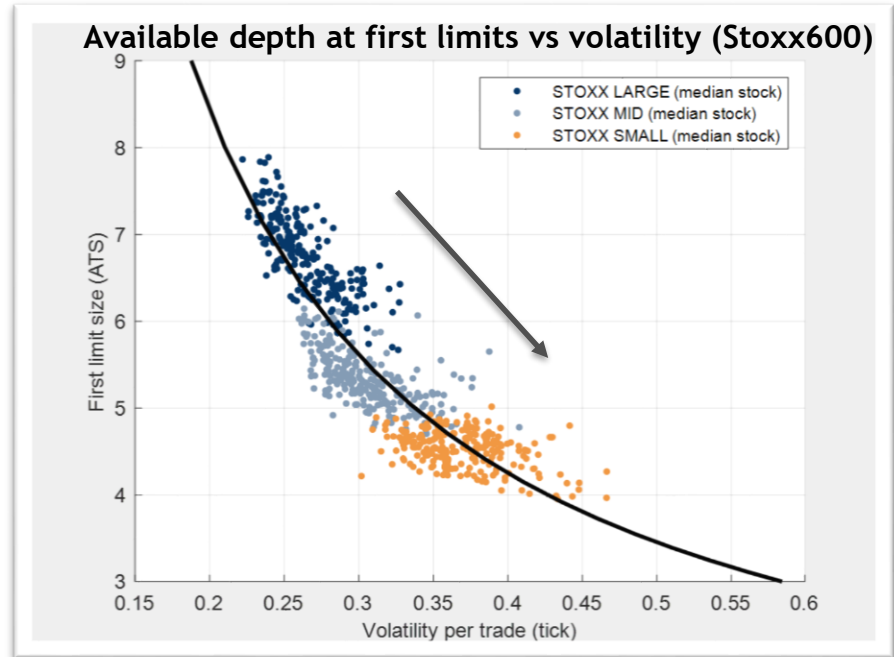
- Before the Covid-19 crisis, a little less than €50k on average was available on the first limit of the CAC 40® components. This depth reduced to €15k on 18 March at the worst of the crisis. At the end of June the depth amounted to €30k, -40% lower than the levels seen in mid February.
- This prolonged lowering of orderbook liquidity is attributable to the prolonged increase of volatility. A greater risk perceived by market makers causes them to reduce the liquidity they post in order to cap their risk exposure.





# ORDERBOOK DEPTH DECREASES WITH RISING VOLATILITY

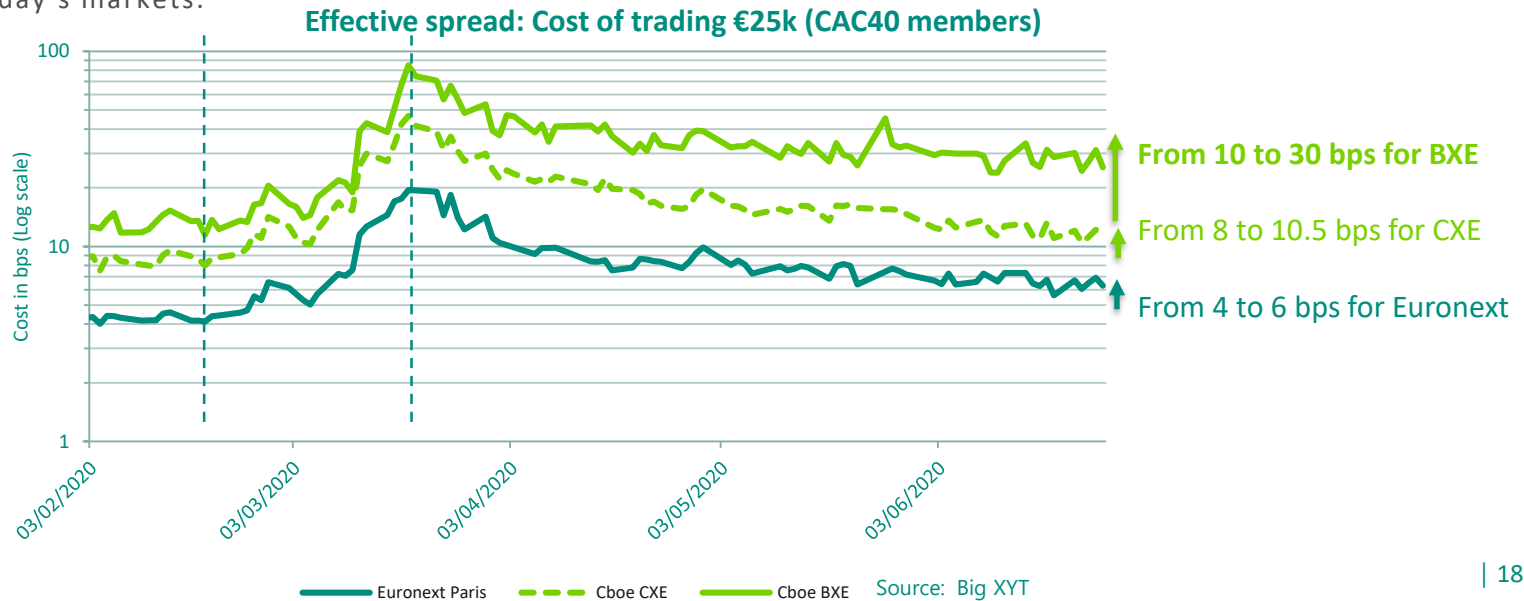
Looking at larger European indices such as the STOXX® 600 from 2007 to 2018: orderbook depth clearly decreases with increasing volatility as market makers reduce their exposure in order to maintain a controlled risk exposure.



Source: MOOC introduction to market microstructure

# TRANSACTION COSTS ROSE ON ALL VENUES DURING THE COVID-19 CRISIS

- The effective spread displays the average cost of trading €25K immediately in a given set of stocks on a given market. This metric combines the spread and the depth available on different markets.
- On our indices, Euronext represents the cheapest alternative compared to Cboe-CXE and Cboe-BXE, the main 2 alternative venues in Europe. In late June 2020, trading €25K would have cost 6 bps on Euronext, versus 10 bps on Cboe-CXE and 12 bps on Cboe-BXE.
- These transaction costs are still at least +50% higher in late June 2020 than pre-crisis levels due to widened spreads and the depth reduction discussed above. This increase in transaction costs directly results from the higher volatility in today's markets.



# THE ORDERBOOK REACTION TO COVID-19

## From 18 February to 18 March 2020:

- Bid-ask spreads were multiplied by 3 to 4 times
- Available depth at first limits was divided by 3 approx.
- Short term volatility on main indices was multiplied by 4 to 5 times

## From 18 February to 30<sup>th</sup> June 2020:

- Bid-ask spreads widened by +20%
- Available depth at first limits was down -40%
- Short term volatility has doubled from 15% to 30%
- Effective spreads for 25 K on CAC 40 rose from 4 to 6bps

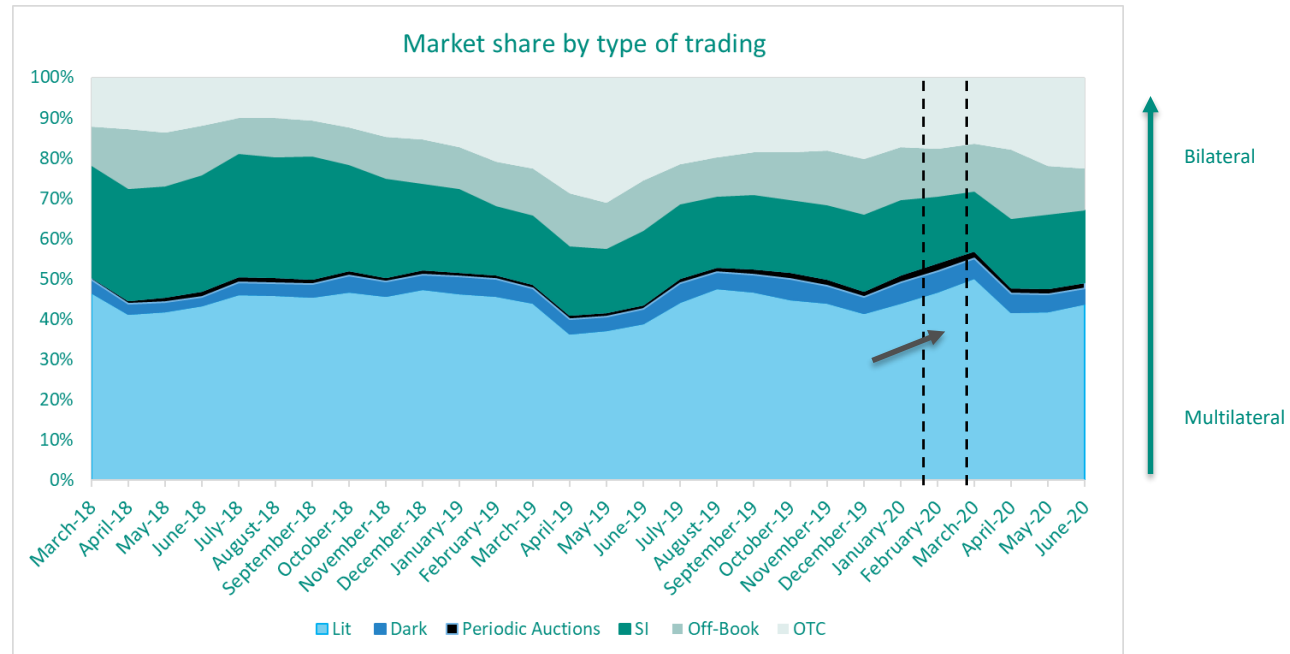
**PART 3:**  
**TYPES OF TRADING (LIT/DARK/OTC),  
MARKET FRAGMENTATION, AND TRADING  
PHASES DURING THE COVID CRISIS**

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# LIQUIDITY FAVOURED LIT TRADING DURING THE COVID-19 CRISIS

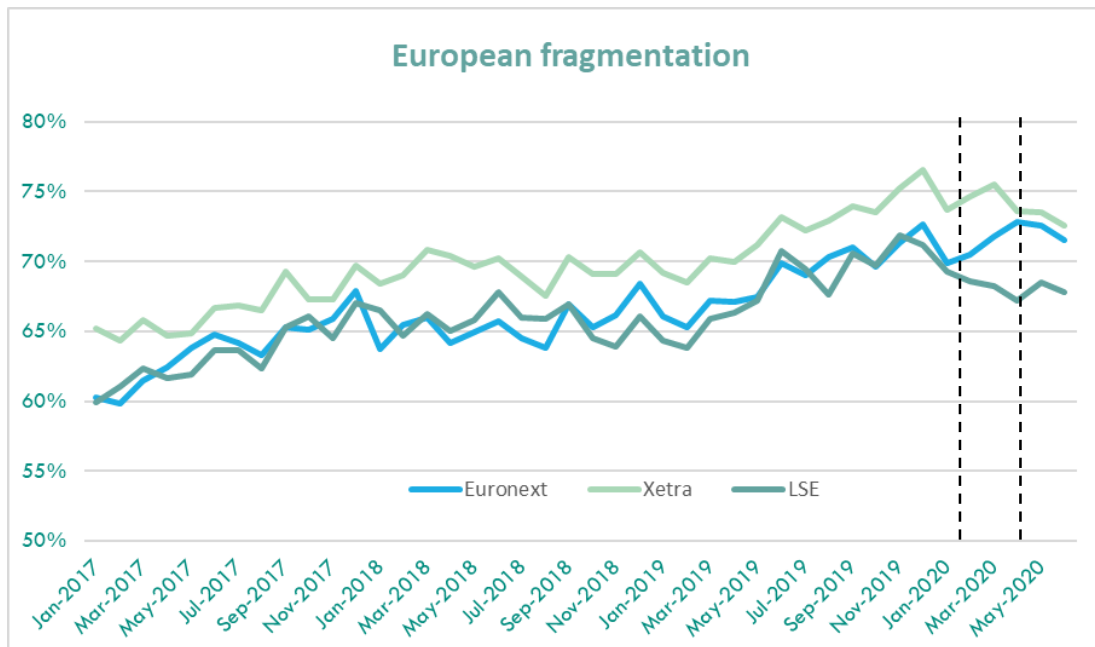
- During the worst of the Covid-19 crisis, the market share of OTC trades and of Systematic Internalisers (SI) diminished while Lit trading market share rose. With rising risks, it makes sense that proprietary desks should be less inclined to offer liquidity bilaterally in SIs or via OTCs.



Source: Reuters Eikon

# LIQUIDITY FAVOURED PRIMARY MARKETS DURING THE COVID-19 CRISIS

Market share of the primary markets rose on Euronext and Xetra but dropped for the LSE. Nevertheless, since 2017, Primary Markets market share has risen steadily.

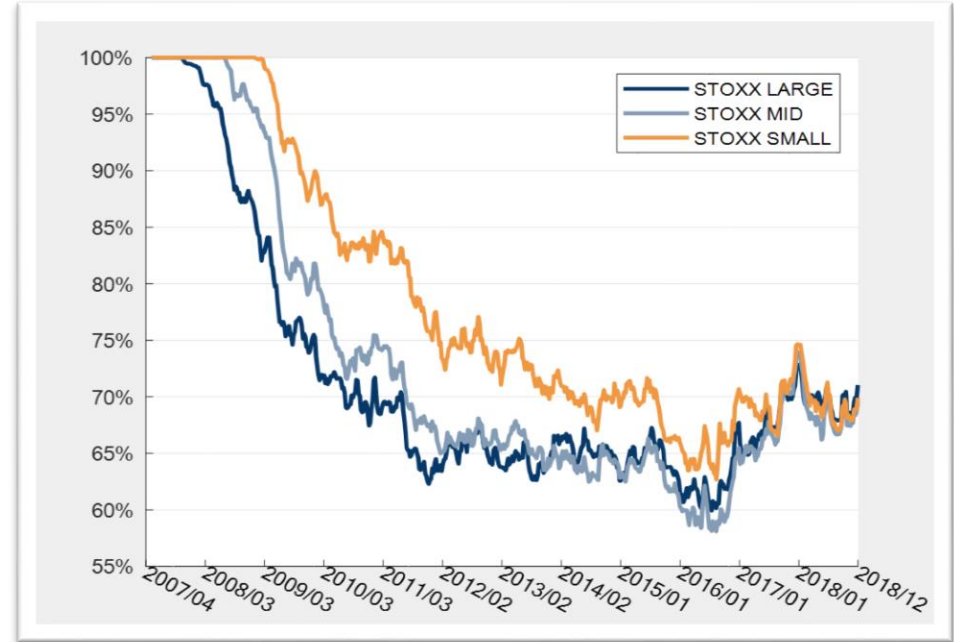


Source: Reuters Eikon (daily data, Jan to June 2020)

# EUROPEAN FRAGMENTATION INCREASED FROM 2007 TO 2018

- Market fragmentation in Europe appeared in November 2007 with the implementation of MIFID I. Thus the market share of Primary Markets dropped from 100% to 65% on largest European capitalisations.
- Since 2017, the market share of the Primary Markets has risen steadily with the rise of closing auctions and the limitation of dark trading.

European Primary Markets market share 2007 to 2018



Source: MOOC introduction to market microstructure

**PART 4:**  
**HOW MARKET PARTICIPANTS REACTED TO  
THE COVID-19 CRISIS**

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# HOW MARKET PARTICIPANTS REACTED TO THE COVID-19 CRISIS

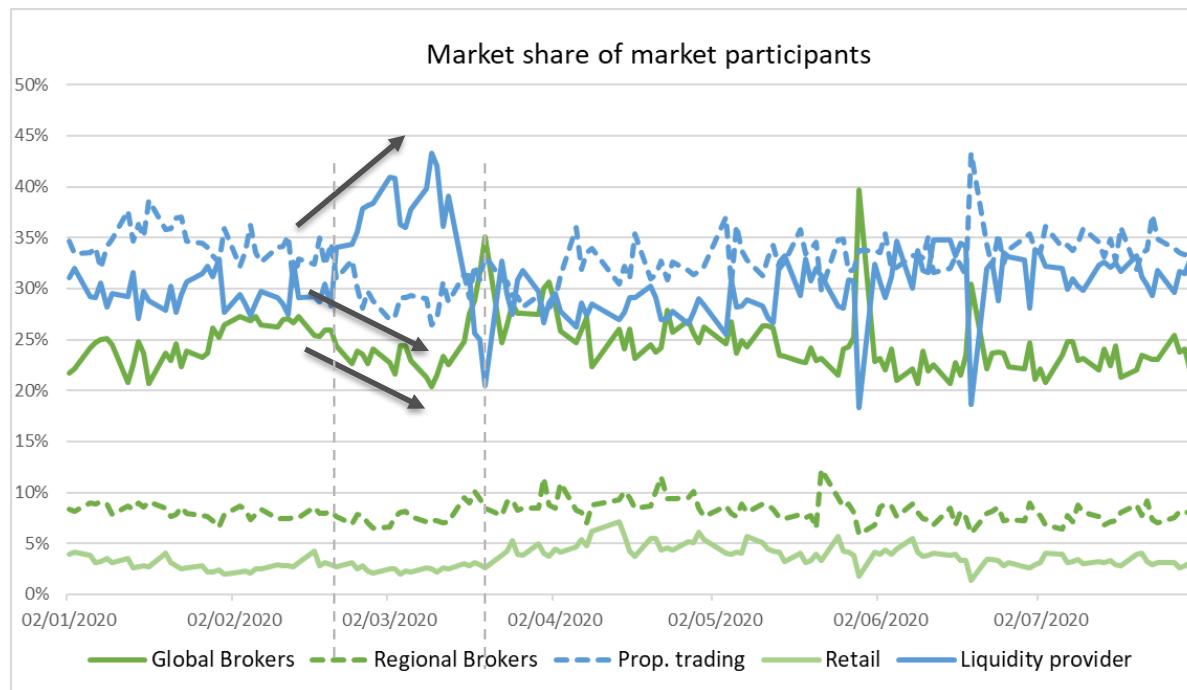
On Euronext 4 types of participant constitute the overall turnover:

- **Liquidity Providers** (33%): registered market makers
- **Proprietary traders** (33%): mostly from large banks and other trading firms
- **Global brokers** (23%) and **Regional brokers** (7%): agency flows
- **Retail brokers** (3%): retail flows

During the worst of the Covid-19 crisis, Liquidity Providers fulfilled their mission and their market share rose sharply.

Global brokers and proprietary traders displayed a smaller market share.

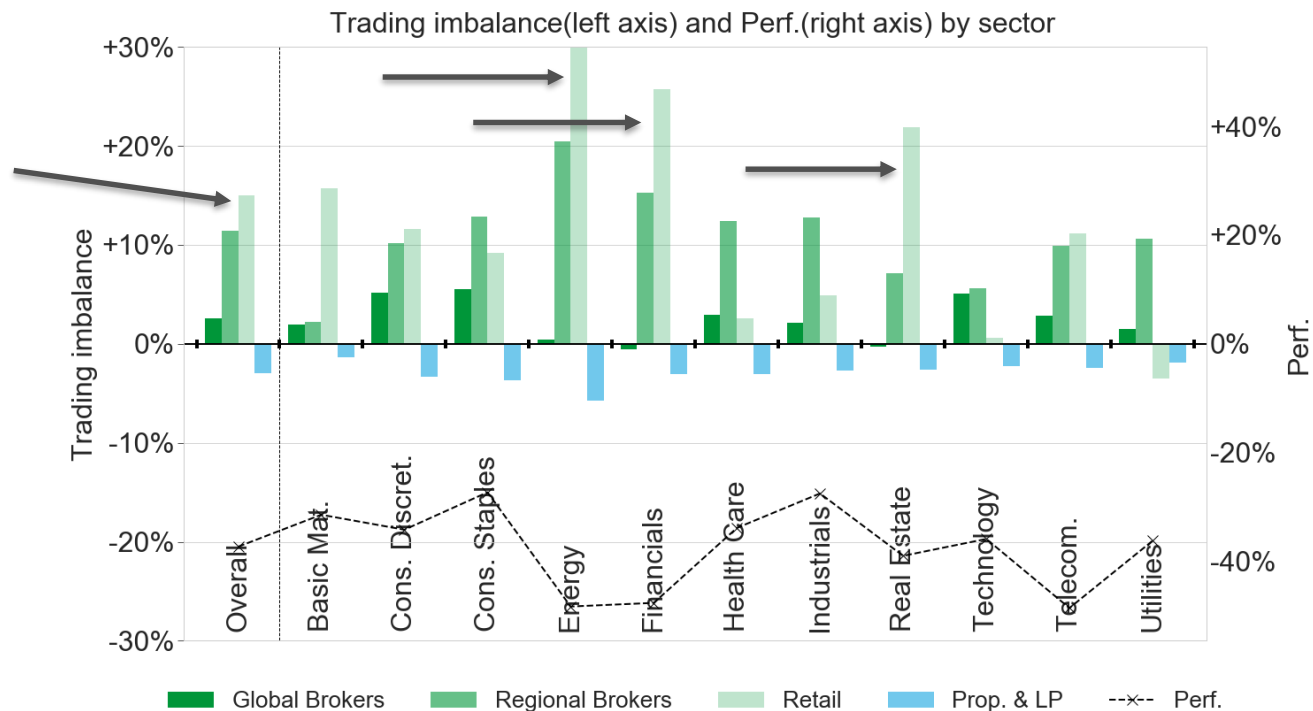
Retail and regional brokers maintained their market share.



Source: Euronext

# PARTICIPANTS' REACTION DURING THE COVID DROP (18/02 TO 18/03)

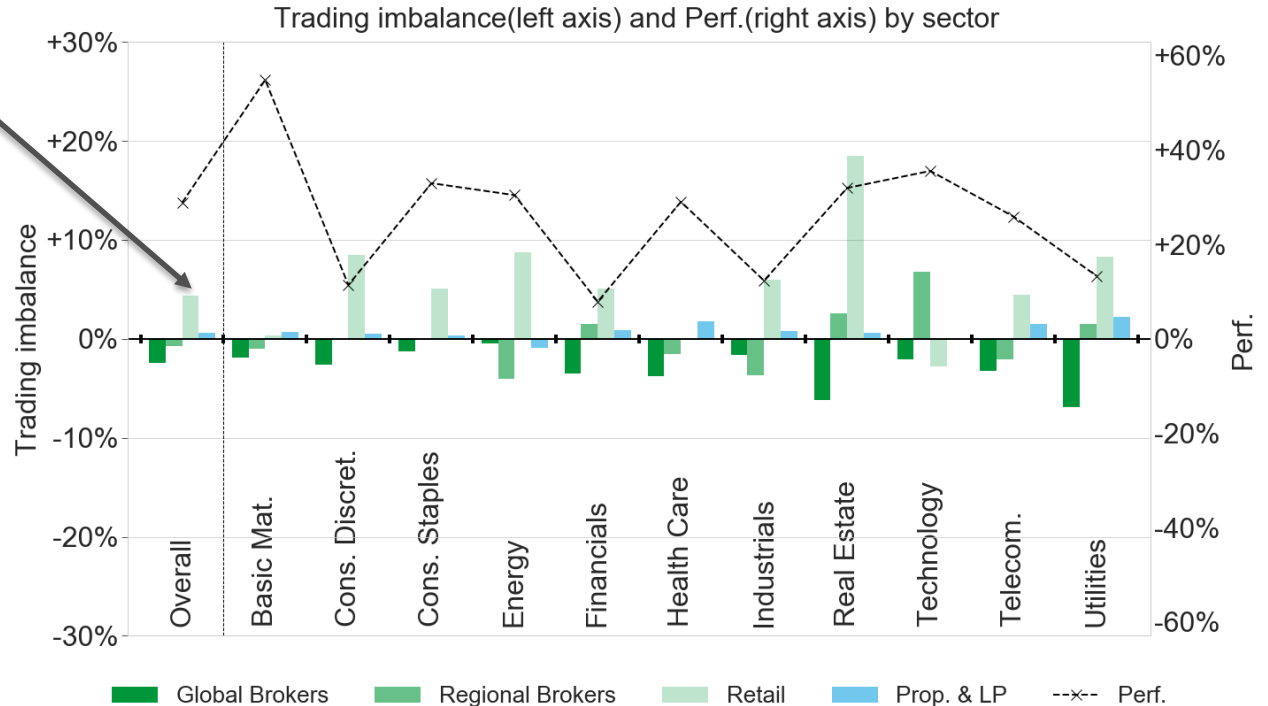
- During the market drop from 18 February to 18 March, the largest buyers were **retail brokers** (+15%) followed by **regional brokers** (+11%). **Global brokers** were **almost neutral** and **proprietary desks** were **net sellers**.
- Contrarian retail flows heavily bought Energy (+31%) and Financials (+25%) despite their adverse momentum.
- Only Utilities were sold by retail investors (-4%) during the bulk of the Covid-19 crisis
- Overall, retail investors were buyers during the worst part of the crisis.



Source: Euronext

# PARTICIPANTS' REACTION DURING THE REBOUND (19/03 TO 30/06)

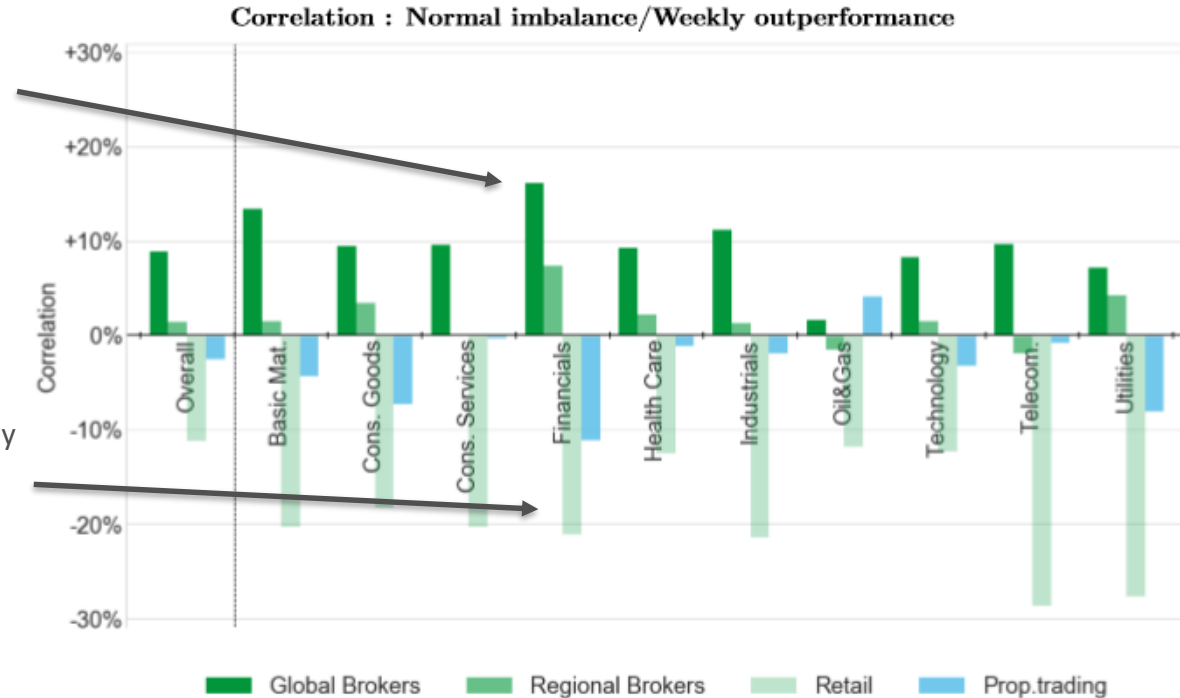
- Only **retail investors** were net buyers, while **global brokers** were net sellers.
- Retail investors** were particularly strong buyers in Real Estate (+18%), but also in Consumer Discretionary, Energy and Utilities.



Source: Euronext

# PARTICIPANTS' FLOWS: CORRELATION WITH PERFORMANCES

- **Global brokers** clearly exhibit a positive correlation with market performance as well as all sectors outperformance.
- **Retail investors'** negative correlation with the performance of sectors accounts for the specifically contrarian nature of their trading.



Source: Euronext (2013 to 2019)

# HOW MARKET PARTICIPANTS REACTED TO THE COVID-19 CRISIS

## From 18 February to 18 March 2020:

- Market-maker market share rose from 30 to 40%
- Global brokers market share dropped from 25 to 20%
- Retail brokers displayed the strongest trading imbalance +15% followed by regional brokers +11%

## From 19 March to 30<sup>th</sup> June 2020:

- Participants market share reverted back to pre-trade levels
- Global and regional brokers remained net sellers while retail flows were net buyers

**On the long run retail flows show negative correlations with performances due to their contrarian nature unlike regional and global brokers flows.**

**CONCLUSION:**  
**MARKET RESILIENCE AND HETEROGENEITY OF  
MARKET PARTICIPANTS**

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