



EURONEXT CAPITAL MARKETS UPDATE

WEEK 14 – FROM 30 MARCH TO 3 APRIL 2020

EXECUTIVE SUMMARY

Weekly update for issuers and market members

MOST RECENT REGULATORY UPDATES – DIVIDEND POLICIES AND FINANCIAL REPORTING DEADLINE

Euronext published new guidelines on dividend policy and AGM changes to prevent the impact on derivatives. Euronext also adjusted its policy on financial communications on Euronext Growth and Euronext Access following ESMA's statement*. For companies with a fiscal year ending 31 December 2019, the publication on their website must be effective no later than 30 April 2020. However, the sending of warnings to issuers unable to publish on time will be delayed of two months beyond the normal deadline.

EQUITY PERFORMANCE IN EUROPE – MAIN INDICES BOUNCED BACK BY FIRST INFLOWS LAST WEEK

Since February 2020, the impact of COVID-19 can be seen across selected Euronext indices with an average decrease of 27.12%. Small and Midcaps issuers performances have been in line with the evolution of Blue Chips indices demonstrated by the respective -29.96% and -29.60% decrease of CAC Mid & Small and AMX. In parallel, volatility has increased with the daily average in March 2020 reaching 57.57% and a daily highest peak of 85.62%. However, over the last week volatility fell below the monthly average to 50.23%. Regarding the performance by sector of activity, issuers operating in the Utilities and Healthcare industries have performed the strongest year to date, whilst Oil & Gas as well as Industrials have struggled the most.

EURONEXT BLUE CHIPS PERFORMANCE – SIGNIFICANTLY POSITIVE PERFORMANCES WITH A RECOVERING MARKET

Issuers from across Euronext's Blue Chips indices have ended the previous week with significantly positive performances compared to their month-to-date and year-to-date figures, as the market continues to recover. Issuers within the Oil & Gas and the Consumer Staples industries specifically saw the biggest price performances across all major indices. In comparison, issuers from the Financials sector struggled the most on average, which is primarily due to many financial firms electing suspend dividend payments due to COVID-19.

EURONEXT TRADING VALUES AND VOLUMES – VOLATILITY REMAINS HIGH BUT DECREASED BELOW ONE-MONTH AVERAGE

The increased volatility caused by uncertainty of COVID-19 has resulted in a daily average turnover over March 2020 to increase to €16.09bn, this being more than 2 times the daily average turnover of the year 2019. Additional liquidity has been primarily seen in Blue Chips, especially through the total turnover in March 2020 which has almost doubled the trading volumes of January 2020. However the trading value across all Euronext locations fell by 22.97% compared to the previous week to a total of €48.33bn. Midcap issuers listed on Compartment B had slightly higher trading volumes with a peak of €5.33bn in March 2020 whilst small cap issuers listed on Compartment C and Euronext Growth have come back to levels slightly higher than January 2020.

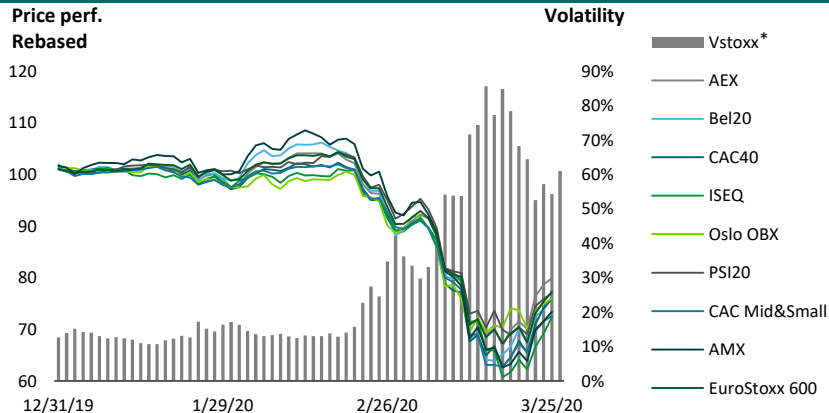
FUNDS FLOWS IN EUROPE – FIRST INFLOWS ON EQUITIES WHILE OUTFLOWS FOR OTHER ASSET CLASSES

With respect to inflows and outflows in Europe by asset class, last week has seen an overall outflow in all asset classes, except for equities. Indeed, the latter have benefitted from a net inflow amounting to €7.87bn, an improvement compared to the previous week-end. The categories Mixed Assets and Bonds experienced an outflow of €1.25bn and €3.87bn respectively, lower compared to the previous week-end figures. Looking at Euronext markets more specifically, monthly figures for March 2020 indicate that Financials, Technology and Consumer Discretionary shares are experiencing the largest outflows. In contrast, the sectors Healthcare, Consumer Staples and Energy have benefitted from a net inflow.

EQUITY PERFORMANCE IN EUROPE

Market impact due to COVID-19

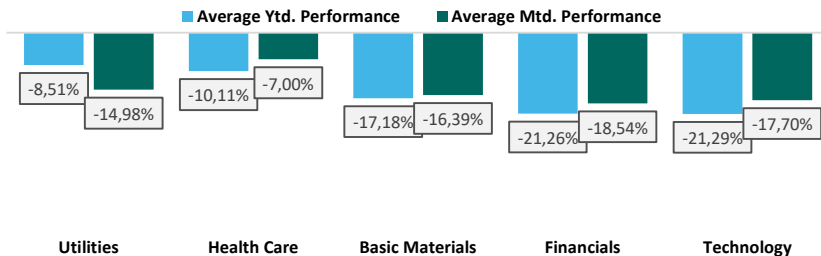
INDEX EVOLUTION



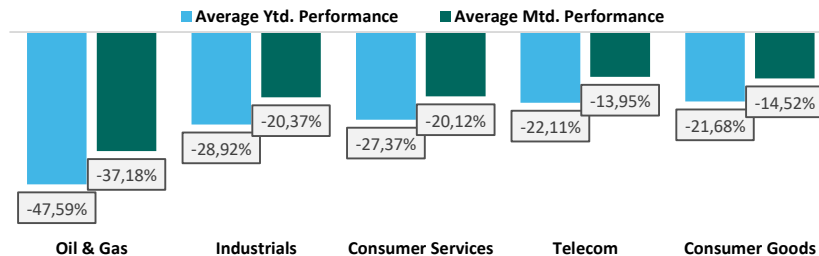
INDEX HISTORICAL PERFORMANCE

Price Perf. (%)	10Y	5Y	Since Feb-20	MTD	YTD
AEX®	34.15	-4.25	-20.02	2.66	-22.02
Bel20®	6.58	-24.28	-26.88	3.55	-27.78
CAC40®	2.98	-18.12	-28.45	1.75	-30.50
ISEQ®	47.44	-20.59	-31.63	-1.35	-33.39
Oslo OBX®	35.23	-11.49	-28.34	-0.83	-32.72
PSI20®	-51.46	-34.18	-24.36	-0.23	-23.81
CAC Mid & Small®	37.51	-16.92	-29.96	1.78	-31.67
AMX®	11.96	-15.05	-29.60	2.05	-29.58
Stoxx600®	22.16	-17.28	-19.88	5.88	-20.87

OVER PERFORMING INDUSTRIES ON Euronext Regulated Markets



UNDER PERFORMING INDUSTRIES ON Euronext Regulated Markets



Source: Factset, Euronext, as of 3 April 2020

*The Vstoxx indices are based on Euro Stoxx 50 real-time options prices and are designed to reflect the market expectations of near-term up to long-term volatility by measuring the square root of the implied variance across all options of a given time to expiration.

EURONEXT BLUE CHIPS PERFORMANCE

Major indices constituents' over and under performers

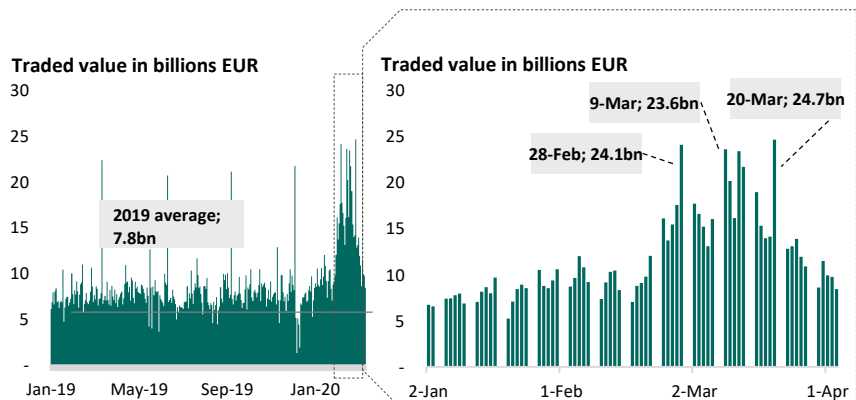
INDEX OVER AND UNDER PERFORMERS

	WEEKLY OVER PERFORMERS						WEEKLY UNDER PERFORMERS					
	Company Name	Last Price €	YTD Perf.	MTD Perf.	WTD Perf.	Volume 1W/ 3M Average (x)	Company Name	Last Price €	YTD Perf.	MTD Perf.	WTD Perf.	Volume 1W/ 3M Average (x)
AEX INDEX	ROYAL DUTCH SHELLA	16.7	-34.18%	3.66%	11.97%	1.08	ADYEN	691.2	-5.44%	-10.30%	-11.81%	1.09
	TAKEAWAY	72.6	-11.70%	5.65%	6.42%	0.58	AEGON	2.1	-48.61%	-9.68%	-10.53%	0.99
	AHOLD DEL	22.4	0.65%	5.43%	4.44%	1.08	UNIBAIL-RODAMCO-WE	45.2	-67.85%	-12.30%	-7.83%	1.20
	UNILEVER DR	44.3	-13.62%	-1.24%	1.14%	0.96	ING GROEP N.V.	4.6	-56.77%	-3.38%	-7.46%	1.43
	DSM KON	104.3	-10.16%	0.77%	0.48%	0.71	RANDSTAD NV	28.9	-46.86%	-10.07%	-6.92%	1.09
CAC40 INDEX	PUBLICIS GROUPE SA	27.2	-32.71%	3.98%	16.42%	1.22	SAFRAN	63.0	-54.23%	-21.39%	-25.80%	1.24
	VIVENDI	19.4	-24.86%	-0.64%	6.71%	1.03	AIRBUS	49.5	-62.06%	-16.57%	-18.75%	1.60
	CARREFOUR	15.1	0.94%	4.68%	6.19%	0.75	SOCIETE GENERALE	12.8	-58.73%	-16.60%	-17.08%	1.34
	AIR LIQUIDE	115.2	-8.72%	-1.24%	2.31%	0.91	CAPGEMINI	67.5	-38.00%	-12.31%	-13.44%	0.78
	MICHELIN	77.9	-28.62%	-3.92%	1.83%	0.95	VINCI	63.8	-35.52%	-15.33%	-12.55%	1.06
PSI20 INDEX	SONAE CAPITAL	0.4	-43.56%	5.99%	8.70%	1.71	B.COM.PORTUG UES	0.1	-56.07%	-13.07%	-15.30%	1.58
	SEMAPA	8.0	-42.06%	2.58%	4.74%	1.04	NOVABASE,SGPS	2.5	-1.55%	-4.87%	-9.29%	1.20
	SONAE	0.6	-33.85%	2.12%	4.42%	1.17	PHAROL	0.1	-36.35%	-7.04%	-7.85%	1.40
	GALP ENERGIA-NOM	10.4	-30.47%	-0.34%	3.81%	1.23	IBERSOL,SGPS	4.6	-42.50%	-3.36%	-6.31%	2.43
	ALTRI SGPS	3.6	-35.81%	0.66%	3.29%	0.67	CTT CORREIOS PORT	2.2	-30.72%	-3.24%	-3.16%	1.17
BEL20 INDEX	TELENET GROUP	30.8	-23.12%	12.24%	8.07%	0.91	ING GROEP N.V.	4.6	-56.77%	-3.38%	-7.46%	1.43
	UMICORE	33.0	-23.89%	3.61%	7.46%	0.63	GBL	67.4	-28.22%	-5.84%	-4.04%	0.98
	UCB	80.1	12.98%	1.39%	6.06%	0.85	BPOST	6.2	-39.71%	-3.42%	-3.78%	0.52
	AHOLD DEL	22.4	0.65%	5.43%	4.44%	1.08	ELIA	92.8	17.32%	4.15%	-3.53%	0.80
	COLRUYT	50.6	8.95%	2.78%	3.14%	1.24	ACKERMANS V.HAAREN	114.7	-17.90%	-3.37%	-2.80%	0.73
ISEQ INDEX	ORIGIN ENT. PLC	2.4	-35.71%	19.37%	21.93%	0.70	GLANBIA PLC	7.7	-24.81%	-21.83%	-18.36%	1.98
	DALATA HOTEL GP.	2.6	-49.90%	4.45%	17.81%	0.98	IRISH RES. PROP.	1.1	-32.83%	-12.46%	-13.59%	1.89
	APPLEGREEN PLC	2.4	-56.79%	11.01%	16.35%	3.93	AIB GROUP PLC	0.9	-71.22%	-12.52%	-11.57%	1.14
	TOTAL PRODUCE PLC	0.9	-37.06%	5.88%	6.51%	2.97	BANK OF IRELAND GP	1.6	-67.12%	-6.90%	-10.49%	1.48
	FLUTTER ENTERTAIN	79.4	-24.18%	-4.03%	6.35%	1.54	KERRY GROUP PLC	92.5	-16.79%	-12.12%	-10.07%	1.25
OSLO OBX INDEX	DNO	0.4	-58.25%	65.58%	80.54%	2.53	FRONTLINE	7.3	-38.65%	-17.90%	-23.54%	2.68
	BW OFFSHORE LIMITED	2.0	-61.08%	27.85%	52.97%	1.45	NORWEGIAN AIR SHUTTLE	0.7	-78.01%	-8.19%	-8.10%	0.83
	AKER BP	13.6	-46.13%	17.01%	33.41%	1.96	BW LPG	2.6	-60.27%	-7.15%	-5.14%	1.04
	TGS-NOPEC GEOPHYSICAL COMPANY	12.2	-47.96%	19.01%	28.10%	1.23	NORSK HYDRO	1.8	-36.83%	-8.84%	-4.65%	0.91
	SUBSEA 7	5.0	-45.69%	15.06%	25.33%	1.25	TOMRA SYSTEMS	24.9	1.72%	-2.81%	-1.22%	0.73

EURONEXT TRADING VALUES AND VOLUMES

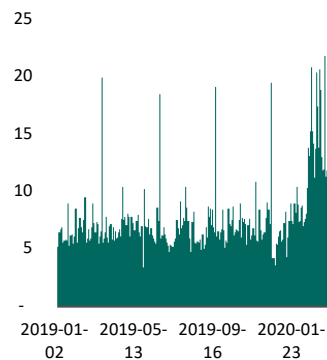
In the past week lower levels of volatility resulted in lower turnover

TRADED VALUE 2019 FY TO 2020 YTD



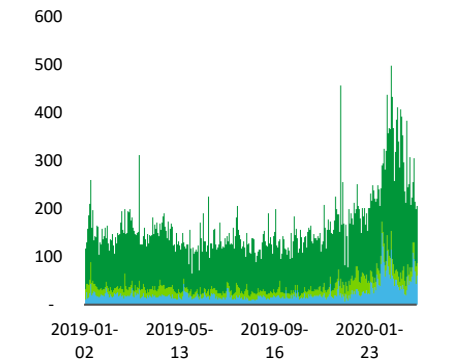
TRADED VALUE ACROSS EURONEXT MARKETS*

Traded Value in billions EUR



■ Compartment A

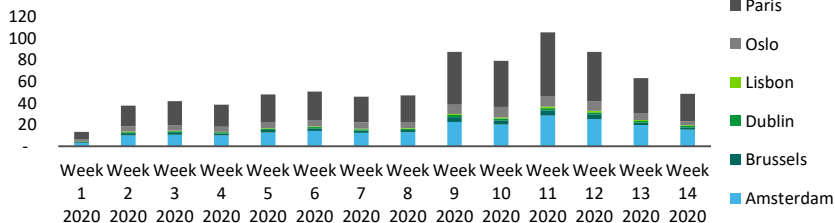
Traded Value in millions EUR



■ Euronext Growth ■ Compartment C ■ Compartment B

TRADED VALUE RECENT EVOLUTION BY EURONEXT LOCATION

Traded value in billions EUR



TRADED VALUE ACROSS EURONEXT MARKETS*

Period	Comp. C and Euronext Growth (€bn)	Comp. B (€bn)	Comp. A (€bn)
Week 14	0.52	0.67	43.60
Week 13	0.38	0.87	55.12
Mar-20	1.64	5.33	311.18
Feb-20	1.94	3.97	198.44
Jan-20	1.28	3.00	153.48
Q1 2020	4.60	11.99	644.95
Q1 2019	2.37	7.48	423.71



| Source: Euronext Optiq data (Amsterdam, Brussels, Dublin, Lisbon and Paris) & Oslo Bors Millennium data for Oslo markets, as of 3 April 2020
 | *Figures exclude trading volumes from Oslo markets

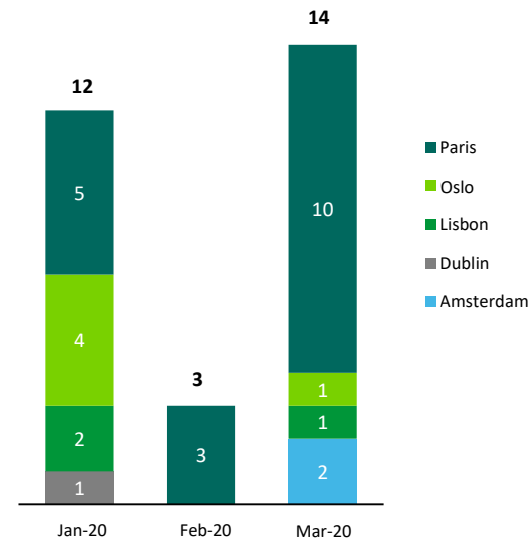
DCM ACTIVITY ON EURONEXT MARKETS

Euronext fixed-income listing activity

EXAMPLES OF CORPORATE BONDS ISSUANCES 2020 YTD

Issuer Name	Date of Issuance	Market	Location	Amount Issued (€m)
SALVADOR CAETANO AUTO SGPS SA	31/03/20	Euronext Access	Lisbon	25
NORGES GRUPPEN ASA	30/03/20	Oslo Bors	Oslo	29
ENGIE	27/03/20	Euronext	Paris	1000
MMB SCF	25/03/20	Euronext	Paris	120
UNILEVER N.V.	25/03/20	Euronext	Amsterdam	1000
DANONE	17/03/20	Euronext	Paris	800
SCHNEIDER ELECTRIC SE	11/03/20	Euronext	Paris	800
KORIAN	10/03/20	Euronext Access	Paris	400
TEREGA SAS	27/02/20	Euronext	Paris	400
CRH-CSE DE REFINANCT HABITAT	07/02/20	Euronext	Paris	1250
THALES	29/01/20	Euronext	Paris	500
NEOPOST S.A.	23/01/20	Euronext	Paris	325
TURKIYE IS BANKASI AS	22/01/2020	Euronext	Dublin	679
SFL CORPORATION LTD	21/01/2020	Oslo Bors	Oslo	59
ARKEMA	21/01/20	Euronext	Paris	300
AIR FRANCE KLM	16/01/20	Euronext	Paris	750
MOTA-ENGIL SGPS S.A	15/01/20	Euronext Access	Lisbon	50
SECIL-COMPANHIA GERAL DE CAL E CIMENTO S.A.	15/01/20	Euronext Access	Lisbon	60

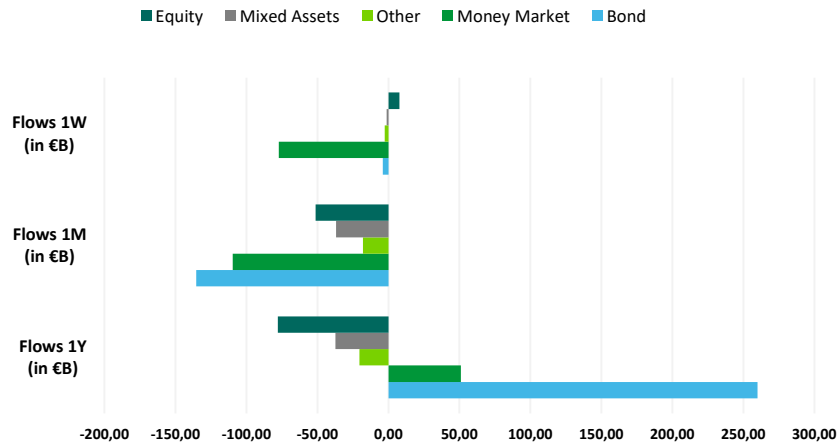
NUMBER OF CORPORATE BONDS ISSUANCES BY EURONEXT LOCATION



FUNDS FLOWS IN EUROPE

Inflows and outflows on European equities

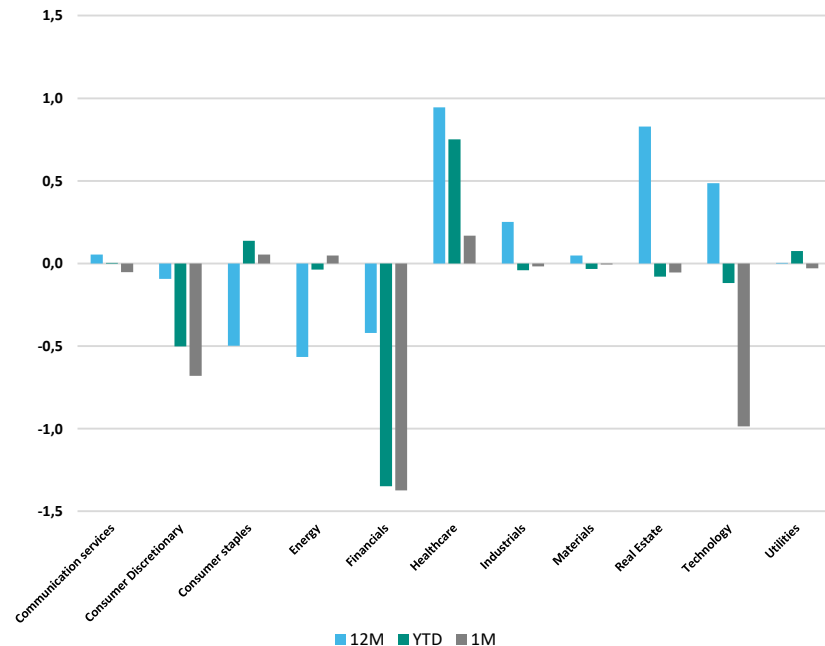
INFLOWS AND OUTFLOWS* EVOLUTION IN EU-27 ZONE BY ASSET CLASS



Asset Class	Flows 1Y (€bn)	Flows 1M (€bn)	Flows 1W (€bn)
Bond	260.07	-135.31	-3.87
Money Market	50.94	-109.75	-77.24
Other	-20.34	-17.92	-2.66
Mixed Assets	-37.37	-36.91	-1.25
Equity	-77.94	-51.21	7.87

FLOWS* ON EURONEXT EQUITIES** BY INDUSTRIES

Funds Flows in billions EUR



CORPORATE ACTIONS AND FINANCIAL REPORTING

Euronext is committed to ensure business continuity

CORPORATE ACTIONS

During the confinement period, will Euronext be able to manage corporate events?

Euronext's teams are fully mobilised to ensure the continuity of market activities under the best possible conditions. Most of Euronext's teams are working remotely whilst operating a fully functional infrastructure. Currently all corporate events are proceeding normally.

What if my company has already announced a cash distribution and needs to cancel it?

For any corporate event (creation, update, cancellation), please contact Euronext's Corporate Actions Department (corporateactionsfr@euronext.com) and your main contact at Euronext as soon as possible, and no later than two trading days prior to the corporate event.

A cash distribution has already been announced but I need to move the payment date to a later date? What is the procedure?

The payment date is not covered by Euronext's rules. As a market operator, Euronext does not play any particular role but has to be informed and inform the market no later than two trading days prior to the event. You can contact your paying agent and CSD that will assist you on this matter.

Does Euronext have in place a plan or strategy for pandemic planning, and has it been reviewed in the context of COVID-19?

Yes, Euronext has a pandemic plan in place. The pandemic plan and business continuity plans have been leveraged with respect to COVID-19. Reinforced actions include daily monitoring of government guidance to enable agile decision-making. Euronext's federal and decentralised model supports the arrangements put in place and avoids high concentration of any of its critical departments to preempt as much as possible risks in any one of its locations.

FINANCIAL REPORTING

Does Euronext intend or do the regulators intend to extend the deadline for publishing accounts (Growth and Access)?

In accordance with Chapter 4 of the Euronext Growth Market Rules, companies admitted on Access (Paris, Brussels, Lisbon) and Growth (Paris and Lisbon) are required to publish an annual report including audited annual financial statements and consolidated financial statements, if applicable, and an annual management report. This publication must be made within four months of the end of your financial year.

For companies with a fiscal year ending 31 December 2019, the publication (on the company website) must be effective no later than 30 April 2020.

Euronext will monitor the communications made (publication of financial statements or announcement of postponement) after the 30 April 2020 deadline. As part of its controls, Euronext will follow the recommendations of ESMA and the national regulators (e.g. FSMA, AMF): the reminder to non-compliant issuers will be postponed for a period of two months beyond the deadline for annual financial reports for a financial year ending between 31 December and 31 March.

What if my company is unable to publish its annual financial accounts by end of April due to COVID-19?

In the current exceptional circumstances and in anticipation of the difficulties encountered by some companies, issuers that are unable to publish their financial reports within the deadlines must notify Euronext (for Euronext Access and Euronext Growth) or the competent regulator (for the regulated markets and Euronext Growth Brussels) and inform the market (in advance) by indicating the reasons for the delay and an expected publication date.

DIVIDEND POLICIES AND EQUITY DERIVATIVES (1/6)

Understand the impact of dividends on derivatives

KEY TAKEAWAYS ON DIVIDEND POLICIES

How the postponement of AGMs and dividend policies can impact the pricing of your derivatives?

Derivatives classes may have been introduced on your company's shares. A derivative listing on Euronext involves a number of benefits, including but not limited to, enhancing interest and liquidity in a company's share and, as various studies have shown, a possible stabilising effect on the underlying share price during the day.

In the unprecedented context brought on by COVID-19, several European national competent authorities are considering exceptional measures, such as allowing the postponement of AGMs for issuers or reviewing public funding in light of dividend policies. These measures can impact your dividend policy, and subsequently the pricing of your derivatives. You can read the best practices to maximise the smooth pricing of derivatives on:

<https://connect.euronext.com/en/support/derivatives-markets>.

To protect investors, it is important that you avoid announcing any high impact corporate actions with price-sensitive consequences on or just before an expiry Friday. Nor it is preferable to change a dividend date so that it moves from before a certain expiry Friday to after that expiry Friday. This has an immediate impact on the pricing of the derivatives because dividends are an important part of the formation of option prices. The price of a derivative (options and futures) is based on the following:

- Underlying share price
- Volatility
- Interest rate
- Dividend
- Lifetime of the contract

What are the expiry dates for options in 2020?

Options expire several times a year. The standard expiry date is the third Friday of the expiry month (calendar month) unless the third Friday is a public holiday and the exchange is closed, in which case it is the third Thursday. List of all upcoming expiry dates for year 2020:

April 17/04/2020

May 15/05/2020

June 19/06/2020

July 17/07/2020

August 21/08/2020

September 18/09/2020

October 16/10/2020

November 20/11/2020

December 18/12/2020

Ordinary of extraordinary? Wording matters

It is important that issuers use the right terminology when qualifying their dividends in their communications. The wordings "Special, Extra or Extraordinary" should only be used when appropriate as only non-ordinary dividends lead to a derivatives contract adjustment by Euronext. An ordinary dividend for the year 2019 should not be requalified as Extraordinary if in current environment:

- Its payment is postponed later in 2020;
- It is reduced;
- It is paid out from reserves and not results.

In doubt, do not hesitate to liaise with Euronext as individual cases may be more specific.

DIVIDEND POLICIES AND EQUITY DERIVATIVES (2/6)

Understand the impact of dividends on derivatives

HOW DO YOU PRICE AN OPTION?

How is the price of an option calculated?

Market Makers are the lubricant of our options markets, they have agreed to a contract to continuous put prices into the market at which others may trade with them, in this way providing liquidity to our markets. When doing so, Market Makers (MMs) generally do not do this based on a directional view of the market but based on a risk neutral pricing model.

In other words: the Market Maker calculates the prices of the options based on a pricing model (for Equity Options that would normally be the Cox, Ross & Rubinstein model or a variant there of). A number of parameters are used to calculate option prices in such models, including:

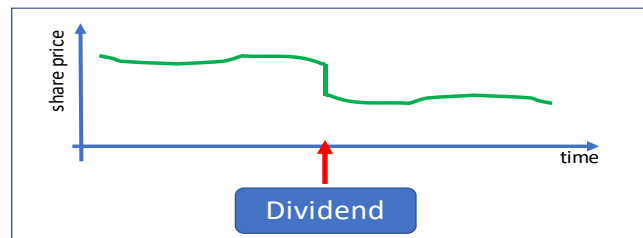
- Current price of the underlying shares
- Current interest rates
- Expected volatility during the lifetime of the option
- Expected dividend payments during the lifetime of the option

In this document we concentrate on the impact of the last one: the expected dividends

Why are dividends important for the price of an option?

If a share pays out a dividend, the share price will at that point in time drop by the dividend amount. The date on which the share trades ex-dividend is the crucial moment there. If a share trades at €70 on a certain day (day 1) and the next day (day 2) the share trades ex-dividend, with the dividend amount being €1.50, the model assumes the share price on the ex-dividend date will be €68.50. Reasoning behind this: if I can buy a share at €70 on day 1, on day 2 I will receive €1.50 dividend, so effectively my share will be worth only €68.50 on day 2.

So the pricing model anticipates a theoretical drop in the share price on the ex-dividend date, equal to the dividend amount.



What is the impact on option holders around dividend?

Dividends are paid to shareholders, not to option holders!

What happens to the option when a dividend is paid on the underlying shares?

The answer is not necessarily the same for all options but let's look at a put option first. If there is an option like this one: the right to sell the underlying shares at €75 (e.g. an August 75 Put option). And the example is the same as above. According to the pricing model, there will be a drop in the share price on the ex-date of €1.50 and if the share price was €70 before the ex-date, it will (theoretically) be €68.50 on the ex-date. The option, which gives the holder the right to sell the shares at €75 has now become more valuable: if I have the right to sell the shares at €75 with the share price at €68.50, the option has an intrinsic value of €6.50 ($75 - 68.50$), where it had an intrinsic value of €5.00 the day before ($75 - 70$).

So for put options there is a pricing effect around dividends.

DIVIDEND POLICIES AND EQUITY DERIVATIVES (3/6)

Understand the impact of dividends on derivatives

HOW DO YOU PRICE AN OPTION?

And for call options?

If there was a call option that gives the right to buy the shares at €65 (e.g. an August 65 call), and the same dividend event happens as before, this is the picture: before the ex-date, with a share price of €70, the option will have an intrinsic value of €5 (70-65). In other words: the option will be worth at least €5. Reasoning if I would be able to get (buy) the option for €0.00 and exercise it immediately (getting the shares for €65) and sell those shares again in the market for the market price (€70) I would have an instant profit of €5.00. This determines that in this case the price of the option would be at least €5.00. Next to that the price of the option may contain time value.

If now the share trades ex-dividend of €1.50 on the next day, the pricing model assumes the share price will drop to €68.50. There will be impact on the intrinsic value of the August 65 Call option. The intrinsic value will in that situation only be €3.50 (68.50 – 65). So due to the fact that the shares trade ex-dividend of €1.50, the price of the option drops €1.50 in value. So for call options, just as for put options, there is a pricing effect around dividend.

(In real life, someone owning such a call option prior to the ex-dividend may want to exercise his option before the ex-dividend data. This way he will collect the dividend).

How does this impact the pricing of options?

Anyone calculating the price of an option, including MMs, needs to take into account dividends, as stipulated above.

There are 2 dimensions of dividends that are important when pricing options:

- **The ex-dividend date**
- **The dividend amount**

Both of these are basically unknown to everyone, yet they should be assessed in order to properly price an option. In general, when looking at ex-dividend dates, we know that basically the ex-dividend date will be the day after the AGM. And most companies have a steady policy for the dates of their AGMs. So predicting the AGM date and therefore predicting the ex-dividend dates is generally not overly complex.

For the dividend amounts it is a bit harder.

There are three sources of information that help the MM to anticipate forthcoming dividends:

- The past (what are the dividends paid out in past years)
- The present (what is the current situation of the company)
- The future (what dividends are forecasted by independent forecasters)

Based on all of that, the MM needs to predict the dividends. And **as we have options in our markets with lifetimes up to 5 years, Market Makers need predict all dividends for the next 5 years.**

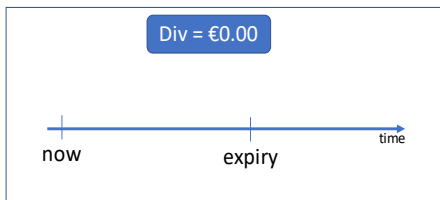
The dividends that impact the pricing of options the most are the dividends that are closest to the current date. In the next slide, we will share some examples of the pricing of options with dividends that are within a few months away of the current date.

DIVIDEND POLICIES AND EQUITY DERIVATIVES (4/6)

Understand the impact of dividends on derivatives

CASE STUDY

Example 1: prices with no dividend involved



The share price now is €70 and we are looking at two options which expire in 4 months time.

August 65 Call

August 65 Put

There are no dividends foreseen during the lifetime of the option (between now and August), the prices of the options are (with given interest rates and volatilities):

August 65 Call €6.91

August 65 Put €1.89

Example 2: prices with dividend of €1.50



The share price now is €70 and we are looking at two options which expire in 4 months time.

August 65 Call

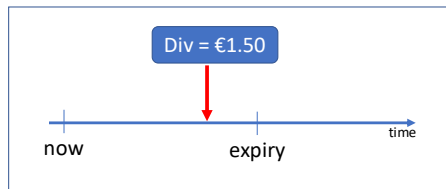
August 65 Put

A dividend of €1.50 is anticipated during the lifetime of the option, 1 month from now, the prices of the options are (with given interest rates and volatilities):

August 65 Call €6.12

August 65 Put €2.36

Example 3: prices with dividend of €1.50



The share price now is €70 and we are looking at two options which expire in 4 months time.

August 65 Call

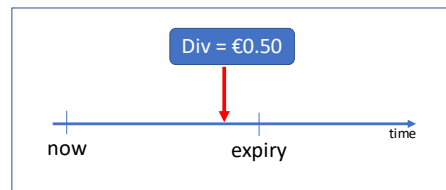
August 65 Put

A dividend of €1.50 is anticipated during the lifetime of the option, 3 month from now, the prices of the options are (with given interest rates and volatilities):

August 65 Call €6.56

August 65 Put €2.36

Example 4: prices with dividend of €0.50



The share price now is €70 and we are looking at two options which expire in 4 months time.

August 65 Call

August 65 Put

A dividend of €0.50 is anticipated during the lifetime of the option, 3 month from now, the prices of the options are (with given interest rates and volatilities):

August 65 Call €6.75

August 65 Put €2.04

DIVIDEND POLICIES AND EQUITY DERIVATIVES (5/6)

Understand the impact of dividends on derivatives

COVID-19 AND DERIVATIVES

A summary of the option prices from the above scenarios:

	Call price	Dividend amount	Dividend date	Put
Example 1	€6.91	--	--	€1.89
Example 2	€6.12	€1.50	1 month away	€2.36
Example 3	€6.56	€1.50	3 months away	€2.36
Example 4	€6.75	€0.50	3 months away	€2.04

The largest pricing effect is seen in the call options.

Where are we today?

As explained before, MMs use the predictable AGM dates as forecasted ex-dividend dates. Generally speaking, a lot of companies have their AGMs planned for the time frame "March until June". With options basically expiring on the third Fridays of April and May and June, the exact timing of the AGM becomes pretty important for pricing options.

If an AGM was planned to take place in April, before the April expiry (third Friday) and would move into the first week of May, that would have large impact on the pricing of April options. MMs would have priced in the dividend into April options but with the mover of the AGM to after the April expiry, there would no longer be a dividend during the lifetime of the April options.

Similarly it would impact the pricing of other options, in particular the options with a relatively short time to expiry as demonstrated in the earlier examples. If the dividend in the examples was predicted to be €1.50 in one month time, the 4-month call option would have a price of €6.12 (ex.2). If then the AGM was moved several months away to end up after the expiry of the option, the price of the option would be €6.91 (ex.1).

Market Makers quote options in the market based on the theoretical prices they calculate and with a certain spread. There are maximum spreads which the MM must live up to. If in this example the maximum spread would be €0.50, that would create the following markets for these examples:

	Call price	Bid price	Ask price	Dividend amount	Dividend date
Example 1	€6.91	€6.66	€7.16	--	--
Example 2	€6.12	€5.87	€6.37	€1.50	1 month away

As demonstrated above, the bid and ask prices under the different scenarios are such that the bid price of ex.1 is higher than the ask price of ex.2.

In general one could argue that the proper predictions of dividend amounts and dividend dates are part of the daily business of Market Makers. However if there is general uncertainty in the market in relation to AGM dates and dividends, especially if such uncertainties would be coming from rules or laws, these additional uncertainties would unduly impair the proper functioning of the market. Basically uncertainty creates additional risk and/or may cause Market Makers to be no longer able to provide prices which in turn would impair the proper functioning of the markets.

DIVIDEND POLICIES AND EQUITY DERIVATIVES (6/6)

Understand the impact of dividends on derivatives

ORDINARY VS EXTRAORDINARY DIVIDENDS

Special dividends and option pricing

When companies pay out special dividends, these are generally unpredictable (e.g. related to special financial results in the company). Euronext (like other trading venues) has special rules and procedures in place to cater for such special dividends (and other corporate actions that are not in line with every day operation of the underlying company).

In such cases trading venues make adjustments to the specifications of the options in order to compensate for such unpredictable events.

Suppose a company pays out a normal dividend every year of about €1.50 in early June. These dividends, as explained before, are included in the calculation of option prices. And as demonstrated above, they will impact the resulting prices of options. If now at the AGM the company decides to pay out an additional special dividend of say €2.50 per share, this will impact the prices of options. As there was no way anyone could have anticipated this, Euronext compensates for such unpredictable events.

Compensations are made by slightly adjusting the contract specifications (strike price and contract size of the options) in such a way that the economic value of the options before the special dividend and after the special dividend are identical. From an options-economic perspective special dividends have no impact at all on holders of options. They are economic non-events.

Could such corporate actions adjustments be made to cater for postponing of AGMs?

Apart from what our corporate actions policy says: a corporate actions adjustment needs an event. The “not paying out of a dividend” is not an event so it would not be very straight forward to make such adjustments. And if the AGM was postponed and a dividend would be paid out say in 4 months’ time (instead of in 3 weeks’ time), how would we want/need to look at that dividend in the light of predictability and adjustments?

It is important that issuers use the right terminology when qualifying their dividends in their communications. The wordings “Special, Extra or Extraordinary” should only be used when appropriate as only non-ordinary dividends lead to a derivatives contract adjustment by Euronext. An ordinary dividend for the year 2019 should not be requalified as Extraordinary if in current environment:

- Its payment is postponed later in 2020;
- It is reduced;
- It is paid out from reserves and not results.

In doubt, do not hesitate to liaise with Euronext as individual cases may be more specific.

TRADING SAFEGUARDS ON EURONEXT MARKETS

Euronext's market protection and detection mechanisms

Euronext's general philosophy is not to halt trading except in extreme circumstances. To achieve this, Euronext does not rely on circuit-breakers alone, but on a full set of trading safeguards. Over the years, Euronext has developed a complete set of mechanisms that go beyond market protection and are designed to prevent situations of disorderly markets and detect unusual events. All the market protection mechanisms are discussed and validated with local regulators, ensuring that Euronext is constantly improving the safety net across all its regulated markets.

EURONEXT MARKET SURVEILLANCE METHODOLOGY

Prevention

Market protection mechanisms include:

- the capacity to reject aberrant orders (unusually large in size or in units/price) before they enter the market;
- the capacity to halt instruments subject to single orders that might disrupt the market;
- the capacity to prevent significant price variations (dynamic or static collars).

Detection

A comprehensive set of algorithm-powered alerts that are triggered by Euronext's monitoring systems and handled in near real-time by analysts from the Cash Market team ensures fair and orderly markets as well as investigation and resolution where needed.

Reservation periods

Dynamic and static collars constitute the first and second layers of Euronext's circuit-breaker mechanism, respectively. The reference price is used to calculate both collars. The reference price changes throughout the trading day after each trade, with the last traded price becoming the new reference.

Reservation periods limit the impact of any unexpected sharp price movements whilst giving the market ample time to review orders and investment decisions before trading resumes.

EURONEXT DYNAMIC AND STATIC COLLARS

Dynamic collars

Are based on the dynamic reference price, which is taken from the last traded price and is amended with each new trade throughout the trading day. This safeguard threshold automatically halts trading on a stock if its price reaches +/-5% price variation (or +/-3% if the stock is part of a flagship index) on the dynamic collar reference price.

Static collars

Are based on the static reference price, which is taken from the opening price of the security if it has traded on the same day, or the last reference price from the previous trading day. This safeguard threshold automatically halts trading on a stock if its price reaches +/-10% price variation (or +/-8% if the stock is part of a flagship index) on the static collar reference price.

	PRODUCT	DYNAMIC COLLARS	STATIC COLLARS
Thresholds	All AEX, BEL 20, CAC 40, ISEQ 20 and PSI 20 constituents	+/- 3%	+/- 8%
Thresholds	Other Equities	+/- 5%	+/- 10%
Minimum Trading Halt duration	All securities that are traded on a continuous basis	3 minutes	3 minutes
Minimum Trading Halt duration: consecutive trading halt in same direction	All AEX, BEL 20, CAC 40, ISEQ 20 and PSI 20 constituents	3 minutes	10 minutes

MOST RECENT LEGAL AND REGULATORY MEASURES

Update from governments and regulators in the context of COVID-19

	ANNUAL GENERAL MEETINGS	ANNUAL ACCOUNTS	SHORT SELLING
BELGIUM	<ul style="list-style-type: none"> Law: soften the proxy form modalities and remote voting procedure; authorize companies to postpone AGMs by 4 months or have AGMs by webcast (ongoing discussions); Regulator: the FSMA published a statement on 26/03 indicating that a new legislation allowing companies to postpone or broadcast their AGMs is currently in progress. 	<ul style="list-style-type: none"> Approval: extension of the deadline for approving accounts by 4 months; Publication: extension of the deadline for publishing annual accounts by 4 months. 	<ul style="list-style-type: none"> On 17/03, the FSMA announced a short selling ban for one month (17/03 – 17/04).
FRANCE	<ul style="list-style-type: none"> Law: ordinance published on 26/03 allowing closed session and virtual AGMs and extending deadline by 3 months until 30/06 for the organization of AGMs; Regulator: the AMF encourages issuers to broadcast AGMs in real time. 	<ul style="list-style-type: none"> Approval: deadline for approving accounts extended by 3 months (ordinance from 26/03); Publication: deadline for publishing annual accounts remains unchanged (30/04). 	<ul style="list-style-type: none"> On 17/03, the AMF announced a short selling ban for one month (18/03 – 16/04).
IRELAND	<ul style="list-style-type: none"> Law: no specific measure but as under The Companies Act in Ireland, companies have to hold their AGMs 15 months after the previous one; Regulator: no specific recommendation from CBI. 	No specific measure for the Regulated Markets but planning to align Euronext Growth Dublin with AIM London for an extension by 3 months.	No specific measure.
THE NETHERLANDS	<ul style="list-style-type: none"> Law: no specific measure, only in-person AGMs allowed; Regulator: no specific recommendation from the AFM. 	In line with the ESMA statement, the AFM decided to follow the recommendation and apply the deadline less strictly for issuers*.	No specific measure.
NORWAY	<ul style="list-style-type: none"> Law: exemption given by the government on 27/03 to facilitate proxy voting and to authorize companies to have AGMs by webcast until the end of the Corona Act (27/04); Regulator: no specific recommendation from the FSA. 	In line with the ESMA recommendation, Oslo Bors informed companies listed on regulated markets about deadlines for financial reporting**.	No specific measure.
PORTUGAL	<ul style="list-style-type: none"> Law: ordinance published on 13/03 allowing AGMs to be postponed until 30/06; Regulator: the CMVM encourages issuers to consider both electronic vote and webcasting. 	No specific measure.	No specific measure but the CMVM has adopted the position of ESMA to increase reporting.

| This update is provided by Euronext based on local evolutions and changes, as of 3 April 2020

| More information and the most recent updates can be found on the websites of local governments and regulators

| * <https://www.afm.nl/en/professionals/nieuws/2020/mrt/esma-wil-soepele-regels-verslaggeving-2019>

| ** https://www.oslobors.no/ob_eng/Oslo-Boers/Regulations/Information-and-news/Information-regarding-publication-of-the-annual-report-for-the-fiscal-year-2019

WEBINAR FOR ISSUERS ON PORTFOLIO MANAGEMENT

How portfolio managers operate in response to COVID-19

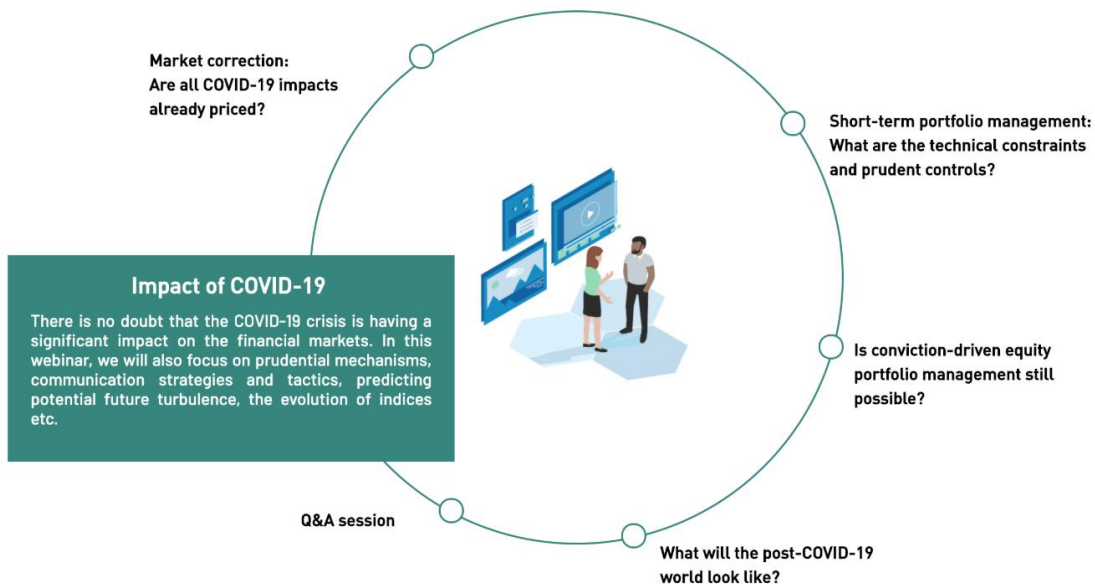
Webinar

COVID-19: Understanding how portfolio managers can stay on course during the correction of stock markets

Given the **exceptional current situation** on equity capital markets, **Euronext** invites you to participate in an exclusive webinar dedicated to how portfolio managers operate in response to the **COVID-19 virus**.

Our experts will touch on **equity management** styles that will predominate, adapting to a **long period of volatility**, factors that can **improve investor sentiment** and much more.

English
15 April 2020 – 3pm
[REGISTER](#)

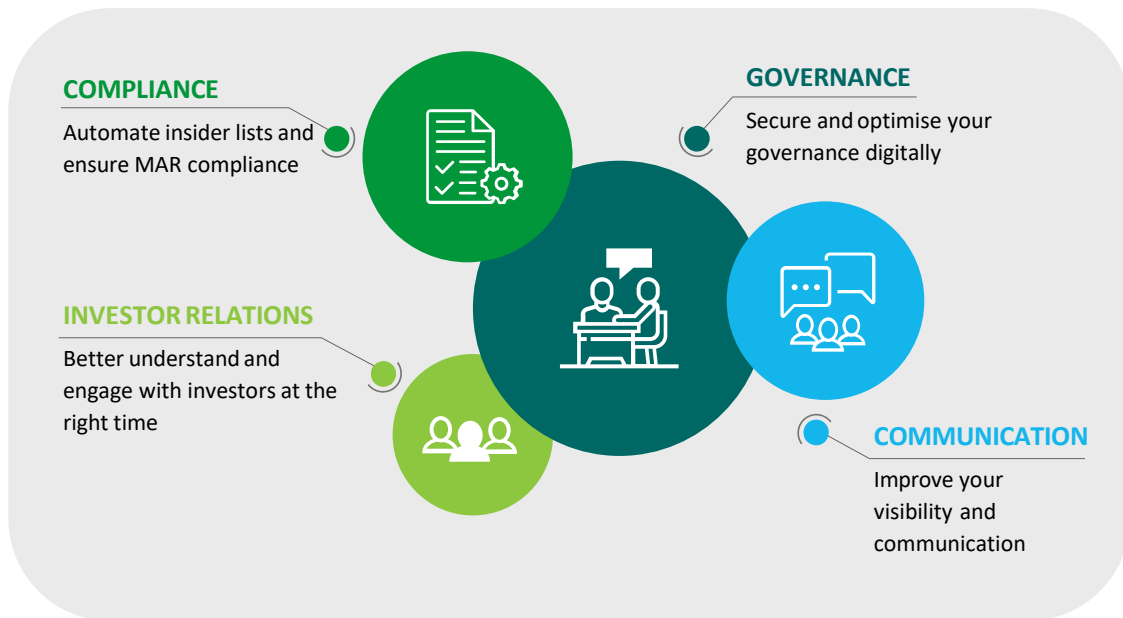


EURONEXT CORPORATE SERVICES

Access a full set of solutions

Managing digital communication, e-governance and investor relations in difficult times, all while remaining compliant, are just some of the challenges brought about by the current circumstances.

Euronext Corporate Services has a suite of solutions which can help you address these challenges and help you navigate this adverse environment digitally and efficiently.



OUR EXPERTISE

600+

Listed companies already working with Euronext Corporate Services totalling 2,500+ clients

80

Professionals to help listed companies make the most out of capital markets

15+

Number of countries where Euronext Corporate Services serves clients

CONTACT US

 corporateservices@euronext.com

 [corporateservices.euronext.com](https://www.euronext.com/corporateservices)

EMBRACE EFFICIENCY IN TIMES OF CHANGE

Manage operational efficiency during COVID-19

GOVERNANCE

The board portal to organise and run board meetings more efficiently.

Enhance **collaboration** and streamline **decision-making processes**, even **remotely**. Schedule **meetings** and share **agendas** or **documents** in a secured environment. On any device, **anywhere**.



COMMUNICATION

Market leader in webinars and webcasts services for financials results, internal communication, marketing and external communication.

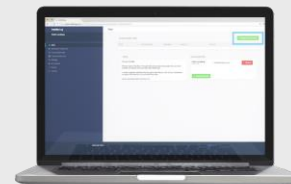
Host your company's **AGM** virtually, from **anywhere**, and **communicate** with all investors and stakeholders **simultaneously** in an **engaging** and **transparent** way.



COMPLIANCE

Automate the management of inside information and insider lists.

In light of the recent development with COVID-19, **ESMA** has issued new **guidelines** for market disclosure and financial reporting. Ensure that you remain **compliant** with the European "Market Abuse Regulation" (**MAR**) and **save time** with our **fully automated** platform.



INVESTOR RELATIONS

Optimise your investor relations team workflow and efficiently manage relationships with institutional investors.

Get **ahead of the curve** and prepare for a **post-COVID-19** world with our Advisory and IR Solutions.

Our **Post-Listing Advisory** team can provide **market intelligence** and **decision-making analytics** and support with crafting an **effective equity story**.

Shareholder Analysis helps to **identify** and **monitor** your **shareholder base** and **benchmark** with your industry.

IR.Manager is an intuitive investor **CRM** and **targeting** platform.



CONTACT DETAILS

Your main contacts at Euronext

You can reach your **dedicated representative** for any question related to the particular situation in your country:

BELGIUM

 Benoît van den Hove
Head of Listing Belgium
bvandenhove@euronext.com


FRANCE

 Camille Leca
Head of Listing France
cleca@euronext.com


 Alain Baetens
Head of Large Caps France
abaetens@euronext.com

 Guillaume Morelli
Head of SMEs France
gmorelli@euronext.com

IRELAND

 Orla O’Gorman
Head of Listing Ireland
ooorman@euronext.com

THE NETHERLANDS

 Rene van Vlerken
Head of Listing Netherlands
rvanvlerken@euronext.com

NORWAY

 Eirik Høyby Ausland
Head of Listing Norway
eirikhoiby.ausland@oslobors.no

PORTUGAL

 Filipa Franco
Head of Listing Portugal
ffranco@euronext.com

You can reach **specific teams** for any question related to your daily activity and corporate actions:

EXPERTLINE

 myquestion@euronext.com

CORPORATE ACTIONS

 corporateactionsfr@euronext.com

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