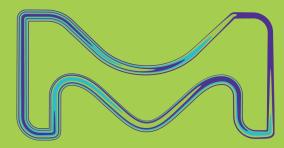
Top Line reflects covid-19 impact, bottom line well managed

Merck KGaA, Darmstadt, Germany

Q2 2020 results

Stefan Oschmann, CEO Marcus Kuhnert, CFO

August 6, 2020







Disclaimer

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Agenda

Executive summary

©2 Financial overview





Merck KGaA

Darmstadt, Germany

Executive Summary

Highlights





Healthcare: Oncology and General Medicine growing despite pandemic, Fertility demand lowered as anticipated, recovery of Mavenclad[®] ramp-up started in June, Bavencio[®] U.S. launch in UC 1L; M5049 COVID-19 study initiated

Life Science: supporting fight against COVID-19, Process Solutions growing 20%, Research & Applied end markets continue to be negatively impacted but recovery started in June

Performance Materials: Semiconductor Solutions growing 12% organically not yet offsetting Display and Surface Solutions decline; Versum performance & integration on track Q2 organic sales: decline of -2.5%;

Q2 organic EBITDA pre: decline of -11.5% (against elevated comps)

EBITDA pre guidance slightly upgraded:

Net sales: €16.9 – 17.7 bn EBITDA pre: €4,450 – 4,850 m EPS pre: €5.60 – 6.25

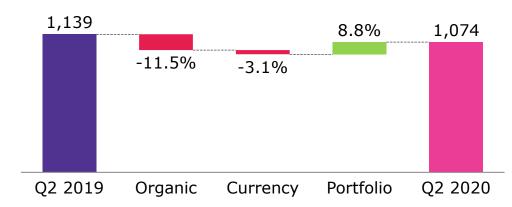
Net financial debt to EBITDA pre at 2.8 on June 30, 2020 – continued focus on deleveraging

Versum portfolio effect and Process Solutions drive sales growth despite COVID-19 related organic decline in Healthcare and Performance Materials

Q2 YoY Net Sales	Organic	Currency	Portfolio	Total
Healthcare	-7.4%	-2.3%	-0.9%	-10.6%
Life Science	6.3%	-0.4%	0.0%	5.9%
Performance Materials	-13.7%	1.8%	50.1%	38.1%
Group	-2.5%	-0.9%	7.1%	3.7%

- Healthcare decline largely driven by COVID-19 impact on Fertility; COVID-19 also slowing down growth of Mavenclad[®] as well as General Medicine & Endocrinology (incl. destocking post Q1 pull-in)
- Process Solutions growing 20% and overcompensating flat Applied Solutions and declining Research Solutions where demand was impacted by COVID-19 related lockdowns
- Semiconductor Solutions organic growth continues at an even higher pace – however, COVID-19 impact on Display and Surface Solutions results in overall organic decline

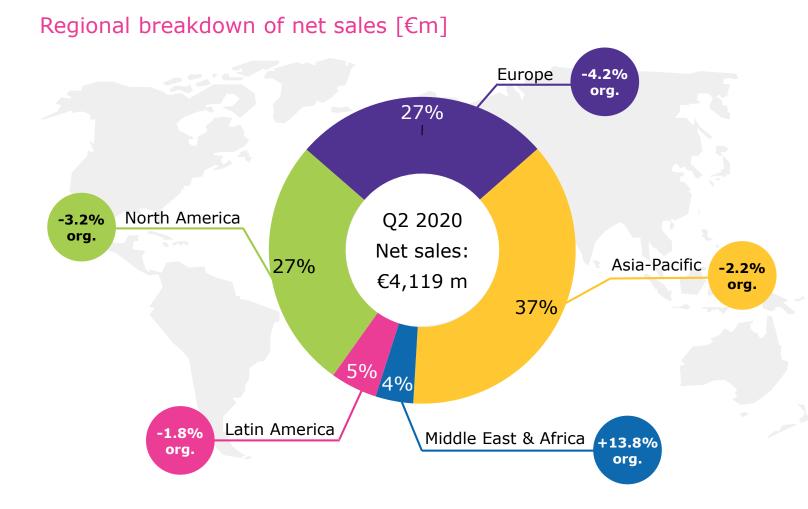
Q2 YoY EBITDA pre



- EBITDA pre declining faster than sales organically, largely due to non-recurring Healthcare income (~ €165 m higher in Q2 2019)
- Margin accretive Versum portfolio effect
- FX tailwinds from U.S. and Taiwan dollar did not offset currency headwinds from some emerging markets



All regions impacted by COVID-19; signs of recovery in APAC dragged down by Display Solutions & Fertility



Regional organic development

- Moderate decline in APAC as doubledigit growth in Life Science and Semiconductor Solutions offset a large part of COVID-19-driven decline in Display, Fertility and Surface Solutions
- In Europe Neurology & Immunology as well as Research Solutions were also declining due to COVID-19
- North America saw significant declines in Research Solutions and Fertility, also Applied Solutions slightly down
- Strong General Medicine & Endocrinology growth in MEA and LATAM (where it could not fully offset effects of COVID-19 in Fertility)

Financial



Q2 2020: Overview

Key figures

[€m]	Q2 2019	Q2 2020	Δ
Net sales	3,971	4,119	3.7%
EBITDA pre	1,139	1,074	-5.7%
Margin (in % of net sales)	28.7%	26.1%	-2.6pp
EPS pre	1.54	1.30	-15.6%
Operating cash flow	743	502	-32.4%
[€m]	Dec. 31, 2019	June 30, 2020	Δ

	Dec. 31, 2019	June 30, 2020	Δ
Net financial debt	12,363	12,560	1.6%
Working capital	3,944	4,474	13.4%
Employees	57,071	57,523	0.8%

- Versum portfolio effect and strong growth in Process Solutions drive sales above last year, despite materializing COVID-19 impact across most business units
- EBITDA pre and margin decline driven by lower non-recurring income components and under absorption of fixed costs due to lower sales from the COVID-19 impact
- EPS pre declining due to a lower financial result and EBITDA pre
- Lower operating cash flow driven primarily by GSK upfront payment in 2019 and higher working capital in 2020

Reported figures

Reported results

[€m]	Q2 2019	Q2 2020	Δ
EBIT	618	491	-20.6%
Financial result	-61	-102	67.4%
Profit before tax	557	389	-30.2%
Income tax	-136	-100	-26.7%
Effective tax rate	24.4%	25.7%	1.2pp
Net income	471	290	-38.5%
EPS (€)	1.08	0.67	-38.0%

- EBIT decline driven by lower nonrecurring income, higher depreciation & amortization from Versum PPA and impairments in Performance Materials
- Financial result impacted by LTIP and higher interest expenses related to Versum financing
- Effective tax rate within guidance range of ~24-26%
- Lower net income and EPS reflects lower EBIT and higher negative financial result

Healthcare: Savings in M&S and R&D offset impact from lowered Fertility demand and Mavenclad[®] drag amid COVID-19

Healthcare P&L			Net sales bri	idge			
[€m]	Q2 2019	Q2 2020	€1,677 m				€1,499 m
Net sales	1,677	1,499		-7.4%	-2.3%	-0.9%	
Marketing and selling	-599	-409					
Administration	-84	-81	Q2 2019	Organic	Currency	Portfolio	Q2 2020
Research and development	-395	-366	EBITDA pre	bridge			
EBIT	345	269	€528 m			0.00/	6274
EBITDA	523	359		-25.9%	4 10/	0.9%	€374 m
EBITDA pre	528	374		-23.970	-4.1%		
Margin (in % of net sales)	31.5%	24.9%	Q2 2019	Organic	Currency	Portfolio	Q2 2020

- Mavenclad[®] 36% growth versus Q2 2019, especially in U.S.; however demand declines versus Q1 2020 due to COVID-19 as expected; Rebif® returning to the anticipated underlying trajectory
- Fertility heavily impacted across all regions due to temporary shutdown
 R&D reflecting ongoing stringent cost control of a majority of clinics
- Erbitux[®] organically slightly growing; Bavencio[®] growing strongly versus last year, but sequentially impacted by COVID-19
- M&S decrease due to rigorous cost management, further supported by significant reduction of in person face-to-face activities during pandemic, last year elevated by now expired amortization of Rebif®
- EBITDA pre declining faster than sales, driven largely by tough comps from Peg-Pal and Bavencio® milestones in Q2 2019



Life Science: Strong resilience continues in Q2; Process growing 20%, Applied & Research impacted by COVID-19 but recovery visible in June

Life Science P&L

[€m]	Q2 2019	Q2 2020	€1,705
Net sales	1,705	1,806	
Marketing and selling	-490	-488	
Administration	-68	-100	Q2 2019
Research and development	-69	-75	EBITDA p
EBIT	322	386	€533 m
EBITDA	518	584	
EBITDA pre	533	569	
Margin (in % of net sales)	31.3%	31.5%	 Q2 2019

Net sales bridge 6.3% €1,806 m 0.0% m -0.4% Q2 2020 9 Organic Currency Portfolio pre bridge 9.7% €569 m m -2.4% -0.6% 9 Organic Portfolio 02 2020 Currencv

- 19.8% organic growth of Process Solutions mainly driven by downstreamand single use, with COVID-19 demand contributing
- Applied Solutions about stable due to COVID-19-related effects across the full portfolio albeit clear signs of recovery in June
- Research Solutions impacted significantly mainly due to temporary slowdown in academia from COVID-19-related lab closures, also showing clear signs of recovery in June
- Lower M&S from overall cost-consciousness and lower travel expenses, partially offset by increased freight costs
- Admin increase largely driven by EBITDA pre adjustments (€12 m) and COVID-19-related cost for additional safety precautions
- Increased R&D driven by investments in strategic projects
- EBITDA pre growing faster than sales, reflecting operational leverage from strong top-line growth



Performance Materials: Versum portfolio effect and accelerating Semi growth more than offset declining Display and Surface amid COVID-19

Performance Materials P&L

[€m]	Q2 2019	Q2 2020
Net sales	589	814
Marketing and selling	-66	-134
Administration	-25	-44
Research and development	-74	-68
EBIT	100	-30
EBITDA	161	219
EBITDA pre	190	238
Margin (in % of net sales)	32.3%	29.3%

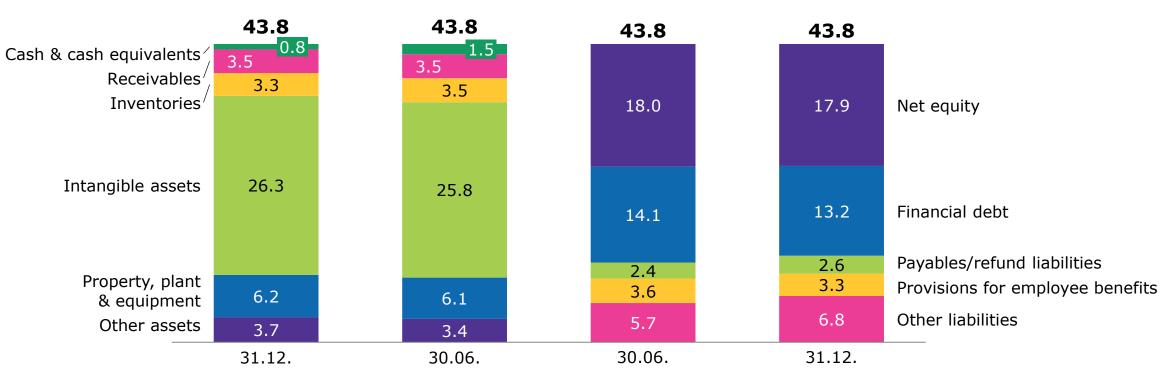
Net sales bridge €814 m 50.1% €589 m 1.8% -13.7% Q2 2019 Q2 2020 Organic Currency Portfolio EBITDA pre bridge €238 m 51.8% €190 m 3.1% -29.7% 02 2019 Organic Currency Portfolio 02 2020

- Sales growth of 38% reflects portfolio effect from Versum and positive FX, overcompensating organic decline
- Semiconductor Solutions: further accelerating strong organic growth, cyclical recovery and outperformance continuing
- Display Solutions: COVID-19 weighs on LC's negative underlying trajectory against still elevated comps in Q2 2019; OLED also impacted
- Surface Solutions: declining significantly amid a heavy COVID-19 impact on automotive and cosmetic end markets

- M&S reflects consolidation of Versum acquisition and diligent underlying cost management as part of the Bright Future transformation and countermeasures to Covid-19
- R&D declining from an elevated Q2 2019 base including Bright Future provisions (EBITDA pre adjustments); Q2 2020 includes Versum consolidation and shows underlying Bright Future cost management
 - Increase in EBITDA pre largely reflects portfolio effect from Versum



Balance sheet



Assets [€bn]

- Stable balance sheet since Dec. 31, 2019
- Continuously higher cash level in order to secure liquidity in the face of Financial debt increase reflects bonds issued in January (€1.5 bn) and the COVID-19 pandemic
- Equity ratio of 41.1%

Liabilities [€bn]

utilization of available credit lines to increase liquidity reserve; bond repayments in March (€2.0 bn)



Cash flow statement

Q2 2020 – cash flow statement

[€m]	Q2 2019	Q2 2020	Δ
Profit after tax	471	289	-182
D&A	453	559	106
Changes in provisions	-47	-54	-7
Changes in other assets/liabilities	-26	-166	-141
Other operating activities	-51	-13	37
Changes in working capital	-58	-112	-54
Operating cash flow	743	502	-240
Investing cash flow	-870	-216	654
thereof Capex on PPE	-162	-194	-33
Financing cash flow	1,244	-302	-1,546

Cash flow drivers

- Profit after tax driven by lower EBIT
- Higher depreciation & amortization from Versum PPA and impairments in Performance Materials
- Provisions reflect reduced litigation provisions and fluctuations in LTIP*
- Changes in other assets and liabilities primarily driven by GSK upfront payment in Q2 2019 that was deferred
- Increased working capital driven by Versum consolidation, higher inventories to secure supply in the face of COVID-19 and growing receivables
- Investing and financing cash flows returning to normal levels

*Long Term Incentive Plan



guidance

03

Our assumptions on the development of the COVID-19 pandemic have remained largely the same since May



Impact across all regions

Previous assumptions

(communicated in May)



Cases expected to **peak in Q2** Situation eases in H2 Pandemic crisis lasts for FY



Stressed health systems Some countries have less effective response than China



18

However, no major resurgences

Merck KGaA, Darmstadt, Germany Q2 20 Results Presentation | August 6th, 2020



Some countries **struggle to contain** virus resulting in stressed health systems Effective **vaccines** not broadly available



Additional flares, but **not triggering** new widespread lockdowns

Recovery progressing during H2

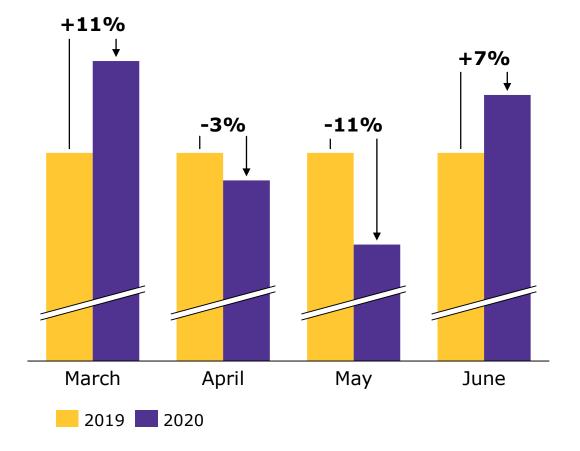
Current assumptions

(communicated in August)



Impact across all regions

Active crisis management and resilient product portfolio allowed quick 8-week recovery time



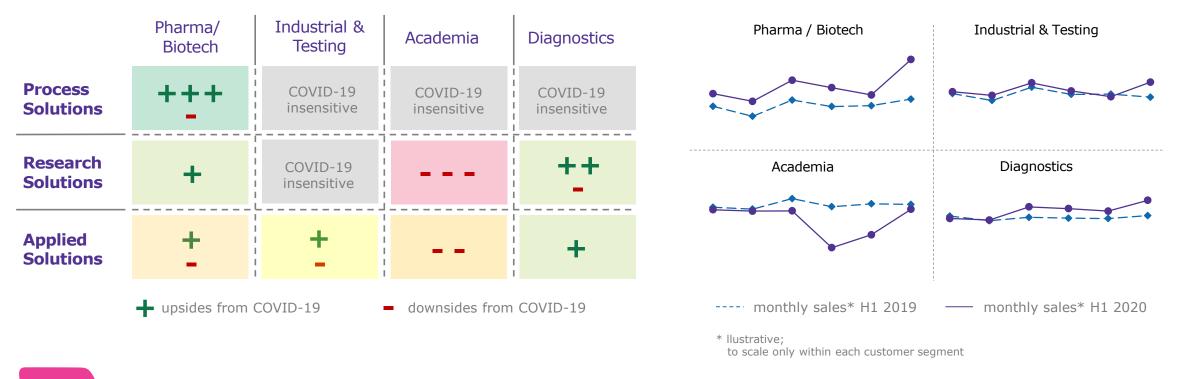
Organic sales growth - Group

Increased visibility of COVID-19 impact

- Strongest correlation with mandatory workplace closures
 - Fertility: closure of clinics
 - **N&I**: closure of practices, limited visits
 - **Research Solution**: closure of research labs
 - Display Solutions: closure of electronic retail
- Merck KGaA, Darmstadt, Germany well positioned in essential industries:
 - Governments moved from mandatory workplace closures to mandatory workplace measures
 - Immediate restoration of business
- Other changes of a longer-lasting nature (Display or Automotive end markets)

Life Science highly resilient and well positioned to participate in potential mid-term upside from COVID-19

2020 heatmap of COVID-19 impact by customer segment



- Mid-term: downsides to fade, some upsides to stay, recovery started in June
- Order book for Process Solutions **up by >40%**, capacity expansion underway



H1 2020 monthly sales^{*} by customer segment

COVID-19 guidance given in May overall accurate, improved visibility warrants slight upgrade

Group:

- Up to mid single-digit percentage sales impact full year
- Countermeasures in place: confirm 50 to 60% of net sales impact to hit EBITDA pre
- Recovery visible in June, expected to continue in Q3 and Q4



Healthcare assumptions:

- Biggest impact in Fertility behind, as **clinics are opening up again**
- Mavenclad[®] recovery visible in June
- Other businesses normalizing

Life Science assumptions:

- **Net upside** from COVID-19-related demand in Process Solutions
- Recovery as of June in Applied Solutions
- Research showed largest impact, recovering in June as well

Performance Materials assumptions:

Strong growth in Semiconductor expected to continue despite COVID-19

Merck K

Darmstadt, Germany

- Some ease of impact from COVID-19 in Display versus Q2
- Slight ease on Surface's end markets expected versus Q2

Group

Key earnings drivers to remember for 2020

EBITDA pre - supporting factors

- Increasing sales contribution from Mavenclad[®] and Bavencio[®]
- Stringent M&S and R&D cost management in HC (decrease YoY absolute and as % of sales)
- Ongoing strength in Life Science with above-market sales growth
- Good momentum in Semiconductor Solutions and cost savings from Bright Future program related initiatives
- High level of cost consciousness and prioritization
- Four quarters of Versum

EBITDA pre - reducing factors

- No more support from Pfizer deferred income (€191 m in 2019)
- Lower income from pipeline management
- Continued decline of Liquid Crystals and Rebif®
- COVID-19-related sales and earnings effect
- Potential additional effect from VBP* in China during Q4 for Glucophage[®]

Group Full-year 2020 guidance

Net sales:

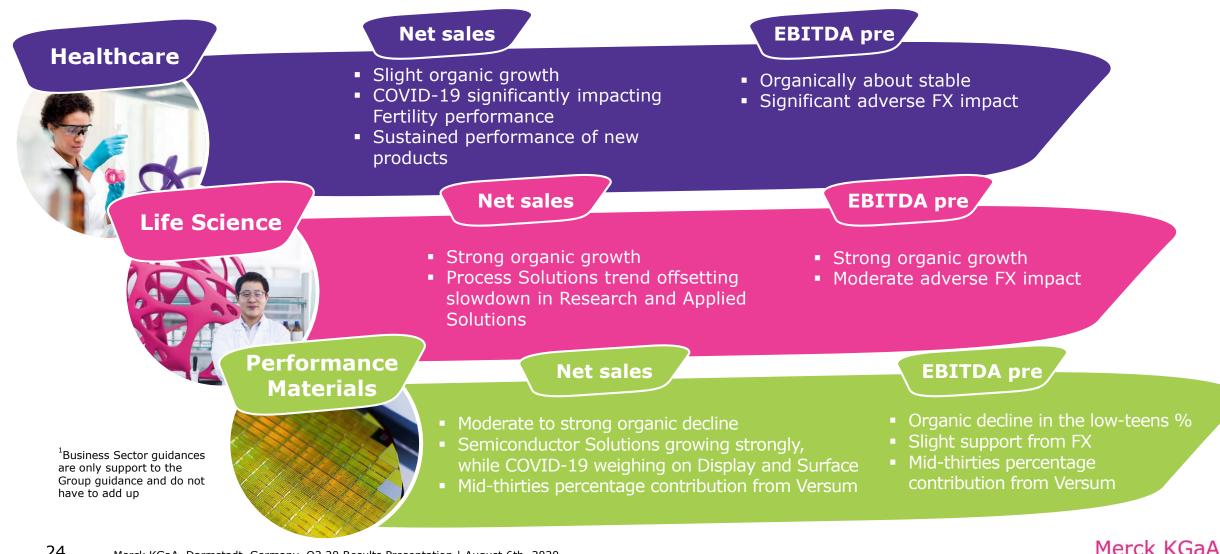
Slight to moderate organic growth, Versum growth contribution in mid single-digit percentage range; FX between 0% to -2% YoY; ~€16.9 – 17.7 bn

EBITDA pre: Slight to moderate organic growth, mid single-digit percentage range growth from Versum; FX headwinds of -2% to -4% YoY; ~€4,450 – 4,850 m

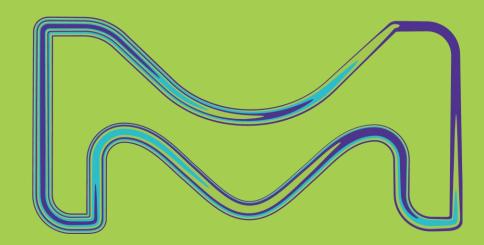
> EPS pre: ~€5.60 - 6.25



Group **2020** business sector guidance¹



Darmstadt, Germany



Appendix

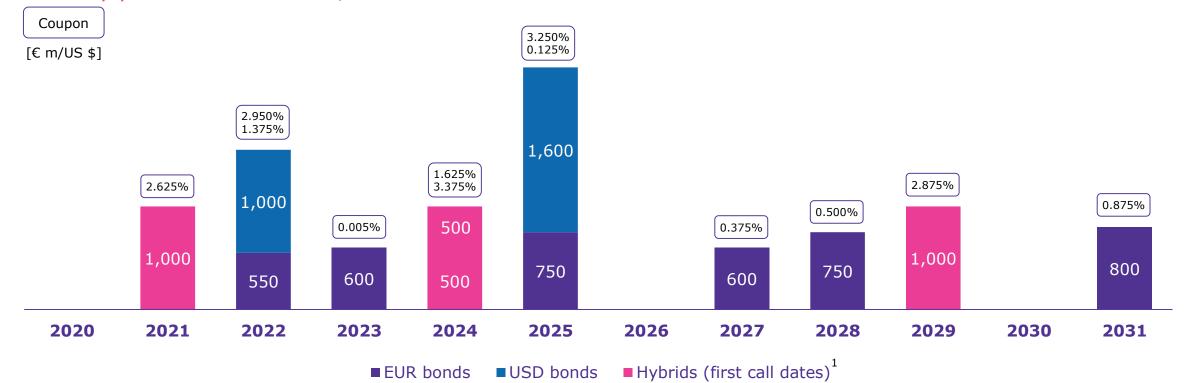
Additional financial guidance 2020

Further financial details

Corporate & Other EBITDA pre	slightly lower than last year
Interest result	~ -280 to -310 m
Effective tax rate	~24% to 26%
Capex on PPE	~1.1 bn to 1.2 bn
Hedging/USD assumption	FY 2020 hedge ratio ~65% at EUR/USD ~1.16
2020 Ø EUR/USD assumption	~1.09 to 1.13



Maturity profile reflects Sigma-Aldrich and Versum financing transactions



Maturity profile as of June 30, 2020

Balanced maturity profile in upcoming years avoids refinancing risks; Merck KGaA, Darmstadt, Germany will become a more frequent issuer

> 1 - No decision on call rights taken yet Totals may not add up due to rounding

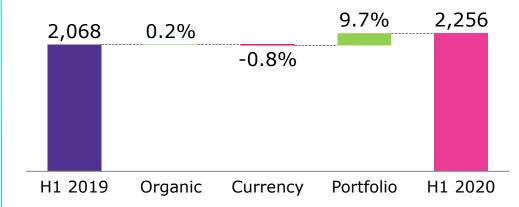


A strong Q1 and double-digit Q2 growth in Process Solutions and Semiconductor Solutions allow for overall organic growth in H1

H1 YoY Net Sales	Organic	Currency	Portfolio	Total
Healthcare	3.2%	-1.4%	-0.5%	1.3%
Life Science	5.9%	0.2%	0.0%	6.2%
Performance Materials	-9.5%	2.1%	51.1%	43.7%
Group	2.4%	-0.2%	7.7%	10.0%

- Healthcare growing organically in H1 on the basis of a strong Q1 supported by resilient Oncology and General Medicine portfolio in Q2, overall June visibly stronger than May and April
- Accelerating Process Solutions growth is overcompensating flat Applied Solutions and declining Research Solutions where demand was impacted by COVID-19 related lockdowns
- Semiconductor Solutions organic growth accelerated from Q1 to Q2 – however, COVID-19 impact on Display and Surface Solutions results in overall organic decline

H1 YoY EBITDA pre



- EBITDA pre growing slower than sales organically, largely due to non-recurring Healthcare income (~ €185 m higher in H1 2019)
- Margin accretive Versum portfolio effect
- FX tailwinds from U.S. and Taiwan dollar did not fully offset currency headwinds from some emerging markets



H1 2020: Overview

Key figures

H1 2019	H1 2020	Δ
7,717	8,489	10.0%
2,068	2,256	9.1%
26.8%	26.6%	-0.2pp
2.67	2.80	4.9%
1,235	1,019	-17.5%
Dec. 31, 2019	June 30, 2020	Δ
12,363	12,560	1.6%
3,944	4,474	13.4%
	7,717 2,068 26.8% 2.67 1,235 Dec. 31, 2019 12,363	7,7178,4892,0682,25626.8%26.6%2.672.801,2351,019Dec. 31, 2019June 30, 202012,36312,560

- A strong Q1, Versum portfolio effect and accelerating growth in Process and Semiconductor Solutions drive sales above last year, despite materializing COVID-19 impact in Q2
- EBITDA pre growing despite lower nonrecurring income components and fixed cost under-absorption due to lower sales amid COVID-19 impact
- EPS pre growing slower than EBITDA pre driven by a lower financial result
- Lower operating cash flow driven foremost by GSK upfront payment in 2019 and higher working capital in 2020



Reported figures

Reported results

[€m]	H1 2019	H1 2020	Δ
EBIT	997	1,207	21.0%
Financial result	-174	-201	15.6%
Profit before tax	824	1,006	22.2%
Income tax	-203	-259	27.5%
<i>Effective tax rate (%)</i>	24.7%	25.8%	1.1pp
Net income	659	746	13.1%
EPS (€)	1.52	1.72	13.2%

- EBIT increase driven by Versum portfolio effect and Life Science growth, partially offset by lower nonrecurring income, higher depreciation & amortization from Versum PPA and impairments in Performance Materials
- Financial result impacted by LTIP and higher interest expenses related to Versum financing
- Effective tax rate within guidance range of ~24-26%
- Higher net income and EPS reflect higher EBIT

Healthcare: Organic Growth in H1 based on a strong Q1 and a portfolio that showed resilience in the COVID-19 pandemic

Net sales hridge

			Net Sales Dift	iye
[€m]	H1 2019	H1 2020	€3,158 m	3.2%
Net sales	3,158	3,200		
Marketing and selling	-1,150	-832		
Administration	-172	-160	H1 2019	Organic
Research and development	-775	-783	EBITDA pre b	ridge
EBIT	473	692	€860 m	
EBITDA	852	860		-0.1%
EBITDA pre	860	846		
Margin (in % of net sales)	27.2%	26.4%	H1 2019	Organic

Healthcare P&I

С	h	nn	n۵	n	۲c
				11	LS

- Mavenclad[®] growth versus H1 2019, especially in U.S.; however declining sequentially due to COVID-19; recovery of ramp-up starting in June; Rebif[®] returning to underlying trajectory
- of a majority of clinics
- Erbitux[®] growing organically slightly; Bavencio[®] growing strongly versus
 EBITDA pre declining faster than sales, driven largely by tough comps last year, but sequentially impacted by COVID-19
- M&S decrease due to rigorous cost management, further supported by suspension of face-to-face activities during COVID-19 pandemic versus elevated H1 2019 by now expired amortization of Rebif[®]

-1.4%

Currency

-2.0%

Currency

-0.5%

Portfolio

0.6%

Portfolio

- Fertility heavily impacted across all regions due to temporary shutdown
 R&D cost control offset by Bavencio[®] H&N study termination accrual (-€15 m)
 - from Peg-Pal and Bavencio® milestones in Q2 2019



€3,200 m

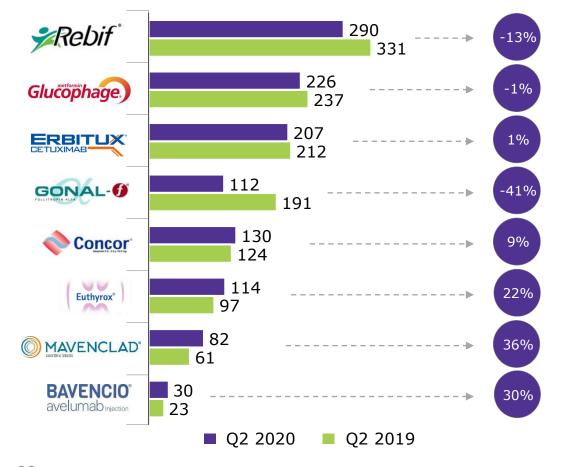
H1 2020

€846 m

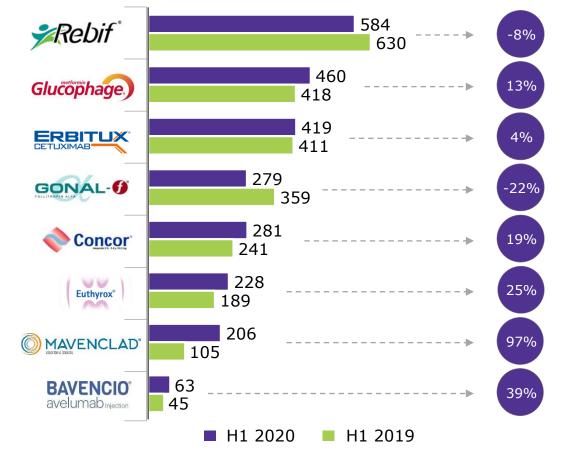
H1 2020

Healthcare organic growth by franchise/product

Q2 2020 organic sales growth [%] by key product [€m]

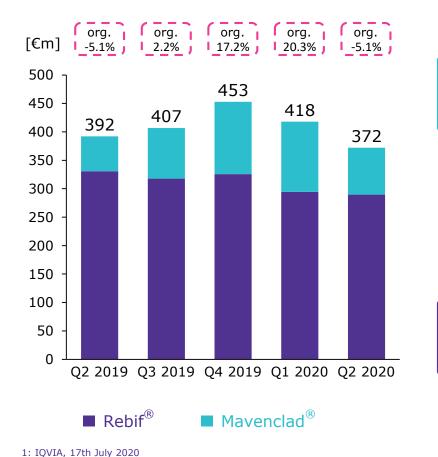


H1 2020 organic sales growth [%] by key product [€m]

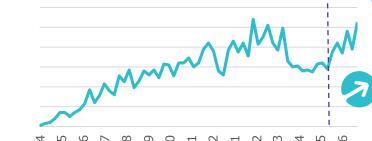


Neurology & Immunology: 7% organic growth in H1; paused Mavenclad[®] ramp-up showing signs of recovery in June

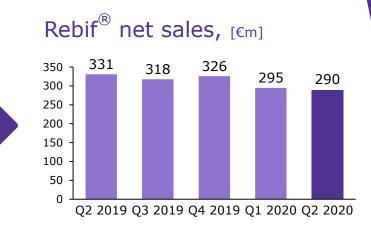
Sales development NDI, [€m]



Mavenclad[®] TRx, [IQVIA, NPA, Weekly View]







- Mavenclad[®] recovery of ramp-up from peak COVID impact visible starting in June
- Rx volumes improving from peak COVID impact
- Mavenclad[®] continuing to gain market share, 6.7% in High Efficacy dynamic class and 9.7% in Oral dynamic class (July)¹

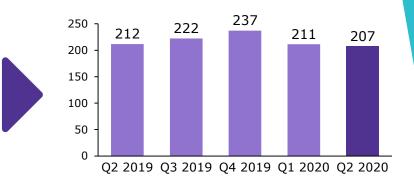
- Rebif[®] sales of €290 m in Q2 '20 are returning to the anticipated underlying trajectory
- Stronger sequential decline vs. an elevated Q1 2020 due to U.S. inventory effects, and Russia tender phasing

Oncology: both Bavencio[®] and Erbitux[®] remain resilient despite impact from the COVID-19 pandemic



Sales development Oncology, [€m]





Bavencio[®] net sales, [€m]

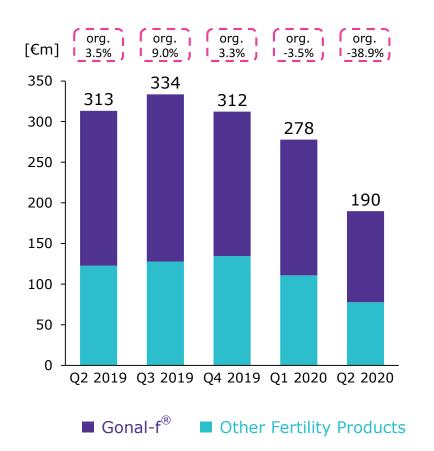


Absolute sales of €207 m reflect a resilient growth of 1.1% in Q2

 Strong organic H1 growth of 23% in Latin America and moderate H1 growth of 3% in Europe despite COVID-19 was further supported by 3% H1 growth in MEA

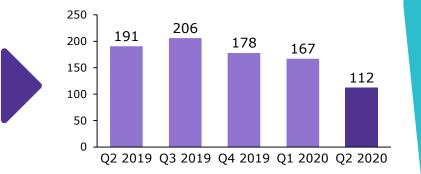
> Bavencio[®] growing 30%; sequential ramp up momentum versus Q1 2020 impacted; largest opportunity will emerge in H1 2020 in UC 1L

Fertility: Strongest COVID-19 impact particularly in Europe and the U.S. given short treatment duration and temporary clinic shutdowns

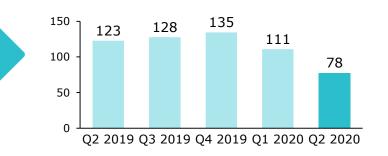


Sales development Fertility, [€m]





Other Fertility net sales, [€m]



Entire Fertility portfolio shows significant organic decline of -39% primarily from COVID-19 related temporary shutdowns of clinics combined with an innately short duration of treatment

- COVID-19 triggering 51% sales decline in Europe as clinics shut down due to the discretionary nature of the treatment
- Milder decline of 31% in APAC shows correlation with pandemic course, as China & others ahead of developments in Europe and U.S.

General Medicine & Endocrinology: Growing organically overall despite COVID-19 impact in Q2 and a negative effect from Q1 pull-in

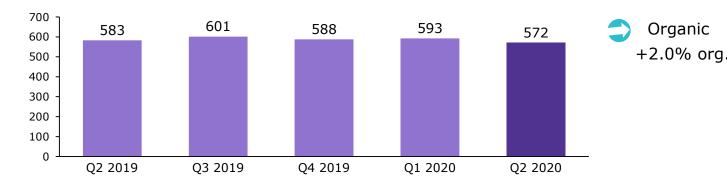
Endocrinology [€m] Organic 99 95 91 -5.4% org. 90 100 83 80 60 40 20 0 Q2 2019 Q3 2019 Q4 2019 Q1 2020 Q2 2020

Q2 2020 organic drivers

 Endocrinology was impacted in the U.S. and to a minor extent in Europe amid COVID-19 pandemic, while stable to growing in other regions



Sales evolution



 While Glucophage[®] had a minor negative impact from the Q1 pull-in, Concor[®] saw ongoing strong demand globally, despite a VBP effect in China; leading to 2% growth overall for CardioMetabolic Care & General Medicine and Others

Merck KGaA

Darmstadt, Germany

China's VBP: Recently announced round 3 includes metformin, as anticipated, with implementation expected to follow in Q4 2020



Round 1		Round 2		Round 3		
	2019		20	020		2021
4 municipali cities in oth June/ expans	7 pilot initiated in ities ¹ and 7 key er provinces ² (July: Provincial sion to Fujian & provinces September: remaining 25 provinces added to "4+7"	Decembe announcer (incl. Conc	nent of Round 2 for [®]) As of April: Gradual implementation of Round 2, 2 winners granted exclusive access to 60% of total hospital market ³ , non- winners (incl. Concor) retain access to remaining 40% of hospital market at a gradient	July: Official and Round 3 (incl. Me XR), tender para winners granted hospital market ³ manufacturers re comply with NMP NDMA testing	etformin IR and meters: up to 8 up to 80% of , all equested to PA guidance on August: Biddin gradual implen	
	tained confid e business		price cut ⁴ + can freely compete in non-hospital/ retail market at least stable 22		to grow >: ✓ "up to" 8 only a gu ✓ Non-hospit	market: Chinese metformin market 10% p.a. over the next 5 years 0% access and up to 8 winners idance, to be finalized post-bidding tal/retail market not subjected to

^{1:} Beijing, Shanghai, Chongqing, Tianjin; 2: together encompasses ~1/3 of Chinese drug market; 3: hospital market for bisoprolol and metformin makes up ~70% of total market, this includes urban hospitals, rural hospitals, and community health centers; 4: Concor® price cut in the high single digit %; Acronyms: NMPA = National Medical Products Administration, NDMA = Nnitrosodimethylamine/ also known as nitrosamine, VBP = Volume-Based Procurement

gradient price cut

bidding strategy

✓ Company following a **carefully crafted**

Healthcare Pipeline

July 31, 2020

Phase I

berzosertib (M6620) ATR inhibitor Solid tumors

peposertib (M3814) DNA-PK inhibitor Solid tumors¹

M1774 ATR inhibitor Solid tumors

M3258 LMP7 inhibitor Multiple myeloma

M4344 ATR inhibitor Solid tumors

M8891 MetAP2 inhibitor Solid tumors bintrafusp alfa TGFbeta trap/anti-PD-L1 Solid tumors

M9241 (NHS-IL12) Cancer immunotherapy Solid tumors¹

M5049 TLR7/8 antagonist Immunology

M6495 anti-ADAMTS-5 nanobody Osteoarthritis

M5717 PeEF2 inhibitor Malaria

Phase II

peposertib (M3814) DNA-PK inhibitor Rectal cancer

tepotinib MET kinase inhibitor Non-small cell lung cancer

bintrafusp alfa TGFbeta trap/anti-PD-L1 Non-small cell lung cancer 1L

bintrafusp alfa TGFbeta trap/anti-PD-L1 Non-small cell lung cancer 1L/2L

bintrafusp alfa TGFbeta trap/anti-PD-L1 Locally advanced non-small cell lung cancer

bintrafusp alfa TGFbeta trap/anti-PD-L1 Biliary tract cancer 1L

bintrafusp alfa TGFbeta trap/anti-PD-L1 Biliary tract cancer 2L

bintrafusp alfa TGFbeta trap/anti-PD-L1 Cervical cancer 2L avelumab anti-PD-L1 mAb Solid tumors²

avelumab anti-PD-L1 mAb Non-small cell lung cancer²

avelumab anti-PD-L1 mAb Urothelial cancer²

M5049 TLR7/8 antagonist Covid-19 pneumonia atacicept anti-BlyS/APRIL fusion protein Systemic lupus erythematosus

atacicept anti-BlyS/APRIL fusion protein IgA nephropathy

sprifermin fibroblast growth factor 18 Osteoarthritis

M1095 (ALX-0761)³ anti-IL-17 A/F nanobody Psoriasis Phase III

avelumab anti-PD-L1 mAb Non-small cell lung cancer 1L

evobrutinib BTK inhibitor Multiple sclerosis

Registration

tepotinib MET kinase inhibitor Non-small cell lung cancer, METex14 skipping⁴

avelumab anti-PD-L1 mAb Urothelial cancer 1L-M⁵

- OncologyImmuno-OncologyImmunology
- Neurology
- Global Health

1L, first-line treatment; 1L-M, first-line maintenance treatment; 2L, second-line treatment.

¹ Includes studies in combination with avelumab. ² Avelumab combination studies with talazoparib, axitinib, ALK inhibitors, cetuximab, or chemotherapy. ³ As announced on March 30 2017, in an agreement with Avillion, anti-IL-17 A/F nanobody will be developed by Avillion for plaque psoriasis and commercialized by Merck KGaA, Darmstadt, Germany. ⁴ As announced on March 25 2020, tepotinib was approved in Japan for the treatment of patients with non-small cell lung cancer harboring *MET*ex14 skipping. ⁵ As announced on June 30, 2020, Avelumab was approved in US for maintenance treatment of patients with locally advanced or metastatic urothelial carcinoma (UC) that has not progressed with first-line platinum-containing chemotherapy.

Pipeline products are under clinical investigation and have not been proven to be safe and effective. There is no guarantee any product will be approved in the sought-after indication.

Healthcare catalysts - significant developmental progress across all therapeutic areas

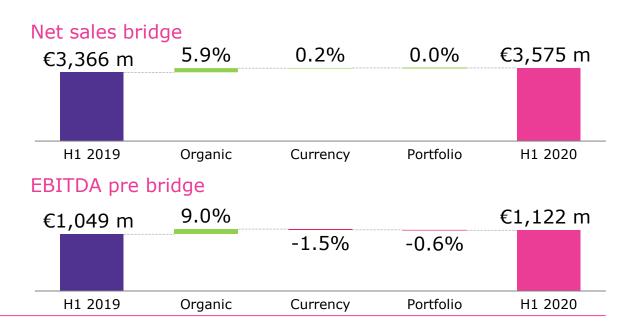
Q2 2020	H2 2020 (R&D Update Call: September 25)	H1 2021
Tepotinib (c-Met-inhibitor)		
METex14: U.S. filing on track under RTOR (BTD granted in 2019)		
	Bavencio [®] (Avelumab/Anti-PD-L1)	
1L UC: U.S. FDA approval on June 30, EMA validation of filing on June 22, & acceptance of supplemental new drug application by the Japanese MHLW	 1L UC: Subgroup analyses to be presented at ESMO (September 19) 1L RCC: NICE recommendation published on July 31 	 1L UC: Expected regulatory feedback from EMA and Japanese MHLW 1L NSCLC: Expected in-house availability of Ph III data
	Bintrafusp alfa (Ar	nti-PD-L1/TGF-ß-Trap)
Evobrutinib (BTK-inhibitor)	tumors (Ph I, bintrafusp alfa + M6	NSCLC: 2L UC (Ph Ib, monotherapy), solid 5223 (TIGIT inhibitor)), 2L TNBC (Ph II, cently posted on ct.gov
RMS: Recruitment initiation (Ph III) 🗸		2L BTC: Expected data read-out
M5049 (TLR7/8	antagonist)	Oncology Neurology
Initiation of trial for severe symptoms of Covid-19 infection (Ph II)	Results from Ph II expected by end of 2020	Immuno-Oncology Immunology

Acronyms: BTC = Biliary Tract Cancer, BTD = Breakthrough Therapy Designation, EMA = European Medicines Agency, FDA = U.S. Food and Drug Administration, MHLW = Ministry of Health, Labour and Welfare, NEJM = New England Journal of Medicine, NICE = UK National Institute for Health and Care Excellence, NSCLC = Non-Small Cell Lung Cancer, RMS = Relapsing Multiple Sclerosis, RTOR = Real-Time Oncology Review, TGIT = T cell immunoreceptor with Ig and ITIM domains, TNBC = Triple Negative Breast Cancer, UC = Urothelial Cancer

Life Science: Strong resilience throughout H1; Process growing double-digit, Applied & Research impacted by COVID-19 but recovery visible in June

Life Science P&L

[€m]	H1 2019	H1 2020
Net sales	3,366	3,575
Marketing and selling	-959	-986
Administration	-156	-189
Research and development	-131	-151
EBIT	635	731
EBITDA	1,025	1,126
EBITDA pre	1,049	1,122
Margin (in % of net sales)	31.2%	31.4%



- Double-digit organic growth of Process Solutions mainly driven by downstream and single use, with COVID-19 demand contributing
- Applied Solutions about stable due to COVID-19 related effects across the full portfolio, albeit clear signs of recovery in June
- Research Solutions impacted significantly mainly due to temporary slowdown in academia from COVID-19 related lab closures, also showing clear signs of recovery in June
- Higher M&S largely from increased freight costs, partially offset by overall cost-consciousness and lower travel expenses
- Admin increase driven largely by EBITDA pre adjustments (€21 m) and COVID-19 related cost for additional safety precautions
 - Increased R&D driven by investments in strategic projects
 - EBITDA pre growing faster than sales, reflecting operational leverage from strong top-line growth



Performance Materials: Versum portfolio effect and accelerating organic Semi growth compensate declining Display and Surface amid COVID-19

Performance Materials P&L

[€m]	H1 2019	H1 2020
Net sales	1,193	1,714
Marketing and selling	-132	-270
Administration	-49	-83
Research and development	-146	-140
EBIT	195	86
EBITDA	318	470
EBITDA pre	383	524
Margin (in % of net sales)	32.1%	30.6%

Net sales bridge €1,714 m 51.1% €1,193 m 2.1% -9.5% H1 2019 H1 2020 Organic Currency Portfolio EBITDA pre bridge €524 m 51.9% €383 m 4.1% -19.2% H1 2019 Organic Currency Portfolio H1 2020

Comments

- Sales growth of 44% reflects portfolio effect from Versum and positive FX, overcompensating organic decline in Display and Surface
- Semiconductor Solutions further accelerating strong organic growth, cyclical recovery started and outperformance continues
- Display Solutions: COVID-19 weighs on LC's negative underlying trajectory against still elevated comps in H1 2019; OLED also impacted
- Surface Solutions declining significantly driven by a heavy COVID-19 impact on automotive and cosmetic end markets

- M&S reflects consolidation of Versum acquisition and diligent underlying cost management as part of the Bright Future transformation
- R&D declining from an elevated H1 2019 base including Bright Future provisions (EBITDA pre adjustments); H1 2020 includes Versum consolidation and shows underlying Bright Future cost management
- Increase in EBITDA pre largely reflects consolidation effect from Versum, while EBIT lower due to sales impact in Display and Surface from COVID-19, higher D&A from Versum PPA and impairments



42 Merck KGaA, Darmstadt, Germany Q2 20 Results Presentation | August 6th, 2020

Cash flow statement

H1 2020 – cash flow statement

[€m]	H1 2019	H1 2020	Δ
Profit after tax	660	747	87
D&A	927	991	64
Changes in provisions	54	-38	-92
Changes in other assets/liabilities	-115	-189	-74
Other operating activities	-55	-24	31
Changes in working capital	-236	-468	-232
Operating cash flow	1,235	1,019	-216
Investing cash flow	-1,199	-504	695
thereof Capex on PPE	-367	-532	-164
Financing cash flow	1,241	239	-1,001

Cash flow drivers

- Profit after tax driven by higher EBIT
- Higher Depreciation & Amortization from Versum PPA and impairments in PM
- Changes in provisions reflect reduced litigation provisions and fluctuations in LTIP*
- Changes in other assets and liabilities primarily driven by a GSK upfront payment in H1 2019 that was deferred
- Increased working capital driven by Versum consolidation, higher inventories to secure supply in the face of COVID-19 and growing receivables
- Investing and Financing cash flows returning to normal levels

*Long Term Incentive Plan Totals may not add up due to rounding

Adjustments in Q2 2020

Adjustments in EBIT

[€m]	Q2 2019		Q2 20	020
	Adjustments	thereof D&A	Adjustments	thereof D&A
Healthcare	5	0	15	0
Life Science	15	0	-15	0
Performance Materials	29	0	131	112
Corporate & Other	16	0	8	0
Total	65	0	138	112



Adjustments in H1 2020

Adjustments in EBIT

[€m]	H1 2019		H1 20	020
	Adjustments	thereof D&A	Adjustments	thereof D&A
Healthcare	8	0	-12	2
Life Science	24	0	-4	0
Performance Materials	65	0	165	112
Corporate & Other	44	0	25	0
Total	141	0	174	114



Financial calendar

Date	Event
August 6, 2020	Q2 2020 Earnings release
September 16, 2020	Virtual Capital Markets Day
November 12, 2020	Q3 2020 Earnings release



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