

A photograph of a male scientist with a grey beard and glasses, wearing a white lab coat and blue gloves. He is holding a small vial with a red cap up to the light, examining its contents. In the background, there are various laboratory equipment, including a pipette, bottles, and a fume hood. The scene is brightly lit, typical of a laboratory environment.

# The largest pharmaceutical companies worldwide

Analysis of key financial indicators for fiscal years 2017, 2018 and 2019



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# About the study

- ▶ Sources: Annual reports, company press releases, SEC filings (capital market reports)
- ▶ This study analyzes the pharma revenue of the world's top 20 listed pharmaceutical companies. The second largest German pharmaceutical company and the largest private family-owned pharmaceutical company in the world, Boehringer Ingelheim is the 21st company in the analysis. Non-pharma activities are not considered in the analyses.
- ▶ "Top 10" refers to the first 10 companies by pharma revenue; "bottom 11" refers to the companies ranked 11 to 21 by pharma revenue.
- ▶ EBIT for all companies was calculated based on the adjusted EBITDA figures. All EBIT figures relate to the full business of the companies and not specifically to the pharmaceutical business; this is also applicable to the calculation of EBIT margins.
- ▶ "Blockbuster drugs" are defined as drugs with revenue of over USD 1 b. The same blockbuster drugs were included in the analysis for 2017, 2018, 2019 as in the prior years.

## Companies analyzed

AbbVie Inc	Eli Lilly and Co.	Otsuka Holdings Co., Ltd.
Amgen Inc.	Gilead Sciences Inc.	Pfizer Inc.
Astellas Pharma Inc.	GlaxoSmithKline plc	Roche Holding AG
AstraZeneca plc	Johnson & Johnson	Sanofi SA
Bayer AG	Merck & Co. Inc.	Takeda Pharmaceutical Co. Ltd.
Biogen Inc.	Merck KGaA	
Boehringer Ingelheim GmbH	Novartis AG	
Bristol-Myers Squibb Co.	Novo Nordisk A/S	



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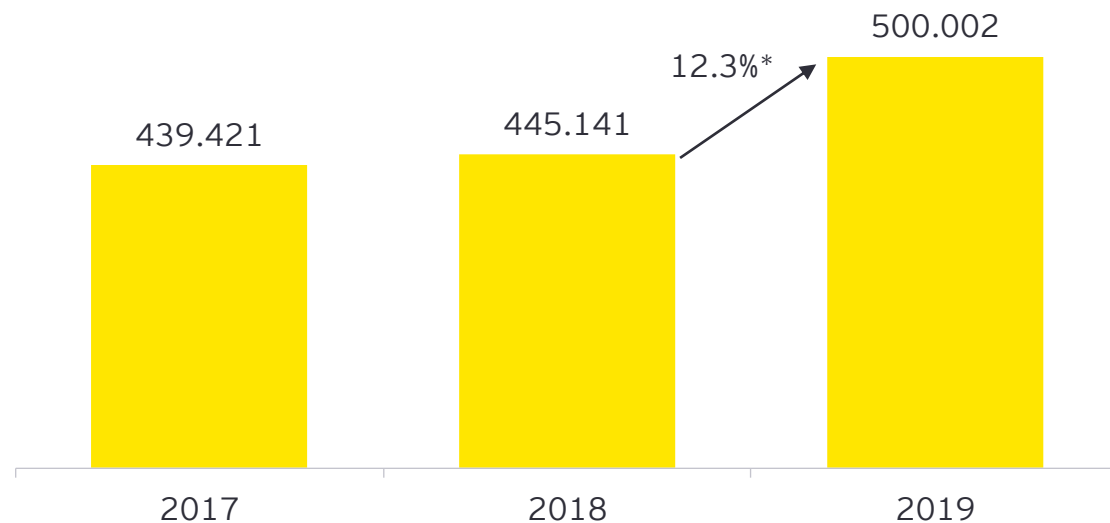
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# Pharma revenue is rising significantly

Organic growth in the industry - acquisitions are contributing to growth

Top 21: Total pharma revenue (in EUR m, at respective XR)



Year-on-year development		
	2018	2019
Revenue growth (Respective XR)	1.3%	12.3%*
Revenue growth (Constant XR)	4.8%	7.8%

## Top 10 versus bottom 11

	Pharma revenue (EUR m) Resp. XR		Growth Resp. XR	
	2018	2019	2018	2019
Top 10	291,052	331,377	3.8%	13.9%**
Bottom 11	154,088	168,625	-3.1%	9.4%

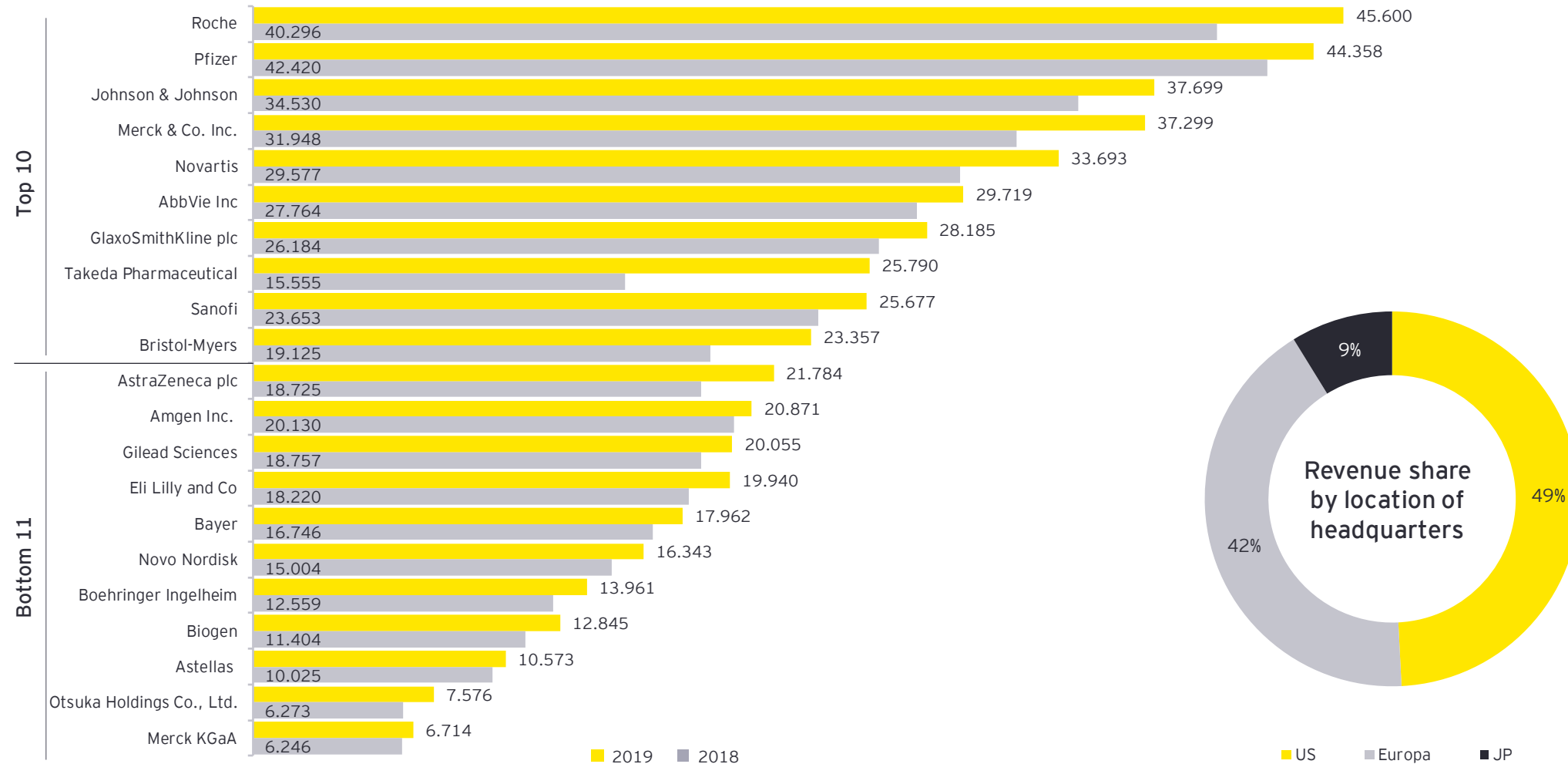
\* 10.1% excluding Takeda's acquisition of Shire

\*\* 10.5% excluding Takeda's acquisition of Shire

# Revenue performance of the top 21 pharmaceutical companies

## Revenue jumps due to new products and acquisitions

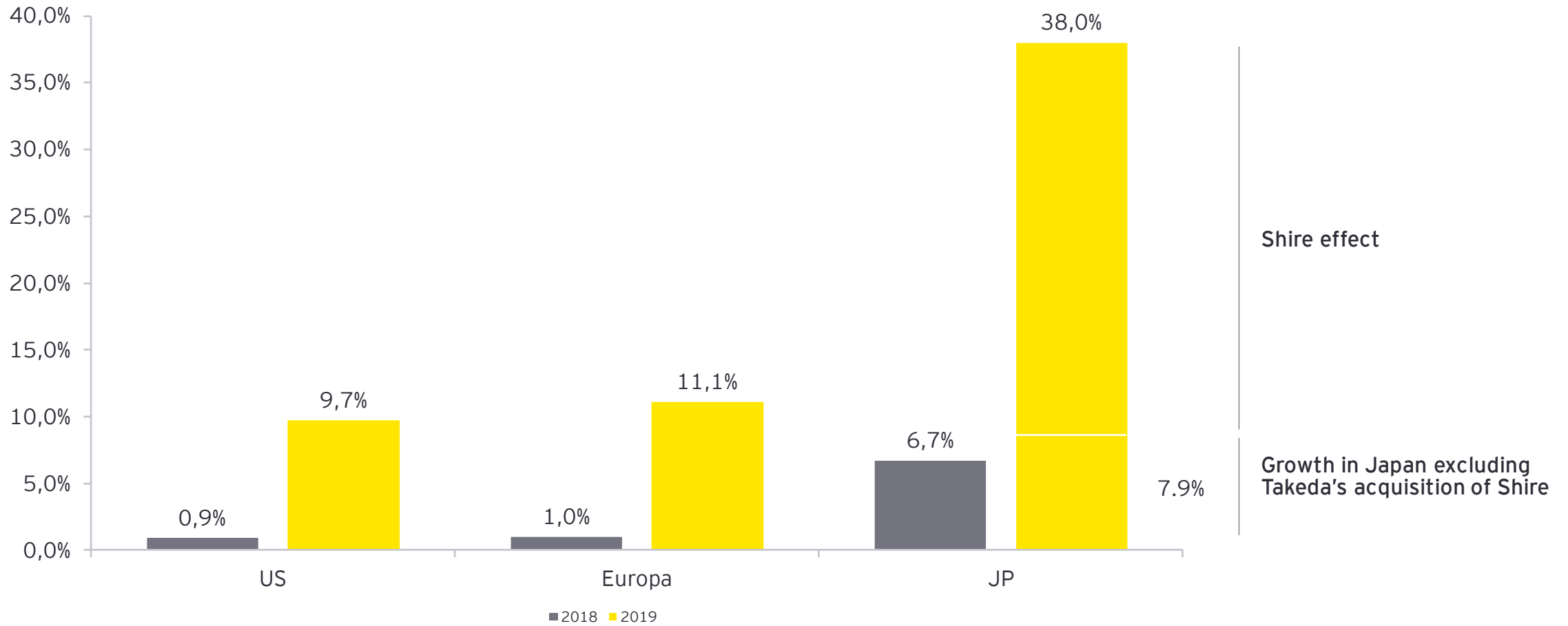
Pharma revenue (in EUR m, at respective XR)



# Revenue growth by region

Strong growth for Japanese companies due to one-time event

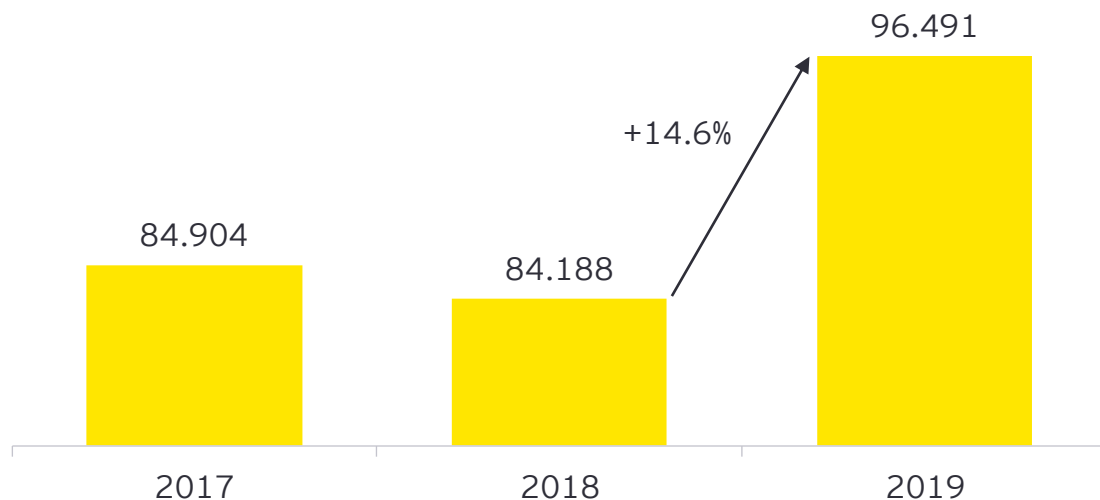
Revenue growth of the top 21 by location of company headquarters



# R&D expenditure is increasing again

Increase distributed broadly across the industry: 16 companies spend more

Top 21: Total R&D expenditure (in EUR m, at respective XR)



Year-on-year development		
	2018	2019
R&D expenditure (respective XR)	-0.8%	14.6%
R&D growth (Constant XR)	2.6%	10.0%

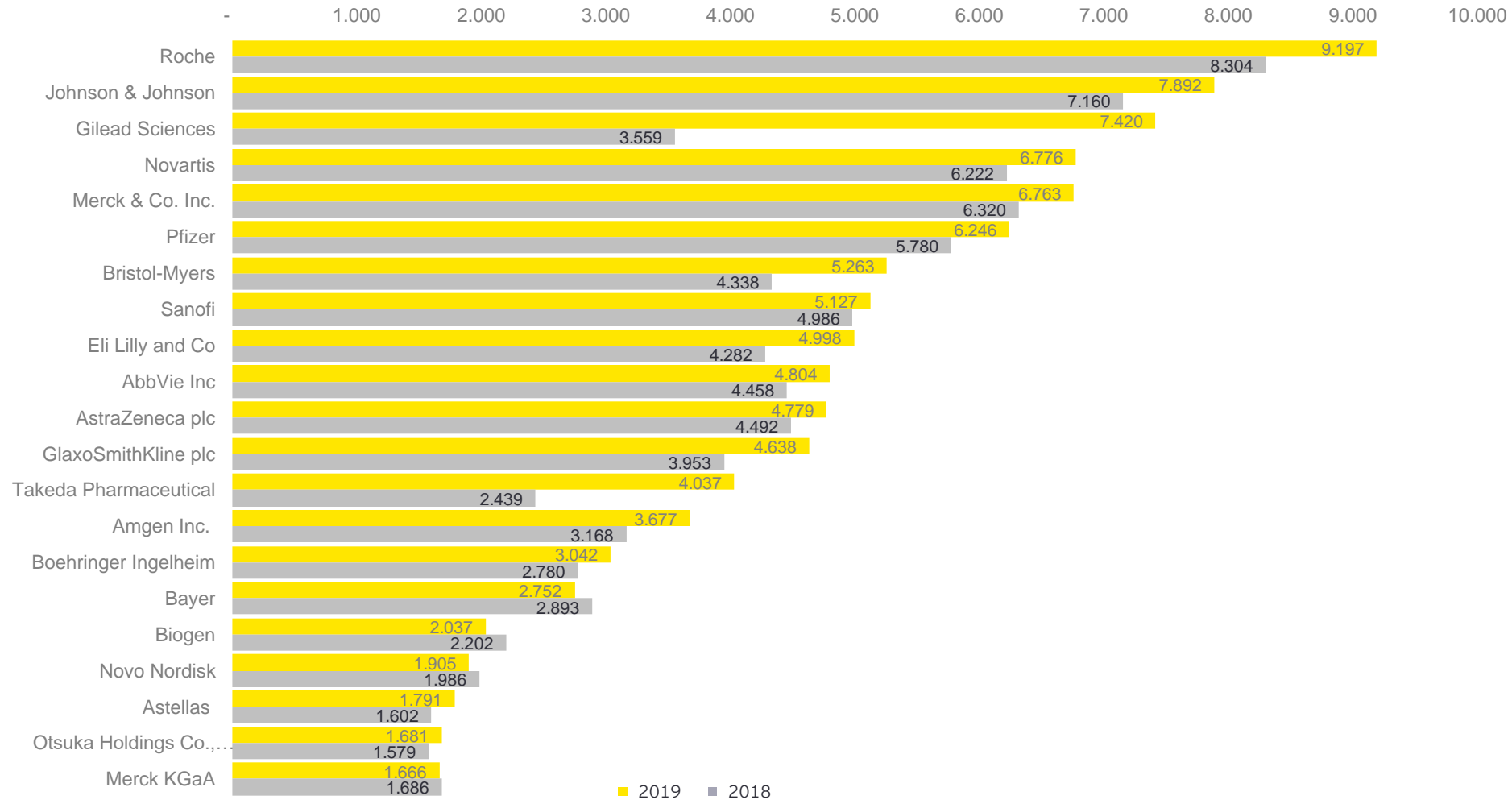
## Top 10 versus bottom 11

	Pharma R&D expenditure (in EUR m) Resp. XR		Growth Resp. XR	
	2018	2019	2018	2019
Top 10	53,959	60,742	-1.8%	12.6%
Bottom 11	30,228	35,749	0.9%	18.3%

# R&D expenditure in detail

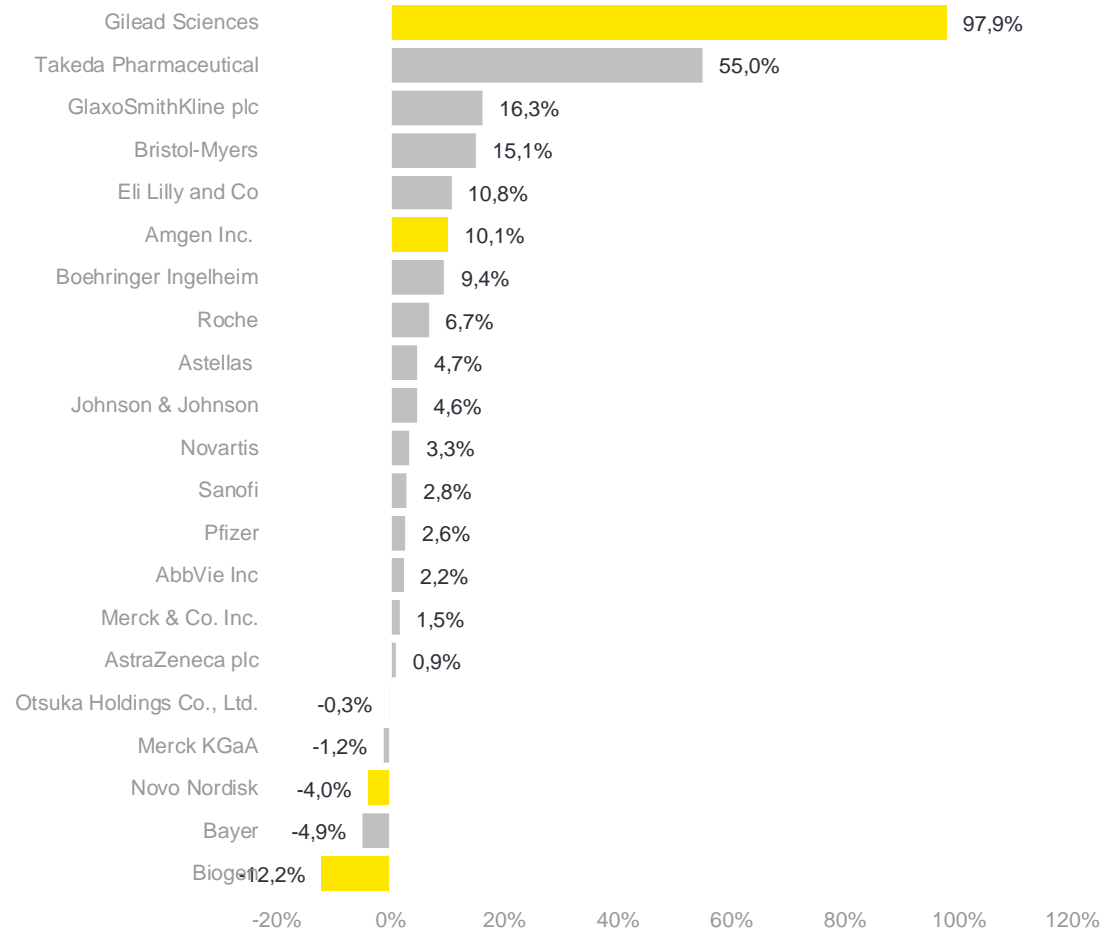
## Sharp rise at innovation leaders and due to acquisitions

Pharma R&D expenditure (in EUR m, respective XR)



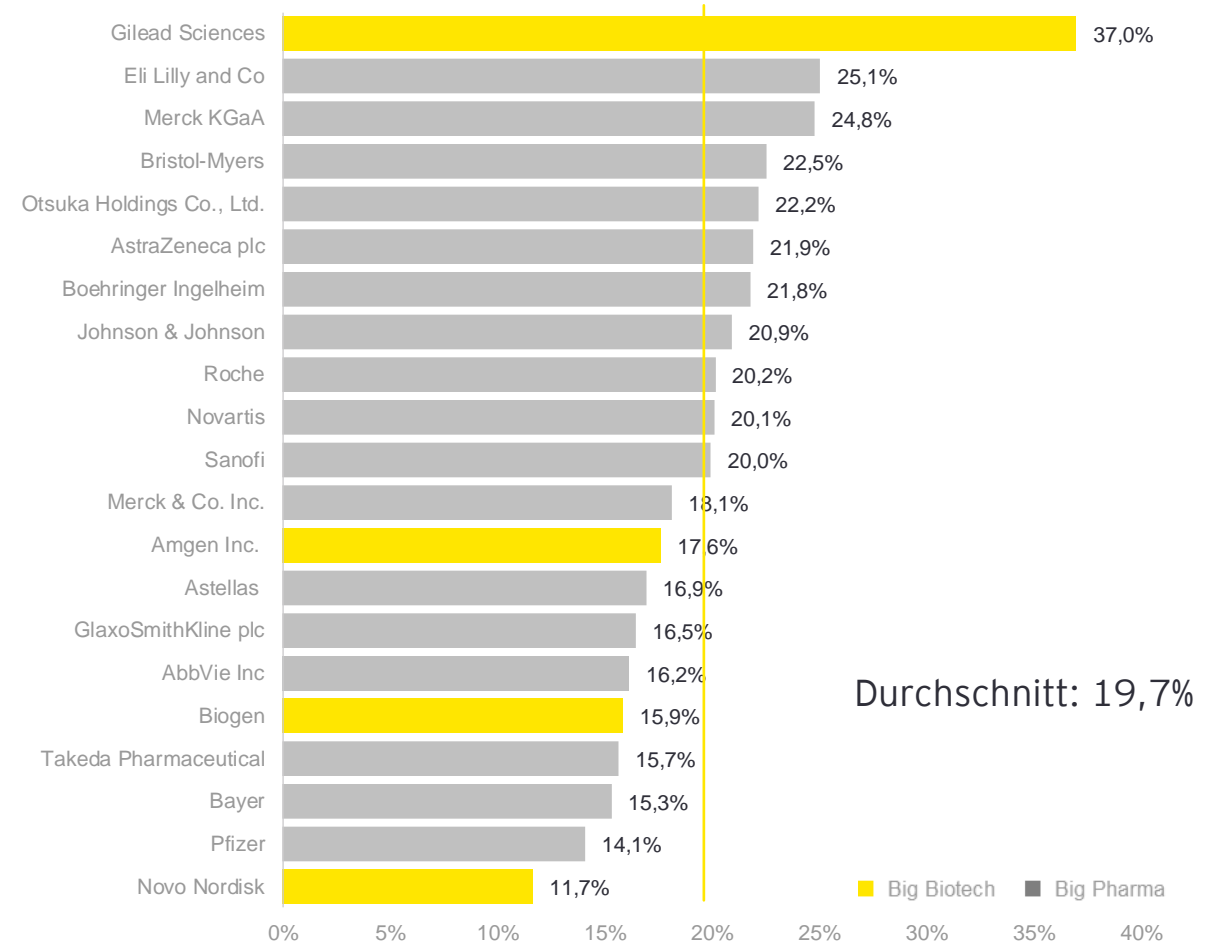
# R&D expenditure in detail

## Pharma R&D growth (in %, constant XR)



Big biotech companies

## Pharma R&D expenditure in relation to revenue (in %)



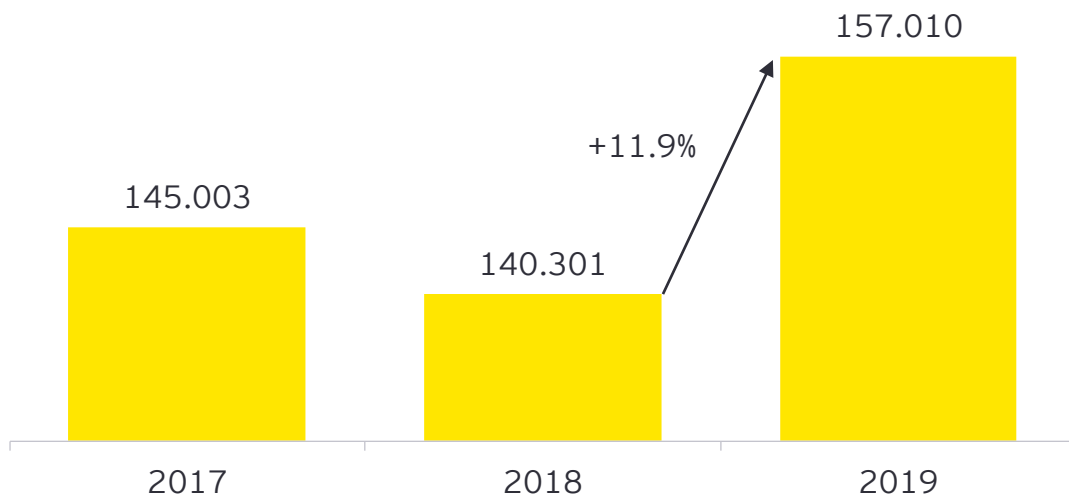
Big Biotech Big Pharma



# EBIT rises again after growth dip

## Bottom 11 companies in particular record big leaps

EBIT (in EUR m, respective XR)



Year-on-year development		
	2018	2019
EBIT growth (respective XR)	-3.2%	11.9%
EBIT growth (constant XR)	0.2%	7.4%

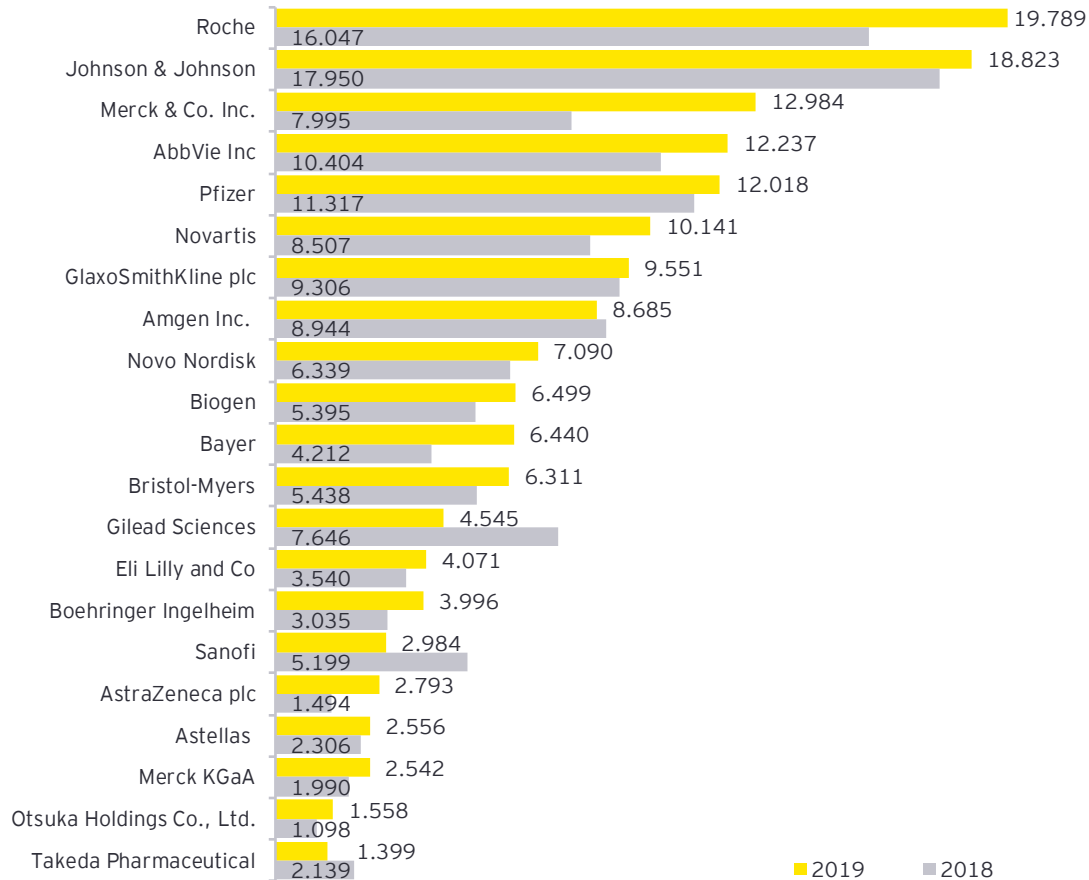
### Top 10 versus bottom 11

	EBIT (in EUR m, respective XR)		Growth Resp. XR	
	2018	2019	2018	2019
Top 10	94,301	106,237	5.5%	12.7%
Bottom 11	46,000	50,774	-17.3%	10.4%

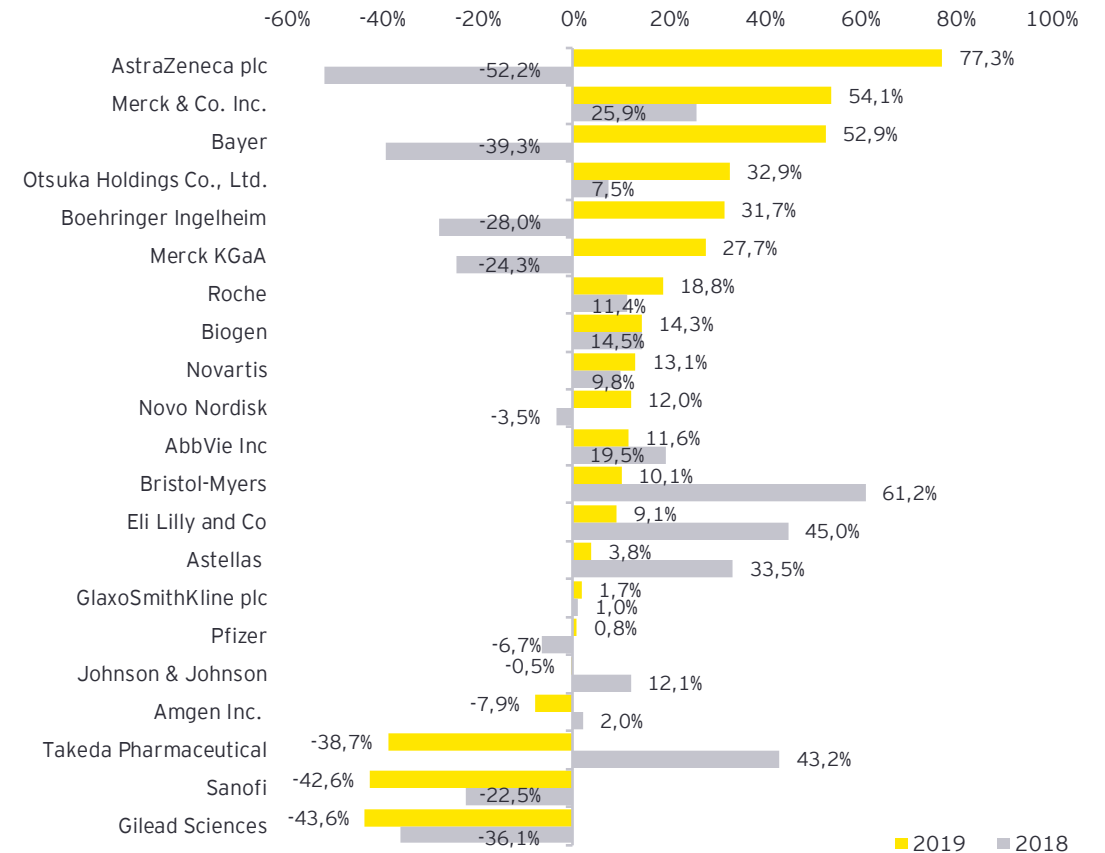
# EBIT in detail

Roche takes top spot - for EBIT as well as revenue and R&D expenditure

EBIT (in EUR m, respective XR)



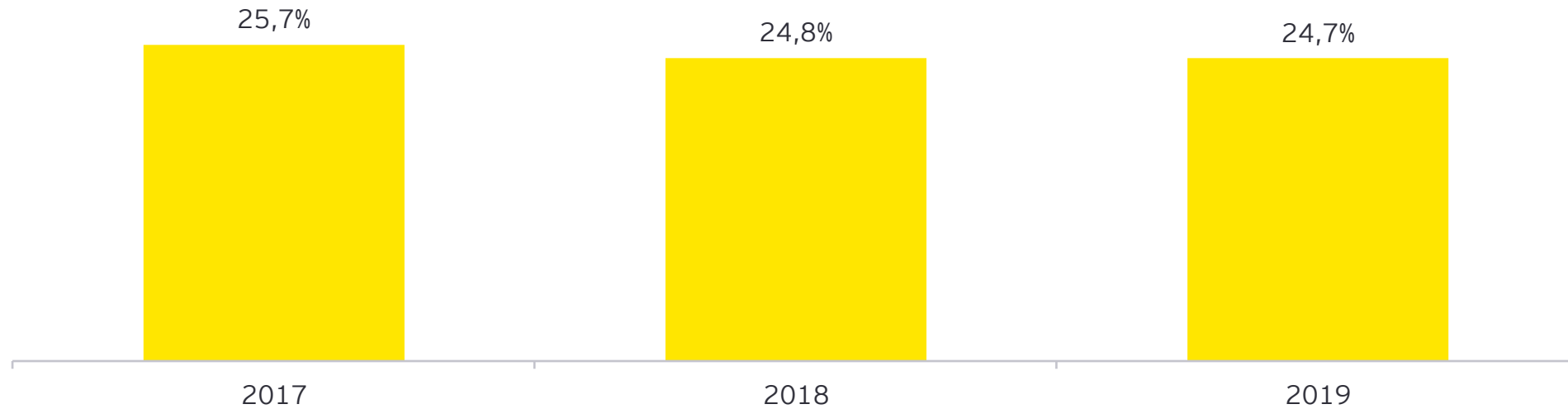
EBIT growth (constant XR)



# EBIT margin stays at prior-year level

Margins at bottom 11 companies higher than for the top 10

Top 21: Total EBIT margin (EBIT/revenue)



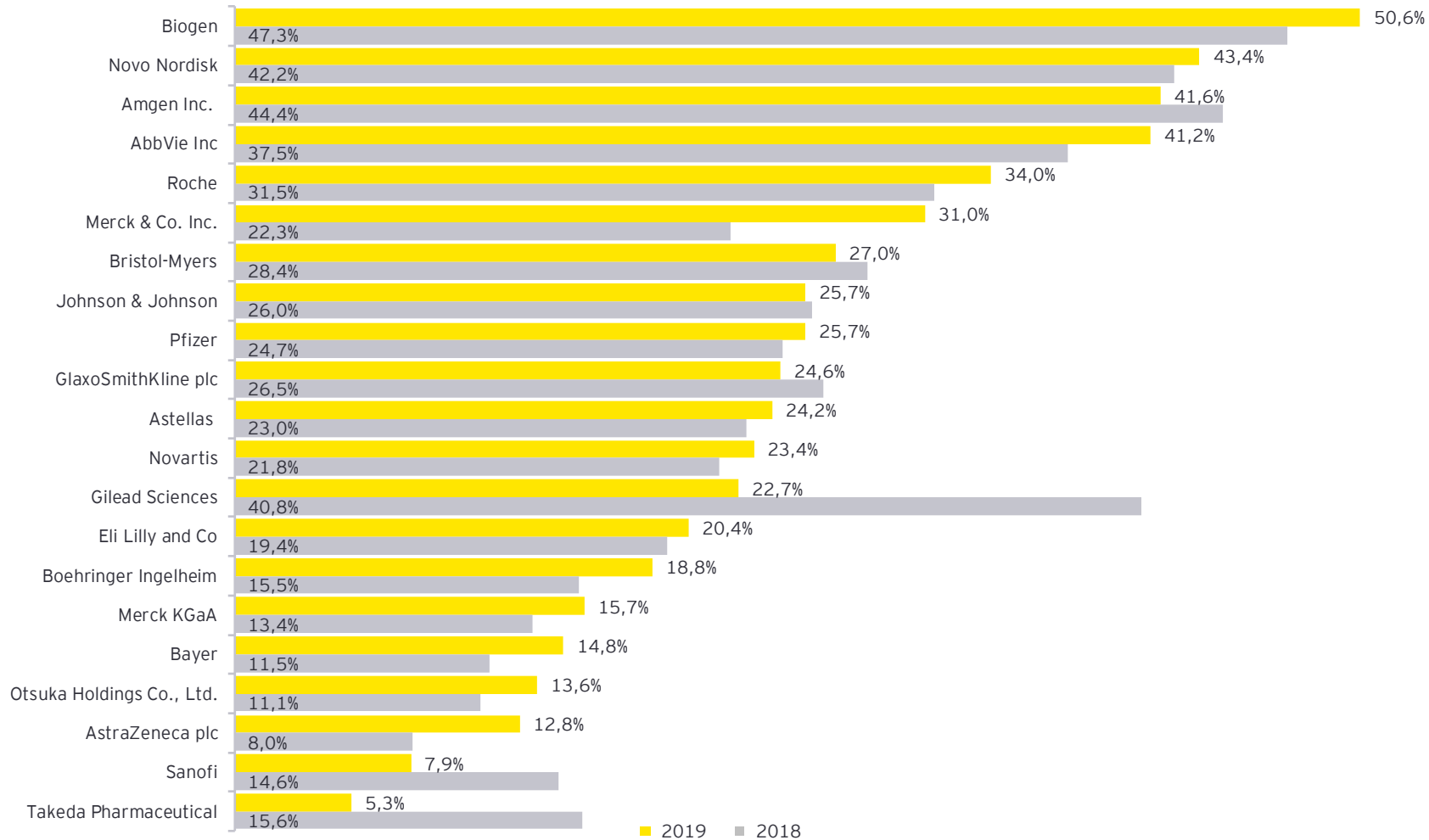
## Top 10 versus bottom 11

	EBIT margin		Growth	
	2018	2019	2018	2019
Top 10	24.2%	24.1%	0.9%	-0.4%
Bottom 11	26.2%	26.1%	-4.5%	-0.4%

# EBIT margin in detail

Big biotechs - except Gilead - continue to lead rankings

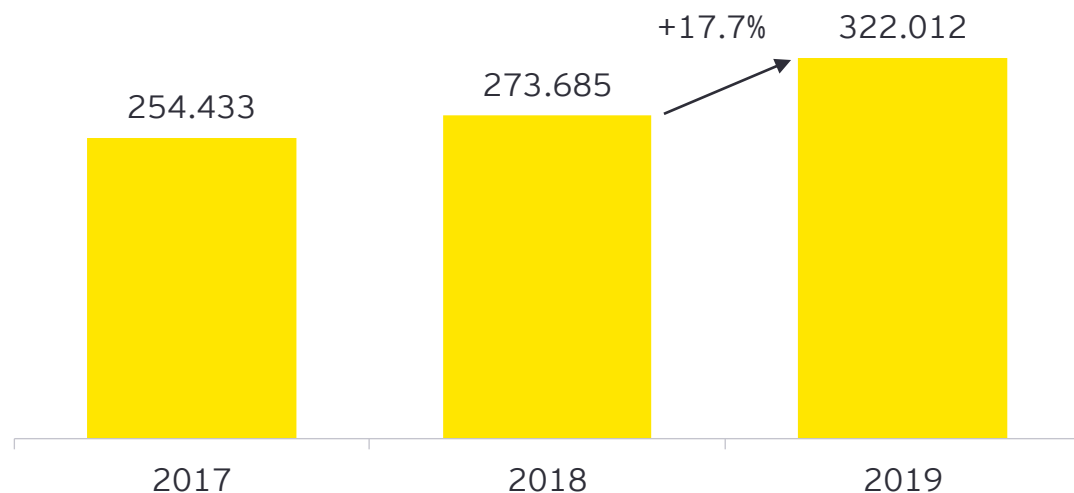
## EBIT margin (EBIT/revenue)



# More strong increases in blockbuster revenue

## Double-digit growth for the whole top 21 group

Top 21: Total blockbuster revenue (in EUR m, respective XR)



Year-on-year development		
	2018	2019
Revenue growth (respective XR)	7.6%	17.7%
Revenue growth (constant XR)	11.5%	12.9%

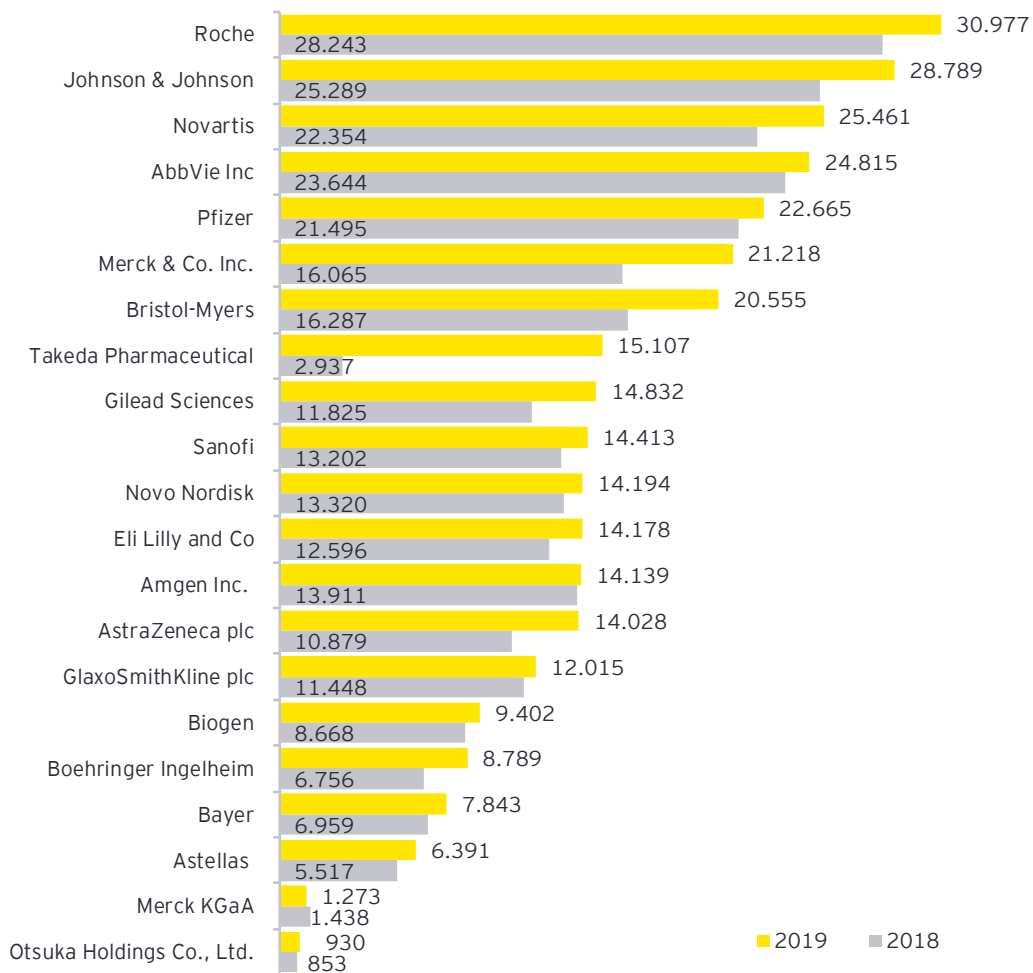
### Top 10 versus bottom 11

	Blockbuster revenue (in EUR m) Resp. XR		Growth Resp. XR	
	2018	2019	2018	2019
Top 10	180,963	216,014	9.2%	19.4%
Bottom 11	92,723	105,997	4.6%	14.3%

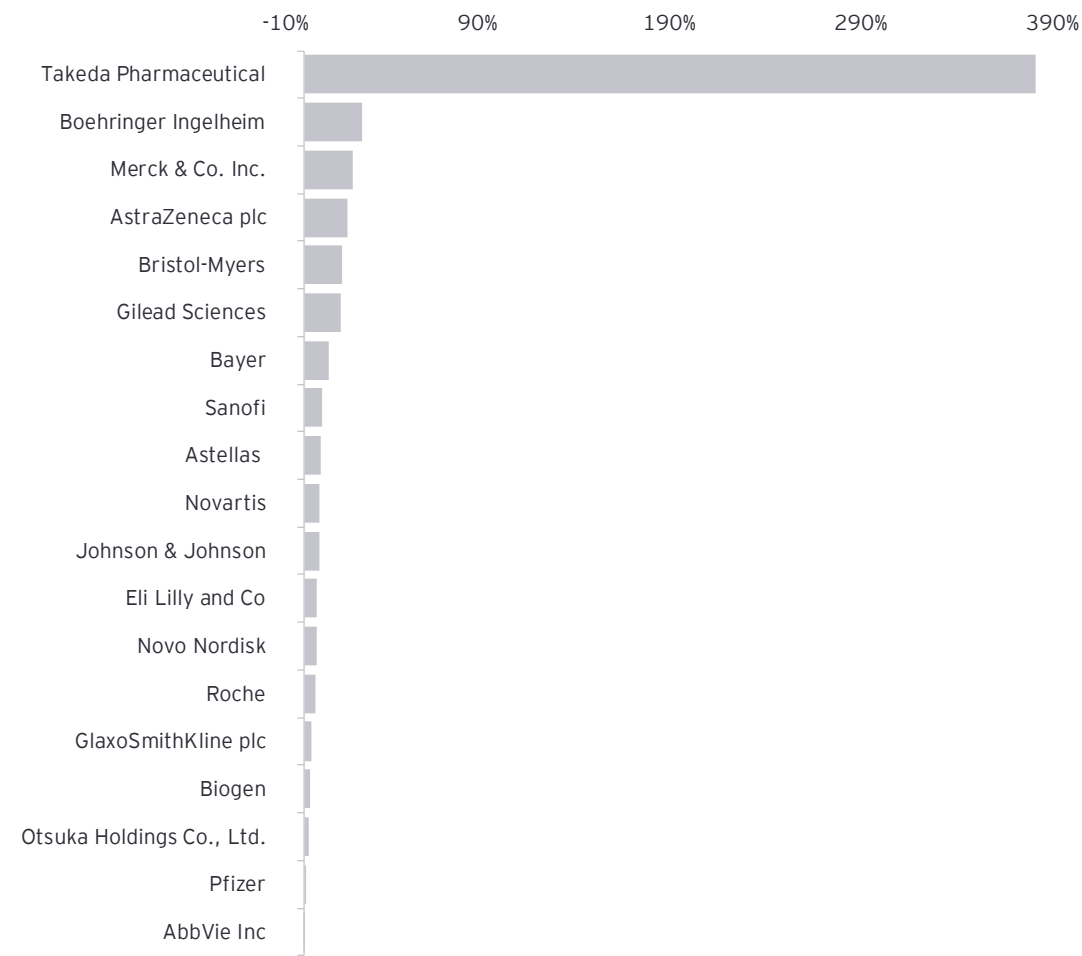
# Blockbuster revenue in detail

## Roche at the top - Takeda records large jump after Shire deal

Blockbuster revenue (in EUR m, constant XR)



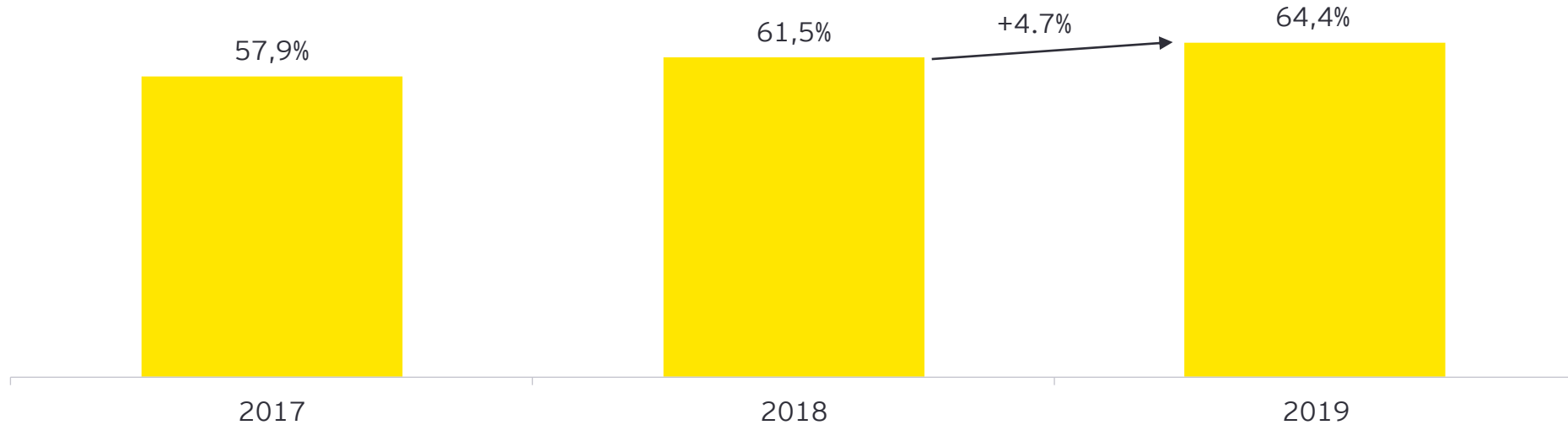
Blockbuster revenue growth 2019 vs. 2018 (constant XR)



# Blockbuster share in total revenue continues to rise

## Despite “personalized medicine,” blockbuster era not yet over

Top 21: Blockbuster revenue as a percentage of total pharma revenue



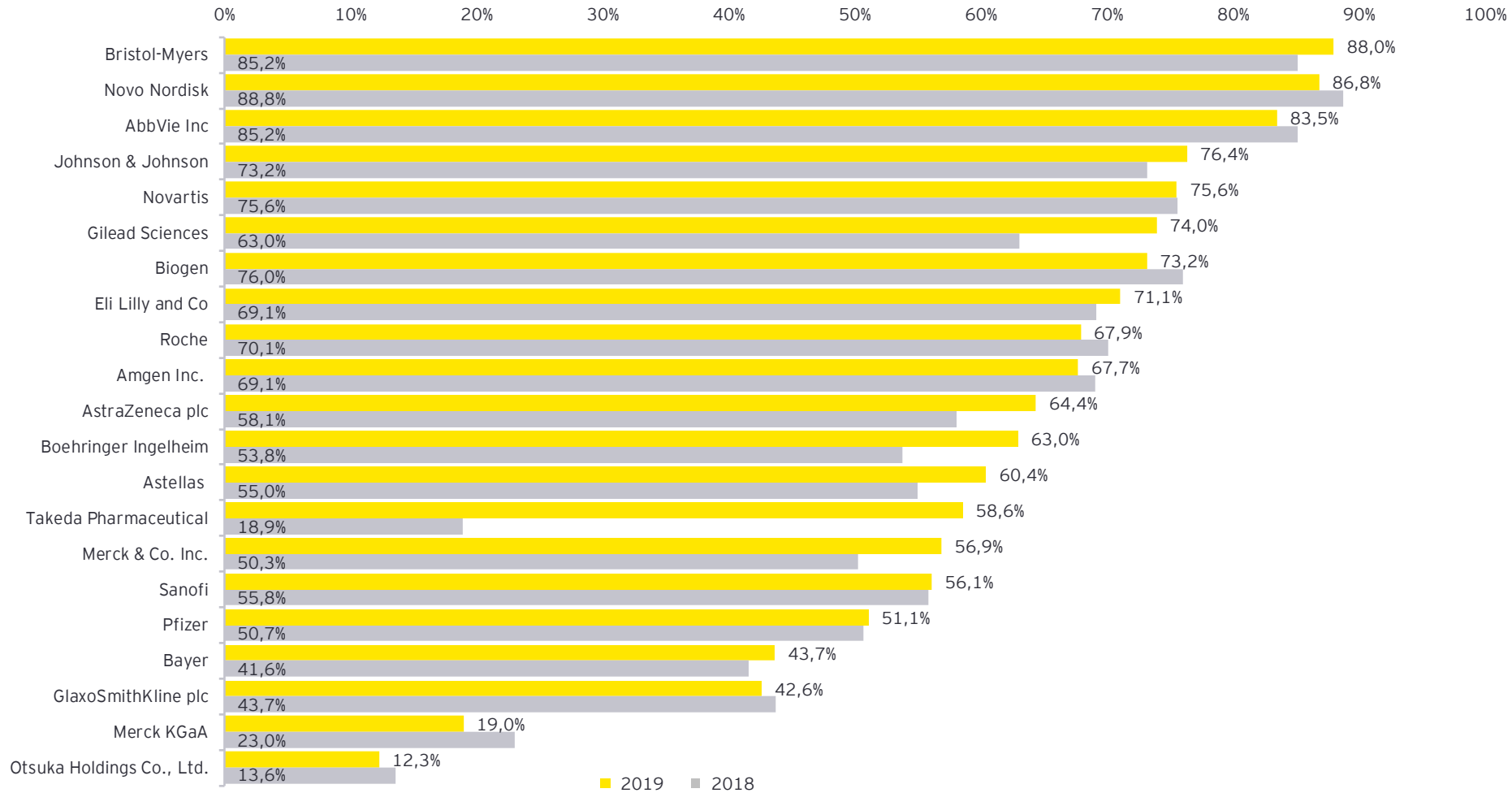
### Top 10 versus bottom 11

	Blockbuster revenue as a percentage of total revenue		Year-on-year development	
	2018	2019	2018	2019
Top 10	62.2%	65.2%	3.1%	4.8%
Bottom 11	60.2%	62.9%	4.4%	4.5%

# Blockbuster revenue shares in detail

## US companies more dependent than EU counterparts

### Blockbuster revenue as a percentage of total revenue

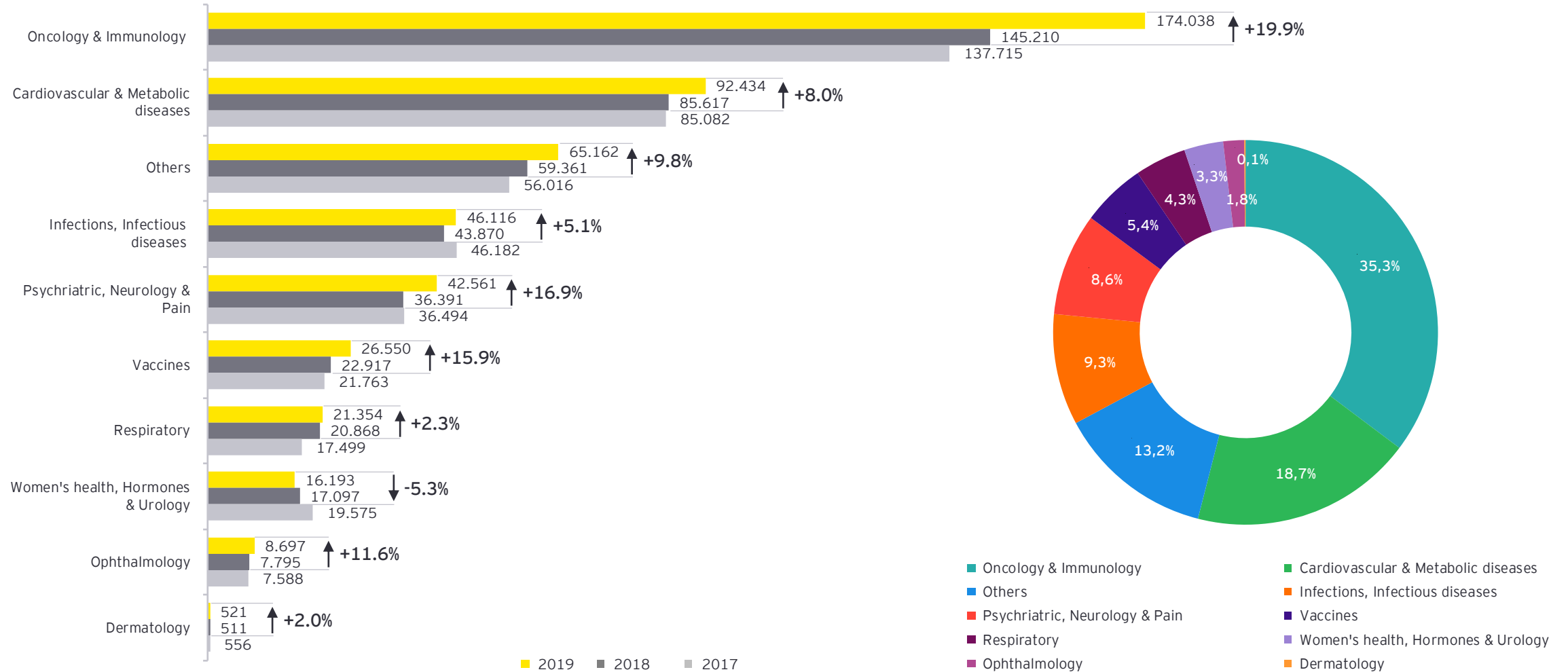




# Revenue by therapeutic area

Growth in almost all sectors - COVID-19 effects in the coming year?

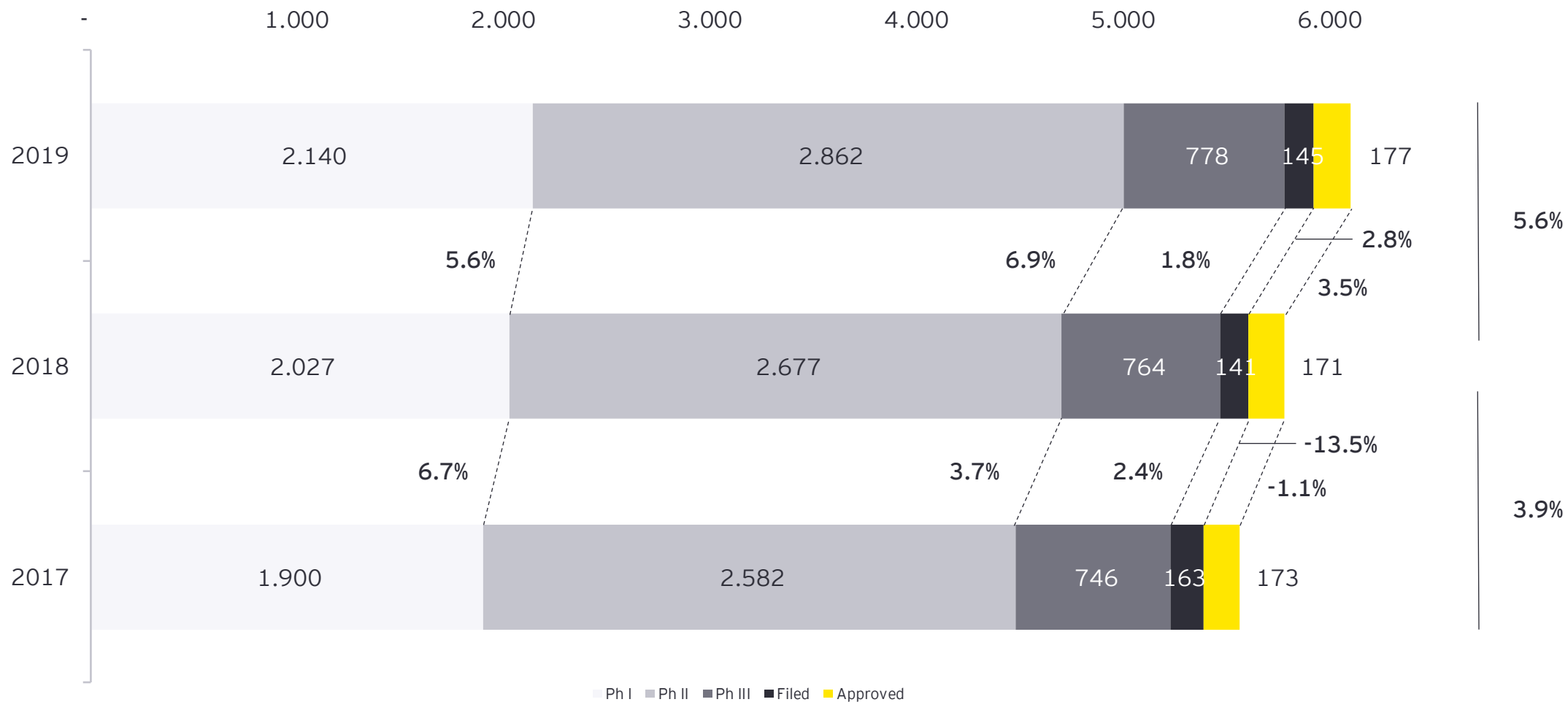
## Top 21: Revenue by therapeutic area (in EUR m)



# Product pipeline continues to develop positively

## Pace of growth remains weak - only early phases more positive

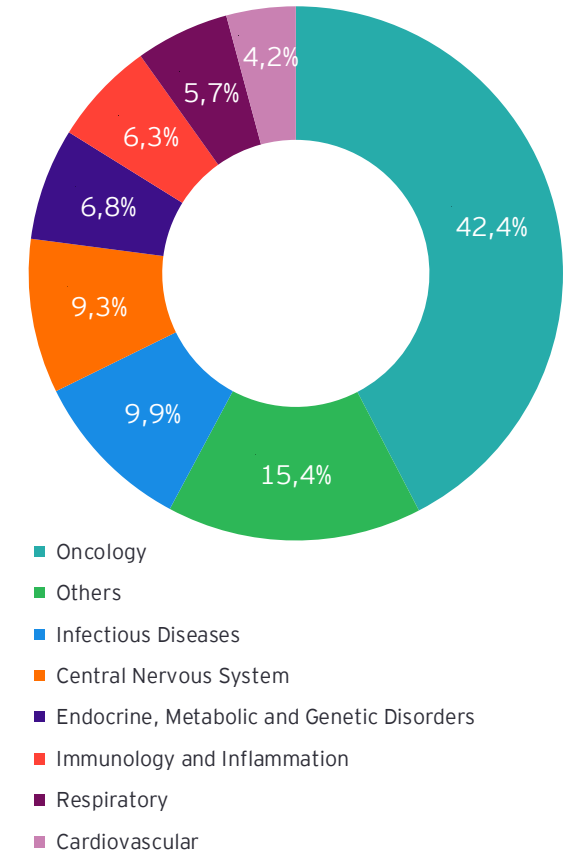
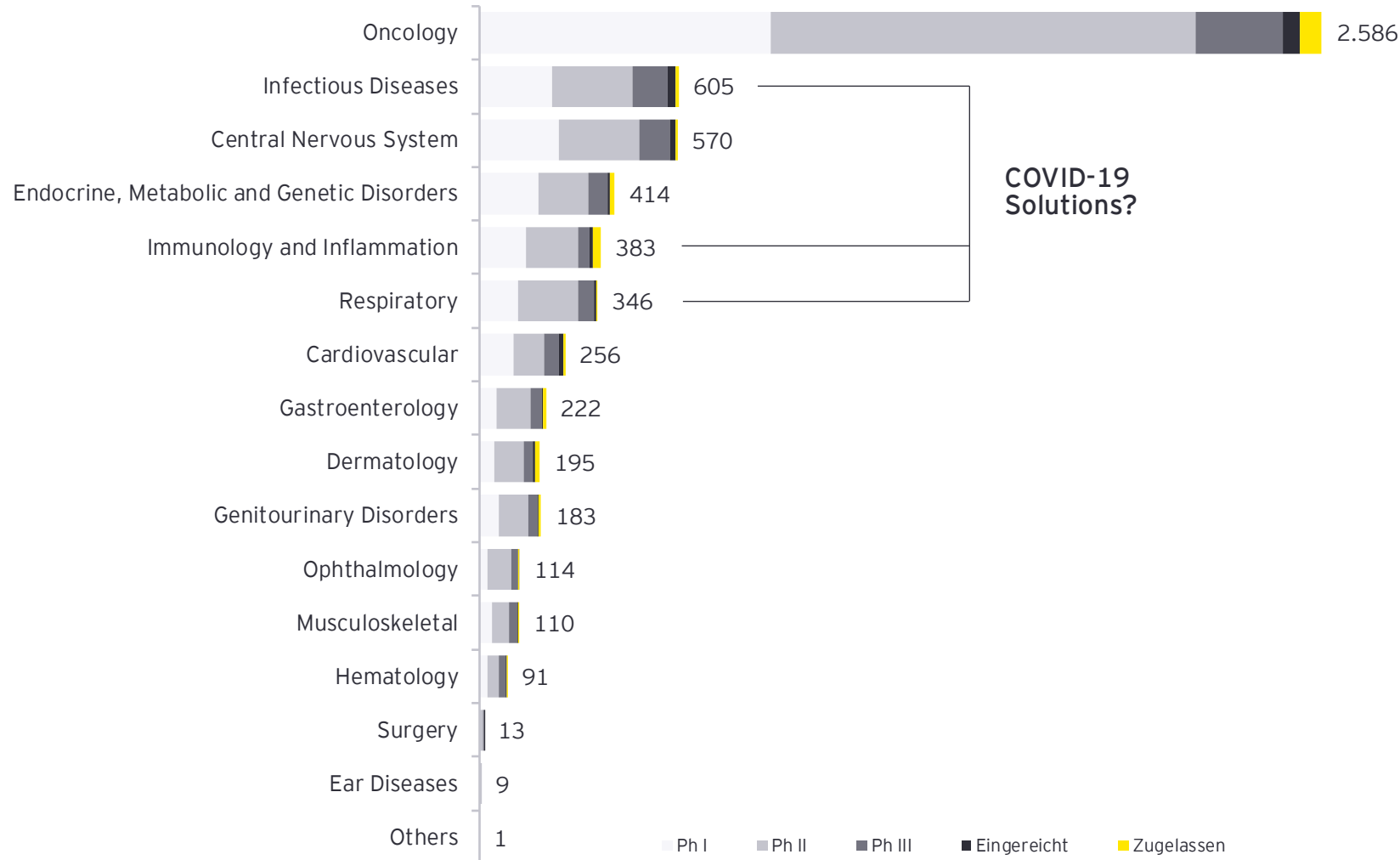
Fewer drugs in market launch stages - positive developments in early clinical drugs



# Product pipelines continue to develop positively

Oncology drugs still dominate the field (up 6.6%) - followed by anti-infective drugs (up 5.4%)

## Top 21: Drugs in clinical development by therapeutic area



# COVID-19

Current development of solutions in the pharmaceutical and diagnostics industries

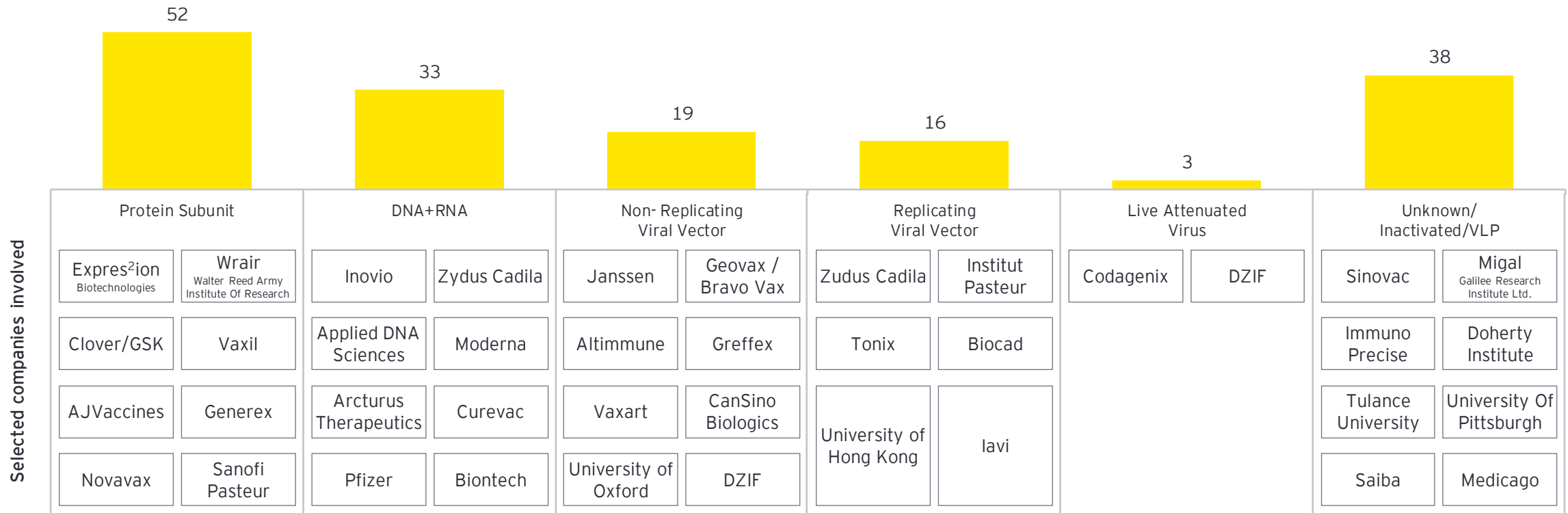
Effect on the life sciences industry and consequences for business performance



# Vaccines for the SARS-Cov2 virus (as of 10 June 2020)

161 vaccine candidates in the pipeline - first products at the end of 2020 at the earliest

## Vaccine candidates



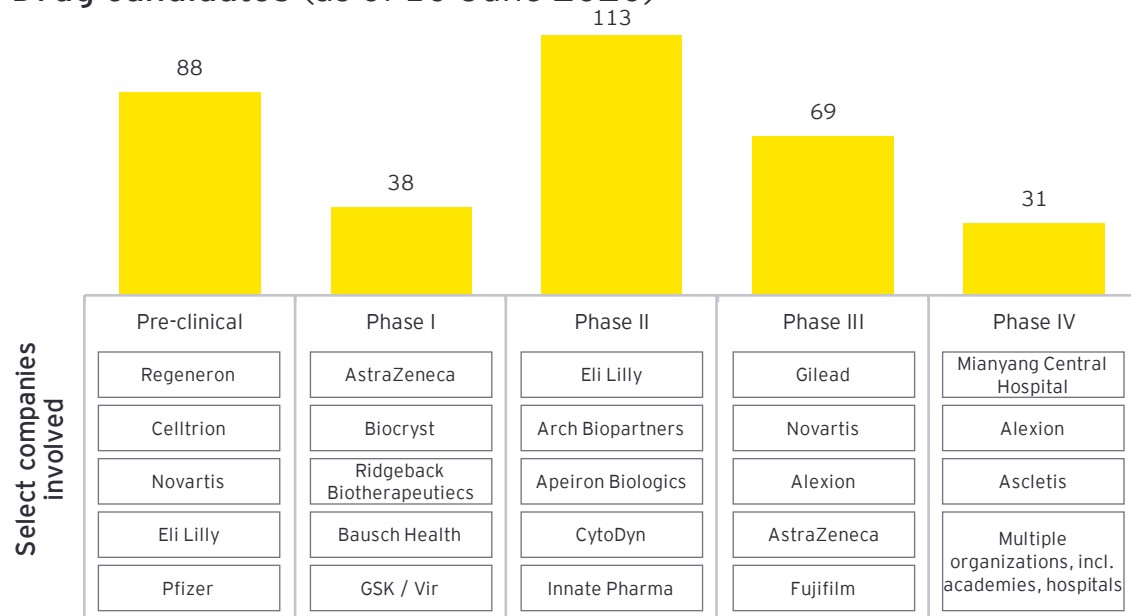
- ▶ 10 in clinical phases 1 or 2 and 151 in pre-clinical development
- ▶ For 2 of these 10 candidates, data are expected by the end of the year
- ▶ Even assuming an extremely speedy approval process by the authorities, a vaccine available in large amounts cannot be expected before the end of the year.

Source: Milken Institute, biorender, bio.org; as of 10 June 2020

# Drugs to treat COVID-19

## 242 drug candidates in the pipeline

### Drug candidates (as of 10 June 2020)



- ▶ 242 drugs potentially effective against COVID-19, thereof 31 already approved for other indications or already available as generics.
- ▶ 182 drugs in Phase II or III and therefore close to approval
- ▶ Relevant data are expected in the course of the year for at least three of these drugs.

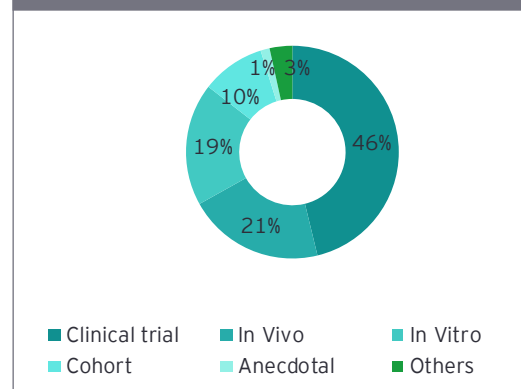
Source: biorender, bio.org, Milken Institute; as of 10 June 2020, numbers will not match with the total as there are overlapping drug candidates which are considered separately, in all phases as stated on the website.

E.g., candidates in Phase 1/2/3/4; Phase 1/2/3; Phase 1/2 are considered in all the phases, hence the total number may exceed 242

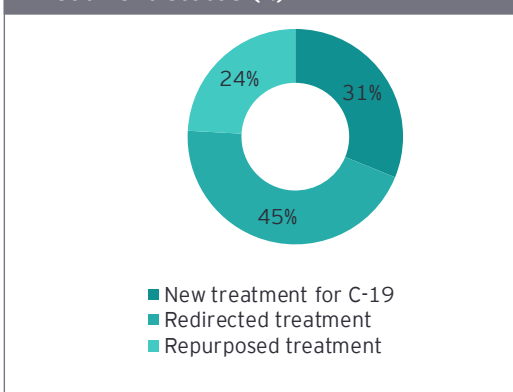
### Drug candidates

- ▶ After clinical data were positive, Gilead obtained an Emergency Use Authorization for its antiviral drug **remdesivir** in the US, Japan and the UK (limited), but still has to submit Phase 3 clinical studies.
- ▶ The WHO has suspended testing of **chloroquine/hydroxy-chloroquine** since 25 May due to high risks

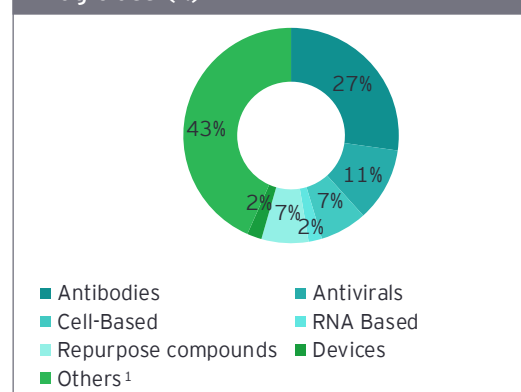
#### Medical evidence<sup>2</sup> (%)



#### Treatment status (%)



#### Drug class (%)



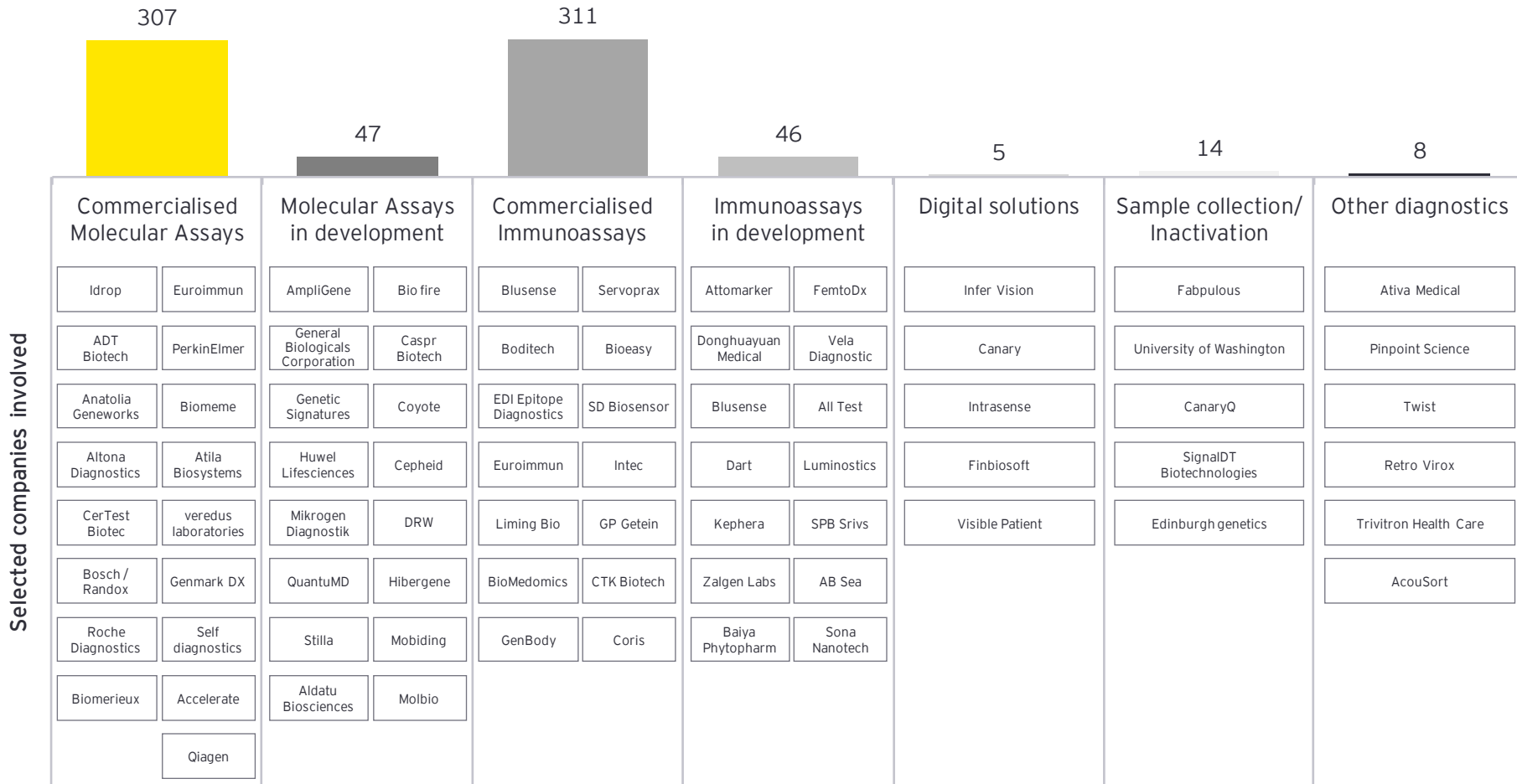
1: Includes fusion inhibitor, immune modulator, neuraminidase inhibitor, endonuclease, NMDA inhibitor, ribonucleoside, enzyme inhibitor, kinase, exoribonuclease and others

2: As of 11 April 2020, WHO does not provide updates

# Diagnostic tests for COVID-19

618 tests on the market and almost 100 additional tests being developed

## Diagnostic candidates



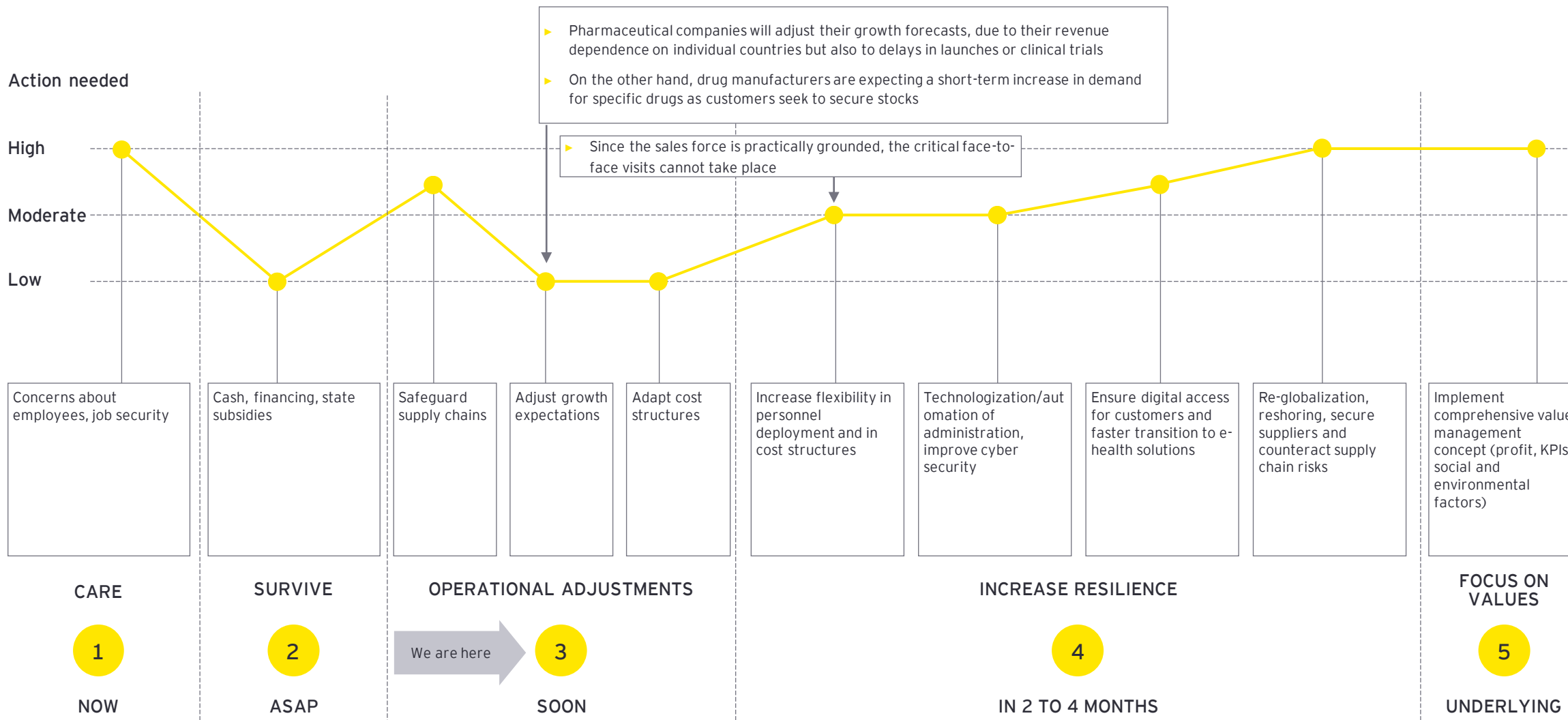
### Overview

- ▶ 307 molecular tests and around 311 immunoassay have been commercialized for detecting SARS-Cov2
- ▶ **Approx. 227** of the immunoassays are rapid tests
- ▶ A further **93** tests are being developed
  - ▶ 47 molecular tests
  - ▶ 46 immunoassays
- ▶ The following criteria are decisive for all diagnostic tests:
  - ▶ #1 Reliability of the test results and the time required to obtain results
  - ▶ #2 Sufficient availability of test kits

Source: finddx.org (1): As of 10 June 2020  
RR Corona Response

# Life sciences companies as winners of the crisis?

## But: challenges must be addressed in the medium term





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