



Chemicals: Industry Forecasts

Highlights

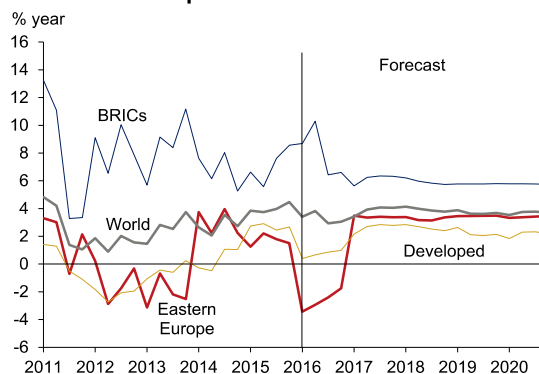
Mixed signals inhibit chemicals growth

Global chemical production increased by 3.4% compared to year-ago levels in Q1 2016, a decrease from the previous quarter, as emerging markets output accelerated while that of developed economies slowed sharply.

Since the start of the year, we have seen mixed signals. Financial markets rallied at the start of the second quarter, including oil, but on the other hand, the global manufacturing PMI has continued to slide. As a result, we do not expect a convincing rise in chemicals output until the later stages of this year, although the outlook is forecast to differ considerably by region. US production is expected to be boosted over the next couple of years as several newly-constructed plants begin production. Meanwhile, Europe and Japan will be impacted by weak world trade while the latter is also affected by a strong yen. Turning to emerging markets, chemical sector prospects are generally positive at the headline level. However, a closer look shows that data issues cloud the outlook for both China and India while poor economic conditions in Russia and Brazil will contain chemical output growth.

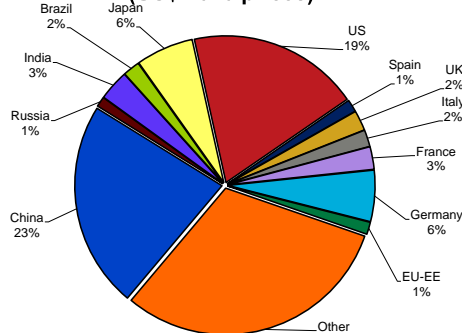
Overall, we expect global chemical output to increase by 3¼% in 2016, down from 4% in 2015, and 4% in 2017.

Chemicals: Output



Source: Oxford Economics

Chemicals: Value added in 2015 (US\$ 2010 prices)



Source: Oxford Economics

Chemicals and pharmaceuticals								
	Annual percentage changes							
	2010-2014	2015	2016	2017	2018	2019	2020	2021-2025
Germany	4.2	1.3	0.4	1.5	1.9	1.6	1.3	0.8
France	2.3	5.1	0.4	1.4	2.5	2.8	2.1	1.8
Italy	1.9	3.8	-0.3	0.1	1.1	0.7	0.8	0.8
UK	-3.7	3.0	-0.8	1.2	1.4	0.8	1.5	2.1
Spain	1.7	3.5	3.8	2.3	1.7	2.2	1.8	1.7
EU15	2.7	2.6	-0.4	1.4	1.8	1.8	1.7	1.6
United States	-1.8	2.4	2.1	4.6	4.0	3.3	3.1	2.4
Japan	1.8	3.2	-0.4	0.4	0.5	-0.3	0.0	0.4
Developed countries	0.9	2.7	0.7	2.6	2.6	2.2	2.2	1.9
Eastern Europe (EU13)	2.9	1.7	-2.6	3.4	3.3	3.5	3.4	3.4
Brazil	2.0	-8.2	-0.2	0.0	1.5	2.8	4.4	3.4
Russia	2.5	10.2	-0.1	1.1	2.7	2.7	2.9	2.1
India	4.9	11.0	10.9	10.3	8.8	8.3	7.7	6.6
China	9.7	7.9	8.6	6.2	5.9	5.7	5.7	5.5
BRICs	8.1	7.1	8.0	6.1	5.9	5.8	5.8	5.4
Emerging Markets	6.7	5.4	6.0	5.1	5.2	5.1	5.1	4.8
World	3.5	4.0	3.3	3.9	3.9	3.7	3.7	3.4

Note: Output is measured in value-added terms in 2010 prices, unless otherwise stated.



Forecast overview

Oil uncertainty caps 2016 basics growth

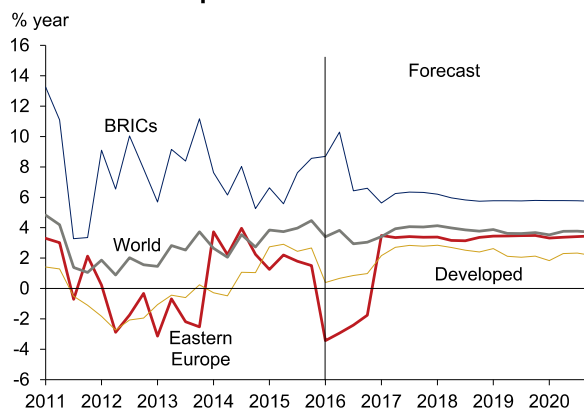
Following a turbulent start to the year, we saw markets rally at the start of the second quarter with stock markets rising and oil prices moving close to the \$50pb mark. However, the rise in the global oil prices is partially due to short term supply disruptions that should unwind in the second half of this year. Moreover, the global manufacturing PMI has drifted lower over the past year, declining 50 in May, indicating stagnation, while our in-house world trade indicator suggests that global trade remains weak. As a result, this means that we do not expect a convincing rise in chemicals output until the later stages of this year, although the outlook is forecast to differ considerably by region.

A closer look at the regional breakdown shows that we expect production growth in the developed economies to decelerate this year before picking up in 2017. The strongest growth prospects are in the US, given the relatively low natural gas prices as a result of the shale gas boom. However, many firms continued to re-evaluate investment plans in the US given that oil prices are still relatively low. Out of the 20 plants (or crackers) proposed only four are in the advanced construction phase and due to start production in 2017 and many firms are waiting to see how oil prices develop. At the same time, Europe will see output decline this year given the weak start to 2016 as growth in world trade remains subdued. In addition to meagre world trade growth, Japanese production growth will be hit by a stronger yen as well as a period of consolidation in the sector as domestic demand weakens and export demand is displaced by capacity coming on-stream in China and the US. Meanwhile, emerging markets' production is forecast to expand by 6% in 2016 before slowing to 3¼% in 2017, although there are some statistical factors at play. First, the positive outlook in China is largely due to base effects in 2016 H1. Also, there appears to be a divergence between the industrial production data and the national accounts in India, with the former showing a much weaker trend than the latter. Meanwhile, economic conditions in Brazil and Russia remain dismal. Overall, world basic chemicals production is forecast to rise by 3¼% in 2016, virtually unchanged from 2015, and 4¼% in 2017.

Paints lifted by housing & autos...

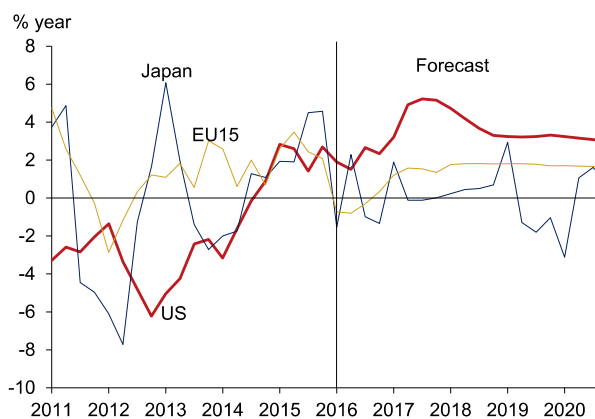
The global outlook for paints and coatings is generally positive given healthy prospects for the most important industrial consumers, typically the automotive and

Chemicals: Output



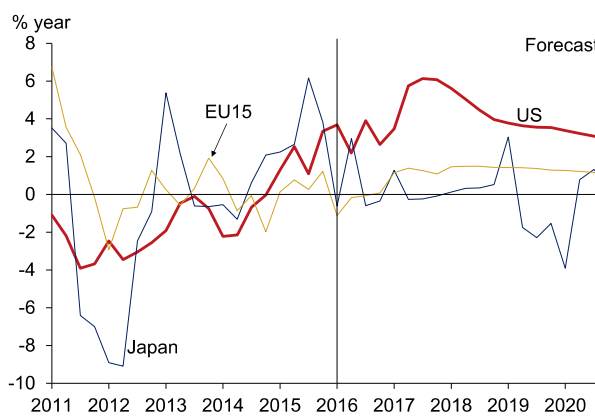
Source: Oxford Economics

Chemicals: Output growth



Source: Oxford Economics

Chemicals excluding pharma: Output growth



Source: Oxford Economics



construction sectors. However, some regions are expected to outperform others.

Given the weak start to the year, US production is forecast to edge down in 2016 but, beyond this, robust growth in residential construction and healthy consumer spending will support demand for paints. However, a slowdown in motor vehicles output ahead is likely to dampen the pace of expansion somewhat. Meanwhile, emerging markets output is predicted to pick-up in 2016, although this is largely because of strong growth in China offsetting weakness in the other major emerging countries. In the longer term, a rising middle class will help to drive demand for higher-quality paints. We expect global paints and coatings output to rise by 2¾% in 2016 and 3¼% in 2017.

...while income growth supports soaps

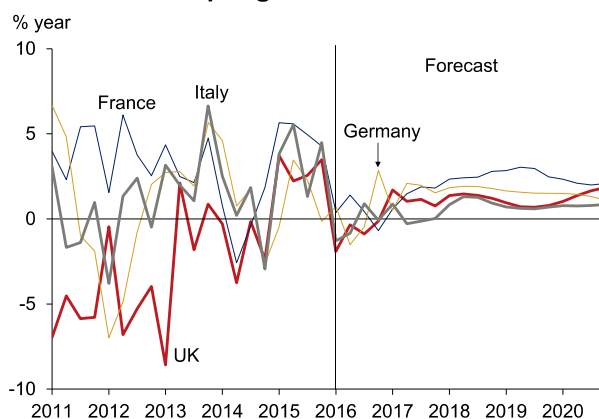
Soaps and detergents production has performed relatively well in comparison to the other chemical sectors over past years given that demand for soaps tends to be relatively inelastic. Looking ahead, production of soaps and detergents in the developed economies is forecast to expand at a healthy pace given that consumer spending growth remains solid. Meanwhile, emerging markets growth will be supported by generally healthy growth prospects, with the exception of Russia and Brazil, and a rising middle class, which will support demand for higher value-added products, such as perfumeries. Also, soaps and detergents will be less exposed to the slowdown in China as it moves to being a consumption-led economy, which is favourable for the sector. Overall, we expect output to expand by 3½% in 2016 and 2¾% in 2017.

Pros outweigh cons for pharmaceuticals

Pharmaceuticals production is expected to grow by 3% in 2016, slower than last year, and 4% in 2017.

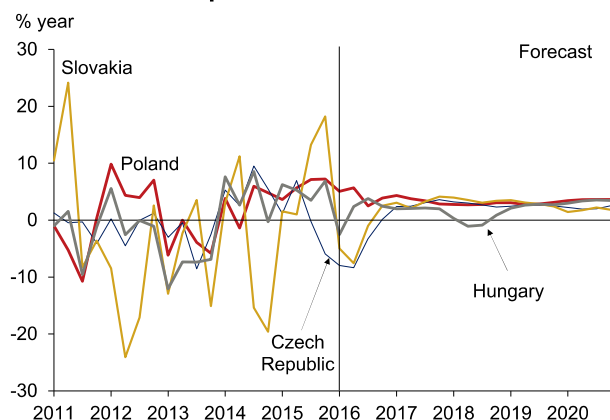
Although the degree of fiscal tightening and the impact of the patent cliff continue to fade, governments in Europe and also the US continue to look at ways to contain healthcare costs. In addition, a report by Deloitte cites that the return on pharma R&D is at its lowest for five years as costs of developing new drugs have risen by a third since 2010 while a focus on drugs focused at smaller patient groups will lower sales growth compared to that seen during the age of blockbusters. On the other hand, we expect some key positive trends to remain in place, such as the boost to pharmaceuticals from the Affordable Care Act in the US while greater access to healthcare in emerging markets will help to drive demand for higher value-added pharmaceuticals. Longer term, developed economies' pharma output will continue to rise steadily given demand from an ageing population.

Chemicals: Output growth



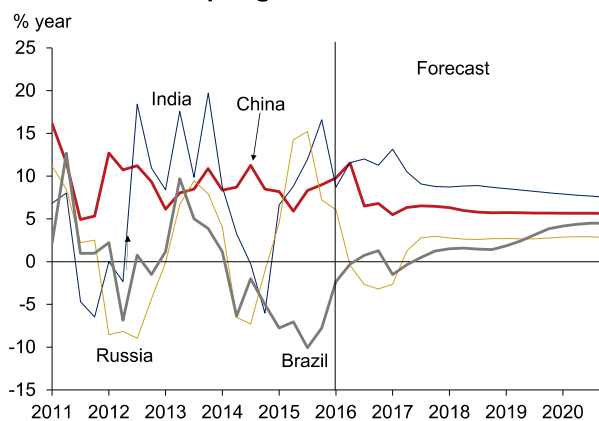
Source: Oxford Economics

Chemicals: Output



Source: Oxford Economics

Chemicals: Output growth



Source: Oxford Economics



Forecast risks

The uncertainty with regard to global oil prices means that firms are continuing to reconsider investment plans in the US. And although we believe that the US will maintain its cost advantage in the long term, there is risk that investment, and hence production, will get delayed as a result. This in turn could work in favour of other regions, such as Europe, which tend to use oil-derived naphtha as a feedstock.

In contrast, an upside risk to the forecast in the medium term is that shale gas developments, which have led to announcements of higher capital spending by chemical firms, lead to even higher production levels than currently forecast. In addition, the benefits of shale could

spillover beyond the US if the economics remain supportive enough to incentivise importing cheap US ethane. Furthermore, if a trade deal, similar to the TPP agreement, between the US and EU can be agreed then it could be mutually beneficial to both regions.

In terms of pharmaceutical output, key risks are associated with a greater impact from expiring patents, government austerity measures and more stringent regulation, mainly in the developed economies, which in turn increase the costs of R&D. Furthermore, a reluctance to embrace strong patent regulation in some emerging markets could deter investment by pharmaceutical firms and, actually, work in favour of developed economies.

Chemicals and pharmaceuticals - Top 10 fastest growing countries

(Annual percentage changes)

	Last year		Next 5 years
Uruguay	17.1	Iraq	9.7
Philippines	16.3	India	9.2
Iraq	15.0	Philippines	7.5
Ireland	12.8	Pakistan	6.8
Israel	12.6	China	6.4
Malta	11.2	Vietnam	6.1
India	11.0	Chile	5.7
New Zealand	10.8	Saudi Arabia	5.4
Russia	10.2	Indonesia	5.3
Malaysia	9.7	Turkey	5.1

Where is chemicals production suffering the most?

Chemicals and pharmaceuticals - Top 10 slowest growing countries

(Annual percentage changes)

	Last year		Next 5 years
Bahrain	-21.3	Slovenia	-1.4
Ukraine	-17.8	Venezuela	-1.1
Estonia	-12.4	Japan	0.0
Qatar	-11.0	Romania	0.1
Ecuador	-10.0	Sweden	0.2
Brazil	-8.2	Ireland	0.2
Slovenia	-6.3	Malta	0.4
Venezuela	-5.6	Italy	0.5
Sweden	-5.5	Hong Kong	0.6
Singapore	-5.5	UK	0.8



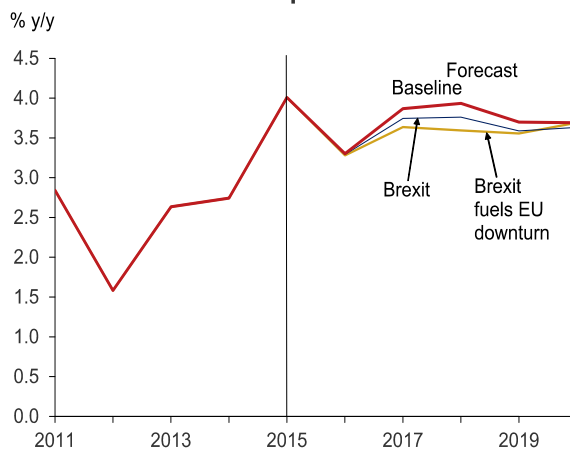
Risk Scenario analysis

Risks to our global chemical forecast are generally skewed to the downside and this is highlighted by the menu of scenarios, five of which assume an event takes place which adversely affects global chemical output.

The first scenario looks at the possibility of a **'Brexit'** whereby the result of the referendum on 23 June leads to the UK leaving the EU. Initially, the plunge in the pound is expected to provide a temporary boost to export growth in the UK but then disappear as a rise in tariff barriers dampens trade volumes. In fact, a [study](#) by Oxford Economics showed that the sector would be one of the worst affected industries because a high proportion of exports are destined for the EU and it would also be susceptible to above-average EU tariffs. And although pharmaceuticals may avoid tariff barriers on the account of the Pharmaceutical Tariff Elimination Agreement, most of the sectors external trade is with the EU and there are added concerns with regard to regulation as it appears uncertain whether the UK would remain a part of the European Medicines Agency, which approves all medicines in the EU. Furthermore, the deterioration in business confidence would lead many firms to delay or cancel investment plans. Indeed, the concerns surrounding 'Brexit' are highlighted by the members of the UK Chemical Industries Association, 62% of which stated that they would prefer that the UK remain in the EU, while the remaining portion chose not to take a position. Overall, we do not expect the impact on the global production of chemicals to be particularly strong, given the UK only accounts for 2% of global production, with output down by ½% below baseline by 2020. In the event that **'Brexit' fuels a downturn in the EU**, our second scenario, we expect production to be ¾% below baseline by 2020.

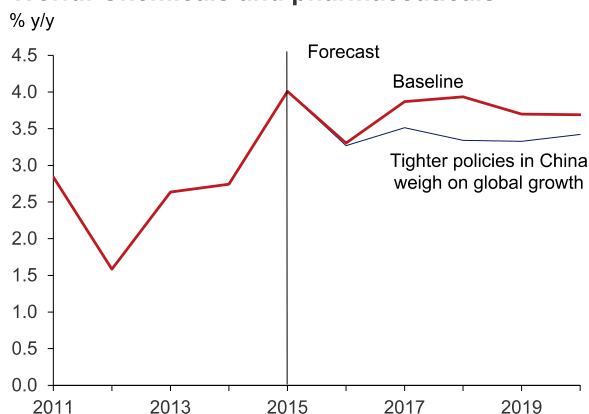
The third scenario, which looks at potentially **tighter policies in China weighing on global growth**, would be more serious for global chemicals production. Tighter policies would be aimed at reducing credit growth, which would have a pronounced effect upon those sectors that are highly dependent on investment such as construction, which are key chemical consumers, are affected most. As a result, our projections suggest that global chemical output would be 1½% below baseline by 2020.

World: Chemicals and pharmaceuticals



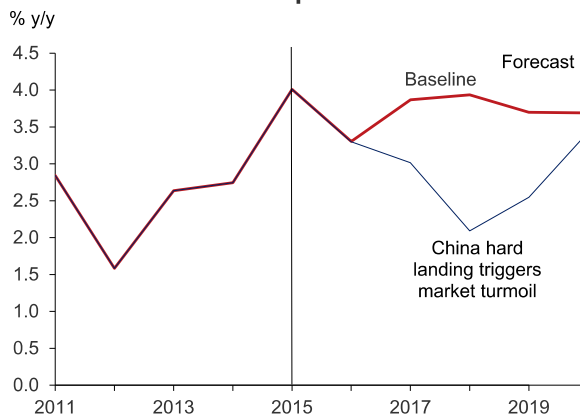
Source : Oxford Economics

World: Chemicals and pharmaceuticals



Source : Oxford Economics

World: Chemicals and pharmaceuticals



Source : Oxford Economics

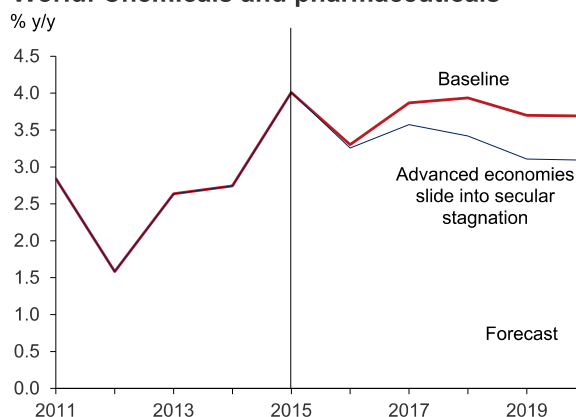


The fourth scenario examines a **Chinese hard landing**, which represents the largest downside risk out of all of the scenarios presented in terms of impact. This scenario assumes that the vulnerabilities in China and other emerging markets continue to build while the US decide to continue to tighten monetary policy, hence, impacting those economies that are most exposed to dollar strength and culminating in a period of market turmoil. Similarly to the previous scenario, those sectors that are highly dependent on investment such as construction, which are key chemical consumers, are affected most. In this scenario, we would expect global chemical output to peak at 4% below baseline by 2020.

The final downside scenario assumes that **advanced economies slide into secular stagnation**. Central banks find themselves unable to boost demand leading to a reduction in the supply potential in the economy, dampening growth throughout the forecast. The delay in investment has an impact on sectors that are important to chemicals, such as motor vehicles, while the reduction in consumer spending, as labour market weakness constrains earnings growth, dampens output in sectors like soaps and detergents. As a result, our projections suggest that global chemical output would be 2% below baseline by 2020, similarly to GDP.

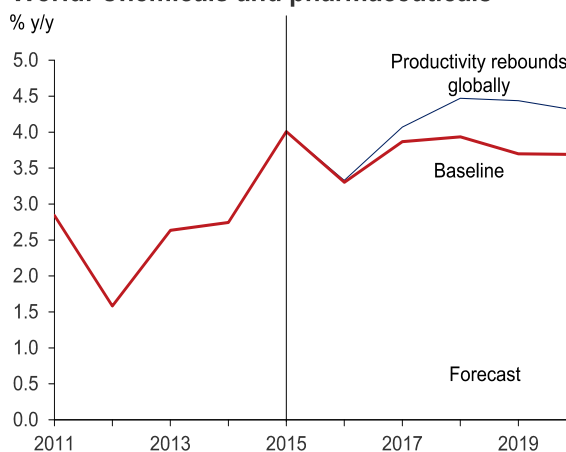
The only upside scenario, **productivity rebounds globally**, assumes that both government investment (in those countries with fiscal room) and business investment picks up as credit conditions loosen. At the same time, earlier investments in ICT start to reap benefits while structural reforms also add to growth into the medium term. The impact across countries varies considerably but at a global level we expect chemical output to be 2% above the baseline by the end of the decade.

World: Chemicals and pharmaceuticals



Source : Oxford Economics

World: Chemicals and pharmaceuticals



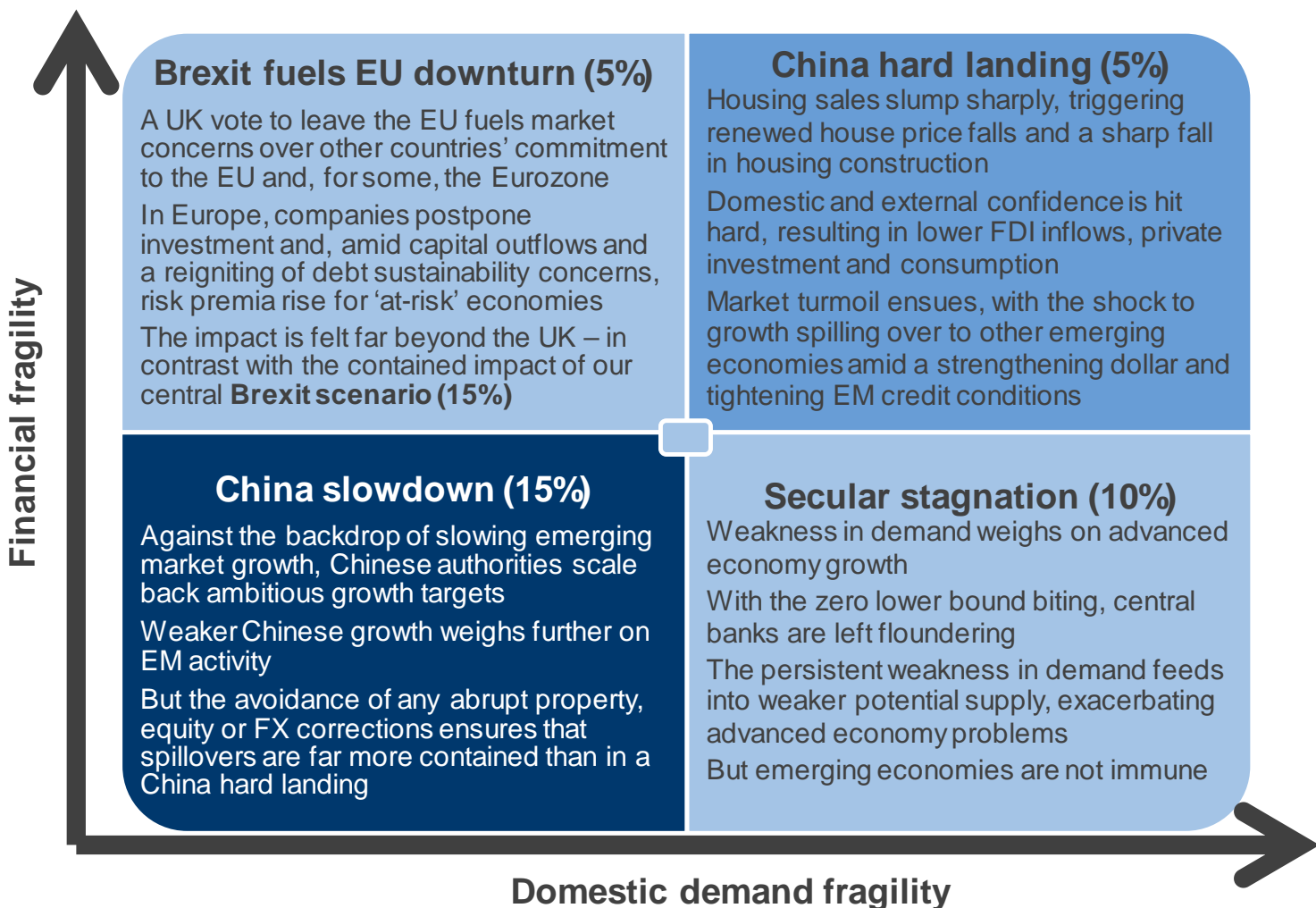
Source : Oxford Economics



Chemicals and pharmaceuticals

% change from a year earlier

	2016	2017	2018	2019	2020
US					
Baseline	2.1	4.6	4.0	3.3	3.1
Brexit	2.1	4.5	3.9	3.2	3.1
Brexit fuels EU downturn	2.0	4.2	3.7	3.2	3.2
Tighter policies in China weigh on global growth	2.1	4.3	3.6	3.2	3.2
China hard landing triggers market turmoil	2.1	3.8	2.4	2.7	3.3
Advanced economies slide into secular stagnation	2.0	4.4	3.5	2.8	2.5
Productivity rebounds globally	2.1	4.9	4.7	4.2	4.1
EU15					
Baseline	-0.4	1.4	1.8	1.8	1.7
Brexit	-0.4	1.1	1.4	1.5	1.5
Brexit fuels EU downturn	-0.4	1.2	1.1	1.4	1.5
Tighter policies in China weigh on global growth	-0.4	1.1	1.4	1.7	1.8
China hard landing triggers market turmoil	-0.4	0.7	0.5	1.3	2.0
Advanced economies slide into secular stagnation	-0.4	1.0	1.0	0.9	0.9
Productivity rebounds globally	-0.3	1.7	2.3	2.5	2.3
Japan					
Baseline	-0.4	0.4	0.5	-0.3	0.0
Brexit	-0.4	0.4	0.4	-0.4	0.0
Brexit fuels EU downturn	-0.4	0.2	0.2	-0.4	0.1
Tighter policies in China weigh on global growth	-0.4	0.1	-0.1	-0.5	0.2
China hard landing triggers market turmoil	-0.4	-1.1	-1.7	-1.3	0.9
Advanced economies slide into secular stagnation	-0.5	0.0	0.0	-1.1	-0.8
Productivity rebounds globally	-0.4	0.6	0.8	0.3	0.6
China					
Baseline	8.6	6.2	5.9	5.7	5.7
Brexit	8.6	6.1	5.8	5.6	5.6
Brexit fuels EU downturn	8.6	6.1	5.7	5.6	5.6
Tighter policies in China weigh on global growth	8.6	5.9	5.3	4.7	4.4
China hard landing triggers market turmoil	8.6	5.3	3.3	3.4	3.9
Advanced economies slide into secular stagnation	8.6	6.0	5.6	5.4	5.1
Productivity rebounds globally	8.6	6.3	6.4	6.4	6.3
World					
Baseline	3.3	3.9	3.9	3.7	3.7
Brexit	3.3	3.7	3.8	3.6	3.6
Brexit fuels EU downturn	3.3	3.6	3.6	3.6	3.7
Tighter policies in China weigh on global growth	3.3	3.5	3.3	3.3	3.4
China hard landing triggers market turmoil	3.3	3.0	2.1	2.5	3.4
Advanced economies slide into secular stagnation	3.3	3.6	3.4	3.1	3.1
Productivity rebounds globally	3.3	4.1	4.5	4.4	4.3





Chemicals and pharmaceuticals									
(Annual percentage changes unless specified)									
	2010-2014	2015	2016	2017	2018	2019	2020	2021-2025	2015 US\$bn (2010 prices)
Austria	5.3	1.2	0.3	1.2	1.2	2.0	1.2	1.4	7.90
Belgium	6.8	-3.5	1.6	2.1	2.0	2.0	2.2	2.3	16.69
Denmark	8.8	-3.4	1.5	3.0	2.5	2.1	2.1	1.8	6.84
Finland	2.1	2.8	1.1	3.6	4.3	4.2	4.2	3.3	4.16
France	2.3	5.1	0.4	1.4	2.5	2.8	2.1	1.8	35.84
Germany	4.2	1.3	0.4	1.5	1.9	1.6	1.3	0.8	81.49
Greece	-2.0	4.0	2.8	1.0	1.3	1.9	2.6	3.4	6.19
Ireland	5.3	12.8	-4.8	0.2	1.7	2.1	2.1	2.4	29.40
Italy	1.9	3.8	-0.3	0.1	1.1	0.7	0.8	0.8	26.53
Luxembourg	4.5	1.7	7.6	3.7	4.1	3.5	3.4	3.0	0.19
Netherlands	1.9	-0.4	-1.4	1.9	1.6	1.6	1.4	1.1	15.21
Portugal	3.0	8.0	2.5	1.4	0.1	0.3	1.1	1.1	2.58
Spain	1.7	3.5	3.8	2.3	1.7	2.2	1.8	1.7	19.75
Sweden	6.8	-5.5	-8.0	2.6	2.0	2.4	2.3	2.2	12.63
UK	-3.7	3.0	-0.8	1.2	1.4	0.8	1.5	2.1	32.10
EU15	2.7	2.6	-0.4	1.4	1.8	1.8	1.7	1.6	297.49
Australia	1.3	2.0	0.0	2.4	2.2	2.1	2.0	2.0	9.9
Canada	2.5	4.5	-0.2	1.9	3.7	2.9	2.7	2.1	18.8
Japan	1.8	3.2	-0.4	0.4	0.5	-0.3	0.0	0.4	91.36
New Zealand	2.0	10.8	2.4	3.0	3.1	2.7	2.1	2.2	1.8
Norway	1.1	5.3	2.7	3.6	3.6	3.8	4.0	4.1	3.94
Switzerland	6.4	2.7	2.6	2.9	3.3	3.3	2.9	2.4	39.2
US	-1.8	2.4	2.1	4.6	4.0	3.3	3.1	2.4	271.28
DEVELOPED COUNTRIES	0.9	2.7	0.7	2.6	2.6	2.2	2.2	1.9	733.77
Bulgaria	4.4	3.2	3.2	5.7	5.4	4.5	4.2	3.5	3.57
Croatia	5.8	4.5	14.5	0.0	2.8	3.0	2.8	2.5	0.64
Cyprus	6.4	7.1	2.8	3.5	2.6	2.7	1.7	0.5	0.08
Czech Republic	2.0	0.4	-5.0	2.9	2.8	2.6	2.2	2.8	2.46
Estonia	-0.5	-12.4	1.6	3.2	4.2	3.6	3.2	3.5	0.15
Hungary	0.1	5.5	1.5	2.0	-0.2	2.6	3.3	3.4	2.10
Latvia	1.6	4.0	6.0	2.4	2.8	3.2	3.1	2.5	0.19
Lithuania	4.5	2.6	3.0	1.8	3.7	3.9	3.4	2.7	0.85
Malta	-4.0	11.2	-8.0	3.1	2.4	2.7	2.2	2.2	0.04
Poland	3.1	5.9	4.3	3.6	2.8	2.9	3.6	3.7	3.58
Romania	1.6	-1.6	-14.9	4.1	4.7	4.7	3.6	4.8	2.53
Slovak Republic	0.0	7.8	-2.9	3.1	3.5	3.0	1.8	2.2	0.71
Slovenia	5.2	-6.3	-17.2	2.4	2.6	3.4	3.7	3.3	2.43
EASTERN EUROPE (EU13)	2.9	1.7	-2.6	3.4	3.3	3.5	3.4	3.4	19.32
Brazil	2.0	-8.2	-0.2	0.0	1.5	2.8	4.4	3.4	26.74
Russia	2.5	10.2	-0.1	1.1	2.7	2.7	2.9	2.1	16.20
India	4.9	11.0	10.9	10.3	8.8	8.3	7.7	6.6	48.46
China	9.7	7.9	8.6	6.2	5.9	5.7	5.7	5.5	327.79
BRICs	8.1	7.1	8.0	6.1	5.9	5.8	5.8	5.4	419.20
Turkey	7.8	3.7	8.4	2.7	4.6	4.9	5.1	4.4	16.25
Ukraine	-4.8	-17.8	0.6	4.0	4.5	4.1	3.1	2.3	1.73
Hong Kong	0.3	-1.9	2.2	-0.5	0.4	0.5	0.6	0.0	0.82
Indonesia	7.3	5.1	4.2	5.4	5.8	5.4	5.5	5.3	27.93
Korea	4.4	3.7	3.7	3.3	3.8	3.5	3.2	2.0	37.82
Malaysia	2.3	9.7	6.5	3.5	3.2	3.2	3.3	3.0	13.90
Pakistan	-1.4	1.8	11.6	1.1	7.1	7.4	7.1	6.2	1.47
Philippines	20.2	16.3	16.4	6.1	5.4	5.0	5.2	4.8	7.63
Singapore	16.1	-5.5	2.3	3.0	3.7	3.4	3.4	3.3	13.22
Taiwan	2.6	3.2	3.2	3.3	4.0	3.6	3.6	2.7	15.15
Thailand	0.7	1.8	3.0	4.9	4.8	4.0	3.7	3.1	14.00
Vietnam	7.3	1.4	0.6	8.4	7.6	6.9	6.9	6.3	1.36
Argentina	4.7	0.0	1.3	2.0	2.6	2.8	2.9	2.7	18.44
Chile	2.7	5.8	7.6	3.9	5.1	5.9	5.8	4.5	2.52
Colombia	2.0	2.1	1.7	4.1	4.3	4.1	4.0	3.9	5.02
Ecuador	16.6	-10.0	0.9	1.3	2.8	3.3	3.4	2.1	0.95
Mexico	-0.3	-1.4	-0.8	0.9	2.4	2.4	2.8	3.4	21.24
Uruguay	5.3	17.1	1.2	4.3	2.9	3.4	3.0	2.7	0.66
Venezuela	0.9	-5.6	-13.5	-3.9	6.4	3.6	3.3	3.0	5.59
Bahrain	6.5	-21.3	3.7	2.6	2.7	3.4	3.7	4.2	0.03
Egypt	7.1	2.6	-1.3	3.1	2.6	2.9	3.0	2.8	6.57
Iraq	9.2	15.0	10.4	9.5	9.8	9.7	9.4	9.6	0.14
Israel	4.5	12.6	3.5	2.1	2.9	2.9	3.3	2.9	7.78
Kuwait	29.1	1.2	3.1	4.8	4.8	4.9	4.8	5.1	2.36
Oman	1.0	1.1	2.2	4.1	4.5	4.6	4.8	4.8	3.43
Qatar	-1.1	-11.0	6.4	4.9	4.6	4.7	3.7	4.1	1.80
Saudi Arabia	8.9	7.4	5.1	5.5	5.3	5.4	5.4	5.1	31.70
South Africa	6.3	4.4	0.7	1.7	0.9	1.2	1.5	2.1	7.27
United Arab Emirates	6.0	3.5	3.8	4.2	4.5	4.8	4.6	4.3	1.38
EMERGING MARKETS	6.7	5.4	6.0	5.1	5.2	5.1	5.1	4.8	706.70
WORLD	3.5	4.0	3.3	3.9	3.9	3.7	3.7	3.4	1440.47



Chemicals and pharmaceuticals shares

	% of Manufacturing		% of GDP		% of World Output	
	2015	2020	2015	2020	2015	2020
Austria	10.91	10.47	2.09	2.05	0.55	0.48
Belgium	25.58	26.10	3.67	3.73	1.16	1.07
Denmark	17.00	17.08	2.40	2.44	0.47	0.44
Finland	11.36	12.17	1.94	2.14	0.28	0.28
France	12.74	12.79	1.43	1.45	2.49	2.27
Germany	10.67	10.63	2.46	2.44	5.66	5.04
Greece	35.82	36.03	2.80	2.96	0.42	0.39
Ireland	56.02	51.27	12.88	10.99	2.01	1.70
Italy	8.97	8.76	1.43	1.39	1.84	1.57
Luxembourg	6.54	7.02	0.35	0.38	0.01	0.01
Netherlands	16.29	15.69	1.94	1.87	1.06	0.93
Portugal	9.46	9.31	1.34	1.32	0.18	0.16
Spain	12.04	11.81	1.52	1.52	1.37	1.29
Sweden	15.90	14.43	2.65	2.40	0.88	0.74
UK	14.12	14.08	1.33	1.24	2.23	1.93
EU15	13.40	13.21	2.03	1.98	20.65	18.33
Australia	11.09	11.75	0.71	0.68	0.68	0.62
Canada	10.31	10.41	1.12	1.13	1.30	1.21
Japan	8.56	8.35	1.64	1.61	6.34	5.30
New Zealand	12.93	13.10	1.51	1.51	0.13	0.12
Norway	11.93	12.99	0.95	1.04	0.27	0.27
Switzerland	32.89	35.09	6.49	6.96	2.72	2.63
US	13.15	13.78	1.65	1.76	18.83	18.57
DEVELOPED COUNTRIES	12.68	12.91	1.80	1.82	50.94	47.06
Bulgaria	53.59	53.55	7.82	8.28	0.24	0.26
Croatia	9.81	10.69	1.38	1.59	0.04	0.05
Cyprus	7.66	7.42	0.37	0.39	0.01	0.01
Czech Republic	4.77	4.25	1.29	1.20	0.17	0.15
Estonia	4.66	4.26	0.75	0.74	0.01	0.01
Hungary	7.89	7.09	1.64	1.60	0.15	0.13
Latvia	5.93	5.84	0.75	0.75	0.01	0.01
Lithuania	10.49	10.28	2.13	2.12	0.06	0.06
Malta	4.26	4.10	0.40	0.36	0.00	0.00
Poland	3.73	3.47	0.73	0.74	0.25	0.25
Romania	6.11	5.09	1.51	1.26	0.17	0.15
Slovak Republic	3.32	3.10	0.79	0.73	0.05	0.04
Slovenia	26.03	19.82	5.60	4.54	0.17	0.13
EASTERN EUROPE (EU13)	7.01	6.37	1.47	1.41	1.34	1.24
Brazil	10.69	11.50	1.36	1.47	1.86	1.68
Russia	7.95	7.87	1.08	1.12	1.12	1.03
India	13.58	13.97	2.40	2.64	3.36	4.36
China	11.59	12.42	3.73	3.80	22.75	25.89
BRICs	11.52	12.33	2.94	3.13	29.10	32.96
Turkey	11.41	12.19	1.98	2.15	1.11	1.19
Ukraine	13.44	12.60	1.66	1.72	0.12	0.12
Hong Kong	21.35	21.38	0.32	0.29	0.06	0.05
Indonesia	13.13	13.32	2.92	2.90	1.91	2.07
Korea	10.50	10.69	3.31	3.42	2.63	2.60
Malaysia	18.33	18.31	4.28	4.24	0.96	0.98
Pakistan	5.48	5.96	0.73	0.78	0.10	0.12
Philippines	12.80	13.70	2.98	3.29	0.52	0.63
Singapore	25.90	26.40	4.83	4.86	0.91	0.88
Taiwan	9.67	9.90	3.10	3.27	1.05	1.04
Thailand	12.69	12.73	3.57	3.72	0.96	0.98
Vietnam	5.82	5.55	1.02	1.01	0.09	0.10
Argentina	23.16	22.82	3.98	3.99	1.28	1.20
Chile	9.34	9.89	1.04	1.20	0.17	0.19
Colombia	12.70	12.08	1.54	1.55	0.34	0.34
Ecuador	9.03	8.90	1.15	1.17	0.06	0.06
Mexico	10.04	9.40	1.83	1.73	1.47	1.33
Uruguay	11.17	11.24	1.56	1.56	0.05	0.04
Venezuela	11.70	10.29	1.99	1.86	0.38	0.30
Bahrain	0.65	0.69	0.10	0.10	0.00	0.00
Egypt	14.02	13.73	2.31	2.13	0.45	0.42
Iraq	3.00	2.99	0.08	0.11	0.01	0.01
Israel	23.58	23.24	3.65	3.57	0.53	0.51
Kuwait	26.38	27.28	1.47	1.67	0.16	0.17
Oman	51.76	52.40	4.67	5.32	0.23	0.24
Qatar	11.56	12.21	1.02	0.92	0.12	0.13
Saudi Arabia	40.13	41.63	4.72	5.44	2.17	2.35
South Africa	14.02	13.62	1.93	1.85	0.50	0.44
United Arab Emirates	4.45	4.55	0.36	0.38	0.09	0.10
EMERGING MARKETS	12.07	12.57	2.71	2.85	49.06	52.93
WORLD	12.37	12.73	2.15	2.25	100.00	100.00



Key Macro Drivers

Basic chemicals are driven by global industrial production with the oil price also key to organics.

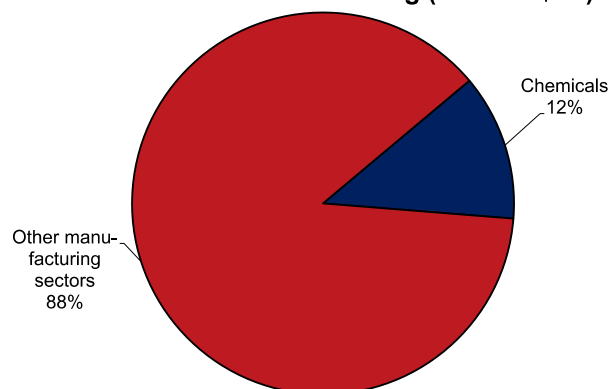
Pharmaceuticals are dependent on government health spending, consumer spending and demographics in the longer-term.

Paints are affected by the construction market, especially housing, and the automobile sector is key in some countries.

Meanwhile, soaps and detergents are heavily influenced by trends in consumer spending.

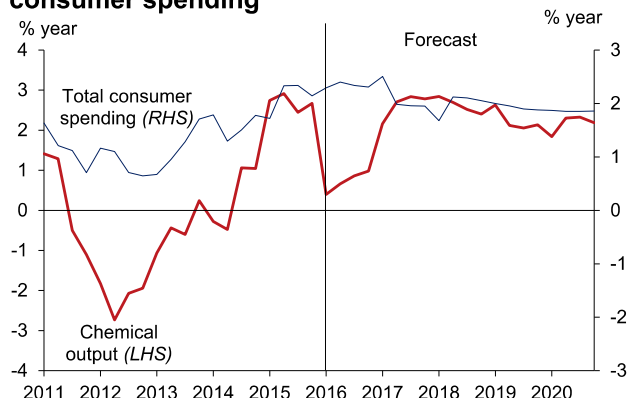
Agriculture is the driver of agrochemicals, textiles affects man-made fibres and the other sectors are driven by elements of GDP.

Chemicals - 2015
Share of world manufacturing (2010 US\$bn)



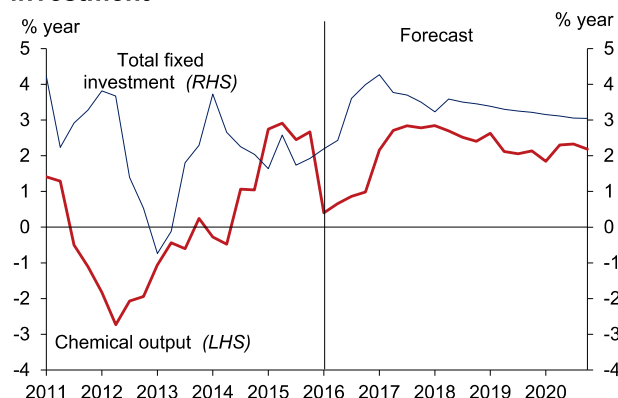
Source: Oxford Economics

Developed countries: Chemicals output and consumer spending



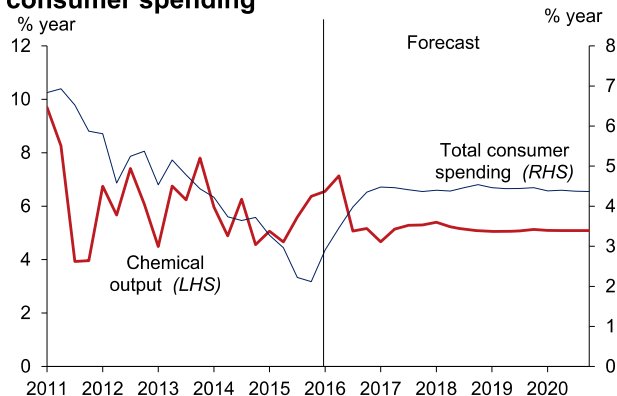
Source: Oxford Economics

Developed countries: Chemicals output and investment



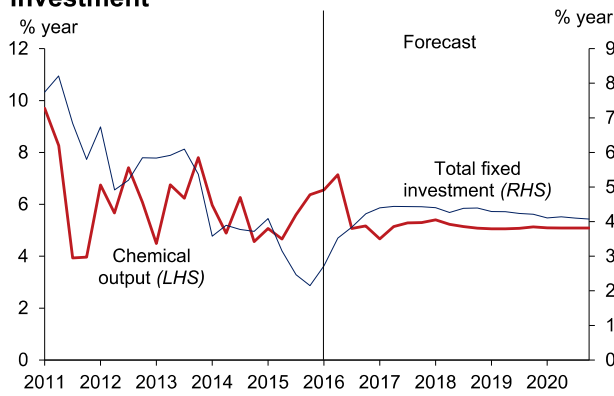
Source: Oxford Economics

Emerging markets: Chemicals output and consumer spending



Source: Oxford Economics

Emerging markets: Chemicals output and investment



Source: Oxford Economics



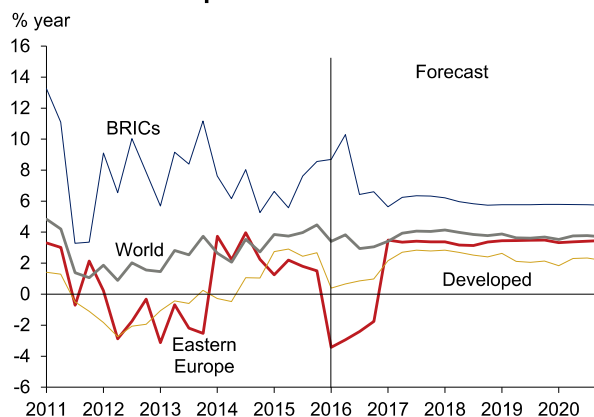
Latest Monthly Trends

German chemical production edged down further in March, and a closer look at the sub-sectors shows that growth in the pharmaceuticals sector was offset by a fall in ex-pharma.

Similarly, French output also decreased, as a result of weakness in ex-pharma, while Italian production fell for the second consecutive month. In the UK, chemical production dropped back with a varied performance among the sub-sectors. Looking ahead, the latest confidence data in the Eurozone have picked-up in recent months but remain at weak levels while concerns regarding a potential exit of the UK from the EU remain elevated. Indeed, in the event of a 'Brexit', the chemical sector would be vulnerable. However, on a positive note, a decision by North Yorkshire County Council to allow fracking has been seen as a positive step for the long term future of the domestic industry.

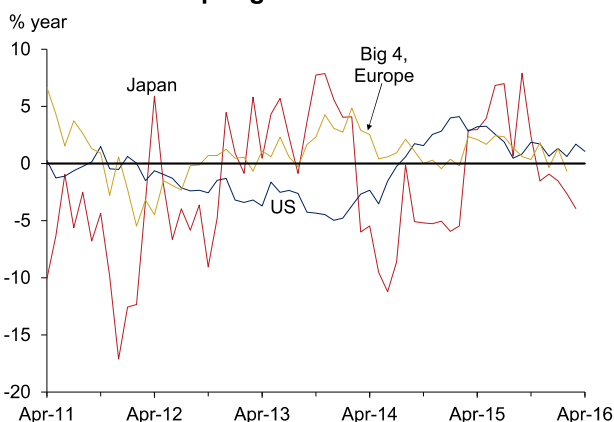
On the other side of the Atlantic, US output edged down by 0.3% in April. Moving on, the strong increase in private construction in the chemical sector, steady pick-up in consumer spending and rebound in housing activity should boost chemical production growth. On a less positive note, however, continued low oil prices are leading some firms to reconsider US investment plans. In Japan, production rebounded by 3.4% in March.

Chemicals: Output



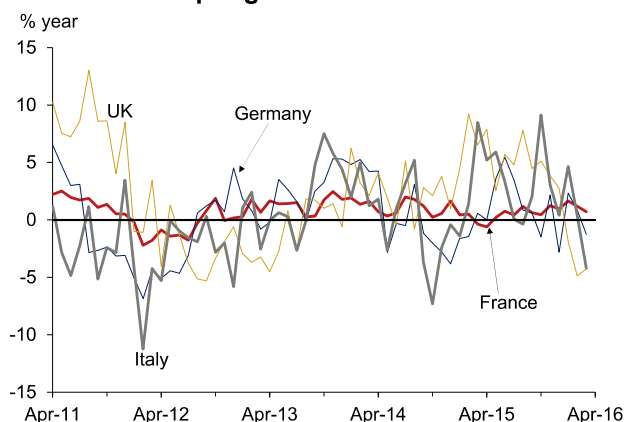
Source: Oxford Economics

Chemicals: Output growth



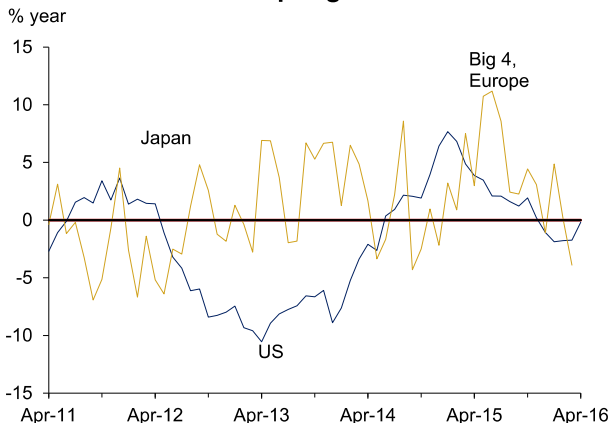
Source : Oxford Economics

Chemical: Output growth



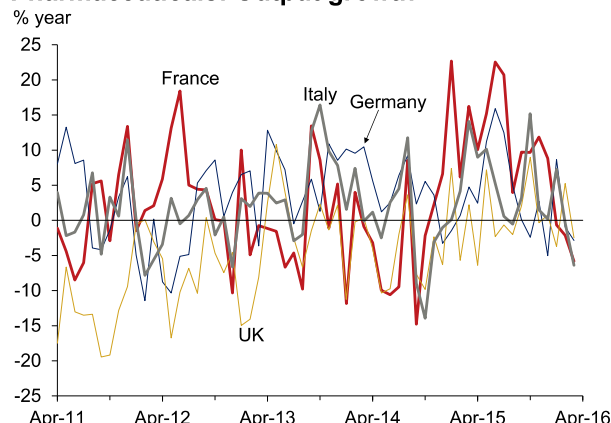
Source : Oxford Economics

Pharmaceuticals: Output growth



Source : Oxford Economics

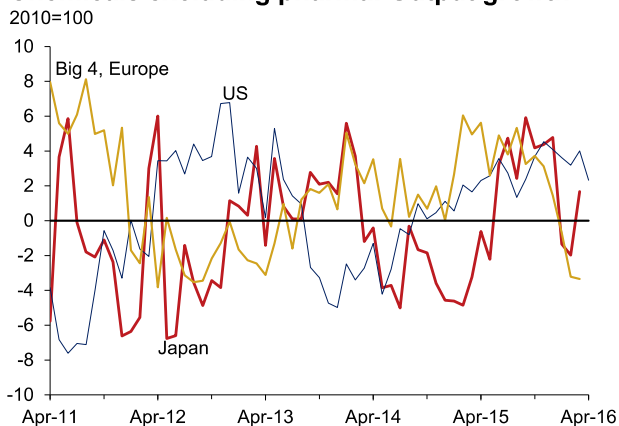
Pharmaceuticals: Output growth



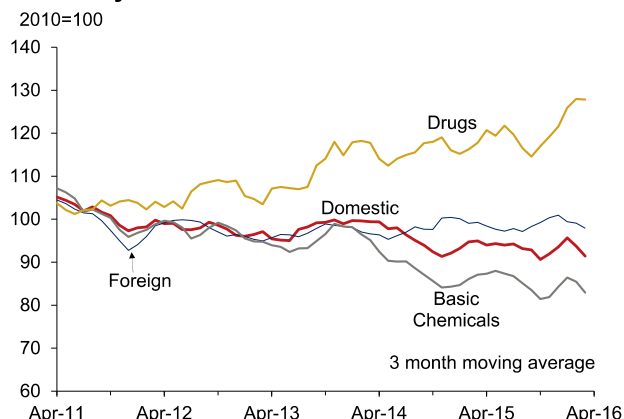
Source : LMC Automotive / Oxford Economics



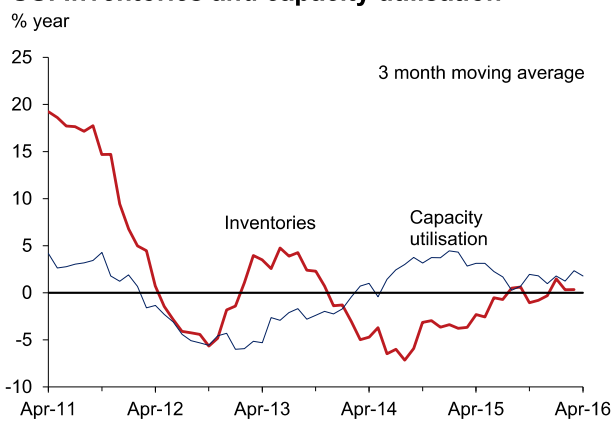
Chemicals excluding pharma: Output growth



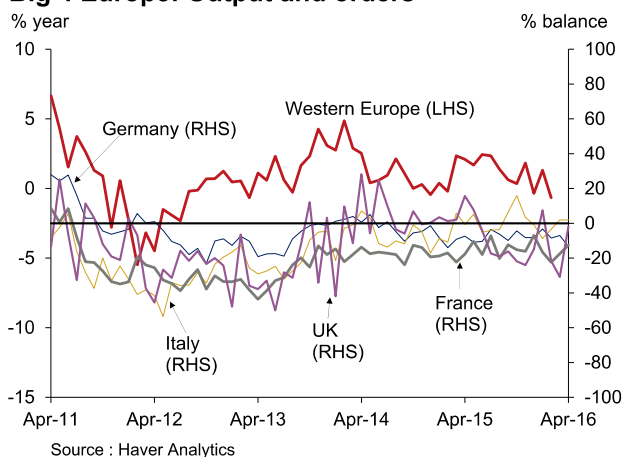
Germany: Orders



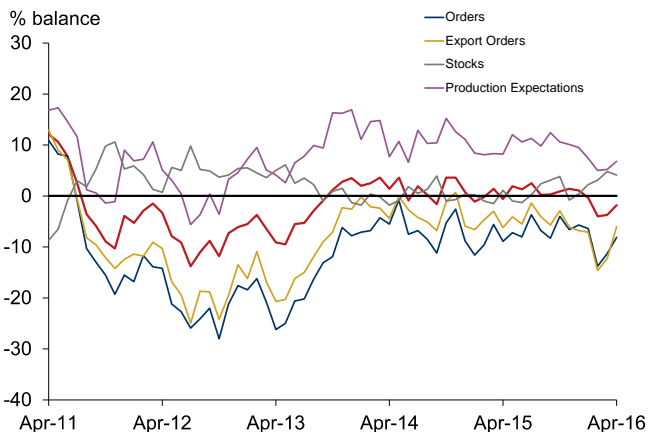
US: Inventories and capacity utilisation



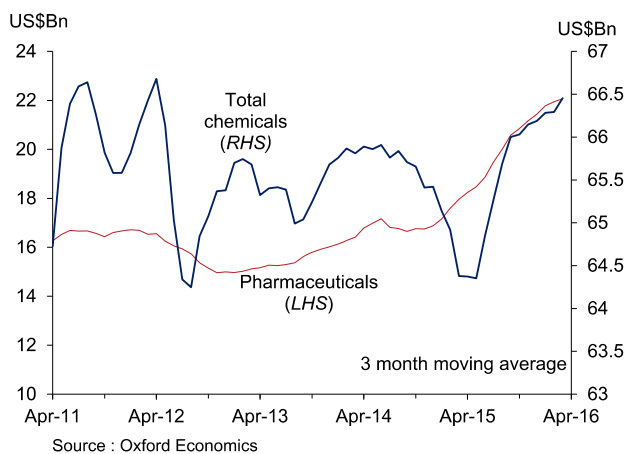
Big 4 Europe: Output and orders



Eurozone: Confidence

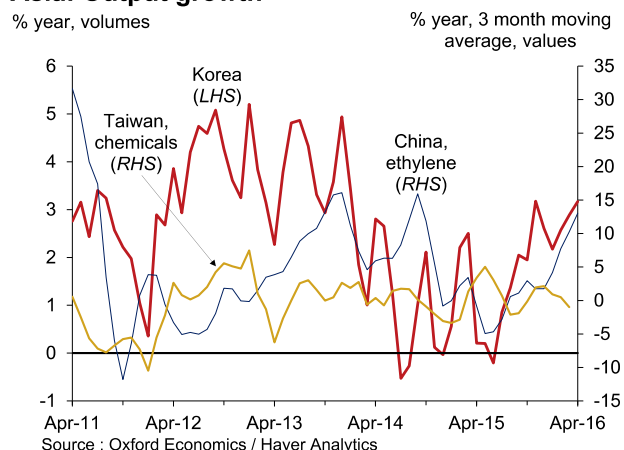


US: Chemical sales

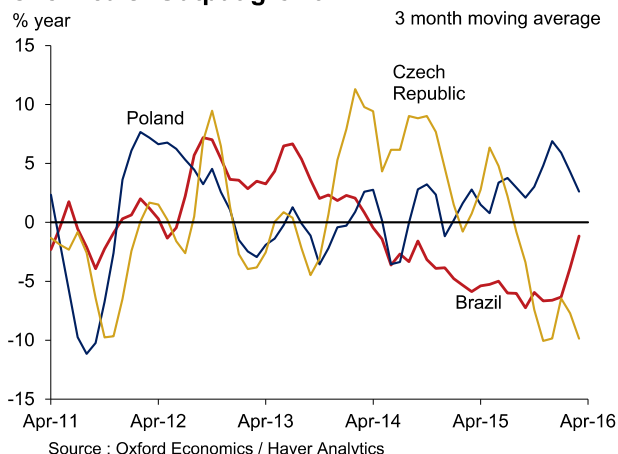




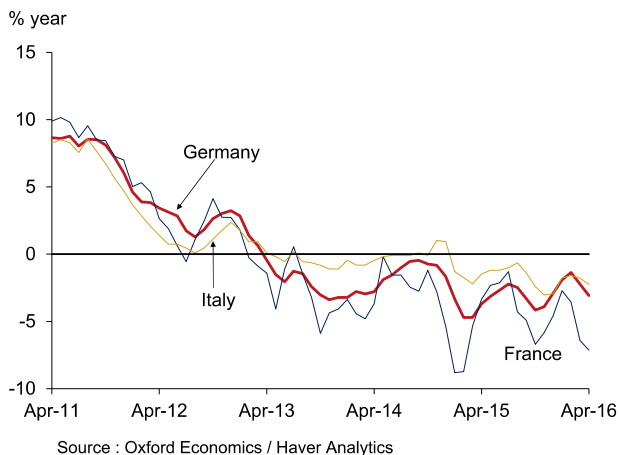
Asia: Output growth



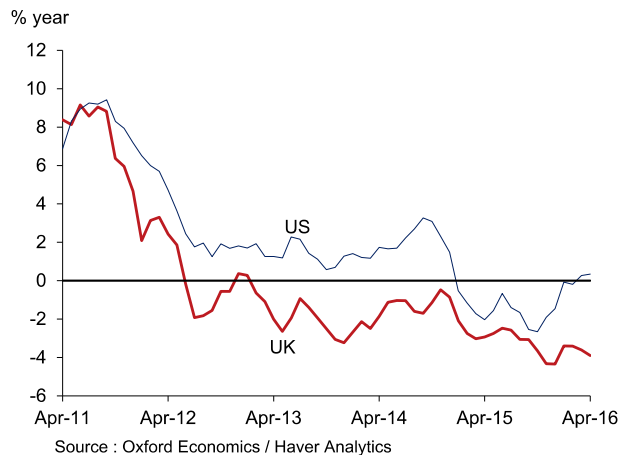
Chemicals: Output growth



Chemicals: Prices



Chemicals: Prices



Industry Output - Chemicals and pharmaceuticals

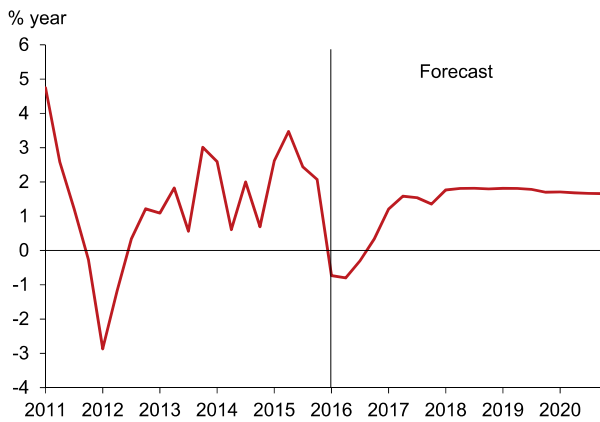
Value Added Index (2010=100) and year-on-year % changes, seasonally adjusted

	USA		Japan		Germany		France		Italy		UK	
	Index	% change	Index	% change	Index	% change	Index	% change	Index	% change	Index	% change
Apr	96.8	0.8	96.1	-1.0	103.4	4.3	110.1	2.5	102.2	7.1	96.4	3.5
May	96.5	3.3	92.5	-2.2	104.0	3.6	110.9	5.5	101.2	5.9	96.2	4.2
Jun	96.7	2.6	96.2	3.2	106.5	5.5	112.4	8.8	100.7	3.3	93.3	2.8
Jul	96.8	1.9	97.1	4.7	104.8	3.5	113.9	7.4	98.0	0.1	95.9	2.8
Aug	96.0	0.5	97.1	2.4	104.3	0.9	113.0	3.5	102.3	-0.4	95.5	4.1
Sep	96.4	0.8	100.1	5.9	102.5	0.6	112.4	4.5	99.1	2.1	96.5	3.6
Oct	97.0	1.9	99.4	4.2	101.0	-1.5	112.9	4.1	102.7	9.1	97.1	6.5
Nov	97.6	1.7	97.7	4.4	104.3	2.2	116.1	6.3	101.1	3.0	95.9	2.4
Dec	96.9	0.6	98.4	4.8	100.6	-2.8	118.6	4.8	99.5	0.4	94.5	2.0
2016												
Jan	97.9	1.3	95.7	-1.3	105.4	2.3	116.5	2.7	101.9	4.7	92.8	-2.5
Feb	97.3	0.6	93.9	-2.0	103.8	0.9	113.0	1.4	101.0	0.4	94.4	-1.4
Mar	98.1	1.7	97.1	1.7	103.4	-1.2	111.7	-0.9	99.6	-4.2	94.0	-3.6
Apr	97.8	1.1	-	-	-	-	-	-	-	-	-	-

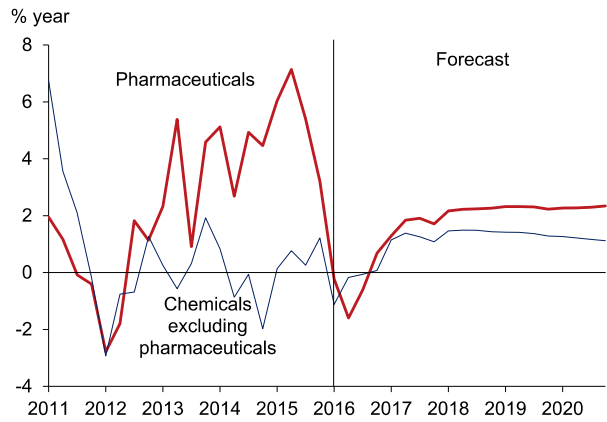


Forecast in Detail – Europe, Middle East & Africa

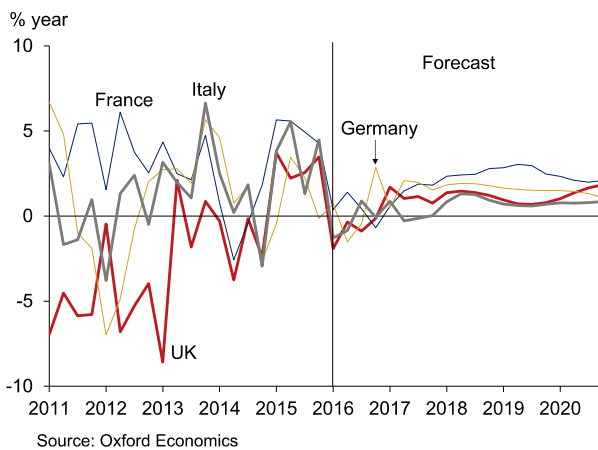
EU15: Chemicals output growth



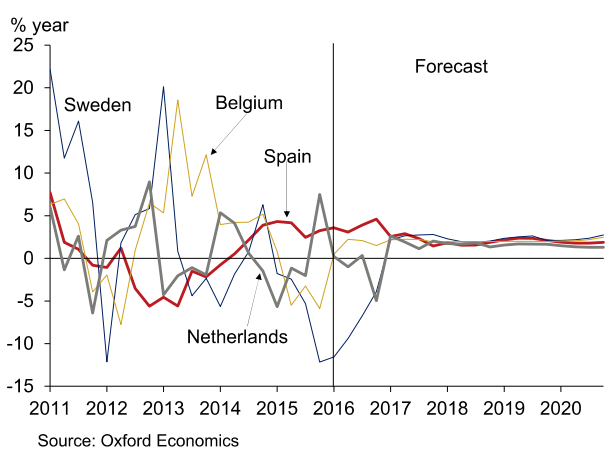
EU15: Chemical sector growth



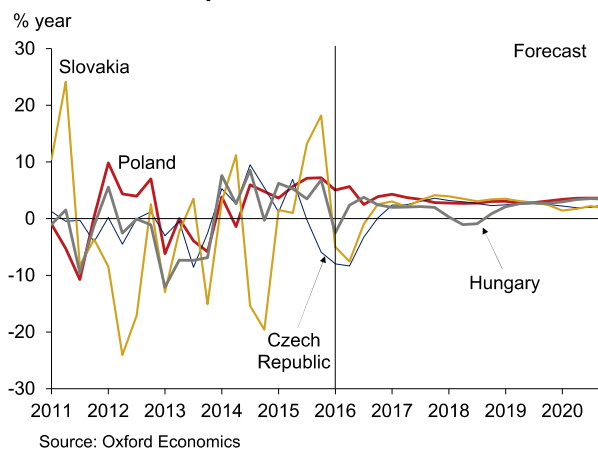
Chemicals: Output growth



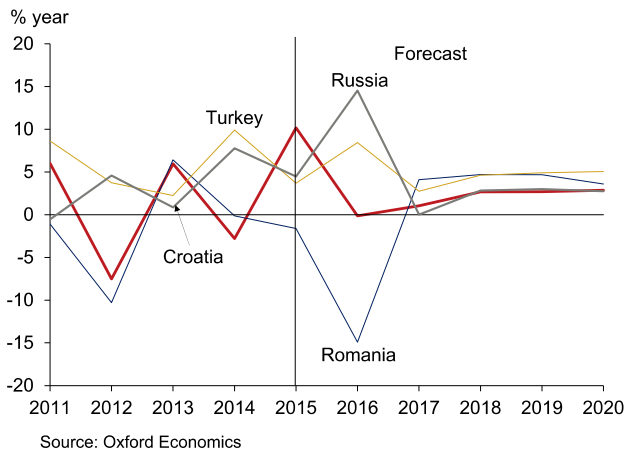
Chemicals: Output



Chemicals: Output



Chemicals: Output





Europe, Middle East and Africa: Chemicals and pharmaceuticals								Detailed output					
NACE 20 to 21								Value Added Index, 2010=100					
	NACE rev 2 industry code:	2015	2016	2017	2018	2019	2020	Average 5 year % growth					
								96-00	01-05	06-10	11-15	16-20	21-25
AUSTRIA													
Pharmaceuticals	21	131.7	133.2	135.5	137.5	140.2	143.1						
% change y-o-y		5.4	1.1	1.8	1.4	2.0	2.1	7.3	4.2	8.2	5.7	1.7	2.2
Chemicals ex Pharmaceuticals	20	108.3	107.6	108.3	109.3	111.3	111.7						
% change y-o-y		-2.9	-0.7	0.6	0.9	1.9	0.3	1.5	3.9	2.9	1.6	0.6	0.4
TOTAL	20-21	119.2	119.5	121.0	122.4	124.8	126.3						
% change y-o-y		1.2	0.3	1.2	1.2	2.0	1.2	3.6	4.0	5.2	3.6	1.2	1.4
BELGIUM													
Pharmaceuticals	21	139.5	143.6	147.0	150.4	154.2	158.6						
% change y-o-y		-4.8	3.0	2.4	2.4	2.5	2.8	1.4	16.3	9.1	6.9	2.6	3.1
Chemicals ex Pharmaceuticals	20	95.5	95.5	97.3	98.8	100.1	101.6						
% change y-o-y		-2.1	0.0	1.9	1.5	1.4	1.4	11.1	4.8	-1.6	-0.9	1.3	1.3
TOTAL	20-21	114.4	116.2	118.6	121.0	123.4	126.1						
% change y-o-y		-3.5	1.6	2.1	2.0	2.0	2.2	8.6	7.6	2.2	2.7	2.0	2.3
DENMARK													
Pharmaceuticals	21	140.2	142.8	147.7	152.3	156.8	161.4						
% change y-o-y		-8.0	1.9	3.5	3.1	2.9	3.0	-	4.3	1.3	7.0	2.9	2.5
Chemicals ex Pharmaceuticals	20	137.0	138.3	141.3	143.2	144.5	145.5						
% change y-o-y		4.9	0.9	2.2	1.4	0.9	0.7	-	-1.6	2.1	6.5	1.2	0.5
TOTAL	20-21	139.0	141.0	145.2	148.8	151.9	155.2						
% change y-o-y		-3.4	1.5	3.0	2.5	2.1	2.1	-	1.8	1.6	6.8	2.2	1.8
FINLAND													
Pharmaceuticals	21	102.4	105.0	109.6	114.3	119.7	125.5						
% change y-o-y		2.4	2.6	4.4	4.3	4.7	4.8	7.1	16.6	3.9	0.5	4.2	4.4
Chemicals ex Pharmaceuticals	20	104.1	105.0	108.6	113.3	118.0	122.9						
% change y-o-y		2.8	0.8	3.5	4.3	4.1	4.1	10.1	7.3	4.0	0.8	3.4	3.1
TOTAL	20-21	103.8	105.0	108.8	113.5	118.3	123.3						
% change y-o-y		2.8	1.1	3.6	4.3	4.2	4.2	9.7	8.5	4.0	0.8	3.5	3.3
FRANCE													
Pharmaceuticals	21	117.7	114.5	116.4	120.1	124.3	127.9						
% change y-o-y		12.8	-2.8	1.7	3.1	3.5	2.9	7.9	8.7	2.4	3.3	1.7	2.6
Chemicals ex Pharmaceuticals	20	116.8	120.0	121.5	124.0	126.9	128.8						
% change y-o-y		0.0	2.7	1.3	2.1	2.3	1.6	4.8	1.2	2.2	3.2	2.0	1.1
TOTAL	20-21	117.2	117.6	119.3	122.3	125.8	128.5						
% change y-o-y		5.1	0.4	1.4	2.5	2.8	2.1	5.8	4.0	2.3	3.2	1.9	1.8
GERMANY													
Pharmaceuticals	21	120.4	118.4	120.8	124.3	127.6	130.7						
% change y-o-y		4.3	-1.6	2.0	2.9	2.6	2.4	0.0	4.5	4.0	3.8	1.7	1.9
Chemicals ex Pharmaceuticals	20	98.5	99.9	101.2	102.6	103.6	104.4						
% change y-o-y		-0.2	1.4	1.3	1.4	1.0	0.8	3.0	1.0	0.9	-0.3	1.2	0.2
TOTAL	20-21	105.0	105.4	107.0	109.0	110.7	112.2						
% change y-o-y		1.3	0.4	1.5	1.9	1.6	1.3	2.2	1.9	1.8	1.0	1.3	0.8
GREECE													
Pharmaceuticals	21	95.3	98.2	99.4	100.9	103.0	106.0						
% change y-o-y		3.6	3.0	1.3	1.5	2.1	2.9	14.4	25.8	26.0	-1.0	2.1	3.7
Chemicals ex Pharmaceuticals	20	102.2	105.0	105.8	107.1	109.0	111.5						
% change y-o-y		4.5	2.7	0.8	1.2	1.8	2.3	-1.3	1.9	-4.7	0.4	1.7	3.1
TOTAL	20-21	98.7	101.5	102.5	103.9	105.9	108.6						
% change y-o-y		4.0	2.8	1.0	1.3	1.9	2.6	-0.4	5.0	5.2	-0.3	1.9	3.4



Europe, Middle East and Africa: Chemicals and pharmaceuticals								Detailed output					
NACE 20 to 21								Value Added Index, 2010=100					
	NACE rev 2 industry code:	2015	2016	2017	2018	2019	2020	Average 5 year % growth					
								96-00	01-05	06-10	11-15	16-20	21-25
IRELAND													
Pharmaceuticals	21	142.5	146.8	147.6	150.3	153.6	157.1						
% change y-o-y		28.1	3.0	0.6	1.8	2.2	2.2	32.4	10.7	8.9	7.3	2.0	2.8
Chemicals ex Pharmaceuticals	20	105.7	91.5	91.3	92.7	94.5	96.2						
% change y-o-y		-0.3	-13.4	-0.2	1.5	1.9	1.8	11.0	0.6	4.4	1.1	-1.9	1.7
TOTAL	20-21	122.3	116.4	116.7	118.6	121.1	123.6						
% change y-o-y		12.8	-4.8	0.2	1.7	2.1	2.1	15.2	4.0	6.3	4.1	0.2	2.4
ITALY													
Pharmaceuticals	21	121.4	119.2	118.9	120.4	121.4	122.6						
% change y-o-y		6.3	-1.8	-0.3	1.3	0.8	1.0	4.8	1.7	3.0	4.0	0.2	1.1
Chemicals ex Pharmaceuticals	20	98.2	99.1	99.5	100.4	100.9	101.6						
% change y-o-y		1.8	0.8	0.5	0.9	0.5	0.7	0.7	0.7	0.0	-0.4	0.7	0.6
TOTAL	20-21	107.6	107.2	107.3	108.5	109.2	110.1						
% change y-o-y		3.8	-0.3	0.1	1.1	0.7	0.8	2.1	1.1	1.1	1.5	0.5	0.8
LUXEMBOURG													
Pharmaceuticals	21	104.5	112.5	116.9	122.3	127.4	132.6						
% change y-o-y		1.7	7.6	4.0	4.6	4.2	4.1	7.0	31.9	-0.2	0.9	4.9	4.0
Chemicals ex Pharmaceuticals	20	104.5	112.5	116.4	120.7	124.3	127.8						
% change y-o-y		1.7	7.6	3.5	3.7	3.0	2.7	2.5	8.5	-7.8	0.9	4.1	2.1
TOTAL	20-21	104.5	112.5	116.6	121.4	125.7	130.0						
% change y-o-y		1.7	7.6	3.7	4.1	3.5	3.4	3.2	14.3	-4.7	0.9	4.5	3.0
NETHERLANDS													
Pharmaceuticals	21	126.1	120.2	124.5	127.5	131.3	135.1						
% change y-o-y		4.4	-4.7	3.6	2.4	3.0	2.9	5.6	5.9	2.1	4.7	1.4	2.6
Chemicals ex Pharmaceuticals	20	96.5	96.5	97.7	99.0	100.0	100.7						
% change y-o-y		-2.4	0.0	1.2	1.3	1.1	0.7	2.9	7.2	0.7	-0.7	0.9	0.4
TOTAL	20-21	103.9	102.4	104.4	106.1	107.8	109.3						
% change y-o-y		-0.4	-1.4	1.9	1.6	1.6	1.4	3.5	6.9	1.0	0.8	1.0	1.1
PORTUGAL													
Pharmaceuticals	21	130.1	126.8	128.0	128.2	128.8	130.4						
% change y-o-y		17.7	-2.6	1.0	0.2	0.4	1.3	5.1	-2.7	2.4	5.4	0.0	1.5
Chemicals ex Pharmaceuticals	20	101.6	106.5	108.2	108.3	108.6	109.7						
% change y-o-y		4.0	4.8	1.5	0.1	0.3	1.0	7.0	3.6	0.5	0.3	1.5	0.9
TOTAL	20-21	109.3	112.0	113.5	113.6	114.0	115.2						
% change y-o-y		8.0	2.5	1.4	0.1	0.3	1.1	6.4	1.8	1.0	1.8	1.1	1.1
SPAIN													
Pharmaceuticals	21	103.9	109.1	111.2	113.1	115.8	118.1						
% change y-o-y		3.5	5.0	1.9	1.7	2.3	2.0	5.7	4.7	10.7	0.8	2.6	2.1
Chemicals ex Pharmaceuticals	20	100.0	103.2	105.8	107.5	109.9	111.8						
% change y-o-y		3.6	3.1	2.5	1.7	2.2	1.7	3.2	4.1	3.0	0.0	2.2	1.5
TOTAL	20-21	101.4	105.3	107.7	109.5	112.0	114.0						
% change y-o-y		3.5	3.8	2.3	1.7	2.2	1.8	3.8	4.3	5.3	0.3	2.4	1.7
SWEDEN													
Pharmaceuticals	21	118.7	109.3	112.4	115.1	118.5	121.7						
% change y-o-y		-5.5	-7.9	2.9	2.4	2.9	2.7	12.0	12.6	0.2	3.5	0.5	2.6
Chemicals ex Pharmaceuticals	20	94.5	86.8	88.4	89.4	90.4	91.6						
% change y-o-y		-5.5	-8.1	1.8	1.2	1.1	1.3	11.2	2.9	3.6	-1.1	-0.6	1.1
TOTAL	20-21	110.7	101.9	104.5	106.7	109.2	111.8						
% change y-o-y		-5.5	-8.0	2.6	2.0	2.4	2.3	11.6	9.2	1.3	2.1	0.2	2.2



Europe, Middle East and Africa: Chemicals and pharmaceuticals								Detailed output						
NACE 20 to 21								Value Added Index, 2010=100						
	NACE rev 2 industry code:	2015	2016	2017	2018	2019	2020	Average 5 year % growth						
								96-00	01-05	06-10	11-15	16-20	21-25	
UNITED KINGDOM														
Pharmaceuticals	21	75.8	76.6	77.7	78.9	79.6	81.0							
% change y-o-y		0.8	1.0	1.5	1.5	0.9	1.6	3.6	7.2	0.4	-5.4	1.3	2.6	
Chemicals ex Pharmaceuticals	20	111.8	108.7	109.5	110.8	111.5	112.9							
% change y-o-y		5.4	-2.8	0.7	1.2	0.6	1.3	2.0	-0.1	-2.4	2.3	0.2	1.5	
TOTAL	20-21	89.7	88.9	90.0	91.2	91.9	93.3							
% change y-o-y		3.0	-0.8	1.2	1.4	0.8	1.5	2.7	3.8	-0.7	-2.2	0.8	2.1	
EU15														
Pharmaceuticals	21	113.8	113.3	115.2	117.8	120.5	123.3							
% change y-o-y		5.4	-0.4	1.7	2.2	2.3	2.3	5.2	6.9	4.0	2.6	1.6	-	
Chemicals ex Pharmaceuticals	20	102.8	102.4	103.7	105.2	106.7	107.9							
% change y-o-y		0.6	-0.3	1.2	1.5	1.4	1.2	3.8	1.8	0.9	0.5	1.0	-	
TOTAL	20-21	107.3	106.9	108.4	110.4	112.4	114.2							
% change y-o-y		2.6	-0.4	1.4	1.8	1.8	1.7	4.3	3.6	2.1	1.4	1.3	-	
BULGARIA														
Pharmaceuticals	21	139.3	154.3	166.2	178.0	188.6	199.3							
% change y-o-y		5.8	10.8	7.7	7.1	5.9	5.7	-	1.4	-5.2	6.9	7.4	4.9	
Chemicals ex Pharmaceuticals	20	116.2	118.9	125.3	131.8	137.4	142.8							
% change y-o-y		2.9	2.3	5.4	5.2	4.2	4.0	-	13.3	9.0	3.1	4.2	3.3	
TOTAL	20-21	118.4	122.2	129.1	136.1	142.2	148.1							
% change y-o-y		3.2	3.2	5.7	5.4	4.5	4.2	-	10.6	7.0	3.4	4.6	3.5	
CYPRUS														
Pharmaceuticals	21	107.9	110.9	114.5	117.5	120.7	122.9							
% change y-o-y		-3.6	2.8	3.3	2.6	2.7	1.8	-	-	7.3	1.5	2.6	0.8	
Chemicals ex Pharmaceuticals	20	155.7	160.0	166.1	170.3	174.7	177.5							
% change y-o-y		22.1	2.8	3.8	2.5	2.6	1.6	-	-	8.5	9.3	2.7	0.2	
TOTAL	20-21	126.3	129.8	134.4	137.8	141.5	143.9							
% change y-o-y		7.1	2.8	3.5	2.6	2.7	1.7	-	-	7.7	4.8	2.6	0.5	
CYPRUS														
Pharmaceuticals	21	107.9	110.9	114.5	117.5	120.7	122.9							
% change y-o-y		-3.6	2.8	3.3	2.6	2.7	1.8	-	-	7.3	1.5	2.6	0.8	
Chemicals ex Pharmaceuticals	20	155.7	160.0	166.1	170.3	174.7	177.5							
% change y-o-y		22.1	2.8	3.8	2.5	2.6	1.6	-	-	8.5	9.3	2.7	0.2	
TOTAL	20-21	126.3	129.8	134.4	137.8	141.5	143.9							
% change y-o-y		7.1	2.8	3.5	2.6	2.7	1.7	-	-	7.7	4.8	2.6	0.5	
CZECH REPUBLIC														
Pharmaceuticals	21	107.2	107.8	110.4	112.8	115.1	117.1							
% change y-o-y		10.6	0.6	2.4	2.2	2.0	1.8	-	10.5	7.1	1.4	1.8	2.7	
Chemicals ex Pharmaceuticals	20	97.0	89.1	92.0	94.9	97.6	99.9							
% change y-o-y		-4.6	-8.2	3.2	3.1	2.9	2.4	-	4.9	2.8	-0.6	0.6	2.8	
TOTAL	20-21	100.5	95.5	98.2	101.0	103.5	105.8							
% change y-o-y		0.4	-5.0	2.9	2.8	2.6	2.2	-	6.4	4.2	0.1	1.0	2.8	
ESTONIA														
Pharmaceuticals	21	83.9	85.4	88.7	92.8	96.6	100.4							
% change y-o-y		-2.7	1.8	3.9	4.6	4.2	3.9	-	4.6	3.0	-3.5	3.7	4.3	
Chemicals ex Pharmaceuticals	20	85.4	86.8	89.5	93.2	96.6	99.7							
% change y-o-y		-12.6	1.5	3.2	4.1	3.6	3.1	-	10.2	-6.8	-3.1	3.1	3.4	
TOTAL	20-21	85.4	86.7	89.5	93.2	96.6	99.7							
% change y-o-y		-12.4	1.6	3.2	4.2	3.6	3.2	-	10.1	-6.6	-3.1	3.1	3.5	



Europe, Middle East and Africa: Chemicals and pharmaceuticals								Detailed output					
NACE 20 to 21								Value Added Index, 2010=100					
	NACE rev 2 industry code:	2015	2016	2017	2018	2019	2020	Average 5 year % growth					
								96-00	01-05	06-10	11-15	16-20	21-25
HUNGARY													
Pharmaceuticals	21	93.0	94.1	95.4	94.8	97.0	100.0						
% change y-o-y		6.2	1.2	1.4	-0.6	2.2	3.1	2.2	5.7	2.5	-1.4	1.5	3.6
Chemicals ex Pharmaceuticals	20	112.0	114.2	118.0	118.7	122.5	127.2						
% change y-o-y		4.0	2.0	3.3	0.6	3.2	3.8	-3.4	4.1	-3.1	2.3	2.6	3.2
TOTAL	20-21	98.7	100.1	102.2	102.0	104.6	108.1						
% change y-o-y		5.5	1.5	2.0	-0.2	2.6	3.3	-0.1	5.1	0.6	-0.3	1.8	3.4
LATVIA													
Pharmaceuticals	21	95.3	97.0	99.9	103.2	106.9	110.9						
% change y-o-y		5.8	1.8	3.0	3.3	3.6	3.7	-	-	-1.7	-1.0	3.1	3.1
Chemicals ex Pharmaceuticals	20	108.0	115.4	118.1	121.3	125.0	128.7						
% change y-o-y		3.7	6.9	2.3	2.7	3.1	3.0	-	-	7.3	1.6	3.6	2.3
TOTAL	20-21	105.7	112.1	114.8	118.0	121.8	125.5						
% change y-o-y		4.0	6.0	2.4	2.8	3.2	3.1	-	-	5.3	1.1	3.5	2.5
LITHUANIA													
Pharmaceuticals	21	201.0	217.5	222.5	231.5	241.5	251.0						
% change y-o-y		34.0	8.2	2.3	4.0	4.3	3.9	-	-0.6	11.6	15.0	4.5	3.3
Chemicals ex Pharmaceuticals	20	99.5	100.9	102.5	106.2	110.2	113.7						
% change y-o-y		-4.6	1.4	1.6	3.6	3.8	3.2	-	4.7	12.7	-0.1	2.7	2.5
TOTAL	20-21	113.4	116.9	119.0	123.4	128.3	132.6						
% change y-o-y		2.6	3.0	1.8	3.7	3.9	3.4	-	3.8	12.6	2.6	3.2	2.7
MALTA													
Pharmaceuticals	21	67.0	53.2	53.8	55.5	57.6	59.1						
% change y-o-y		27.4	-20.6	1.2	3.2	3.8	2.5	8.0	10.8	22.6	-7.7	-2.5	2.5
Chemicals ex Pharmaceuticals	20	100.0	105.5	110.4	112.3	114.3	116.6						
% change y-o-y		-2.2	5.5	4.6	1.7	1.8	2.0	-7.6	-1.8	1.8	0.0	3.1	2.0
TOTAL	20-21	79.7	73.3	75.5	77.4	79.4	81.2						
% change y-o-y		11.2	-8.0	3.1	2.4	2.7	2.2	-4.8	2.1	11.7	-4.4	0.4	2.2
POLAND													
Pharmaceuticals	21	94.3	97.6	101.4	104.6	108.0	112.3						
% change y-o-y		4.8	3.5	4.0	3.1	3.3	4.0	-8.3	9.9	14.7	-1.2	3.6	4.2
Chemicals ex Pharmaceuticals	20	117.3	122.9	127.0	130.3	133.9	138.2						
% change y-o-y		6.7	4.8	3.3	2.6	2.7	3.3	24.9	7.8	8.3	3.2	3.3	3.4
TOTAL	20-21	106.7	111.2	115.2	118.4	121.9	126.3						
% change y-o-y		5.9	4.3	3.6	2.8	2.9	3.6	5.2	8.6	11.0	1.3	3.4	3.7
ROMANIA													
Pharmaceuticals	21	109.9	102.4	107.6	114.3	119.9	124.3						
% change y-o-y		1.8	-6.9	5.1	6.3	4.8	3.7	-	-10.3	2.9	1.9	2.5	5.2
Chemicals ex Pharmaceuticals	20	90.6	76.0	78.9	82.4	86.3	89.4						
% change y-o-y		-2.1	-16.2	3.9	4.4	4.7	3.6	-	-19.3	4.0	-2.0	-0.3	4.7
TOTAL	20-21	92.8	79.0	82.2	86.1	90.1	93.3						
% change y-o-y		-1.6	-14.9	4.1	4.7	4.7	3.6	-	-18.5	3.8	-1.5	0.1	4.8
SLOVAK REPUBLIC													
Pharmaceuticals	21	39.0	33.8	34.9	35.8	36.6	37.6						
% change y-o-y		5.0	-13.3	3.2	2.6	2.4	2.8	-	-	8.8	-17.2	-0.7	2.8
Chemicals ex Pharmaceuticals	20	93.9	91.8	94.7	98.0	101.0	102.7						
% change y-o-y		7.9	-2.2	3.1	3.5	3.0	1.7	-	-	10.1	-1.2	1.8	2.1
TOTAL	20-21	86.7	84.2	86.8	89.9	92.5	94.2						
% change y-o-y		7.8	-2.9	3.1	3.5	3.0	1.8	-	-	10.0	-2.8	1.7	2.2



Europe, Middle East and Africa: Chemicals and pharmaceuticals								Detailed output					
NACE 20 to 21								Value Added Index, 2010=100					
	NACE rev 2 industry code:	2015 2016 2017 2018 2019 2020						Average 5 year % growth					
		96-00	01-05	06-10	11-15	16-20	21-25						
SLOVENIA													
Pharmaceuticals	21	98.4	81.5	83.4	85.4	88.9	92.7	-	22.1	6.1	-0.3	-1.2	3.8
% change y-o-y		-6.3	-17.2	2.3	2.5	4.1	4.2	-	22.1	6.1	-0.3	-1.2	3.8
Chemicals ex Pharmaceuticals	20	98.4	81.5	83.6	85.8	88.0	90.6	-	22.1	6.1	-0.3	-1.6	2.6
% change y-o-y		-6.3	-17.2	2.6	2.7	2.5	3.0	-	22.1	6.1	-0.3	-1.6	2.6
TOTAL	20-21	98.4	81.5	83.4	85.6	88.5	91.8	-	22.1	6.1	-0.3	-1.4	3.3
% change y-o-y		-6.3	-17.2	2.4	2.6	3.4	3.7	-	22.1	6.1	-0.3	-1.4	3.3
EASTERN EUROPE (EU13)													
Pharmaceuticals	21	101.2	99.7	102.6	105.2	108.7	112.6	-0.4	6.9	5.6	0.2	2.2	-
% change y-o-y		3.6	-1.5	2.9	2.5	3.3	3.6	-0.4	6.9	5.6	0.2	2.2	-
Chemicals ex Pharmaceuticals	20	104.3	101.0	104.6	108.5	112.3	116.0	-1.5	-2.7	5.6	0.8	2.1	-
% change y-o-y		0.8	-3.2	3.6	3.6	3.5	3.3	-1.5	-2.7	5.6	0.8	2.1	-
TOTAL	20-21	103.3	100.5	104.0	107.4	111.1	114.8	-1.2	0.0	5.6	0.6	2.1	-
% change y-o-y		1.7	-2.6	3.4	3.3	3.5	3.4	-1.2	0.0	5.6	0.6	2.1	-
NORWAY													
Pharmaceuticals	21	106.3	110.9	116.0	121.0	126.7	132.9	6.9	10.5	1.0	1.2	4.6	5.5
% change y-o-y		11.5	4.3	4.6	4.4	4.7	4.9	6.9	10.5	1.0	1.2	4.6	5.5
Chemicals ex Pharmaceuticals	20	81.9	83.4	85.9	88.6	91.4	94.5	1.0	2.8	2.2	-3.9	2.9	3.2
% change y-o-y		1.9	1.8	3.0	3.2	3.2	3.4	1.0	2.8	2.2	-3.9	2.9	3.2
TOTAL	20-21	89.7	92.2	95.5	98.9	102.7	106.8	2.4	5.0	1.8	-2.2	3.5	4.1
% change y-o-y		5.3	2.7	3.6	3.6	3.8	4.0	2.4	5.0	1.8	-2.2	3.5	4.1
RUSSIA													
Pharmaceuticals	21	127.6	125.6	126.0	129.3	133.1	137.6	-	10.5	3.4	5.0	1.5	2.6
% change y-o-y		13.4	-1.5	0.3	2.6	3.0	3.3	-	10.5	3.4	5.0	1.5	2.6
Chemicals ex Pharmaceuticals	20	104.3	104.9	106.4	109.3	112.1	115.1	-	6.5	0.5	0.8	2.0	1.8
% change y-o-y		8.6	0.6	1.4	2.7	2.6	2.6	-	6.5	0.5	0.8	2.0	1.8
TOTAL	20-21	111.2	111.1	112.2	115.2	118.3	121.7	-	7.5	1.3	2.1	1.8	2.1
% change y-o-y		10.2	-0.1	1.1	2.7	2.7	2.9	-	7.5	1.3	2.1	1.8	2.1
SWITZERLAND													
Pharmaceuticals	21	135.5	139.7	144.3	149.5	154.9	159.8	13.5	12.6	6.9	6.3	3.4	2.6
% change y-o-y		3.2	3.1	3.3	3.6	3.6	3.2	13.5	12.6	6.9	6.3	3.4	2.6
Chemicals ex Pharmaceuticals	20	102.9	102.5	103.3	105.1	106.8	108.3	-1.3	7.5	3.9	0.6	1.0	1.1
% change y-o-y		0.0	-0.3	0.8	1.7	1.6	1.4	-1.3	7.5	3.9	0.6	1.0	1.1
TOTAL	20-21	128.7	132.0	135.8	140.3	144.9	149.1	8.0	11.3	6.3	5.2	3.0	2.4
% change y-o-y		2.7	2.6	2.9	3.3	3.3	2.9	8.0	11.3	6.3	5.2	3.0	2.4
TURKEY													
Pharmaceuticals	21	159.2	179.2	184.8	193.8	204.0	215.2	-	-	10.3	9.7	6.2	4.9
% change y-o-y		15.1	12.6	3.1	4.9	5.2	5.5	-	-	10.3	9.7	6.2	4.9
Chemicals ex Pharmaceuticals	20	118.6	125.6	128.7	134.4	140.7	147.4	-	-	7.6	3.5	4.4	4.1
% change y-o-y		-2.2	5.9	2.5	4.5	4.7	4.7	-	-	7.6	3.5	4.4	4.1
TOTAL	20-21	131.3	142.4	146.3	153.1	160.6	168.7	-	-	8.4	5.6	5.1	4.4
% change y-o-y		3.7	8.4	2.7	4.6	4.9	5.1	-	-	8.4	5.6	5.1	4.4
UKRAINE													
Pharmaceuticals	21	68.1	74.6	78.0	81.8	85.5	88.8	-	-	5.8	-7.4	5.4	3.0
% change y-o-y		-21.1	9.5	4.6	4.9	4.6	3.8	-	-	5.8	-7.4	5.4	3.0
Chemicals ex Pharmaceuticals	20	55.8	55.1	57.3	59.8	62.2	64.0	-	-	-2.8	-11.0	2.8	2.1
% change y-o-y		-17.1	-1.1	3.9	4.4	4.0	2.9	-	-	-2.8	-11.0	2.8	2.1
TOTAL	20-21	57.5	57.8	60.2	62.9	65.4	67.5	-	-	-1.9	-10.5	3.3	2.3
% change y-o-y		-17.8	0.6	4.0	4.5	4.1	3.1	-	-	-1.9	-10.5	3.3	2.3
EUROPE													
Pharmaceuticals	21	118.0	118.8	121.2	124.4	127.8	131.2	6.2	7.7	4.6	3.4	2.1	2.6
% change y-o-y		5.5	0.6	2.1	2.6	2.7	2.7	6.2	7.7	4.6	3.4	2.1	2.6
Chemicals ex Pharmaceuticals	20	102.7	102.6	104.1	106.0	107.9	109.6	4.0	2.2	1.5	0.5	1.3	1.3
% change y-o-y		0.7	-0.1	1.5	1.9	1.8	1.6	4.0	2.2	1.5	0.5	1.3	1.3
TOTAL	20-21	109.3	109.5	111.4	113.9	116.4	118.9	4.7	4.1	2.7	1.8	1.7	2.0
% change y-o-y		2.8	0.2	1.7	2.2	2.2	2.1	4.7	4.1	2.7	1.8	1.7	2.0



Europe, Middle East and Africa: Chemicals and pharmaceuticals								Detailed output					
NACE 20 to 21								Value Added Index, 2010=100					
	NACE rev 2 industry	2015	2016	2017	2018	2019	2020	96-00	01-05	Average 5 year % growth			
										06-10	11-15	16-20	21-25
BAHRAIN													
Pharmaceuticals	21	16.0	16.7	18.0	19.0	19.9	20.8						
% change y-o-y		-50.2	4.5	8.0	5.4	4.7	4.5	-	-	-20.4	-30.7	5.4	4.6
Chemicals ex Pharmaceuticals	20	90.6	93.9	96.3	98.9	102.2	106.0						
% change y-o-y		-21.3	3.7	2.6	2.7	3.4	3.7	-	-	6.5	-2.0	3.2	4.2
TOTAL	20-21	90.5	93.9	96.3	98.9	102.2	106.0						
% change y-o-y		-21.3	3.7	2.6	2.7	3.4	3.7	-	-	6.5	-2.0	3.2	4.2
IRAQ													
Pharmaceuticals	21	104.0	116.8	129.7	144.7	160.7	178.2						
% change y-o-y		17.3	12.3	11.1	11.5	11.1	10.9	-	-53.5	-4.2	0.8	11.4	11.4
Chemicals ex Pharmaceuticals	20	157.8	174.1	190.6	209.2	229.6	251.1						
% change y-o-y		15.0	10.4	9.5	9.8	9.7	9.4	-	-12.0	5.8	9.6	9.7	9.6
TOTAL	20-21	157.7	174.0	190.5	209.1	229.5	251.0						
% change y-o-y		15.0	10.4	9.5	9.8	9.7	9.4	-	-13.1	5.8	9.5	9.7	9.6
ISRAEL													
Pharmaceuticals	21	112.4	115.9	117.7	120.7	124.0	128.0						
% change y-o-y		15.0	3.1	1.6	2.5	2.7	3.2	18.6	29.7	19.5	2.4	2.6	2.8
Chemicals ex Pharmaceuticals	20	110.3	115.0	118.5	122.7	126.7	131.2						
% change y-o-y		7.9	4.2	3.0	3.6	3.3	3.5	8.0	21.6	9.8	2.0	3.5	3.2
TOTAL	20-21	111.7	115.6	118.0	121.4	124.9	129.0						
% change y-o-y		12.6	3.5	2.1	2.9	2.9	3.3	12.5	25.8	15.8	2.2	2.9	2.9
KUWAIT													
Pharmaceuticals	21	608.4	637.4	675.3	715.9	758.0	803.9						
% change y-o-y		4.6	4.8	5.9	6.0	5.9	6.0	-	-	-	43.5	5.7	6.6
Chemicals ex Pharmaceuticals	20	317.6	326.9	342.2	358.1	375.3	392.8						
% change y-o-y		0.8	2.9	4.7	4.6	4.8	4.7	-	16.8	21.6	26.0	4.3	4.9
TOTAL	20-21	334.7	345.2	361.9	379.1	397.8	417.0						
% change y-o-y		1.2	3.1	4.8	4.8	4.9	4.8	-	17.6	22.2	27.3	4.5	5.1
OMAN													
Pharmaceuticals	21	103.5	106.9	112.4	118.1	124.1	130.8						
% change y-o-y		2.3	3.2	5.1	5.1	5.1	5.4	-	-	-0.4	0.7	4.8	5.9
Chemicals ex Pharmaceuticals	20	99.2	101.4	105.6	110.4	115.5	121.1						
% change y-o-y		1.1	2.2	4.1	4.5	4.6	4.8	-	-	8.0	-0.2	4.1	4.8
TOTAL	20-21	99.2	101.4	105.6	110.4	115.5	121.1						
% change y-o-y		1.1	2.2	4.1	4.5	4.6	4.8	-	-	8.0	-0.2	4.1	4.8
QATAR													
Pharmaceuticals	21	79.9	82.0	87.3	92.8	98.3	103.4						
% change y-o-y		-20.8	2.6	6.5	6.3	5.9	5.2	-18.5	41.3	13.6	-4.4	5.3	5.8
Chemicals ex Pharmaceuticals	20	74.7	79.5	83.4	87.2	91.3	94.7						
% change y-o-y		-11.0	6.4	4.9	4.6	4.7	3.7	11.7	1.0	5.1	-5.7	4.9	4.1
TOTAL	20-21	74.7	79.5	83.4	87.2	91.3	94.7						
% change y-o-y		-11.0	6.4	4.9	4.6	4.7	3.7	11.7	1.0	5.1	-5.7	4.9	4.1
SAUDI ARABIA													
Pharmaceuticals	21	260.0	277.7	297.0	317.2	338.0	360.7						
% change y-o-y		8.6	6.8	7.0	6.8	6.6	6.7	53.4	36.0	31.1	21.1	6.8	6.6
Chemicals ex Pharmaceuticals	20	141.6	148.6	156.6	164.6	173.3	182.4						
% change y-o-y		7.3	4.9	5.4	5.1	5.3	5.2	2.3	15.7	10.7	7.2	5.2	4.9
TOTAL	20-21	148.5	156.1	164.7	173.4	182.8	192.7						
% change y-o-y		7.4	5.1	5.5	5.3	5.4	5.4	2.5	16.0	11.4	8.2	5.4	5.1

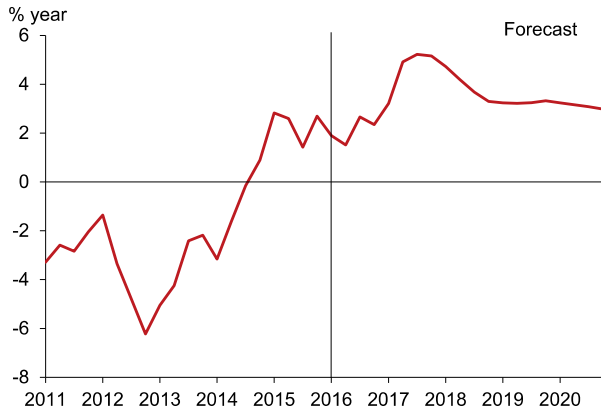


Europe, Middle East and Africa: Chemicals and pharmaceuticals								Detailed output					
NACE 20 to 21								Value Added Index, 2010=100					
	NACE rev 2 industry	2015	2016	2017	2018	2019	2020	Average 5 year % growth					
								96-00	01-05	06-10	11-15	16-20	21-25
UAE													
Pharmaceuticals	21	130.5	137.6	145.2	154.0	163.1	172.8						
% change y-o-y		5.3	5.4	5.6	6.0	5.9	5.9	-	18.3	5.8	5.5	5.8	5.8
Chemicals ex Pharmaceuticals	20	120.0	124.3	129.3	134.8	141.2	147.4						
% change y-o-y		3.3	3.6	4.0	4.3	4.7	4.5	-	17.8	-1.2	3.7	4.2	4.1
TOTAL	20-21	121.0	125.6	130.9	136.7	143.3	150.0						
% change y-o-y		3.5	3.8	4.2	4.5	4.8	4.6	-	17.8	-0.6	3.9	4.4	4.3
EGYPT													
Pharmaceuticals	21	122.9	121.3	124.0	127.1	131.2	135.9						
% change y-o-y		4.1	-1.3	2.2	2.6	3.2	3.6	2.6	6.1	8.9	4.2	2.0	3.5
Chemicals ex Pharmaceuticals	20	123.7	122.1	126.2	129.5	133.2	137.0						
% change y-o-y		2.3	-1.3	3.3	2.7	2.8	2.9	1.7	7.5	9.5	4.4	2.1	2.7
TOTAL	20-21	123.6	122.0	125.8	129.1	132.8	136.8						
% change y-o-y		2.6	-1.3	3.1	2.6	2.9	3.0	1.9	7.2	9.4	4.3	2.1	2.8
SOUTH AFRICA													
Pharmaceuticals	21	120.0	120.3	122.3	123.3	125.5	128.0						
% change y-o-y		5.9	0.3	1.7	0.8	1.8	2.0	-2.5	5.6	5.0	3.7	1.3	2.8
Chemicals ex Pharmaceuticals	20	120.8	121.7	123.7	124.8	126.2	127.9						
% change y-o-y		4.1	0.8	1.7	0.9	1.1	1.4	-3.3	7.0	5.5	3.8	1.2	2.0
TOTAL	20-21	120.6	121.4	123.5	124.6	126.1	127.9						
% change y-o-y		4.4	0.7	1.7	0.9	1.2	1.5	-3.2	6.7	5.4	3.8	1.2	2.1
EUROPE, ME & AFRICA													
Pharmaceuticals	21	119.1	120.1	122.6	125.9	129.5	133.1						
% change y-o-y		5.7	0.8	2.1	2.7	2.8	2.8	6.2	8.0	5.0	3.6	2.2	2.7
Chemicals ex Pharmaceuticals	20	107.0	107.7	109.9	112.5	115.1	117.7						
% change y-o-y		1.5	0.6	2.1	2.3	2.3	2.2	3.8	3.1	2.4	1.4	1.9	2.0
TOTAL	20-21	111.9	112.6	115.0	117.8	120.8	123.8						
% change y-o-y		3.2	0.7	2.1	2.5	2.5	2.5	4.5	4.7	3.4	2.3	2.1	2.3



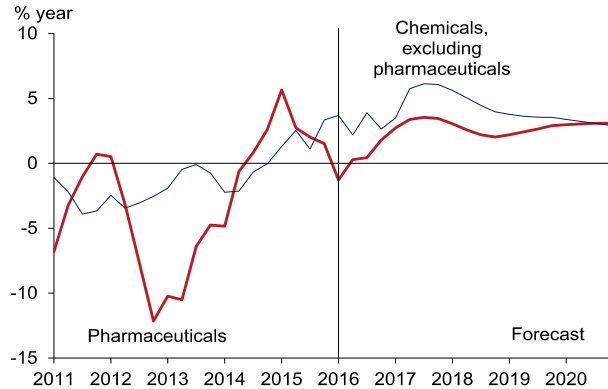
Forecast in Detail - Americas

US: Chemicals output growth



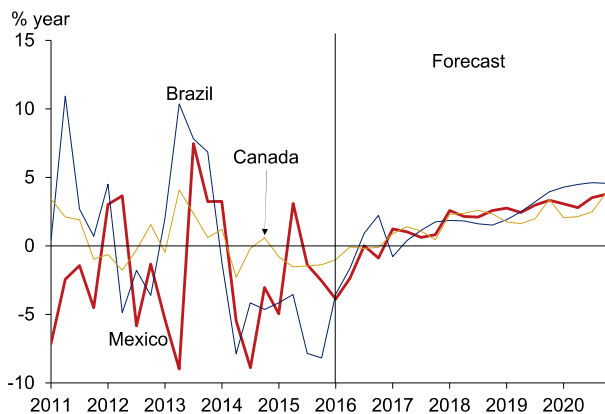
Source: Oxford Economics

US: Chemical sector growth



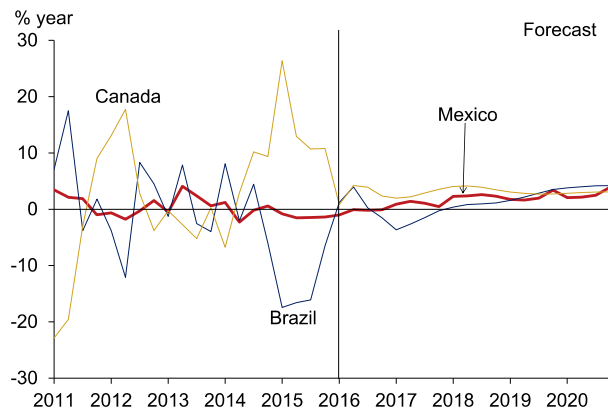
Source: Oxford Economics

Chemicals excl pharmaceuticals: Output



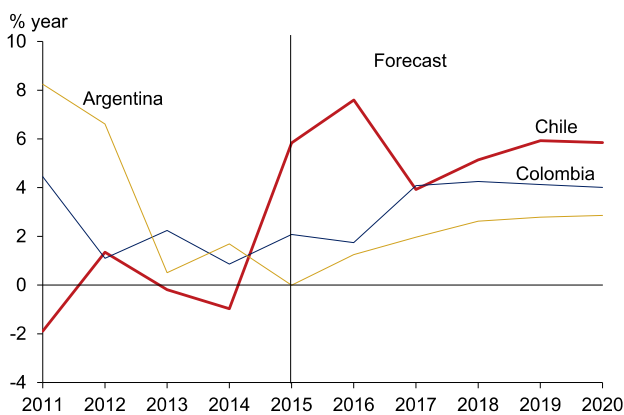
Source: Oxford Economics

Pharmaceuticals: Output



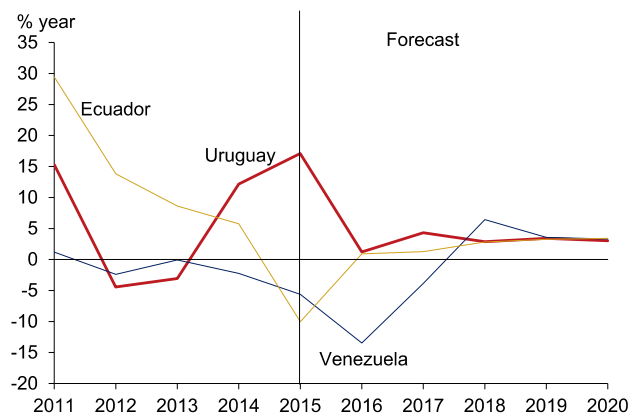
Source: Oxford Economics

Chemicals: Output



Source: Oxford Economics

Chemicals: Output



Source: Oxford Economics



Americas: Chemicals and pharmaceuticals								Detailed output					
NACE 20 to 21								Value Added Index, 2010=100					
	NACE rev 2 industry code:	2015	2016	2017	2018	2019	2020	Average 5 year % growth					
		96-00	01-05	06-10	11-15	16-20	21-25						
UNITED STATES													
Pharmaceuticals	21	86.4	86.7	89.5	91.7	94.1	96.9						
% change y-o-y		3.0	0.3	3.3	2.5	2.5	3.0	7.9	6.1	0.0	-2.9	2.3	2.8
Chemicals ex Pharmaceuticals	20	94.4	97.4	102.6	107.4	111.3	114.9						
% change y-o-y		2.1	3.1	5.4	4.8	3.6	3.2	3.6	3.0	0.9	-1.1	4.0	2.2
TOTAL	20-21	91.4	93.3	97.7	101.5	104.8	108.1						
% change y-o-y		2.4	2.1	4.6	4.0	3.3	3.1	5.0	4.2	0.6	-1.8	3.4	2.4
CANADA													
Pharmaceuticals	21	112.4	115.5	118.6	123.2	126.7	130.5						
% change y-o-y		14.9	2.8	2.7	3.9	2.8	3.0	8.8	5.9	-2.2	2.4	3.0	2.8
Chemicals ex Pharmaceuticals	20	112.0	110.0	111.7	115.7	119.0	122.0						
% change y-o-y		-0.3	-1.8	1.6	3.5	2.9	2.5	2.3	-0.6	-4.2	2.3	1.7	1.7
TOTAL	20-21	112.1	111.9	114.1	118.3	121.7	124.9						
% change y-o-y		4.5	-0.2	1.9	3.7	2.9	2.7	3.8	1.3	-3.5	2.3	2.2	2.1
ARGENTINA													
Pharmaceuticals	21	114.4	115.9	117.5	120.0	122.7	125.7						
% change y-o-y		0.1	1.3	1.4	2.1	2.3	2.4		4.6	1.8	2.7	1.9	2.7
Chemicals ex Pharmaceuticals	20	119.4	120.9	123.5	127.0	130.8	134.8						
% change y-o-y		-0.1	1.2	2.2	2.8	3.0	3.0		4.8	9.4	3.6	2.5	2.7
TOTAL	20-21	113.0	111.8	114.0	117.0	120.3	123.7						
% change y-o-y		-0.5	-1.1	2.0	2.6	2.8	2.9		2.5	6.1	2.5	1.8	2.7
BRAZIL													
Pharmaceuticals	21	90.1	91.0	89.1	89.9	92.1	95.8						
% change y-o-y		-14.4	0.9	-2.0	0.8	2.5	4.0	-0.4	4.5	5.6	-2.1	1.2	3.5
Chemicals ex Pharmaceuticals	20	97.8	97.2	97.8	99.5	102.4	107.0						
% change y-o-y		-5.9	-0.6	0.6	1.7	2.9	4.5	1.2	2.2	1.4	-0.4	1.8	3.4
TOTAL	20-21	95.8	95.6	95.6	97.0	99.7	104.1						
% change y-o-y		-8.2	-0.2	0.0	1.5	2.8	4.4	0.8	2.7	2.4	-0.9	1.7	3.4
CHILE													
Pharmaceuticals	21	100.2	119.5	122.9	128.2	136.5	145.4						
% change y-o-y		1.2	19.2	2.8	4.4	6.4	6.6	-	3.6	8.5	0.0	7.7	5.2
Chemicals ex Pharmaceuticals	20	105.3	109.3	114.0	120.2	127.1	134.2						
% change y-o-y		7.5	3.8	4.3	5.4	5.8	5.6	-	2.3	4.7	1.0	5.0	4.3
TOTAL	20-21	104.0	111.9	116.3	122.3	129.5	137.1						
% change y-o-y		5.8	7.6	3.9	5.1	5.9	5.8	-	2.6	5.6	0.8	5.7	4.5
COLOMBIA													
Pharmaceuticals	21	107.8	112.3	116.8	121.7	127.4	133.2						
% change y-o-y		4.5	4.1	4.1	4.2	4.7	4.5	0.2	-0.1	3.6	1.5	4.3	4.4
Chemicals ex Pharmaceuticals	20	112.0	113.3	117.9	123.0	127.9	132.8						
% change y-o-y		1.5	1.1	4.1	4.3	4.0	3.9	0.8	4.8	3.1	2.3	3.5	3.8
TOTAL	20-21	111.2	113.1	117.7	122.7	127.8	132.9						
% change y-o-y		2.1	1.7	4.1	4.3	4.1	4.0	0.7	3.7	3.2	2.1	3.6	3.9
ECUADOR													
Pharmaceuticals	21	108.1	109.0	110.4	113.5	117.8	122.5						
% change y-o-y		-21.2	0.9	1.2	2.8	3.8	3.9	-	-16.8	12.8	1.6	2.5	2.6
Chemicals ex Pharmaceuticals	20	165.3	166.8	169.0	173.7	179.2	185.1						
% change y-o-y		-7.5	0.9	1.3	2.8	3.2	3.3	-	13.5	17.2	10.6	2.3	2.0
TOTAL	20-21	152.3	153.6	155.6	159.9	165.2	170.8						
% change y-o-y		-10.0	0.9	1.3	2.8	3.3	3.4	-	-1.0	16.1	8.8	2.3	2.1



Americas: Chemicals and pharmaceuticals

Detailed output

NACE 20 to 21

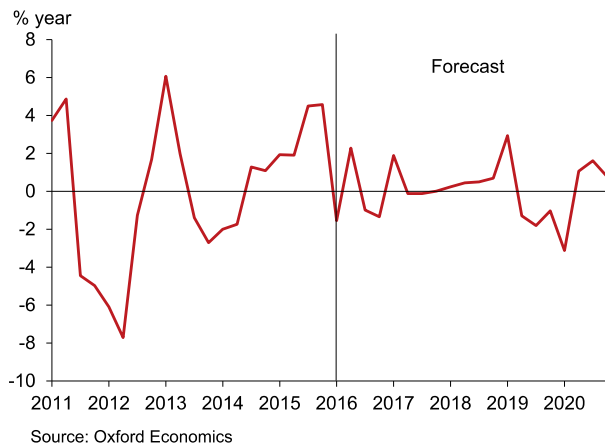
Value Added Index, 2010=100

	NACE rev 2 industry code:	2015	2016	2017	2018	2019	2020	96-00	01-05	Average 5 year % growth				
										06-10	11-15	16-20	21-25	
MEXICO														
Pharmaceuticals	21	90.0	88.4	89.2	91.3	93.9	97.0							
% change y-o-y		-1.5	-1.8	0.9	2.4	2.9	3.3	5.4	0.6	-2.5	-2.1	1.5	3.9	
Chemicals ex Pharmaceuticals	20	101.5	101.1	102.1	104.5	106.8	109.7							
% change y-o-y		-1.3	-0.3	1.0	2.4	2.2	2.7	3.2	0.8	1.0	0.3	1.6	3.3	
TOTAL	20-21	97.8	97.0	97.9	100.3	102.7	105.6							
% change y-o-y		-1.4	-0.8	0.9	2.4	2.4	2.8	4.0	0.7	-0.2	-0.5	1.6	3.4	
URUGUAY														
Pharmaceuticals	21	116.0	117.4	122.4	126.1	130.7	134.9							
% change y-o-y		7.0	1.2	4.3	3.0	3.6	3.2	-3.1	-1.9	8.1	3.0	3.1	2.7	
Chemicals ex Pharmaceuticals	20	153.9	155.7	162.4	167.0	172.6	177.7							
% change y-o-y		22.0	1.2	4.3	2.8	3.3	3.0	-1.1	5.8	10.5	9.0	2.9	2.7	
TOTAL	20-21	140.3	142.0	148.1	152.3	157.6	162.3							
% change y-o-y		17.1	1.2	4.3	2.9	3.4	3.0	-2.0	2.4	9.6	7.0	3.0	2.7	
VENEZUELA														
Pharmaceuticals	21	105.1	93.5	89.8	95.6	100.1	104.6							
% change y-o-y		-3.7	-11.0	-4.0	6.5	4.7	4.5	-	11.0	0.5	1.0	-0.1	4.2	
Chemicals ex Pharmaceuticals	20	88.9	76.6	73.6	78.4	81.0	83.5							
% change y-o-y		-6.0	-13.9	-3.8	6.4	3.4	3.1	-	6.7	4.7	-2.3	-1.3	2.8	
TOTAL	20-21	91.1	78.8	75.8	80.7	83.6	86.3							
% change y-o-y		-5.6	-13.5	-3.9	6.4	3.6	3.3	-	7.3	4.0	-1.8	-1.1	3.0	
AMERICAS														
Pharmaceuticals	21	89.2	89.6	92.0	94.3	96.8	99.8							
% change y-o-y		2.0	0.5	2.7	2.5	2.6	3.1	7.7	5.5	0.2	-2.3	2.3	2.9	
Chemicals ex Pharmaceuticals	20	97.4	99.2	103.4	107.7	111.4	115.0							
% change y-o-y		0.8	1.9	4.2	4.2	3.4	3.2	3.6	2.7	1.1	-0.5	3.4	2.4	
TOTAL	20-21	94.5	95.8	99.3	103.0	106.3	109.6							
% change y-o-y		1.2	1.4	3.7	3.7	3.2	3.2	4.9	3.7	0.8	-1.1	3.0	2.6	

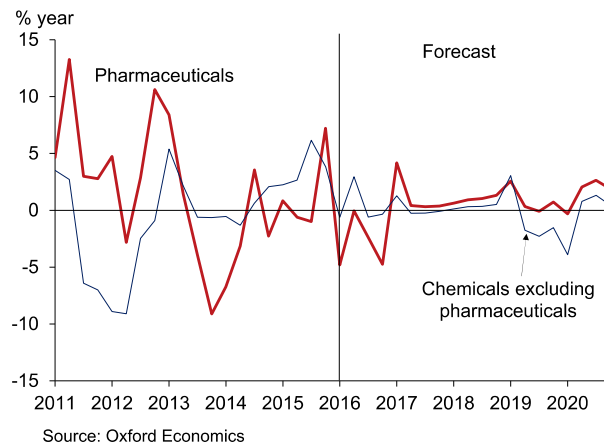


Forecast in Detail – Asia Pacific

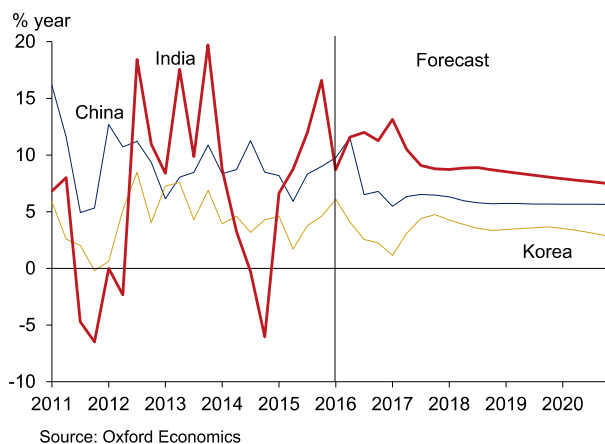
Japan: Chemicals output growth



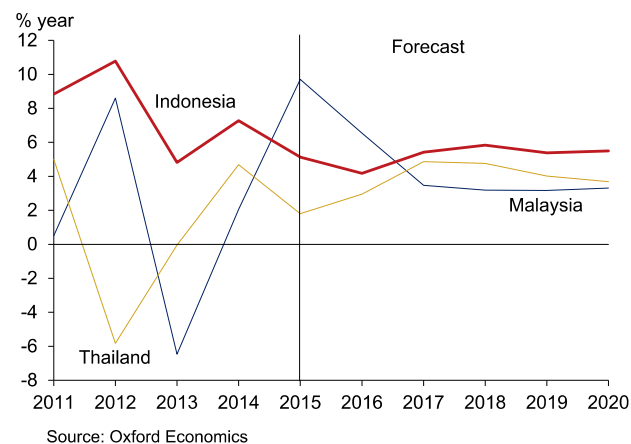
Japan: Chemical sector growth



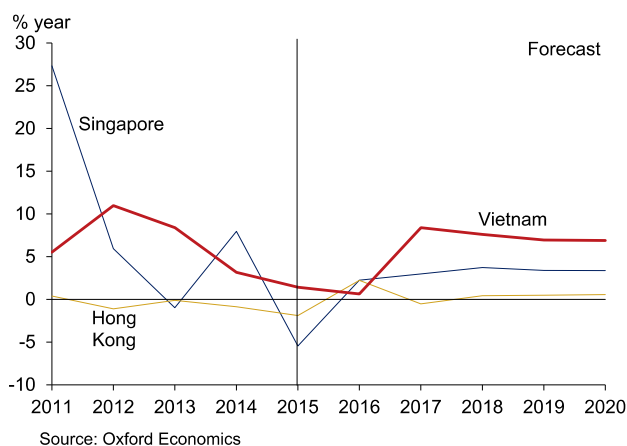
Chemicals: Output



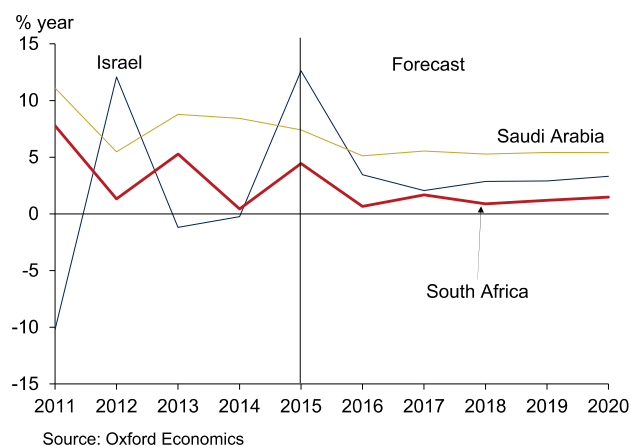
Chemicals: Output



Chemicals: Output



Chemicals: Output





Asia Pacific: Chemicals and pharmaceuticals								Detailed output					
NACE 20 to 21								Value Added Index, 2010=100					
	NACE rev 2 industry	2015	2016	2017	2018	2019	2020	Average 5 year % growth					
								96-00	01-05	06-10	11-15	16-20	21-25
AUSTRALIA													
Pharmaceuticals	21	93.0	92.8	95.7	98.5	101.4	104.2						
% change y-o-y		2.0	-0.3	3.2	2.9	2.9	2.8	-	-2.8	2.8	-1.4	2.3	2.7
Chemicals ex Pharmaceuticals	20	93.0	93.1	95.1	96.9	98.7	100.5						
% change y-o-y		2.0	0.1	2.2	1.9	1.8	1.8	-	-0.4	1.6	-1.4	1.6	1.7
TOTAL	20-21	93.0	93.0	95.3	97.3	99.4	101.4						
% change y-o-y		2.0	0.0	2.4	2.2	2.1	2.0	-	-1.0	1.9	-1.4	1.8	2.0
JAPAN													
Pharmaceuticals	21	107.9	104.6	106.0	107.0	108.0	109.6						
% change y-o-y		1.6	-3.0	1.3	1.0	0.9	1.6	2.4	4.0	10.6	1.5	0.3	1.7
Chemicals ex Pharmaceuticals	20	97.9	98.2	98.4	98.7	98.1	97.7						
% change y-o-y		3.7	0.3	0.2	0.3	-0.6	-0.4	1.1	1.5	2.0	-0.4	0.0	0.1
TOTAL	20-21	99.9	99.5	99.9	100.4	100.1	100.1						
% change y-o-y		3.2	-0.4	0.4	0.5	-0.3	0.0	1.2	1.8	3.5	0.0	0.0	0.4
NEW ZEALAND													
Pharmaceuticals	21	149.3	153.5	158.4	163.4	168.2	173.6						
% change y-o-y		17.0	2.8	3.2	3.1	3.0	3.2	11.0	5.3	6.1	8.3	3.1	3.1
Chemicals ex Pharmaceuticals	20	109.2	111.7	115.0	118.6	121.7	124.1						
% change y-o-y		9.9	2.3	3.0	3.1	2.7	2.0	0.2	1.4	-0.5	1.8	2.6	2.0
TOTAL	20-21	113.4	116.1	119.6	123.2	126.6	129.3						
% change y-o-y		10.8	2.4	3.0	3.1	2.7	2.1	0.7	1.7	0.1	2.5	2.7	2.2
CHINA													
Pharmaceuticals	21	199.7	224.2	243.5	261.5	279.6	298.2						
% change y-o-y		12.7	12.3	8.6	7.4	6.9	6.7	21.5	7.5	11.2	14.8	8.4	6.0
Chemicals ex Pharmaceuticals	20	145.6	156.6	165.2	174.3	183.6	193.4						
% change y-o-y		6.6	7.6	5.5	5.5	5.3	5.3	10.4	8.3	10.0	7.8	5.8	5.3
TOTAL	20-21	154.8	168.1	178.5	189.1	199.9	211.2						
% change y-o-y		7.9	8.6	6.2	5.9	5.7	5.7	11.9	8.2	10.2	9.1	6.4	5.5
HONG KONG													
Pharmaceuticals	21	96.4	100.2	99.0	99.0	99.2	99.6						
% change y-o-y		-1.9	3.9	-1.2	0.0	0.2	0.4	-3.2	-16.4	-2.4	-0.7	0.7	-0.2
Chemicals ex Pharmaceuticals	20	96.4	96.8	97.0	97.9	98.6	99.3						
% change y-o-y		-1.9	0.4	0.2	1.0	0.8	0.7	4.0	-5.4	-2.6	-0.7	0.6	0.2
TOTAL	20-21	96.4	98.6	98.0	98.5	98.9	99.5						
% change y-o-y		-1.9	2.2	-0.5	0.4	0.5	0.6	-1.1	-12.0	-2.5	-0.7	0.6	0.0
INDIA													
Pharmaceuticals	21	133.2	146.4	162.3	177.0	192.2	207.5						
% change y-o-y		12.4	9.9	10.9	9.1	8.6	8.0	-	-	5.4	5.9	9.3	6.8
Chemicals ex Pharmaceuticals	20	140.6	157.2	172.6	187.4	202.5	217.7						
% change y-o-y		9.8	11.8	9.8	8.6	8.0	7.5	-	-	5.8	7.1	9.1	6.4
TOTAL	20-21	137.0	152.0	167.6	182.4	197.5	212.7						
% change y-o-y		11.0	10.9	10.3	8.8	8.3	7.7	-	-	5.6	6.5	9.2	6.6
INDONESIA													
Pharmaceuticals	21	165.6	172.7	182.8	193.2	204.3	216.7						
% change y-o-y		15.3	4.3	5.9	5.7	5.8	6.1	1.3	17.1	6.8	10.6	5.5	5.6
Chemicals ex Pharmaceuticals	20	136.8	142.4	150.0	158.8	167.2	176.1						
% change y-o-y		2.4	4.2	5.3	5.9	5.3	5.3	15.1	5.1	6.8	6.5	5.2	5.2
TOTAL	20-21	142.5	148.5	156.5	165.7	174.6	184.2						
% change y-o-y		5.1	4.2	5.4	5.8	5.4	5.5	12.6	6.9	6.8	7.3	5.3	5.3



Asia Pacific: Chemicals and pharmaceuticals								Detailed output						
NACE 20 to 21								Value Added Index, 2010=100						
	NACE rev 2 industry	2015	2016	2017	2018	2019	2020	96-00	01-05	Average 5 year % growth				
										06-10	11-15	16-20	21-25	
KOREA														
Pharmaceuticals	21	117.1	121.1	124.5	128.8	133.1	137.2							
% change y-o-y		4.0	3.4	2.8	3.5	3.4	3.0	11.0	5.0	6.9	3.2	3.2	1.9	
Chemicals ex Pharmaceuticals	20	124.2	128.9	133.4	138.4	143.4	148.1							
% change y-o-y		3.6	3.8	3.5	3.8	3.6	3.3	10.6	7.1	5.4	4.4	3.6	2.0	
TOTAL	20-21	123.1	127.7	131.9	136.9	141.7	146.3							
% change y-o-y		3.7	3.7	3.3	3.8	3.5	3.2	10.7	6.7	5.6	4.2	3.5	2.0	
MALAYSIA														
Pharmaceuticals	21	157.9	173.1	182.2	191.3	200.1	209.6							
% change y-o-y		9.8	9.6	5.3	5.0	4.6	4.7	-2.5	-5.5	-3.6	9.6	5.8	4.2	
Chemicals ex Pharmaceuticals	20	114.0	121.4	125.6	129.6	133.7	138.1							
% change y-o-y		9.7	6.5	3.5	3.2	3.2	3.3	25.8	7.6	2.7	2.7	3.9	3.0	
TOTAL	20-21	114.3	121.8	126.0	130.0	134.1	138.6							
% change y-o-y		9.7	6.5	3.5	3.2	3.2	3.3	24.7	7.4	2.7	2.7	3.9	3.0	
PAKISTAN														
Pharmaceuticals	21	52.8	55.4	56.5	60.8	65.5	70.5							
% change y-o-y		-18.2	4.9	2.1	7.5	7.8	7.6	-	-13.0	-2.1	-12.0	6.0	6.5	
Chemicals ex Pharmaceuticals	20	99.1	110.8	112.0	119.9	128.7	137.9							
% change y-o-y		2.6	11.8	1.1	7.1	7.3	7.1	-	-21.5	6.6	-0.2	6.8	6.1	
TOTAL	20-21	96.2	107.4	108.5	116.2	124.8	133.6							
% change y-o-y		1.8	11.6	1.1	7.1	7.4	7.1	-	-20.9	5.9	-0.8	6.8	6.2	
PHILIPPINES														
Pharmaceuticals	21	162.4	189.1	201.7	212.1	223.6	236.8							
% change y-o-y		2.8	16.4	6.6	5.2	5.4	5.9	-	-4.6	-2.2	10.2	7.8	5.2	
Chemicals ex Pharmaceuticals	20	321.4	374.3	396.9	418.2	439.0	461.5							
% change y-o-y		18.0	16.4	6.0	5.4	5.0	5.1	-	8.3	11.9	26.3	7.5	4.8	
TOTAL	20-21	294.2	342.6	363.5	383.0	402.2	423.1							
% change y-o-y		16.3	16.4	6.1	5.4	5.0	5.2	-	3.5	8.6	24.1	7.5	4.8	
SINGAPORE														
Pharmaceuticals	21	143.5	147.4	151.9	157.9	163.3	169.0							
% change y-o-y		-9.0	2.7	3.1	3.9	3.5	3.5	21.2	23.5	16.7	7.5	3.3	3.4	
Chemicals ex Pharmaceuticals	20	123.4	125.0	128.4	132.6	136.9	141.2							
% change y-o-y		3.0	1.3	2.8	3.3	3.2	3.2	17.4	8.8	6.0	4.3	2.7	3.1	
TOTAL	20-21	136.3	139.4	143.5	148.9	153.9	159.1							
% change y-o-y		-5.5	2.3	3.0	3.7	3.4	3.4	18.8	15.2	12.2	6.4	3.1	3.3	
TAIWAN														
Pharmaceuticals	21	114.9	122.4	124.9	128.7	132.8	137.2							
% change y-o-y		5.9	6.5	2.0	3.0	3.1	3.3	7.5	5.5	7.7	2.8	3.6	2.4	
Chemicals ex Pharmaceuticals	20	110.0	113.2	117.1	121.9	126.4	131.0							
% change y-o-y		3.0	2.9	3.4	4.1	3.7	3.6	9.1	8.7	7.7	1.9	3.6	2.8	
TOTAL	20-21	110.4	113.9	117.7	122.4	126.9	131.5							
% change y-o-y		3.2	3.2	3.3	4.0	3.6	3.6	8.9	8.4	7.7	2.0	3.6	2.7	
THAILAND														
Pharmaceuticals	21	125.9	133.4	140.6	147.0	153.6	160.4							
% change y-o-y		7.9	6.0	5.4	4.5	4.5	4.4	-	3.2	3.4	4.7	5.0	3.5	
Chemicals ex Pharmaceuticals	20	104.6	107.6	112.8	118.2	122.9	127.4							
% change y-o-y		1.6	2.8	4.8	4.8	4.0	3.7	-	4.9	4.3	0.9	4.0	3.1	
TOTAL	20-21	105.3	108.5	113.7	119.1	123.9	128.5							
% change y-o-y		1.8	3.0	4.9	4.8	4.0	3.7	-	4.9	4.3	1.0	4.1	3.1	
VIETNAM														
Pharmaceuticals	21	126.2	133.3	145.1	155.9	167.3	179.7							
% change y-o-y		0.5	5.6	8.9	7.4	7.3	7.5	-	-	7.9	4.8	7.3	6.6	
Chemicals ex Pharmaceuticals	20	134.8	133.7	144.8	155.9	166.5	177.6							
% change y-o-y		1.7	-0.8	8.2	7.7	6.8	6.7	-	-	6.3	6.2	5.7	6.2	
TOTAL	20-21	132.8	133.6	144.8	155.9	166.7	178.1							
% change y-o-y		1.4	0.6	8.4	7.6	6.9	6.9	-	-	6.6	5.8	6.1	6.3	



Asia Pacific: Chemicals and pharmaceuticals								Detailed output					
NACE 20 to 21								Value Added Index, 2010=100					
	NACE rev 2 industry	2015	2016	2017	2018	2019	2020	Average 5 year % growth					
								96-00	01-05	06-10	11-15	16-20	21-25
ASIA PACIFIC													
Pharmaceuticals	21	153.5	165.9	177.8	189.0	200.3	212.1						
% change y-o-y		8.6	8.0	7.2	6.3	6.0	5.9	7.4	6.8	9.1	9.0	6.7	5.4
Chemicals ex Pharmaceuticals	20	129.5	137.1	143.4	150.1	156.7	163.6						
% change y-o-y		5.8	5.9	4.6	4.7	4.4	4.4	6.9	5.3	6.6	5.3	4.8	4.3
TOTAL	20-21	134.4	143.0	150.4	158.1	165.6	173.5						
% change y-o-y		6.4	6.4	5.2	5.1	4.8	4.8	7.1	5.6	7.1	6.1	5.2	4.6

World: Chemicals and pharmaceuticals								Detailed output					
NACE 20 to 21								Value Added Index, 2010=100					
	NACE rev 2 industry	2015	2016	2017	2018	2019	2020	Average 5 year % growth					
								96-00	01-05	06-10	11-15	16-20	21-25
WORLD													
Pharmaceuticals	21	116.7	120.1	124.8	129.6	134.6	139.9						
% change y-o-y		5.6	2.9	3.9	3.9	3.9	4.0	7.1	6.7	3.9	3.1	3.7	3.7
Chemicals ex Pharmaceuticals	20	113.6	117.6	122.1	127.0	131.6	136.3						
% change y-o-y		3.3	3.5	3.8	4.0	3.6	3.6	4.7	3.7	3.6	2.6	3.7	3.3
TOTAL	20-21	114.6	118.4	122.9	127.8	132.5	137.4						
% change y-o-y		4.0	3.3	3.9	3.9	3.7	3.7	5.3	4.6	3.7	2.8	3.7	3.4

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