

European Life Sciences





What is driving life science growth?

Mike Barnes, European Research, explores the key drivers behind life sciences and what this means for future occupier demand.

Ageing populations, rising demand for digital health and the Covid-19 pandemic have boosted R&D investment into the life sciences sector, spurring investor demand for office and laboratory facilities.

What do we mean by life sciences?

Life sciences covers a wide range of medical fields including biotechnology, pharmaceuticals, biomedical research, with an increasing focus on applied sciences such as cell and gene therapy (CGT) and genomics. As an R&D-intensive sector, technological advancements have accelerated progress and opened up new ways to improve human health.

Thanks to medical advances, people today are living longer and are healthier. Even people with pre-existing conditions and chronic or long-term diseases can now live more actively for longer. The ageing population is driving the continuous development of preventive treatments, prescription drugs and innovations in all areas of life sciences

and the development of advanced medical devices. We have also observed a trend towards personalized solutions and e-health methods.

Life sciences encourage investors to develop their portfolios around the 'triple helix' of government, universities and industry to create ecosystems. More recently, this has expanded to a quintuple helix, focussing on societal and environmental benefits, with proximity to high quality teaching hospitals essential.

The World Economic Forum's Global Competitiveness Index outlines the strength of University- Industry collaboration in R&D. Switzerland leads the ranking, with Finland, the Netherlands, UK, Germany, Belgium and Sweden all featuring in the top 10. Real estate ultimately responds to these requirements from incubators and accelerators to global R&D headquarters.

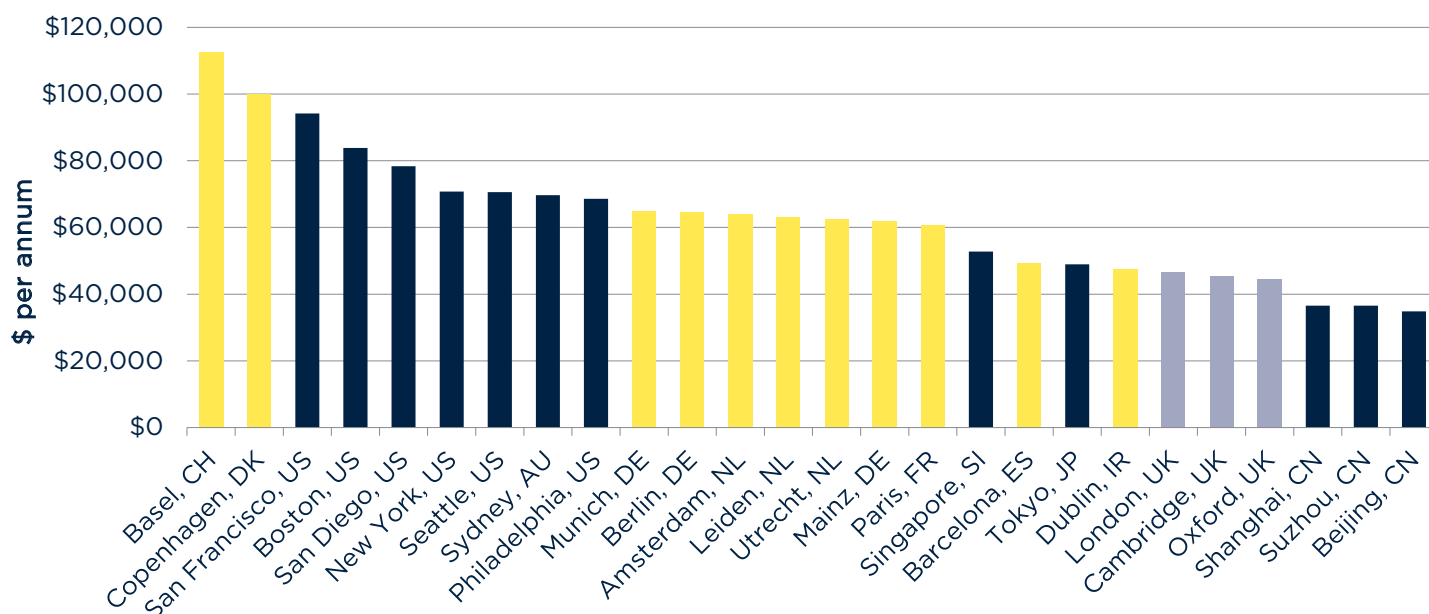
What is driving growth?

Ageing demographics has attracted new funding into Europe's major life science markets. The European Union's population aged 65+ is expected to increase by 18% from 94 million to 111 million over the next ten years according to Oxford Economics.

This is contributing to a rise in demand for healthcare services, drug discovery and development of more personalised medicines. The coronavirus pandemic has brought life sciences into the spotlight for investors, however, the supply side drivers including investment into digital health will help to drive growth.

COVID-19 has been the catalyst for enormous additional funding for R&D and medical care around the world. In response to the pandemic, European Commission leaders agreed on a NextGenerationEU stimulus package totalling €1.8 trillion to rebuild Europe's economy, with a focus on health programmes and digital transitions.

Chart 1: The salary cost of European life scientists compares favourably on the global stage (\$ p.a.)



Source Glassdoor, Savills

Spending on health care is an important driver of investment in life science R&D. This spending will only increase as governments seek leadership in addressing the challenges and demands of an ageing population. The latest data from Eurostat shows that, with the exception of Greece, all European countries increased health expenditure between 2012 and 2017, some by over 20 percent. At 11.2%, Germany has the highest health expenditure in relation to gross domestic product, alongside France and Switzerland, whereas the EU-27 average is 9.9%.

In response to the vast levels of funding into the sector, 2020 patent applications data from the European Patent Office (EPO) indicates a 10.2% annual increase in pharmaceutical and a 6.3% increase in biotechnology applications, despite overall applications falling by 0.7%. With this coinciding with a number of “patent cliffs” emerging towards the start of 2021, this will increase R&D opportunities and increase demand for real estate space to effectively deliver the products.

Talent

In Europe, the UK is home to five of the top ten life sciences universities, led by Oxford and Cambridge universities, although we have seen more mainland European markets rise up the rankings in more recent years. ETH Zurich (Switzerland), Wageningen University (Netherlands), Karolinska Institute (Sweden) and LMU Munich (Germany), feature among the top ten European universities in 2021 as ranked by the Times Higher Education. Due to the importance of the triple helix of government, universities and industry to deliver on a specific aim and its impact on employment prospects, many university graduates remain in the wider municipalities upon graduation.

Indeed, as well as the access to talent, global occupiers focus on the cost of talent for their operations. Comparing the average cost of employing a life scientist worldwide, most major European countries provide a discount to many of the established US cities. The UK cities are relatively cheap compared to the leading global cities, whilst teaching standards of European universities also rank favourably. Basel stands out as one of the more costly markets to employ

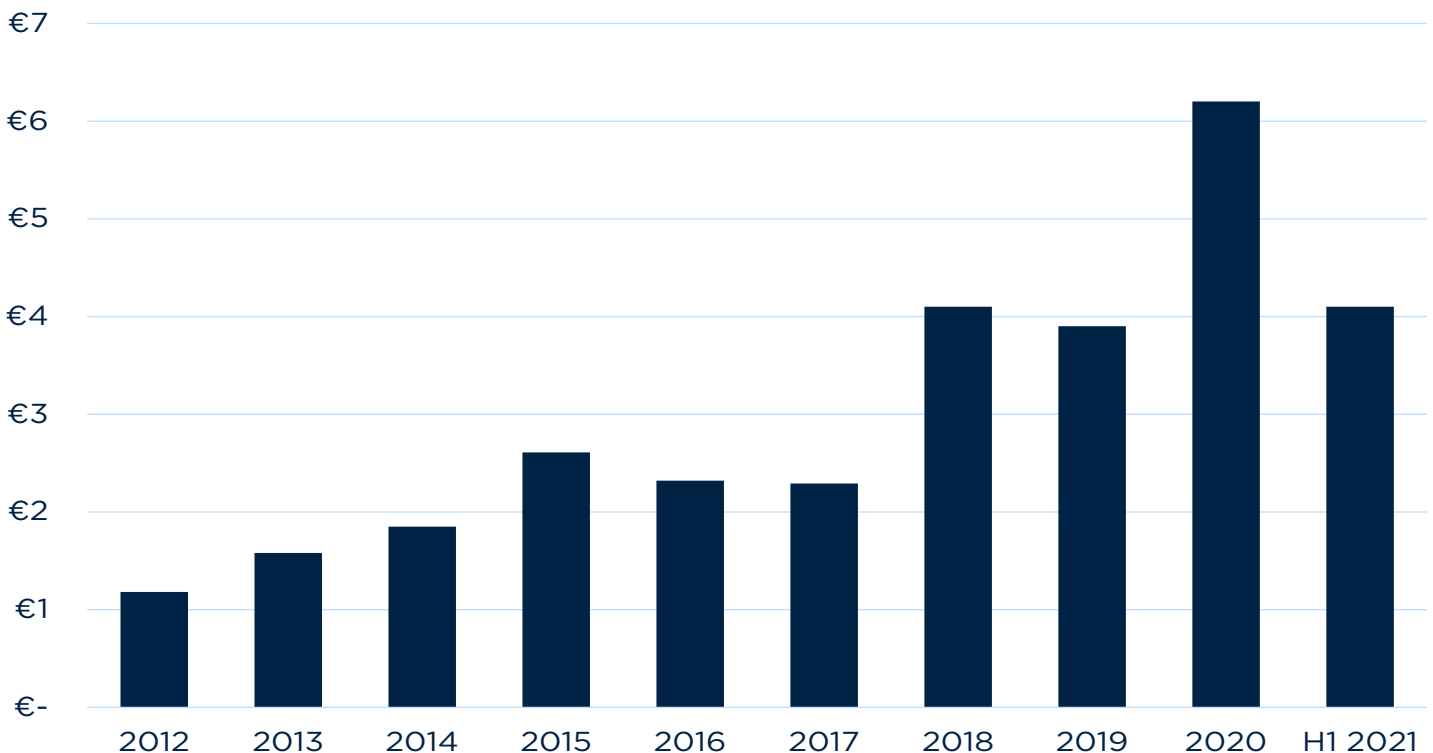
workers, however over 700 life science companies and 32,000 employees are active in Basel’s pharmaceutical industry given low tax rates and a growing focus towards digital health continuing to boost the market.

Venture capital investment

Corporate investment helps to indicate the level of future real estate demand in the sector. European life science companies attracted €21bn of venture capital funding in the last five years. The UK accounted for over a third (€7.6bn), although we are seeing a higher allocation of capital targeting mainland European markets in more recent years, with Germany (€3bn), Switzerland (€2.7bn), France (€2.3bn), Belgium (€1.6bn) and the Netherlands (€1.3bn) boosting investment growth.

That said, Europe still lags behind the largest global life science hubs led by San Francisco, San Diego and Boston/ Cambridge, Massachusetts by volume of capital invested. The US has accounted for 68% of global VC flows over the last five years. Investment into China has spurred Asia’s growth, which now accounts for 14% of global investment, gaining ground on Europe’s share of 16%.

Chart 2: European life sciences venture capital investment (€bn)



Source Pitchbook, Savills

👉 Savills calculate that for every €1bn of venture capital investment, this creates 46,000 sq m of life science demand- we therefore anticipate approximately 474,000 sq m of new requirements from the life sciences sector will emerge between 2021-22. 🙏

Europe set for record occupier demand

Global pharmaceutical companies are now increasingly expanding into Europe due to attractive tax incentives and access to talent. Over €100bn was invested as R&D spend in 2019 (latest data available from the European Commission), with over €33bn in the UK through the likes of GSK and AstraZeneca, €30bn in Switzerland including Roche, Takeda and Novartis and €12bn in France including Abbvie, Sanofi and Servier.

Impact on office demand

We usually see real estate requirements arise between 12-18 months after a company receives corporate funding. Savills determine future 'latent' occupier demand by tracking venture capital (VC) investment data as a lead indicator.

According to Pitchbook, €13.2bn of life science VC data was raised in European headquartered companies between 2014-18, resulting in over 650,000 sq m of office and lab deals across selected European life science markets between 2016-20. Savills calculate that for every €1bn of

venture capital investment, this creates 46,000 sq m of life science demand. Rolling this forward, the €10.2bn of capital invested during 2019-20 indicates approximately 474,000 sq m of new requirements from the life sciences sector will emerge between 2021-22.

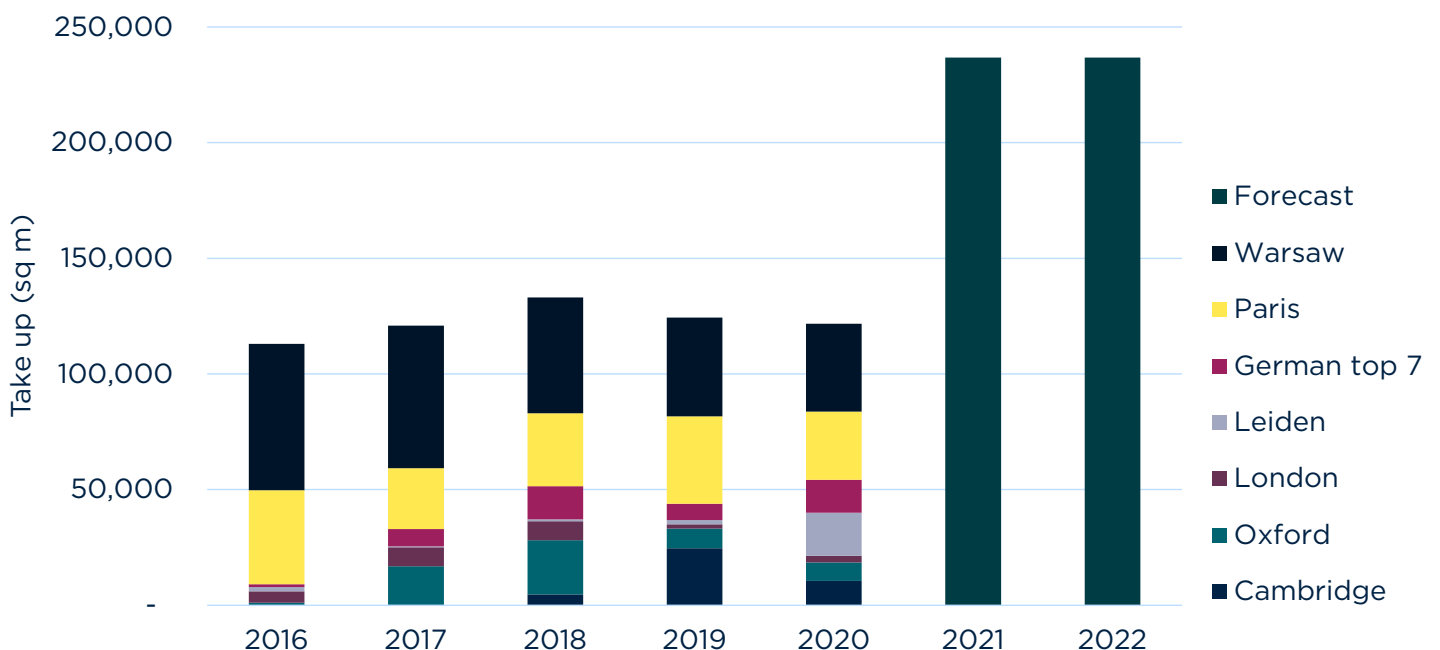
The nature of life science occupier activity often mirrors that of VC investment patterns into the sector. Compared to traditional office occupiers, drug discovery companies will have an higher element of "hit or miss", although once a start-up receives the breakthrough, then we see accelerated growth in demand for space from the individual occupier. More drug discovery companies are adopting AI in order to improve their success rates.

Of course, life science occupier demand is not dictated by VC investment alone, as higher value government initiatives and private equity/ M&A activity contribute to a number of large-scale occupier deals. What's more, as leasing visibility becomes more transparent, we anticipate the

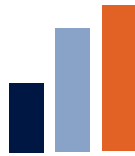
impact will be observed more widely across Europe, beyond our selected markets.

Life science occupier requirements vary to a large degree depending on the R&D success rate, making it vital for occupiers to have the flexibility and growth options to remain on the campus.

Chart 3: Venture capital funding will create new occupier requirements



Source PitchBook, Savills



31%
of Europe's research
and development
expenditure is
invested in Germany.

Germany

An established pool of talent and rising levels of corporate investment will create new opportunities in Europe's largest economy, says Martin Kern, Germany.

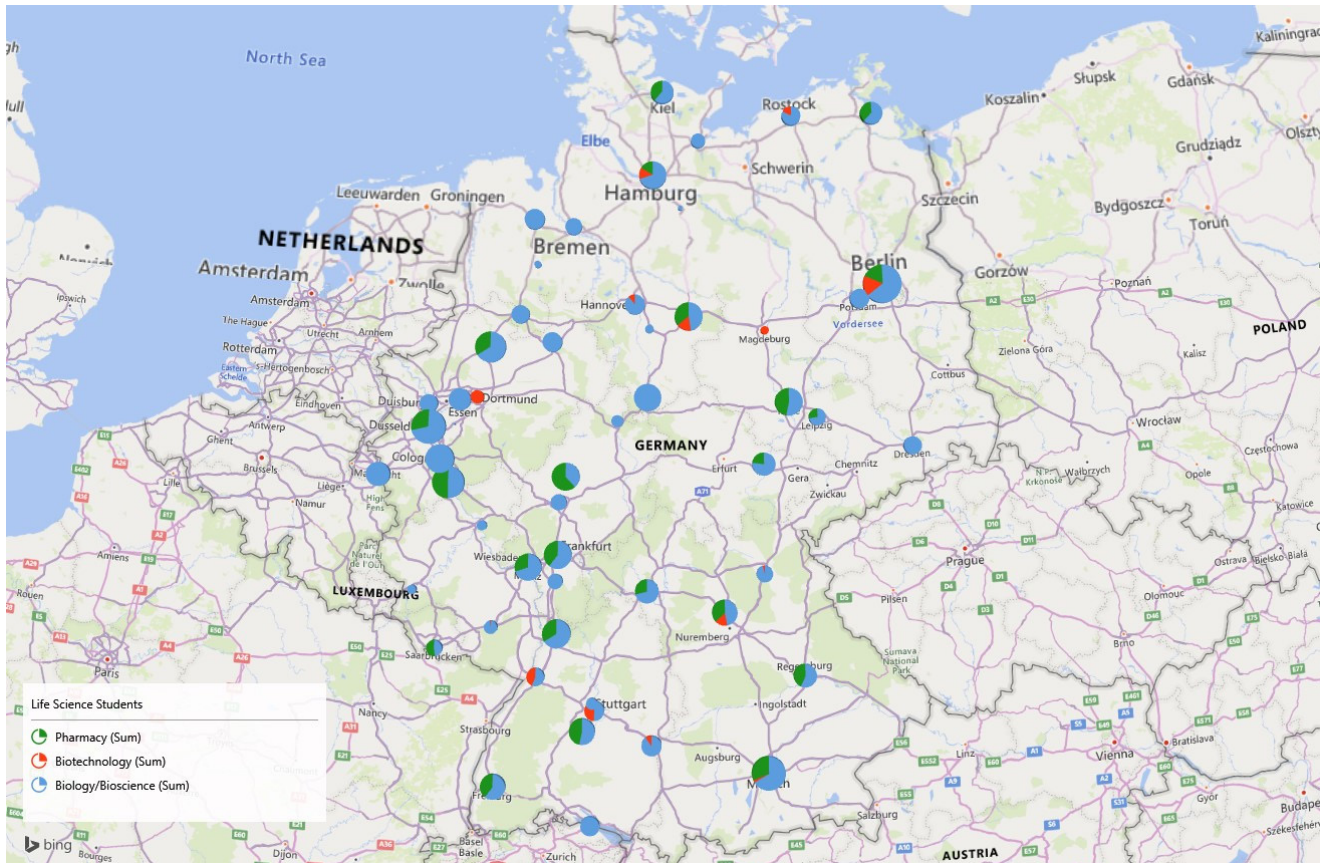
Government support is the key to building a life science cluster. A strong life science campus requires the commitment of both public and private stakeholders to ensure sufficient local support and funding. COVID-19 has put healthcare, research, and thus, the life science sector at the top of the agenda of every government. The German government has long supported scientific innovation and research, both domestically and in conjunction with other nations. German spending on research and development has more than doubled in the last 20 years and is expected to reach 3.5% of GDP by 2025. This makes Germany one of the world's most research-intensive economies.

In 2017, the state, universities and industry invested a total of €99.6 billion in R&D. According to preliminary calculations, total expenditure on R&D increased further to €104.8 billion in 2018. R&D expenditure has risen sharply since the beginning of the 2000s, and during the financial crisis of 2008/2009, the state and the economy continued to invest continuously in R&D. In a European comparison, Germany thus has the highest R&D expenditure in absolute terms and 31% of all R&D expenditure in the European Union. Germany has the world's fourth highest absolute R&D expenditure – after the major economies of the USA, China and Japan.

The number of R&D employees in Germany has been rising continuously for more than a decade and reached over 686,000 workers in 2017. In the past ten years alone, this figure has increased by almost 180,000 full-time equivalents, an increase of over a third (+35%). According to preliminary calculations, the number of R&D personnel increased to almost 708,000 full-time equivalents in 2018.

The level of interaction within the German innovation ecosystem is also significant: the country ranks 8th in cooperation between universities and industry and third in the development of clusters. The level and quality of the innovations produced in

Map 1: German life science students by city



Financing

Venture capital and private equity financing are key indicators for identifying the most important life-science clusters and growth regions. Venture Capital financing for life science companies in Europe (excl. Great Britain) has totalled €15.5 billion over the last five years, representing an annual growth of 16%. In Germany alone, the volume over the last five years has been more than €3 billion (2016-2020) and in 2020, the volume was €1 billion. Most of the transactions were in Berlin, but the largest funding with over €100 million was accounted for by CureVac in Tübingen.

In 2019, the total number of dedicated biotechnology companies in Germany rose to over 660 - thanks to a new high in start-ups. The dedicated biotech companies generated record sales of €4.9 billion and spent almost €1.8 billion on the development of new products.

Research and development (R&D) expenditure of the largest German pharmaceutical companies for the top five institutions averaged 17.9% of turnover. In terms of absolute volume, Bayer is the leader with more than €5.6 million, and BioNTech leads the table in Germany by far in terms of sales with an R&D intensity of over 180%. Across Europe, three of the top 4 companies with Bayer, Boehringer Sohn and Merck come from Germany. Only Sanofi from France invested more money in R&D during 2019.

Germany are also exceptional. The country is the world leader in patents by origin.

The key figure for patents relevant to the world market per capita in Germany is almost twice as high as in the USA. In absolute terms, Germany has the highest number of innovative enterprises in Europe, which in turn have the highest innovation expenditure in the economy compared to other European countries.

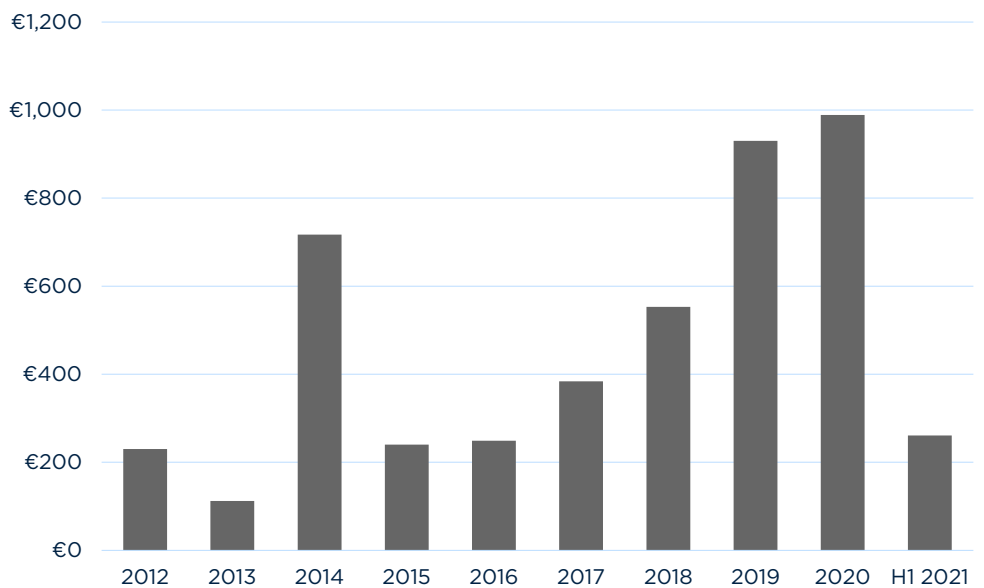
Germany has an excellent human capital and research system, thanks to its high number of graduates in the natural and engineering sciences, leading R&D-intensive global companies and a strong university system. The domestic business sector contributes greatly to these efforts, as it both carries out and finances a large part of R&D expenditure.

Overall, Germany has a scattered life science network, indicated by the network of life

science students shown in Map 1. The most important cities in Germany are of equal rank, in contrast to some other European countries, where there tend to be much stronger cities. Munich is particularly strong in terms of growth, but there is a higher concentration of the larger science parks in and around Berlin. Key leasing examples include Sanofi signing for 5,520 sq m in Berlin City West during 2020, and MSD signing for 8,500 sq m in Munich in 2018.

The latest example of Berlin's attractiveness is the announcement by the World Health Organisation (WHO) in Berlin to build a new global base as a pandemic early warning centre. The hub will lead innovations in data analytics across the largest network of global data to predict, prevent, detect prepare for and respond to pandemic and epidemic risks worldwide.

Chart 4: Germany life science venture capital investment (€m)



Source PitchBook, Savills

The Netherlands

Scato de Smit, Savills Research, explores how Leiden competes as a key European life science hotspot.

The Netherlands has eight comparable Innovation and Science Campuses. All these campuses have a (technical) university, a university medical centre and accommodate companies such as DSM or Philips. However, none of the campuses are very similar; each of them is at a different stage of development and has a certain specialisation. For instance, Wageningen Campus mainly focuses on the Agri-Food Sector, while Eindhoven High-Tech Campus targets the development of high quality technologies.

Although distances in the Netherlands are small, in comparison to other European countries, the Netherlands has a wide

geographical spread of campuses and each campus is complementary, rather than competing with each other. The success and maturity of these campuses heavily depends whether established companies and knowledge institutions are connected to international science developments and innovation.

Life sciences patents fuel demand for clustering

The Netherlands has attracted international science clusters due to its R&D capabilities in certain scientific fields, reflected by the number of approved patents, which continues to drive employment growth. For instance,

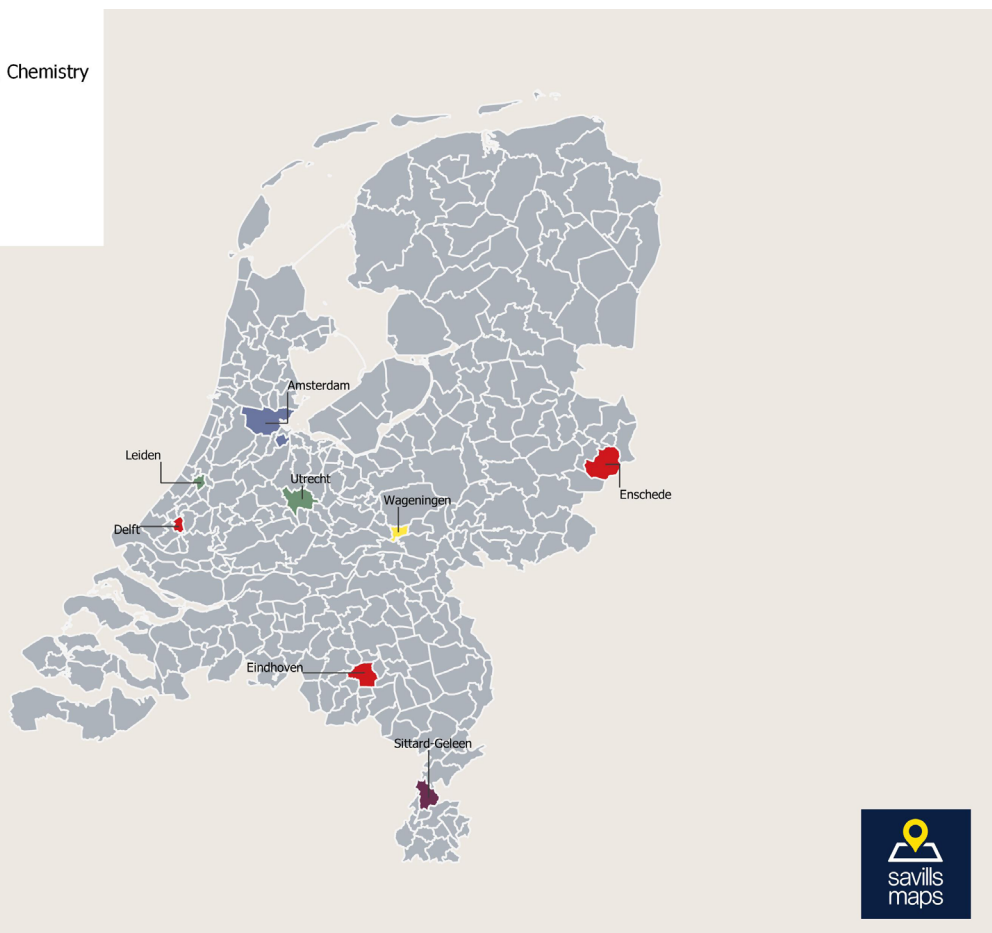
general employment grew by nearly 8% between 2013 and 2019, while employment within R&D businesses, education and knowledge institutions grew by almost 15%. Within the most relevant R&D sectors, Life Sciences & Health and High Tech has the largest share in R&D expenditure from private investment.

Due to the pandemic, many technical fields declined in terms of European Patent Applications, while medical technologies (+2.6%), pharmaceuticals (+10.2%) and biotechnology (+6.2%) experienced a strong performance, due to the demand for medical and pharmaceutical innovation. These

Map 2: Major Dutch innovation and science parks

Type of Science and Innovation Parks

- Mixed: Life Sciences, Technology, Chemistry
- Life Sciences
- Technology
- Food
- Mixed: Chemistry & Materials



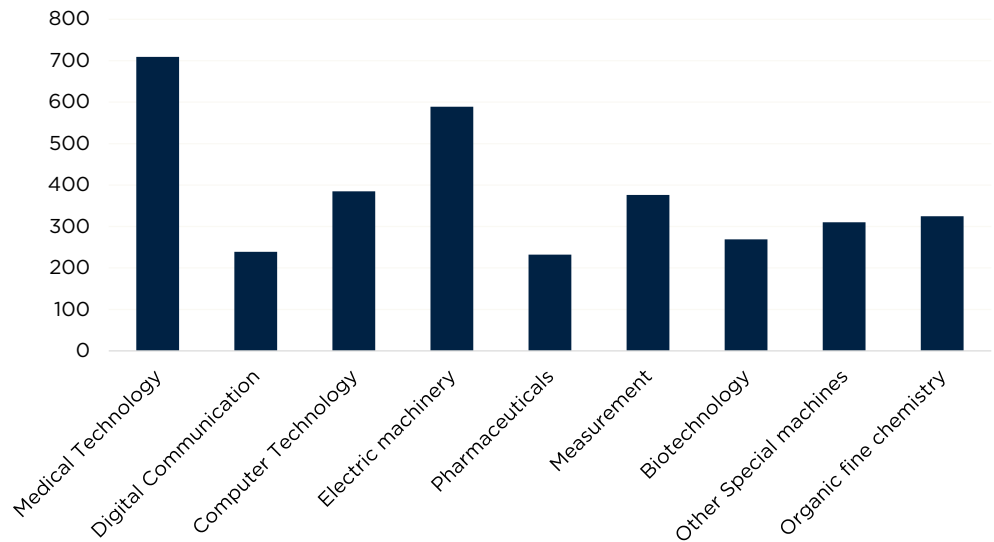
three fields, fall under Life Sciences and comprised 16.7% of all worldwide patent applications to the EPO in 2020. The share of these fields is 30% higher in the Netherlands than the Europe average.

So, the Netherlands represents a large share in patent applications in Life Science in comparison to other countries. Developing new drugs is a time consuming and expensive process and many firms recognise that being close to academics and to start-ups brings many benefits which far outweigh the downsides. Since, they can work in an agile way – sharing ideas, share resources and make use of the latest technological innovations. Life Science academics are mainly clustered in three different locations in the Netherlands- Leiden, Amsterdam and Utrecht, due to its international medical, biomedical and pharmaceutical research and teaching activities.

Clustering of Life Science

Each campus is in its own stage of maturity, whereby the amount of corporate pharmaceutical, medical and biomedical companies is reflecting the maturity of the campus. The most mature life science campus is Leiden, due to its amount of international biomedical and pharmaceutical companies (Astellas, Johnson & Johnson, Galapagos). For example, the Covid-19 vaccine “Janssen” has been developed by Johnson & Johnson and these companies have access to a wide talent pool, consisting of the Leids Universitair Medisch Centrum, which has an international leading position. The whole campus has almost 20,000

Chart 5: Dutch patent applications by sector, 2020



Source EPO

jobs and aims to create another 10,000 over the next five years. The campuses of Utrecht and especially Amsterdam are smaller, which is reflected by less corporate pharmaceutical and biomedical companies. However, the amount of venture capital which has been invested in life sciences start-ups sheds light on the maturity of these campuses. The volume of capital and the attraction of talent might contribute to increase the number of life science start-ups of these cities.

Besides capital, an important ecosystem consisting of laboratories, tax subsidies and available office space are vital for the growth of life science clusters. Bio

Science Park Leiden distinguishes itself from other life science clusters in the Netherlands due to the strong focus on innovative therapy development, especially medicines.

A successful example of this ecosystem is whereby the incubator, BioPartner Center, Leiden offers flexible offices and laboratory facilities to start-ups, where they can conduct research, particularly focused on the development of medicines and vaccines. The flexibility of this incubator is unique, since tenants have the possibility to scale-up and move quickly, while laboratories are equipped with the most modern amenities. This flexibility is essential for

Table 1: Size of Dutch science parks

	Leiden	Amsterdam	Utrecht
University Ranking (Clinical & Health)	72	60	98
Number of Jobs (public & private)	18,263	3,875 (Faculty of Science)	22,600
R&D Focus	Vascular and Regenerative Medicine, Cancer Pathogenesis and Therapy, Immunity, Infection and Tolerance	Green Life Sciences	Public health, cancer, Molecular Life sciences, regenerative medicine & stem cells
Number of Start-ups	35	40	65
Venture Capital In Life Sciences (last 5 years)	€166 Million	€170 Million	€307 Million
Small & Medium Companies	85	80	9
Corporates	15	9	4
Building Capacity on park	1,000,000 sq m	120,000 sq m	153,000 sq m

Source Savills Research, Pitchbook, Top Science Innovation 2016

life science businesses, since these are built on innovation and knowledge intensive investments, while profitability and results might take decades to manifest. This paradox impacts the real estate market for life sciences from a real estate investment point of view.

Mismatch between supply and demand

Over the past few months, the global race to develop therapeutics and vaccines has required rapid adaptation, both in activity and working environment, also in the Life Science Clusters in the Netherlands, particularly in Leiden. This activity is reflected by the increased market activity of life science occupiers. Lumc & Nectst, Janssen Vaccines & Prevention B.V. and the Netherlands Center for Clinical Advancement of Stem Cell & Gene Therapies B.V. took more than 12,500 sq m in 2020. Life science companies consisted of 52% of the total office take up in Leiden in 2020, while prior to 2020, this percentage was between 2% and 6%.

As a result of occupier interest in Life Science clusters, vacancy rates in these clusters are low. New supply in these clusters is often pre-let or built by corporate life science companies. Recently, the pharmaceutical company Bristol

Myers Squibb (BMS) signed a lease agreement of 19,500 sq m for a building plot on Bio Science Park Leiden. BMS will spend the next few years building the new manufacturing and laboratory facility.

As a result of Covid-19, future supply-demand ratios of life sciences real estate might become even tighter, swinging in favour of the landlord. Despite the improved fundamentals of the life science market, the number of investment deals has so far been limited.

The small size of the investment market is twofold. Firstly, the life science real estate market is predominantly owner-occupied, whereby major companies own their real estate. Secondly, there is an enormous number of start-ups, which are perceived as too risky by investors, since these often rent small spaces and are not able to sign long term leases.

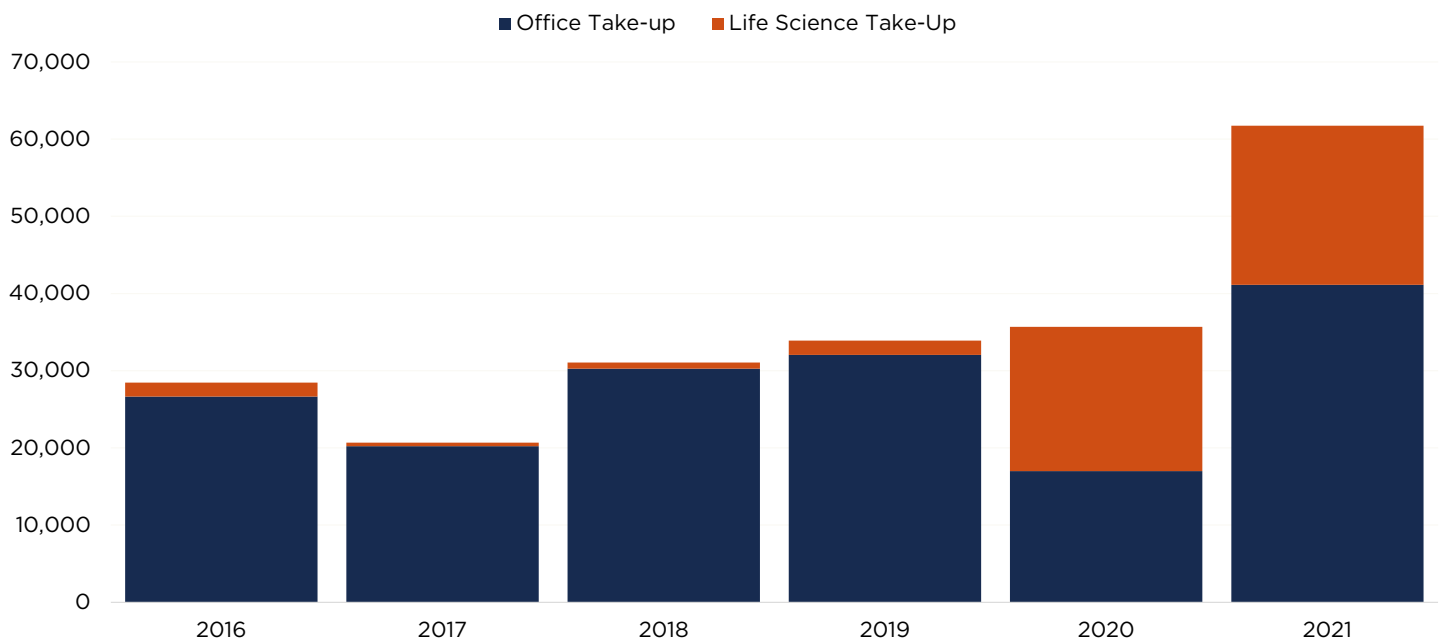
There are three possible solutions to increase market activity and to create a win-win situation for occupiers and investors. Firstly, major companies who own their real estate can free up capital by sale and leaseback of their real estate- recently for example, the Japanese company

Astellas sold Mirai House in Leiden Bio Science Park to Fidelity International for €54 million. Secondly, investors perceive life science start-ups as too risky, but a vast amount of start-ups in an incubator program, are less risky due to the spread of risk. Thirdly, mid-size companies and scale ups are underserved by investors.

These companies still predominantly own their real estate and cannot make use of real estate facilitation by incubator programs. These occupiers are attractive for investors, since they result in cash flow, while these type of occupiers can free up capital and reinvest in further innovation. In this manner, real estate investors can contribute to further innovation in life sciences and may result in more market activity.

The life sciences industry has benefitted from pandemic-related tailwinds. Long beyond the pandemic, the innovation race will continue as downward pricing pressures continues. As one of the front-runners in life sciences innovation, the Netherlands will be therefore on the list of investors' life sciences wishlist.

Chart 6: Leiden office and life science take up (sq m)



“ In 2020, Switzerland successfully introduced a new tax legislation that allows Swiss cantons to offer the attractive ordinary corporate tax rates and incentives for manufacturing and R&D jobs. ”

Switzerland: Zurich

Guest Column: Lukas Sieber, Greater Zurich Area, on Zurich's transformation from banks to biotech: how Zurich became a leading life sciences location.

Nine out of ten of the largest biotechnology and pharmaceutical companies globally have a substantial presence in the Greater Zurich Area in Switzerland, including Johnson & Johnson, Pfizer, AbbVie, Bristol-Myers Squibb, Novartis and Roche, Novo Nordisk, Abbott and Merck. While the big names in life sciences tend to garner a lot of attention, the Zurich region has a rich diversity of pharma and biotech companies and help the region and Switzerland to maintain its reputation as one of the global innovation leaders.

Talent matters

Switzerland has been ranked as the world's most innovative country for the 10th year in a row by the United Nations Global Innovation Index (GII). Also in other rankings including the World Economic Forum (WEF) Switzerland has been top ranking for many years. While those rankings aim to capture the multi-dimensional facets of innovation, a key differentiator for the life sciences industry is talent. According to WEF, Switzerland is the country with the most extensive and highest quality staff training as well as the highest skill set for graduates worldwide. Other top positions for Switzerland include international co-inventions and R&D expenditure per capita. An important factor regarding talent is Switzerland's labour law, with one of the most liberal labour legislations in the world. Last but not least, Switzerland is attractive to highly qualified employees, as it offers a very high quality of life, security as

well as the highest disposable income in the world.

While global companies can easily recruit international talent from Switzerland, Greater Zurich has become a leading location for biotech start-ups. Of particular significance is the Biotechnopark Schlieren, a science park for life science companies and institutions in very close proximity to the Swiss Federal Institute of Technology (ETH) and the University as well as the Zurich University Hospital. The park, 55,000 sq m in size, today hosts 55 companies and many academic institutions, representing a healthy mix of young start-ups and global companies as well as university clinics, institutes, and research groups. Mario Jenni, CEO of the Biotechnopark Schlieren, names antibody-related therapeutic agents, gene therapy and personalized health as key life sciences verticals of the Greater Zurich Area.

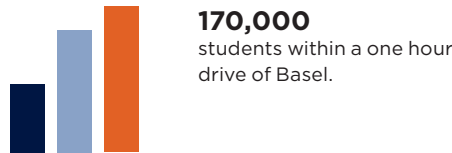
Not only Swiss start-ups are thriving in the region. More and more foreign, particularly U.S. start-ups are expanding into Greater Zurich to accelerate their growth in Europe and expand R&D as well as production capabilities. Some of the most recent additions to the local life sciences cluster include Apellis, Reata Pharmaceuticals, Deciphera, Global Blood Therapeutics, Stemline, Arvelle Therapeutics and many others.

Life sciences: key pillar of the Swiss economy

In 2019, the Swiss pharmaceutical market totalled around \$7bn, while pharmaceutical exports reached more than \$9bn, representing almost 30% of all Swiss exports. Europe still represents the main export and import market for Swiss life science goods, although the US and other markets are growing. The productivity of the Swiss pharma and biotech sector is seven times higher than that of the global economy. Another indicator of Switzerland's significance as a biotech and pharma location is the fact that around 40% of the capital of European life sciences companies is being traded on the SIX Swiss Stock exchange in Zurich.

Recent and ongoing changes to international tax and regulations make it more important than ever to select the most appropriate location for life sciences companies. In 2020, Switzerland successfully introduced a new tax legislation that allows Swiss cantons to offer the attractive ordinary corporate tax rates and incentives for manufacturing and R&D jobs as well as reasonable taxation of intellectual property income from patents, technology or trademarks. Thanks to the country's high volume of tax autonomy, the combined effective corporate tax rates (federal, cantonal and municipal) in Switzerland ranges between 12% and 20%.

“ In H1 2021, Swiss life science companies raised over €500m of venture capital funding. ”



Switzerland: Basel

Christof Klöpfer, CEO Basel Area Business & Innovation, explains how Basel’s existing life sciences cluster attracts global innovators to the city.

An international workforce, tax-friendly environment and global innovation positions Basel as one of the leading European life science clusters. Renowned international businesses and a world class academic community attract skilled and talented employees from all over the world, with more than 40,000 expats settling here from 160 countries. In total, there are 14 universities with about 170,000 enrolled students within a one-hour drive of the Basel Area, spread across three countries. Specialisms cover pharmaceuticals, biotechnology, medical technology and digital health. Global summits and conferences including the European Aids Conference, Future Health Basel and the Swiss Innovation Forum attract international attention.

Basel’s leading life science companies have been involved in M&A activity in recent years. Actelion, a pharmaceutical company based in Allschwil, was sold to Johnson & Johnson for \$30 billion in 2017. Furthermore, in 2013, Basel-based biopharma Okairos was sold to GlaxoSmithKline for \$250 million, in 2019, Basel-based biotech Therachon was sold to Pfizer for \$810 million, and in 2020, Basel-based biotech NBE-Therapeutics was sold to Boehringer Ingelheim for \$1.2 billion.

The lighthouses of the Basel Area’s life sciences cluster are the two global headquarters and research centres of Novartis and Roche in Basel. Roche is currently building a second tower and a new research center, Novartis is developing the new Novartis Pavillion scheduled for opening in Q4 2021, with the ETH Basel campus in close proximity. Furthermore Novartis is opening its campus for startups, incubators, institutes, companies and partners.

Opened in mid-2020, the Switzerland Innovation Park Basel Area was the first major external organization to have offices on the Novartis Campus. It supports startups and established companies from the fields of digital health and personalized medicine.

Future key development schemes for the Basel Area include;

BaseLink - The development site of 75,000 sq m in Allschwil is part of a thriving life sciences ecosystem with renowned and innovative companies and research institutions such as Johnson & Johnson and Idorsia nearby. On the site and next to the new home of the Swiss Tropical and Public Health Institute, the Main Campus of the Switzerland Innovation Park

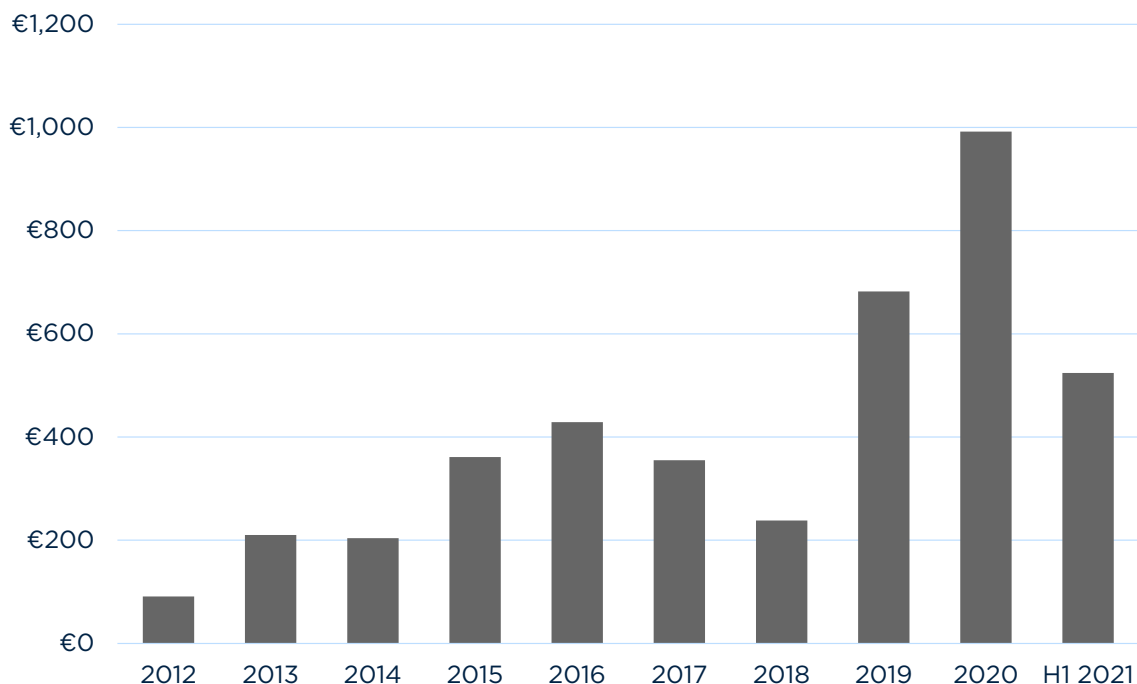
Basel Area is currently under construction. The building was designed by Herzog & de Meuron architects and will be ready for business in summer 2022.

- Rosental Mitte - Centrally located at the German train station in Basel, the former birthplace of Basel’s chemical industry and current HQ-site of Syngenta covers 68,000 sq m and will transform into a modern business and research district with potential for up to 8,500 jobs and new development completions set for 2025.

- Stücki Park - Four office and laboratory buildings totalling 25,000 sq m will expand the existing business park until 2023. The area is already home a research centre of Lonza and the Technologiepark Basel, offering 6,700 sq m of office and lab space for early-stage tech-startups.

- Klybeckplus - The transformation of the centrally located former Ciba factory site into an urban district of 300,000 sq m development area offers potential for 7,000 jobs in office, research and production facilities.

Chart 7: Switzerland life science VC investment (€m)



Source: Pitchbook, Savills Research

France

Cyril Robert assesses how rising corporate investment and infrastructure development will support occupier activity in Paris.

France's expanding life science industry employs 99,000 workers, second in Europe only to Germany. According to EFPIA, France's public and private healthcare spending accounts for 11.2% of GDP, the joint highest in the European Union alongside Germany and above the Netherlands (9.9%) and the UK (9.8%). Paris' medical universities, Paris Sciences et Lettres (PSL) and Sorbonne University feature within The Times University Guide's top 15 European universities for life sciences, attracting global talent to the French capital and positioning Paris as a key European life science hub.

Paris has subsequently attracted €1bn of venture capital funding into the life science sector over the last five years, fourth in Europe behind Cambridge, London and Oxford, although this is increasing each year, with €258m across 18 deals in 2020. Much of the funding has targeted companies in the biotechnology and drug discovery subsectors, including Inotrem, Enterome and Eyeevensys.

In Paris, pharma companies strongly favour the western suburbs of Paris when it comes to choosing office space. Situated in the direct vicinity of Paris, it provides a mixture of a large efficient buildings with excellent access of public transport and good amenities.

The three pharma clusters of La Défense, Rueil Malmaison and Boulogne Billancourt

currently show relatively higher vacancy rates, as a result of the pandemic. Options are available for occupiers and incentives to tenants tends to be more favourable compared to central Paris, however most of the production/ manufacturing sites are located outside Paris or even Greater Paris.

Over the last five years, Paris' pharmaceutical sector has accounted for over 240,000 sq m of total take up, with Novartis signing for 42,000 sq m of laboratory space in 2015 boosting the total.

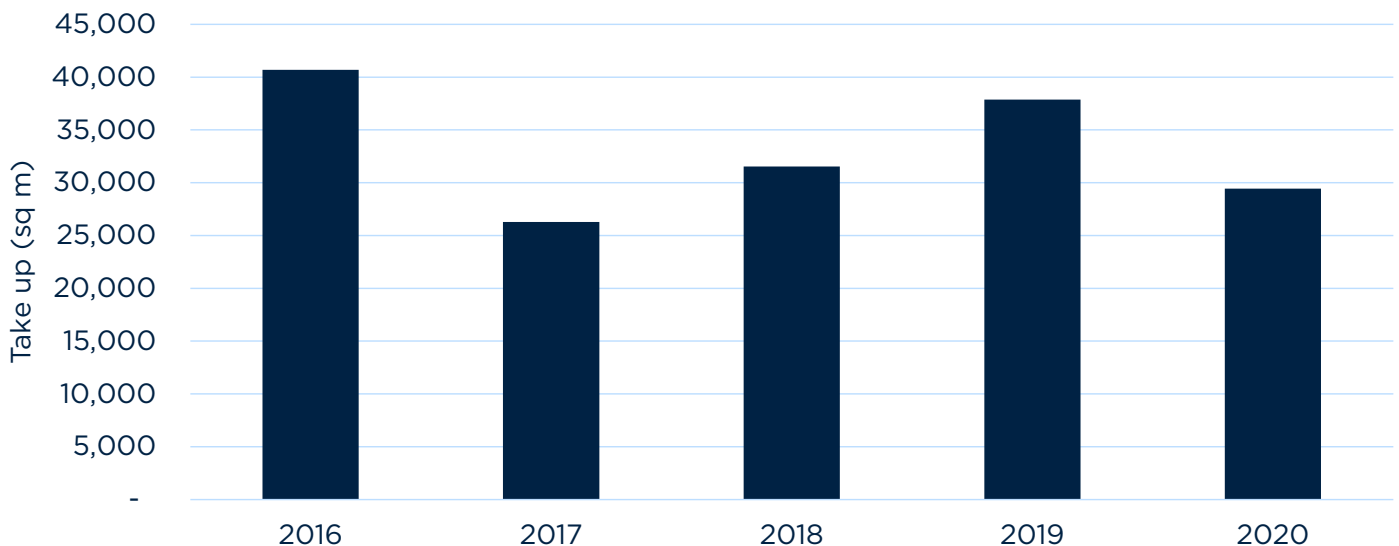
Leasing activity slowed considerably across the traditional offices sector in 2020, although the pharmaceutical sector performed resiliently, in line with previous years. Medtronic signed for 4,610 sq m in Montrouge, south of the CBD, which remains an attractive hotspot for occupiers due to its proximity to Le Kremlin-Bicêtre and Villejuif, offering four teaching hospitals. New infrastructure developments as part of Le Grand Paris will also provide direct transport routes to Paris Orly and the city centre. The Gustave Roussy research centre and oncology hospital specialises in the treatment of rare tumours in the nearby southern suburb and is at the heart of the Cancer Campus biocluster project, which is entering its operational phase and is set to become a research and innovation park dedicated to cancer. Supported by Europe and the French State,

Cancer Campus benefits from the assistance of numerous partners such as Gustave-Roussy and Gustave Roussy Transfert, the Institut Curie, the Medicen competitiveness cluster, the Assistance publique - Hôpitaux de Paris, the Université Paris Sud, the Agence régionale de santé and the Caisse des dépôts (the State's financial arm). Its development also involves the Genopole, a nearby biocluster (Evry) specialising in genetic and genomic research.

Laboratory facilities tend to record a lower occupational density than in the traditional offices sector, usually around 19 sq m per employee, above the office average of 11 sq m per employee due to the space requirements for life science activities. As a result, laboratory space has traditionally been located to the outskirts of the city, although we are seeing more examples of pharmaceutical companies relocating inwards to city fringes in order to attract talent pools.

Paris prime CBD office rents achieve as high as €935 per sq m with La Defense rents at circa €543 per sq m, although these locations tend to attract pharmaceutical headquarters rather than laboratory facilities. For example, IQ VIA reorganised its real estate portfolio across Greater Paris and signed for 11,300 sq m in La Defense, whilst Sanofi recently signed for 9,200 sq m in Paris CBD for its

Chart 8: Paris pharmaceutical take up (sq m)



Source Savills Research

world headquarters. Laboratory rents in Gentilly typically achieve rents in the region of €300-€350 per sq m, where Sanofi's R&D centre and French headquarters are located on more than 50,000 sq m (buildings inaugurated in 2014).

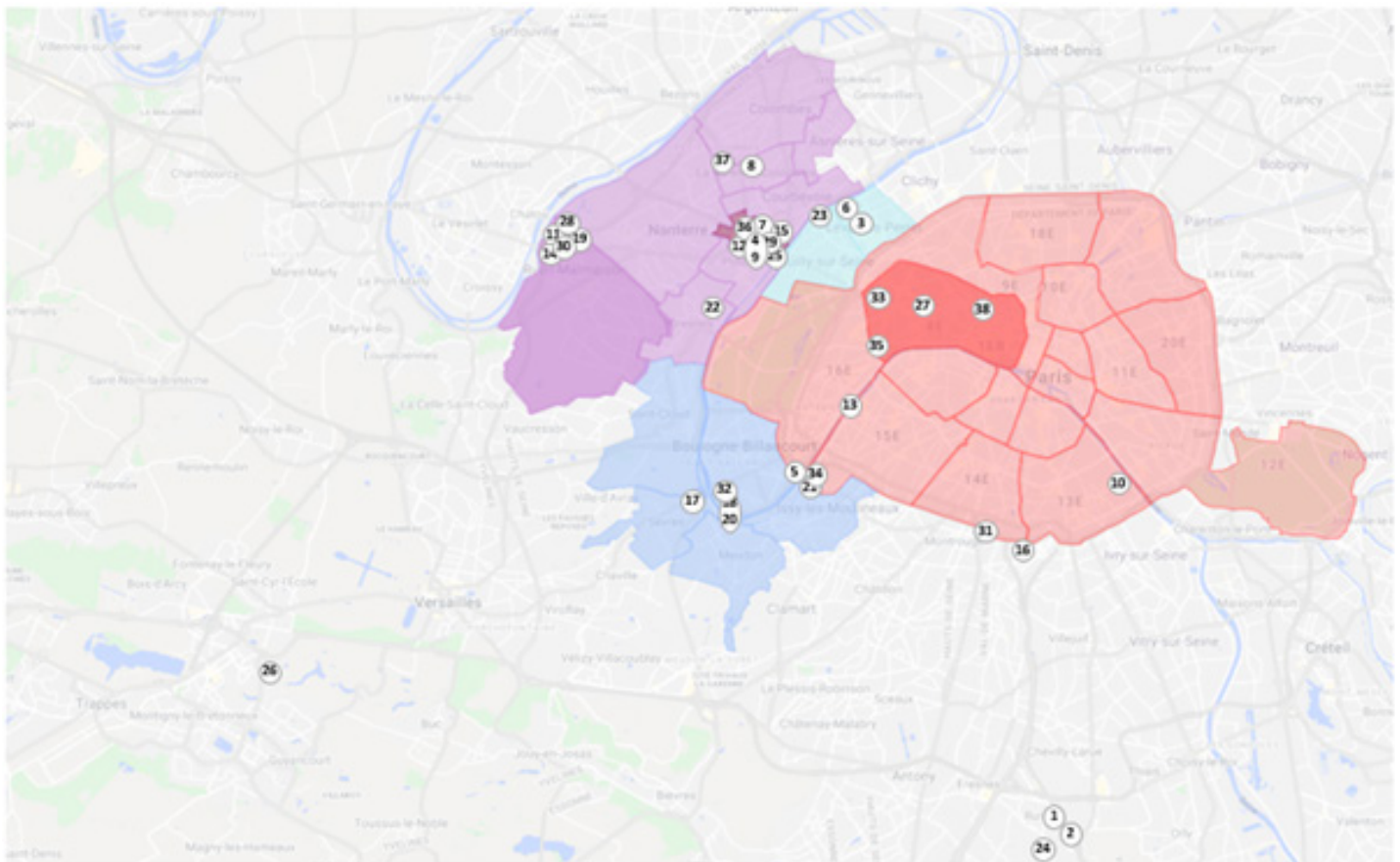
Beyond the capital, Lyon is positioned as a stronghold of the Pharma Biotech sector, at the forefront of one of Europe's largest pharmaceutical and biotechnology markets. With nearly 100,000 jobs in the healthcare sector, Lyon is one of the largest biotech and healthcare markets in Europe, and we have observed a number of production facilities developed both here and Grenoble as part of the BioValley cluster.

Relative to the total level of office investment, the level of R&D transactions remains limited across France, with €184m invested in 2020. A shortage of institutionally owned stock is likely to limit transactions in the near future, but we believe there is an opportunity for landlords to gain access the sector through sale and leaseback transactions.

Key for Map 3: Paris life sciences occupiers

No	Company	No	Company
1	Abbott	20	Ipsen
2	Abbvie	21	Johnson & Johnson
3	Alexion	22	Les Laboratoires Servier
4	Allergan	23	Lilly
5	Amgen	24	Menarini
6	Astellas	25	MERCK & Co Inc
7	AstraZeneca	26	MERCK KGaA Millipore
8	Bayer	27	Mylan
9	Biogen IDEC	28	Novartis
10	Boehringer Ingelheim	29	Novo Nordisk
11	Bristol Myers Squibb	30	Otsuka Holdings
12	Chugai	31	Pzifer
13	CSL	32	Roche
14	Daiichi Sankyo	33	Sanofi
15	Eisai Co	34	Eurogenerics
16	Ferring	35	Takeda
17	Fresenius	36	Teva Pharmaceutical
18	Gilead	37	UCB
19	GSK	38	Vertex Pharmaceuticals

Map 3: Paris life sciences occupiers





Denmark

Public, private and university clusters are driving life sciences growth in Copenhagen, says David Hauge, Nordicals Research.

For the Danish science/pharmaceutical market rents have reached levels of €550 per sq m for laboratory space in the prime Copenhagen area and the prime yield level for this sector is registered at 4.5%. Compared to the office sector, laboratory rents achieve a premium- prime rents for office space is €300 per sq m with a prime yield of 3.75%. As a consequence of the Covid-19 pandemic, we have observed a change in the Danish office market. Companies demand modern office facilities with flexible layout options, with a higher focus on the physical work environment and human resource management.

The pharmaceutical sector's leasing level has held stable with some minor increases over the last five years. The high prices are reflected by the good quality of the leases and prices seem not to be challenged.

Pharmaceutical companies looking for lab space have traditionally chosen to build their own labs instead of leasing through institutional landlords. It has become very expensive to design or convert a property into a lab and to meet every pharmaceutical/science company's individual needs and demands, which is an explanation as to why labs are primarily owner occupied.

Most of the pharmaceuticals, science and research centers have locations in Copenhagen, closely located to the universities. Novo Nordisk, which is a global pharmaceutical business, has operations in the north of Greater Copenhagen in Bagsværd. The location of Novo Nordisk has

attracted other pharmaceutical companies, such that clusters are primarily located in Greater Copenhagen in the north. A few pharmaceuticals have locations outside Greater Copenhagen where they have established their highly specialized production facilities.

One of the key occupiers in Greater Copenhagen is Denmark's Technical University (DTU) with the DTU Science Park, which is the largest science park for deep tech companies in Denmark with locations in Lyngby and Hørsholm. The science park is owned by the University, where more than 290 companies are located and together they are a part of the Danish leading growth of development environment.

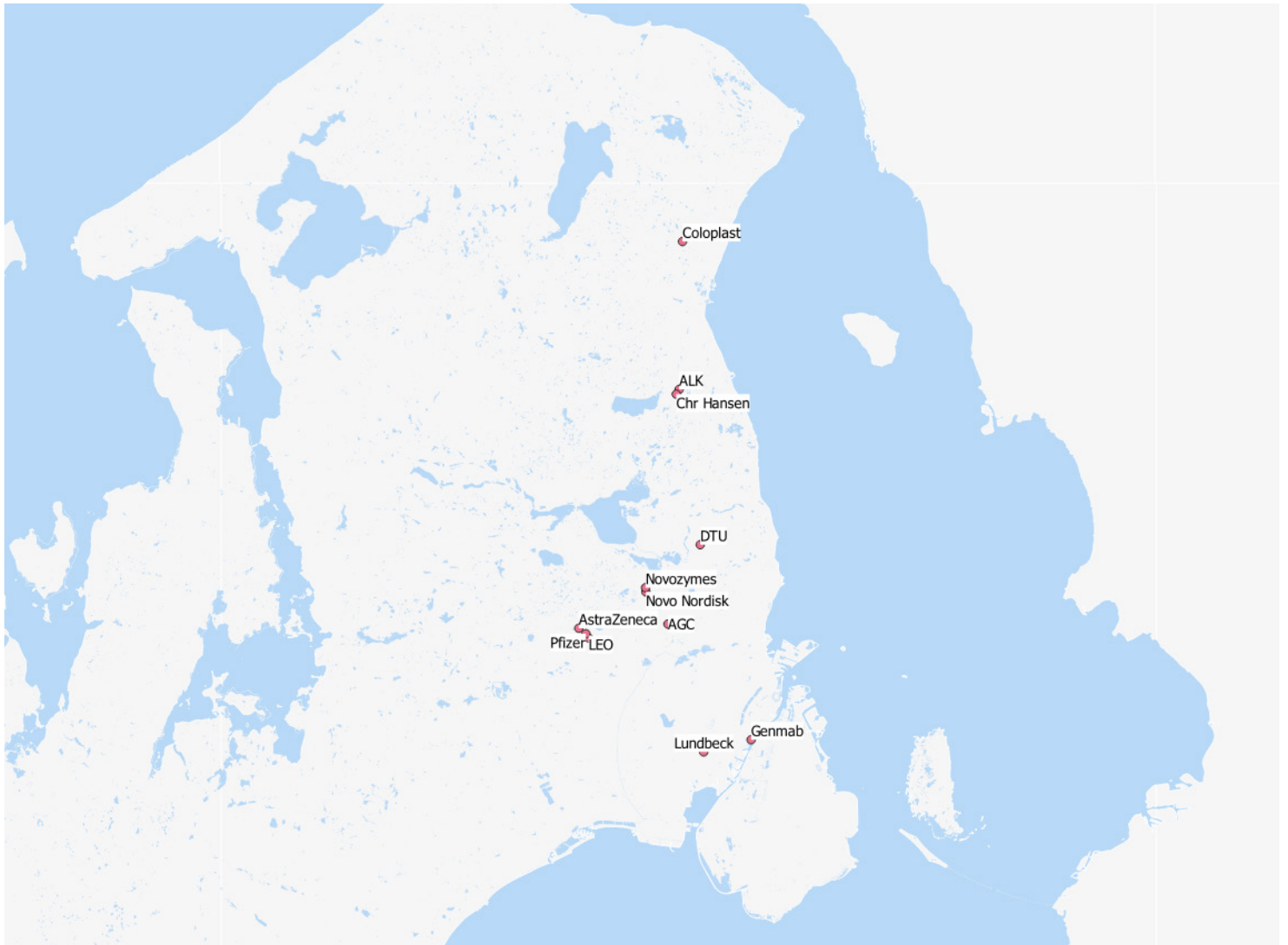
Currently, the wider municipality has life science clusters at Hørsholm with DTU, ALK-Abelló and Chr. Hansen HQ. In 2022 Chr. Hansen plan to expand their headquarters in Hørsholm by 15,000 sq m. Genmab has planned to move their offices to Valby in Copenhagen from a location in central Copenhagen. In Valby, the pharmaceutical company Lundbeck is also located, which focuses on brain diseases. Novo Nordisk and Novozymes are both located in Bagsværd, which is a part of Greater Copenhagen. Leo Pharma is a Danish medicinal company located in Ballerup.

Denmark's life science university research is ranked among the highest globally, especially from DTU. Research and knowledge at the universities is considered to be of paramount

importance for Denmark's life-science sector. Plenty of new startups are established from DTU's research and the supply of offices makes it possible for these to find proper environments to develop on their projects. The life science start-ups from Denmark are in high interest for global and international investors as a result, with considerable levels of life science facilities sold to non-domestic investors.

DTU works with a lot of different companies and using a business PhD, the cooperation gets closer. The collaborative research between companies and DTU is a great opportunity for companies to get access to the newest research and knowledge at a professional level and secures a continued level of innovation and development.

Map 4: Copenhagen key life science occupiers





UK

London and the OxCam arc remain the market leaders, although regional locations are witnessing rising investment activity, says Steve Lang, Director, Life Sciences.

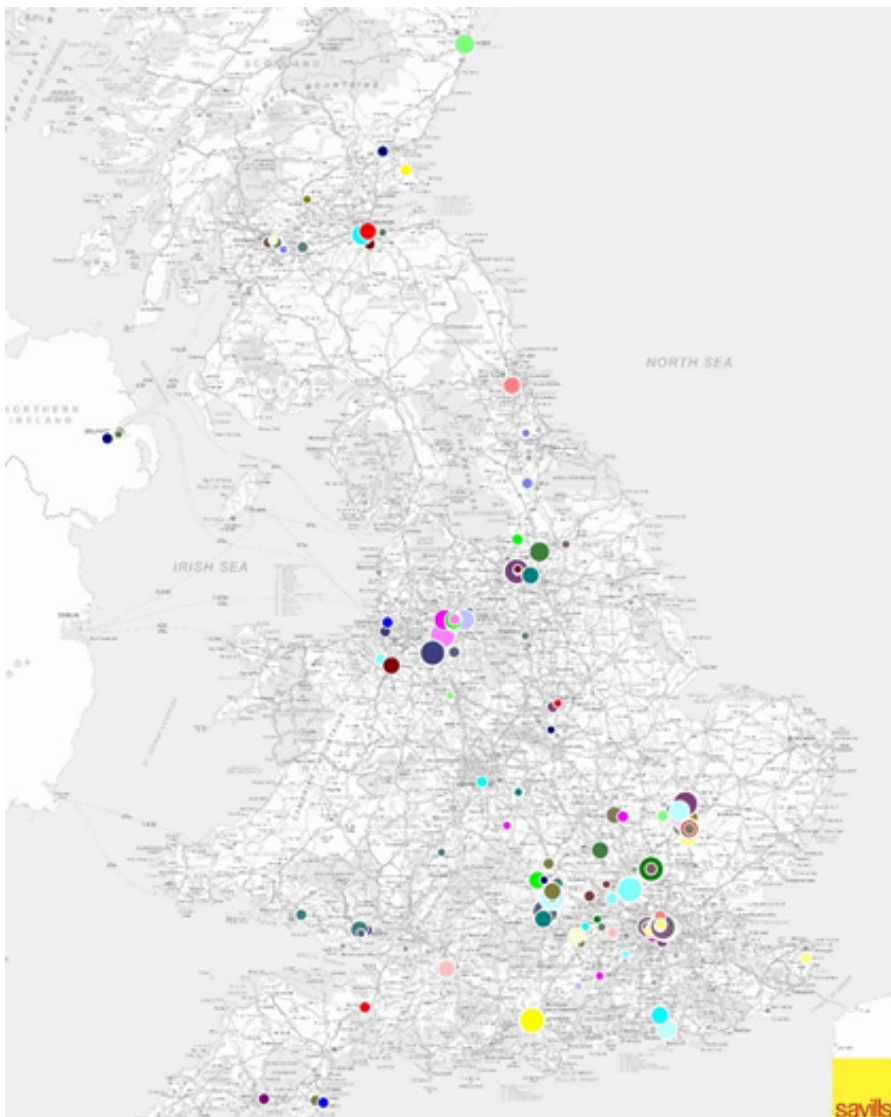
The UK life sciences sectors employ over 250,000 people within 6,300 businesses and generates a turnover of nearly £81bn per annum. The core biopharma sector of life sciences includes all businesses developing and/or producing their own pharmaceutical products – companies involved in this area include small R&D-focussed biotechs to multinational Big Pharma. However, the life science sector also includes MedTech, which is particularly prevalent in the Midlands of the UK, within a traditional manufacturing heartland. Increasingly, with the blurring of life sciences and technology, the Digital Health sector is also growing strongly in the UK, particularly within London.

Within the UK, the life science sector has created significant opportunities for real estate developers and investors from across the UK and indeed the globe. However, the past couple of years has shown a much higher level of real estate interest in the life science sector than any time during the past 20 years. Despite the post-Brexit business and economic environment remaining an unknown, following the EU referendum in 2016, the importance of research and development (R&D) was made very clear. In particular, the UK would remain a ‘go-to’ place for scientists and global talent. In parallel to this pledge, and a more recent announcement, the UK will look to pursue “high-risk, high-reward”

investment via a new state-backed agency.

The UK life science sector, geographically, is predominantly driven by London, Cambridge and Oxford. Companies in these locations are spending billions in R&D costs and placing them in the top ranks in the world. Whilst Cambridge and Oxford are leading the way for life science and discovery, it is clear that the amount of available laboratory and R&D space in our cities is small compared to other global locations. Currently, London has c.100k sq ft (9,000 sq m) and Manchester has 360k sq ft (33,000 sq m) of stock compared to Boston (US) and New York which has 14.6m sq ft (1.4m sq m) and 1.36m sq ft (126,000 sq m) available, respectively. The delivery of more R&D workspace is vital for the UK’s growth in this important sector going forward. Despite more limited stock, there are many pockets of life science across the UK, including most large cities.

Map 5: UK life science corporate investment deals, 2020



The continued growth of clusters in the UK is key, as shown in the map opposite. Like-minded and complementary companies, within the life science sector, want to be co-located, to a certain extent, to take advantage of shared knowledge and business synergies and to be near to knowledge gateways, often academic institutes. Some landlords and developers have recognised that owning various commercial buildings in close proximity creates opportunities for a new science/tech cluster. However, to do so, successfully, requires an exciting vision, curation of the right tenants and a longer-term strategic commitment to deliver the right space.

There are locations across the UK where the density of corporate investment is significant. Today, the notable exception is in the Midlands of the UK, where capital raising has been relatively muted. However, with high quality teaching and research hospitals, as well as major universities, this will change over the next few years and it is a region to watch.

To understand the relative strength of the UK life science sector, and understand the future demand for real estate, an analysis of the level of capital raising (including mergers & acquisitions (M&A) and venture capital (VC) transactions) is relevant. For UK headquartered life science companies, the total level of all types of corporate investment was £18.6bn in 2020, which was 15% higher than

Source Savills, Pitchbook

2019. This year has also started strong with UK-headquartered companies already attracting nearly 90% of the 2020 total by mid-June.

The VC trends indicate growth at the discovery end of the life science ecosystem. The level of VC attracted by UK-headquartered life science companies was around £2.5bn in 2020, which was in-line with the 2019 total amount. However, by mid-June 2021, the total for this year is already 3% higher. Additionally, the average deal size for these VC deals is £9.6m, which is well above the 10-year average of £2.5m.

The UK is at the forefront of life sciences in Europe, based upon this finding. As a nation, the UK has two of the top five global universities and attracts the lion's share of corporate investment funding on a European basis. As a result, the UK is home to some major life science clusters and research hubs. The key hotspots include the following:

Scotland: The last five years has seen companies headquartered in Scotland, in all sectors, raise around £1 billion of capital. For the life sciences

sector, specifically, there were £170m of deals in 2020, the majority of which occurred in Q2 and Q3. This total is 31% higher than 2019 and the venture capital share of the total, by value, is 84%. This shows a future strengthening life science sector in Scotland across all the major cities. There is considerable investor interest in real estate assets across the key markets.

North of England: 2020 continues to show a geographical distribution of companies that have attracted some form of capital. The 'Northern Arc' stretching from Manchester, through Leeds and onto Newcastle is important for the UK to show the polycentric nature of the life sciences sector in the UK and provides evidence that the life science sector is prevalent in many locations of the UK, underwritten by strong universities and teaching hospitals.

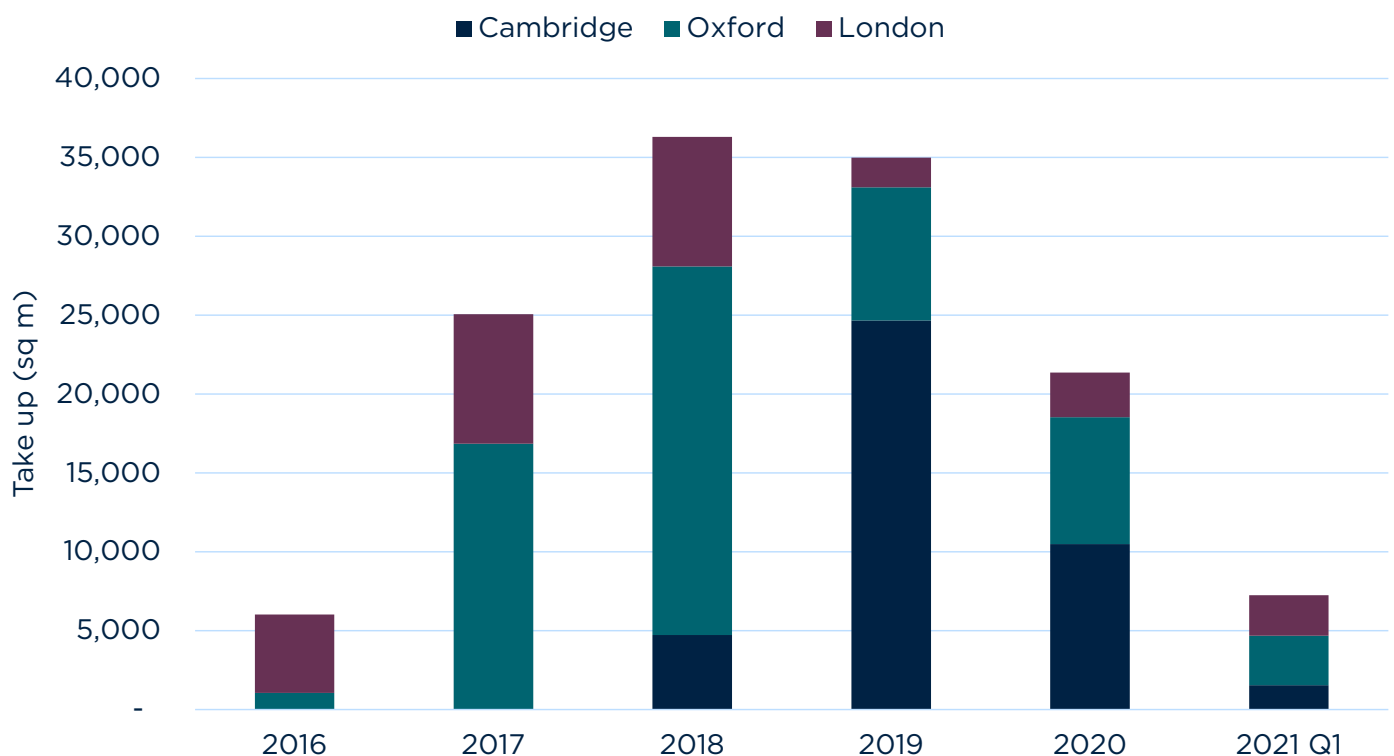
London: This is emerging as the dominant cluster in the UK and Europe in terms of capital raising. However, it does suffer from a shortage of appropriate science-related workspace, particularly laboratories, to accommodate company demand

as a result of them raising capital and headcount growth increasing. London has grown in White City and the King's Cross/Euston Road cluster. There is also an increased appetite to convert office space to life science space, including laboratories.

Oxford-Cambridge 'Arc': This continues to show significant strength of fundraising, with the area 'bookended' by two of the leading universities in the world. The level of appetite for investors in this market area, particularly around Oxford and Cambridge cities.

The leasing activity in the London-Oxford-Cambridge markets is shown below. The take-up level fell during 2020, which wasn't Covid-19 related, but rather the lack of available stock. Recent investment transactions and development site sales will look to bring more stock to these markets over the coming years. This includes the repurposing of some ex-retail assets in both Oxford and Cambridge city centres.

Chart 9: UK pharmaceutical take up (sq m)



Poland

Biotechnology and nanotechnology activities continue to support occupier demand across Poland, explains Agnieszka Giermakowska.

The Covid-19 pandemic has accelerated the growth of pharmaceutical companies in Poland, which is now home to the sixth largest pharmaceutical industry in Europe. According to the latest available data, the number of companies operating in the pharmaceutical sector in Poland was 482, a 27.5% increase compared to the previous year (2019 vs 2018) and 24,900 employees (3% increase y-o-y). 41 new pharmaceutical companies were registered during 2020 (22.6% less compared y-o-y and 18% less compared to the 5-year average).

Rapid development of the pharmaceutical sector in Poland is also due to the well-developed academic background. In the academic year 2019/2020 there were almost 145,100 students (medical, biology and related faculties) and more than 41,200 graduates. Biotechnology is especially one

of the most popular fields of study chosen by high school graduates, therefore it is included in the program offer of most large universities in Poland.

Pharmaceutical companies operating in Poland, especially those running production facilities and laboratories, are mostly concentrated in Central Poland: namely in Warsaw city and suburbs, Łódź suburbs, followed by Poznań suburbs, Kraków and Rzeszów. Nevertheless, Central Poland is now a major pharmaceutical hub in Poland. R&D centres and laboratories run by pharmaceutical companies are usually located close to, or are part of, the production facility of the company.

Most of the companies own the production facilities or laboratories in which they operate. The exceptions are mainly

represented by the company's main offices, back offices or financial services centres, which are located in the different office buildings.

During the last five years, the annual take-up of pharmaceutical/life science companies in Poland was at the average level of 76,300 sq m per annum, with the largest volume recorded in 2016 (91,600 sq m) and the lowest in 2020 (63,300 sq m). The average share of the pharmaceutical/life science companies of total take-up recorded during the five year period was 5.4%. The decrease of the take-up volume of the pharmaceutical/life science companies in the 2020 is in line with the general occupier activity trend observed in Poland due to the Covid-19 pandemic.

Warsaw, so far, was the main beneficiary of

Map 6: Major pharmaceutical hubs in Poland



Source Savills

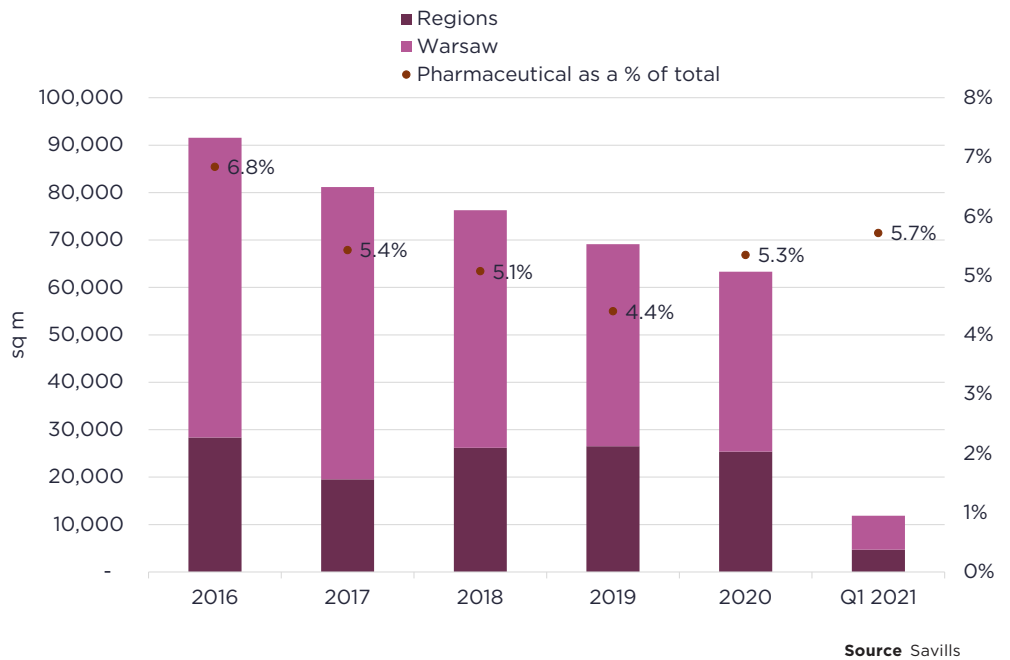
the pharmaceutical/life science companies take-up (circa 66% of total Poland demand during last five years). The regional cities Wrocław and Kraków were home to more than 52% of the entire pharmaceutical/life science companies take-up recorded in the regions during the 2016-2020. 23% went to Poznań and Katowice (11.7% and 11.4% respectively) and 16% to Gdańsk and Łódź (8% each), while the rest (9%) was scattered across such cities as Radom, Kielce, Białystok, Rzeszów or Gliwice.

Biotechnology and nanotechnology are currently the most rapidly developing industries not only in Poland but all over the world. The companies operating on that market focus mostly on novel molecules, innovative therapies and biosimilar products.

According to Statistics Poland data, 268 biotechnology and nanotechnology companies operated in Poland in 2019, 13% less than in the previous year. The number of people employed in the biotechnology and nanotechnology industry remained almost the same compared to the data from 2018 (5,611 vs. 5,673 people).

Biotechnology and nanotechnology is also very extensively developing outside the corporate sector. In 2019, 377 entities and 10,254 people were involved in the research and development in this field. At least 100 entities were represented by the units connected with the universities,

Chart 10: Poland pharmaceutical sector take up



while circa 30 were from the government sector or non-commercial private institutions.

Many of those entities are located in the technology parks or “life science” clusters in

Poland. Many of the existing clusters in Poland were created as joint ventures between private companies and higher educational institutions, e.g. NutriBiomed Cluster (Wrocław), LifeScience Cluster Kraków or Bionanopark (Łódź).

Table 2: Major pharmaceutical leasing transactions, Poland 2016-20

Year	City	Building	Tenant	Size (sq m)	Lease type
2020	Łódź	Sterlinga Business Centre	Takeda	5,700	Lease renewal & expansion
2018	Gdańsk	Olivia Business Centre: Olivia (Point & Tower)	Bayer	5,800	Lease renewal & expansion
2018	Warsaw	North Gate	Sanofi Zentiva	5,700	Lease renewal & expansion
2017	Warsaw	Postępu 14	AstraZeneca	13,200	Lease renewal & expansion
2017	Warsaw	D48	IQVIA	8,300	New deal
2017	Warsaw	Topaz	Roche Polska	5,700	Lease renewal
2016	Warsaw	Warsaw Trade Tower	MSD	7,200	Lease renewal & expansion

Source Savills

How can investors gain access to the sector?

George Coleman, Savills Regional Investment Advisory EMEA, explores the challenges and opportunities for European investors.

The COVID-19 pandemic has affirmed investor interest in the “meds, beds and sheds” sectors, more formerly known as life science, residential and logistics. In each instance, investors are attracted to the future-proof real estate fundamentals, the surety of income and rental growth forecasts driven by the occupational supply/demand imbalance.

The life science sector, which quietly enjoyed positive growth pre-Covid, has garnered serious attention due to the mission critical nature of the real estate for its occupiers. That said, there exist high barriers to entry due to the highly fragmented ownership

within the sector. Ownership is distributed between private companies, government bodies and research institutions or universities.

Although it is difficult to estimate the Europe’s life science stock, we expect to see increased development and repurposing strategies which will help to grow the market size. When opportunities are presented, investors must fully understand the triple-helix drivers of a particular location and the local cluster dynamics before making an investment decision. Given the breadth of real estate typology available and the different transaction structures, Savills

approach each investment underwrite uniquely.

Standard on and off-market real estate transactions will continue to attract significant investor attention given the sheer weight of capital seeking access to the sector. Cambridge Science Park, one of the UK’s flagship life science clusters has seen increased investment activity this year. It is reported that c.£2bn of equity was chasing Legal & General’s sale of five buildings (214-240 Cambridge Science Park) leading to an aggressive bidding process. The assets were marketed at £62m (6.50%) and ultimately sold to Brockton for over £98m (sub 4.50%).

Image: Fidelity International acquired Astellas’ facility at Leiden Science Park in January 2021.



Oxford Properties also made their first acquisition in the European life science sector, securing AstraZeneca's facility at the Park. The asset was acquired in an off-market transaction from the Local Authorities' Property Fund for a price reported to be in the region of £45m, reflecting a 3.60% NIY. Savills also managed the sale of One Cambridge Science Park on behalf of LaSalle Investment Management. The Grade A office and R&D facility totals c.7,500 sq m of Grade A office and R&D space and is situated in a prominent position at the entrance of Cambridge Science Park. After significant interest and competitive bidding, the asset was acquired by JP Morgan for £50m, reflecting 4.50% NIY.

Hotly contested open market opportunities will encourage investors to consider off market sale and leaseback transaction structures to gain sector exposure at more attractive yields whilst avoiding bidding wars. The specialised configuration of the real estate and covenant issues have previously dissuaded investors from committing to the sector, however we believe these barriers to entry will be lowered as education surrounding the sector improves. On the other side of the table, sale and leaseback transactions offer life science companies the opportunity to raise capital for their operations and invest in primary business areas.

Fidelity International acquired Astellas Pharma's research and development facility in Leiden, Netherlands in a part sale and lease back transaction at the start of the year. Mirai House, a c.14,888 sq m office and laboratory facility located on the pre-eminent Leiden Science Park, is multi-let to 3 tenants (Astellas, LUMC and NECSTGEN) with a WAULT of c.11.9 years at the time of sale. Fidelity reportedly paid €54m for the asset, reflecting c.5.19% GIY.

The European life science sector is characterised by a severe undersupply of

Image: Ramala Investment Bank acquired Genencor's facility at Leiden Science Park by way of a forward commitment transaction.

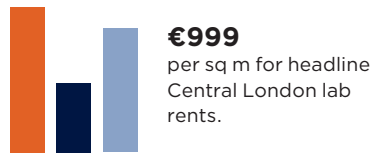


high quality stock and the majority of real estate is tailored to the specific occupier. As the sector evolves and the nuances of life science assets becomes more mainstream, we expect more investors to engage in forward funding or forward commitment structures with the benefit of a highly resilient end user. The surety and longevity of income that derives from built-to-suit (BTS) assets will prove highly attractive to investors in the current market.

Rasmala undertook their first acquisition in the Netherlands with the forward commitment to the DuPont Building at Leiden Science Park, which is fully let to Genencor International B.V, a subsidiary of American Chemical Group DuPont. The BTS facility totals 6,588 SQM and comprises 4,001 SQM of laboratory space and 2,587 SQM of office space.

Rasmala was advised by Savills from a commercial and technical perspective.

Finally, Real Estate Investment Trusts (REIT) provide investors with highly liquid access to the real estate sector. US based Alexandria REIT focusses on office and laboratory buildings leased to life science tenants in the key clusters throughout the United States. The business model is highly resilient and future proof owing to the strong tenant base and mission critical real estate in its ownership. The REIT share price recovered to pre-pandemic levels in July 2020 and has enjoyed strong growth since. Is now the time for a UK and European focussed pure play life science REIT to service the chronically undersupplied and rapidly growing market?



The case for change of use

Matt Soules, Director in Savills Building and Project Consultancy assesses the potential for conversion of office stock.

The requirements for life science real estate vary significantly among occupiers. These can range from start-up incubators to large headquarters with traditional office space. Unlike other traditionally office-based industries, R&D operations require workers to operate specialist machinery/ equipment in optimised environments, and the sector is therefore more resilient to the impact of remote working.

Lab rents in the UK continue to command a premium over the rest of Europe, with London lab rents achieving as high as €999 per sq m, followed by Cambridge €562 per sq m and Oxford €562 per sq m. Respectively, office rents can achieve €1,124 per sq m (London), €606 per sq m (Cambridge) and €587 per sq m (Oxford).

However, we see some opportunity for conversion of office facilities in selected mainland European life science clusters where there is a lower spread between capital values. For example, due to the specialism of Leiden's life science sector, laboratory capital values outweigh traditional office values.

Challenges facing conversion of offices to laboratories

More specifically for wet laboratories, building requirements including increased ventilation allowing a minimum of six air changes per hour, gas storage, waste handling facilities and backup generators all increase capex requirements. In addition, these facilities require higher slab-to-slab heights (ideally over four metres), which is higher than some traditional offices can accommodate. Chemical labs, in particular will also require fume cupboards and local exhaust ventilation (LEV), which require ducting out to fresh air, and requires planning permission. Other considerations include additional space for tenant generators and dual incoming comms suppliers on order to provide occupiers with resilient operational systems.

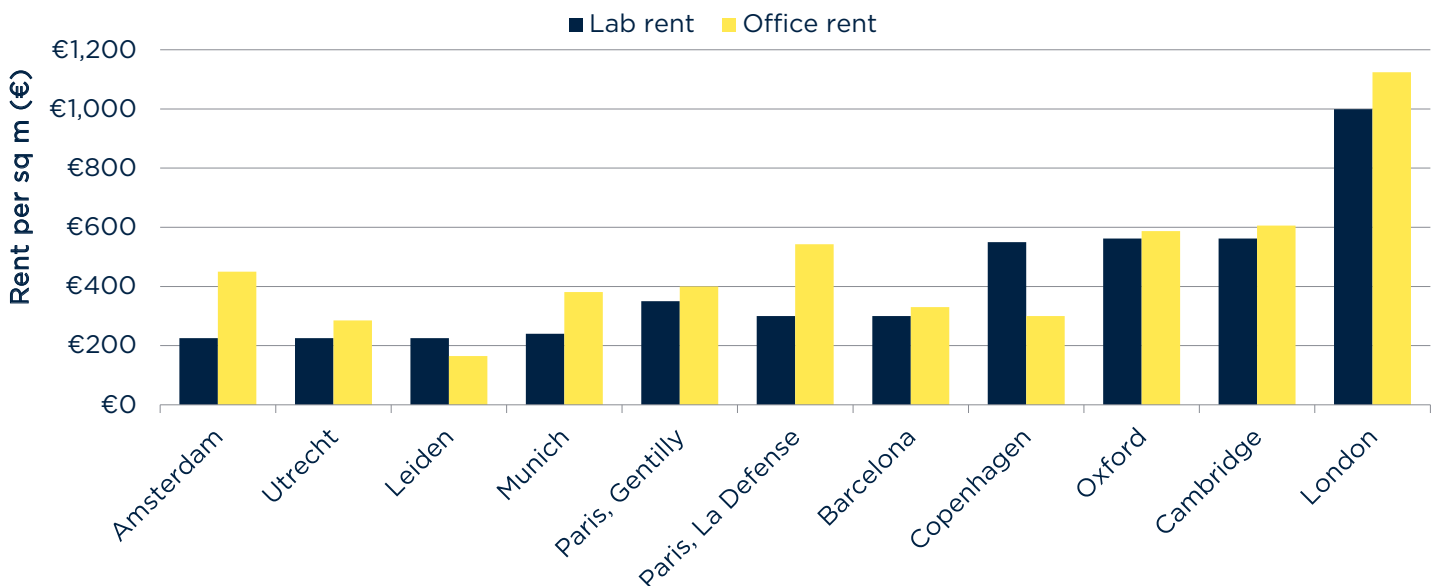
Typically, when providing incubator facilities, the landlord is expected to pay for a full Cat B fitout. However, as tenants mature to requiring 500-1,000 sq m offices, fitouts become more specific to the occupier and many landlords will either provide a Cat A

fitout or a shell and core with contributions for the tenant to personalise their own space. For large scale requirements, landlords tend to opt for an enhanced shell and core fitout and as a result of the Covid-19 pandemic, we are observing increasing demand for wet labs.

Another short term factor is that construction cost inflation is currently at its highest level on record in the UK, so change of use will become more likely once costs have stabilised.

Overall, the scarcity of laboratory spaces in the UK means we are seeing an increase in the conversion of offices to laboratories, despite the technical and cost challenges that these projects can present. Until the market's appetite for undertaking speculative development of laboratory buildings changes, we anticipate conversions of existing spaces will continue in the core markets of the Golden Triangle.

Chart 11: Laboratory and office rents by European city (€ per sq m)



Source: Savills

Conclusion

What are the top five takeaways from this report?

1 Surging venture capital investment into the life science sector will continue to support occupier demand across Europe, with an anticipated 474,000 sq m of new requirements forecast to emerge across key markets by end 2022.

2 Market transparency remains one of the key challenges for investors. The UK and The Netherlands remain among the most transparent and active investment markets in Europe currently, supported by attractive business environments and wide talent pools.

3 With considerable fitout costs and longer lease lengths, life science tenants remain 'stickier' than traditional office tenants, which will continue to pique investor interest seeking long term income. Conversion of office space to laboratory facilities is unlikely to become a common theme at least in the short term, due to building specifications, particularly ceiling heights and waste handling. Any conversion of space is more likely to be for dry labs specific to digital health.

4 Shortage of stock remains a challenge for institutional landlords seeking to access the sector, with universities traditionally less active vendors. Sale and leasebacks and forward funding

of new schemes will be the major opportunities for investors to gain access to the sector.

5 The cost and availability of talent will remain one of the key considerations for global life science occupiers who are seeking to expand. European employee costs compare favourably on the global stage and attractive tax regimes will continue to drive activity in Europe.



Savills Science

Science, R&D and technology sectors all demand specific types of real estate. Savills, using data and expertise across all markets and disciplines will help clients make the best real estate decisions. Savills have established offices, with life science capability, within the key markets across the UK. Savills also has significant expertise in dealing with all aspects of life science real estate, particularly for occupiers, within the key markets in North America and Asia. Having a global understanding of these international markets, with experts 'on the ground', means that Savills can provide an enhanced offering to all types of clients, including occupiers, investors and landlords.

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