

INTERNATIONAL CORPORATE TAX

Site Selection for Life Sciences Companies

European Life Sciences Cluster 2013 Report

In association with



VENTURE VALUATION

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Foreword

Access to new technologies, products, talent and markets is critical for Life Sciences (LS) companies' efforts to maintain competiveness and generate growth in an environment characterized by price pressures, fast technological changes and increasingly sophisticated consumers.

Europe is especially interesting for LS companies from emerging economies and the US seeking to leverage these potential advantages. With its technological leadership and manufacturing know-how, Europe offers interesting opportunities for the acquisition or development of intellectual property (IP) as well as the production of sophisticated products.

The vocational training systems in place in many countries and/or top academic educational systems guarantee sizeable highly skilled workforces. Meanwhile, mandatory health insurance systems in most European countries, together with ageing populations, ensure strong and steady demand. Furthermore, products accepted by European consumers, or even those manufactured in Europe, can benefit from a 'Europe bonus' in emerging markets in terms of credibility and desirability.

KPMG's Global Location & Expansion Services (GLES) practice is therefore delighted to present this report setting out the key considerations for LS companies looking for a European location for their operations. The report contains previously unpublished data from Venture Valuation on a wide range of relevant considerations.

Hartley Powell, Principal Global Head GLES

Thomas Linder, Director Head GLES Switzerland

Concept: André Guedel. Text: André Guedel, Thomas Linder (KPMG), Patrik Frei (Venture Valuation). KPMG Switzerland, October 2013

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Scope of the report

Issued by KPMG in Switzerland in collaboration with Venture Valuation, this report aims to provide useful information to LS companies (Pharmaceutical, Biotechnology and Medical Devices) seeking a European location in which to establish operations.

Setting out previously unpublished data from Venture Valuation, this report should be of interest to parties active across the LS field. It is based on our experience of operations set by non-European LS businesses in Europe, which typically center around distribution, Research & Development (R&D), manufacturing and regional headquarters / shared services.

Identifying an ideal location requires consideration of the following key factors.

- Structure of LS and related clusters in shortlisted countries, including a detailed overview
 of size and specialization, product pipelines, insights into existing regional and global
 headquarters (HQs), and financing opportunities.
- Opportunities for business and tax model optimization, including an understanding of the corporate tax system and most common corporate tax planning possibilities for supply chain management, R&D incentives and IP management.
- A host of other relevant business factors including macroeconomic performance, general business environment, flexibility of labor regulations, innovation, and the cost of doing business, among others.

This report compares such factors across the countries that represent the leading European LS clusters: **France, Germany, Ireland, the Netherlands, Switzerland and the UK**.



Key Findings

The significant variations in the **size and specialization** of European LS clusters can be summarized as follows:

France

- solid LS industry focusing on nutraceutical and cosmetics.
- 60% of French LS companies undertake in-house R&D . This is the highest proportion in Europe.
- second largest number of regional HQs of non-domestic LS companies in the group of countries in this study.

Germany

- highest number of LS companies of any European country with focus on Medical Devices.
- largest number of global HQs of domestic LS.
- largest LS workforce in absolute numbers.

Ireland

- second largest LS workforce relative to the active population.
- attractive location for manufacturing for domestic and foreign LS companies.

Netherlands

- diverse LS industry with particular strength in Medical Devices and Biotechnology.
- attractive to regional HQs of non-domestic LS companies for their R&D activities.

Switzerland

- strong LS clusters with large number of global HQs of domestic companies.
- largest number of regional HQs of non-domestic LS companies within the six countries covered.
- highest LS workforce relative to the active population.

United Kingdom

- Europe's largest cluster in Biotechnology Therapeutics and Pharmaceuticals.
- strong in R&D and a large LS workforce.
- surpassed Germany to record the most financing raised for LS companies in 2011 and 2012.

Innovation and Products in Development

- all countries within the scope of this report have healthy R&D pipelines relative to the size of their LS sectors.
- the UK has the highest number of products in development followed by Germany, France and Switzerland. Ireland and the Netherlands have smaller pipelines.
- Germany and Switzerland display levels of innovation that are comparable to the top research nations such as the US, Japan and South Korea.

Financing

- the six selected countries account for more than 70% of European LS financing.
- a country's financing opportunities can indicate the dynamism of the sector within an economy and its level of internationalization.
- leading the selected countries, investments in the UK's LS industry totaled USD 645 million in 2012.
- countries with strong financial industries (e.g. Germany, France, the UK and Switzerland) can provide critical expertise alongside funding, helping LS businesses grow internationally.

Key business framework conditions

- the World Economic Forum's Global Competitiveness Report and the Heritage Foundation's Index of Economic freedom both rank Switzerland top in Europe followed by the Netherlands in 8th place, Germany in 4th place (Global Competivieness report), Ireland in 11th place and the UK in 14th place (Index of Economic Freedom).
- Germany and Switzerland offer the strongest key macroeconomic data, with low unemployement rates and positive current account balances.
- France competes strongly in the number of regional HQs of non-domestic LS companies despite an average ranking in global competitiveness.
- Ireland and France offer the lowest salaries among the six countries.
- Germany ranks first in terms of workforce productivity, followed by Switzerland in 2nd place.
- the UK, Ireland and Switzerland are in the top ranks regarding labor market flexibility.
- Amsterdam (Netherlands) and Dublin (Ireland) offer the most attractive cost of living including rents.
- London's airports offer the best direct flight connections to all major global LS hubs.
- the Netherlands, Germany and Switzerland offer the best quality of life.
- Ireland and Switzerland have the highest proportion of foreign workforce.

Key tax considerations

- Ireland and Switzerland offer particularly favorable tax environments for LS companies for all types of activities (Trading, IP Management, Value Chain Management and HQs).
- the UK and the Netherlands appear to be closing the gap through the introduction of tax incentives on income from innovation-related activities.
- tax holidays are available in Switzerland for substantial investment projects. France, the UK and Ireland have similar provisions for start-up companies.

Intellectual Property

- opportunities for efficent management of income from IP is a critical site selection factor. Considerations include the capacity to offset development costs, tax incentives, favorable treaty networks and exit taxation, among others.
- the Netherlands, UK, Ireland and Switzerland offer the most efficient solutions for management of income from IP.
- France, Ireland, the UK and to a certain degree the Netherlands offer attractive R&D-related tax incentives, while Germany and Switzerland offer direct subsidies.

Sources of data and sector categorization

For this report Venture Valuation conducted a specific analysis with data for the year 2012 based on its Biotechgate Database (www.biotechgate.com), which contains information on more than 29,000 LS companies, products, financing rounds, company valuations and management details. This report utilizes a categorization system for LS that was developed for the Global Biotechgate Database. According to this definition, the LS industry includes:

Biotechnology companies

Biotechnology companies are those that employ living organisms or biological substances for the development of products and services with applications in numerous fields such as waste management, food processing, agriculture and pharmaceutics. An important sub-segment of Biotechnology companies is **BiotechnologyTherapeutics**, the core business of which is the application of Biotechnology to the discovery and development of novel therapeutics compounds for applications in medicine.

Pharmaceutical companies

Pharmaceutical companies are commercial enterprises that research, develop, produce and sell drugs and other medicines. These enterprises are typically large and deal both in branded and generic compounds. They rely, at least in part, on smaller Biotechnology companies for in-licensing of novel compounds for their pipelines.

Medical Devices companies

Medical Devices companies are involved in research, development, production and marketing of systems and devices for medical applications in humans and animals.

Glossary

- EU European Union
 EUR Euros
 GDP Gross Domestic Product
 HQs Headquarters
 IP Intellectual Property
- LS Life Sciences
- R&D Research and Development
- USD US Dollars
- USDm Millions of US Dollars

Key European LS clusters

1. European LS clusters

France, Germany, Ireland, the Netherlands, Switzerland and the UK have been selected because they have strong local LS industries and are often the preferred location for foreign companies seeking a European or global HQs.



With Sanofi-Aventis being one of the top Pharmaceuticals companies worldwide, and a broad range of smaller, publicly listed Biotechnology companies, **France** has a solid LS industry. Food, nutraceutical and cosmetics are strong areas. In general, French LS companies have a rather national focus. As France is a relatively large European market, companies have been under little pressure to offer products outside their home market. This is especially true of Medical Devices and Biotechnology service companies. Overall the country has a well diversified LS industry. Many French LS companies also undertake their R&D in France. The product pipeline is well diversified with more than 220 products in pre-clinical development and around 40 in phase III. Financing in France has seen a big uplift in 2012 with approximately USD 350 million of capital raised by French companies according to research by Venture Valuation. The public market in particular allowed numerous publicly listed companies to take advantage of the opportunity to raise additional capital.

Germany has the highest number of LS companies in Europe. It has a proportionally strong Medical Devices industry with players such as Siemens and Carl Zeiss. Although neither company operates exclusively in Medical Devices, they contribute a strong basis for the many internationally successful businesses. Most German Medical Devices companies have some degree of manufacturing in Germany. Germany has many Biotechnology service companies, but fewer Biotechnology Therapeutics companies than the UK. The German LS pipeline is solid with good diversification between early and later stage products. The financing environment has stabilized over the past four years, peaking in 2010 at in excess of USD 500 million. Large financing rounds involved private companies largely in the Biotechnology service area or also clean technology, which is an emerging field.

Ireland has the smallest LS industry of the six countries presented. It is, however, an attractive location for manufacturing, R&D and HQs operations with its skilled yet comparatively inexpensive workforce. Strong areas in Biotechnology are veterinarian and agricultural. Ireland is home to Shire plc, one of Europe's strongest Biotechnology companies. In terms of product pipeline, the country has almost as many phase III projects as pre-clinical products. This is due to the difficulty of raising money. Except for Amarin, which raised USD 10 million in 2012, financing has totaled USD 12 million to USD 45 million per annum since 2009.

The lack of a strong local presence of big Pharmaceuticals players impacts the **Netherlands**, Biotechnology industry. Although the country has many innovative new Biotechnology and Medical Devices companies, its businesses suffer from a difficulty in finding sufficient financial resources to develop their pipelines. By the end of 2012 only nine products in Phase III had been recorded in that year, around 40 in Phase II and 30 in Phase I. The pipeline of early state projects in a pre-clinical phase is proportionately high at almost 140. In the past two years LS companies in the Netherlands were able to raise in excess of USD 150 million, which was higher than in either 2009 or 2010. LS in the Netherlands has extremely good potential if it is able to attract sufficient capital. Companies have a largely international focus due to the domestic market being of a limited size. Approximately half of the companies undertake R&D or manufacturing within the country. Significant Medical Devices/Pharmaceuticals businesses in the Netherlands include DSM and Phillips, though neither is active exclusively in LS.

Switzerland has on the one hand a strong Pharmaceuticals industry on which it can build, such as through Roche and Novartis's corporate HQs in Basel. On the other hand the learning curve of the watch industry with miniaturization and know-how in low power consumption is a key factor for the country's medical technology industry. Furthermore, Switzerland has attracted regional HQs of many non-domestic LS companies such as Biogen Idec, Amgen, Celgene, Medtronic and Onyx Pharmaceuticals. Approximately 40% of LS companies based in Switzerland perform R&D in the country and approximately 45% have their manufacturing in Switzerland. Switzerland has a relatively high 9% of phase 3 products in development. On the financing side Switzerland has been able to maintain a steady investment level of around USD 250 million per annum. However, the amount invested by Swiss investors globally outside of Switzerland is a multiple of this. Family offices are an important source of LS financing.

The **UK** benefits from a number of major Pharmaceuticals companies such as GSK and AstraZeneca. Together with London as a financial hub attracting private investors and significant stock exchange activity, there is a strong basis for the UK's Biotechnology industry. Drug development by Biotechnology Therapeutics companies is a particular strength, reflected in the pipeline of almost 300 projects in pre-clinical development. Key contributors to this strength are renowned universities and favorable conditions for spin-offs. More than 77% of Biotechnology companies in the UK have R&D functions there. The Medical Devices sector, however, is not as strong compared to the power of the overall LS sector. 2012 marked a record year for LS financing with more than USD 600 million of fresh capital going into mainly private companies. London's two stock exchanges – the London Stock Exchange (LSE) and the Alternative Investment Market (AIM) are a substantial source of capital.

Number of LS companies

The simple number of LS companies in a given country provides an initial impression of the size of the industry in that country. Germany has the most LS companies (1645), followed by the UK (868), France (863) and Switzerland (742). The Biotechnology industry alone shows a similar distribution. However it is useful to look more deeply at the various Biotechnology sectors such as Biotechnology Therapeutics. The UK has the most Biotechnology Therapeutics companies at 180, followed by Germany (155) and France (151). The six countries together represent almost 60% of all the Biotechnology companies and Biotechnology Therapeutics companies in Europe.

With regard to Medical Devices, Germany leads by far with 582 companies, followed by Switzerland (340).

The biggest LS companies are in the Pharmaceutical businesses, in which the UK leads with 85 followed by Germany with 83, France with 71 and Switzerland with 68.

Overall, Ireland does not have a very large LS industry compared with the other countries, though comparing the number of companies per capita provides a different picture. Switzerland has 127 companies per one million active population, followed by the Netherlands with 41 and Ireland with 36. Germany (25), France (20) and UK (20) are just above the European average of 18.

Country	Biotechnology	Biotech Therapeutics	MedTech	Pharma
France	647	151	145	71
Germany	980	155	582	83
Ireland	60	14	42	13
Netherlands	296	71	172	31
Switzerland	334	98	340	68
UK	645	180	138	85
Total 6 Countries	2,962	669	1,419	351
Total Europe	5,127	1,142	2,267	723

Number of Life Sciences Companies in 2012

Source: Biotechgate Database

Number of employees

As Pharmaceutical companies typically employ the highest number of people within LS, their number has a great impact on the number of people employed in LS. Leading again is Germany with an estimated 220,000 people employed directly in the LS industry, followed by the UK (165,000) and France (143,600). The Netherlands has the lowest number of people working in the sector (28,550), behind Ireland's estimated 45,000.

On a per capita basis, Switzerland heads the pack with approximately 15,000 employees per one million active population, followed by Ireland with 13,000. France, Germany, the Netherlands and the UK are each in the region of 2,000 to 3,000 employees per one million inhabitants.

Number of Employees in the Life Sciences Industry 2012

Country	Biotechnology	MedTech	Pharma	Total	Active Population
France	6,000	40,000	97,600	143,600	51.0 m
Germany	30,000	87,000	103,000	220,000	71.0 m
Ireland	4,000	24,000	17,000	45,000	3.6 m
Netherlands	2,150	9,500	16,900	28,550	13.9 m
Switzerland	19,200	40,000	36,700	95,900	6.6 m
UK	23,000	64,000	78,000	165,000	51.9 m

Main activities of LS companies

Looking at the main activities of LS companies across the countries in-scope (pure domestic, domestic multinationals and foreign multinationals) shows that approximately 50% of LS companies undertake R&D in their respective country. France is particularly high at 60%.

The UK has the lowest percentage (28%) of companies undertaking manufacturing in the country, but the highest offering contract research (16%). Regarding shared services, the traditionally strong locations for corporate HQs of Ireland, the UK and Switzerland have higher percentages (19%, 10% and 9% respectively). However, the other countries do not lag far behind, at between 5% and 8%.

Main Activities of all Life Science Companies in 2012

Country	R&D	Manufacturer	Research on contract basis	Shared Services
France	60%	44%	14%	8%
Germany	31%	57%	10%	7%
Ireland	54%	53%	6%	19%
Netherlands	42%	37%	11 %	5%
Switzerland	39%	45%	7%	9%
UK	51%	28%	16%	10%

Notes: Other companies not included unter these activites are engaged in out and in -licensing services, suppliers or involved in other activites.

Number of global and regional HQs

In sync with their large LS industry clusters, Germany and the UK have the highest absolute number of global HQs of domestic LS companies. However, these figures do not automatically translate into a large number of regional HQs of non-domestic LS companies. Of these regional HQs of non-domestic LS companies, Switzerland has the highest absolute number (29), followed by France (22). Ireland and the Netherlands with smaller LS clusters also have a comparatively high number of regional HQs (8).

Number of Global and Regional HQs

Country	Global HQs	Main activities	Regional HQs	Activities
France	57	R&D (74%)	22	Manufacturing (73%)
Germany	109	Manufacturing (72%)	14	Manufacturing (36%)
Ireland	16	Manufacturing (69%)	8	Manufacturing (63%)
Netherlands	17	R&D (59%)	8	R&D (63%)
Switzerland	41	Manufacturing (66%)	29	Manufacturing (38%)
UK	71	R&D (58%)	17	Manufacturing (65%)

Apart from centralized management functions (finance, marketing, supply chain management, etc), regional HQs of non-domestic LS companies are often also engaged in manufacturing or in R&D activities.

Products in development in the Biotechnoloy Therapeutics and Pharmaceutical industries

Oncology is by far the largest area by products in development across all countries within this study. An exception is Ireland where the dominant prodicts are medication for the digestive system, which tends to be less cost intensive and quicker to market than oncology. Therapeutics for the Central Nervous System (CNS) is the second most important product in development.

Products in Development in 2012

Country	Strongest Indication	Strongest Pre-clinical	Strongest Phase I	Strongest Phase II	Strongest Phase III
France	Oncology	Oncology (74)	Oncology (17)	Oncology (18)	Oncology (9)
Germany	Oncology	Oncology (93)	Oncology (41)	Oncology (48)	Oncology (18)
Ireland	Digestive system	Digestive system (5)	CNS (4)	Digestive system (4)	Mental & behavioural disorders (5)
Netherlands	Oncology	Oncology (39)	Oncology (6)	Oncology (11)	Oncology (3)
Switzerland	Oncology	Oncology (36)	Oncology (19)	CNS (11)	Oncology (8)
UK	Oncology	Oncology (34)	CNS (12)	Oncology (10)	Infectious Diseases (4)

The absolute number of products in development indicates the strength of the sectors. Here the highest number can be found in the UK with almost 650 products, followed by Germany (580), France (390) and Switzerland (310).

Development stages, 2012



The distribution of products across the various stages of development is staggered, with many pre-clinical products (approximately 50%), and decreasing numbers from phase I to phase III, reflecting the normal attrition rate and associated costs. Despite a low number of products in development, Ireland has a more even distribution with a higher percentage of phase III products then the other countries. Overall, all countries have a healthy pipeline.

Financing

The figures from the Biotechgate Database for financing include all available financing for public and private companies including equity financing and non-equity such as loans, grants, convertibles, etc. Financing has been hit hard since 2009, although 2012 showed a positive trend with the UK leading the group of selected countries with investments in the UK's LS industry totaling USD 645 million. Germany, with its larger LS industry by number only accounted for little more than Switzerland and considerably less than France in total financing volume in 2012.

The six countries combined account for more than 70% of all LS financing in Europe. The number of financing rounds has increased, with companies on average receiving less money per round, absorbing management time and putting additional pressure on businesses to raise finance. The biggest financing rounds in 2012 were by private Biotechnology companies. Medical Devices companies tend to have smaller financing rounds, as less money is required to bring products to market.

Investment sources are increasingly moving away from classical venture capitalism financing to family offices, government funding and venture funds run by big Pharmaceutical companies. Two of the five biggest rounds in the selected countries also included two biofuel companies (Gazasia and Brain), which show the overlap between LS and clean technology.

Financing volumes



* UCB (Belgium) Debt financing of EUR 1.48 billion

**Elan (Ireland) Debt financing of USD 625 million

Largest Financing Rounds in 2012

Country	Sector	USDm	Status	Investors
UK	Biotechnology	150	Private	Abiotiz Equity Ventures (Phillip.)
Germany	Biotechnology	103	Private	dievini Hopp BioTech Holding (D.)
Netherlands	Biotechnology	81	Private	Debiopharm Group (CH.)
Germany	Biotechnology	77	Private	The family Putsch, Munich MIG funds (D.)
UK	Biotechnology	76	Private	Imperial Innovations (UK.) & Invesco Perpetual (UK.) & existing investors
France	Biotechnology	59	Private	RUSNANO (Russ.)
UK	Biotechnology	51	Private	Existing investors (i.e. IP Group (UK.), Illumina (US.))
Switzerland	Biotechnology	45	Private	PMV (Belg.) & other investors
	Country UK Germany Netherlands Germany UK France UK	CountrySectorUKBiotechnologyGermanyBiotechnologyNetherlandsBiotechnologyGermanyBiotechnologyUKBiotechnologyUKBiotechnologyFranceBiotechnologyUKBiotechnologySwitzerlandBiotechnology	CountrySectorUSDmUKBiotechnology150GermanyBiotechnology103NetherlandsBiotechnology81GermanyBiotechnology77UKBiotechnology76FranceBiotechnology59UKBiotechnology51SwitzerlandBiotechnology45	CountrySectorUSDmStatusUKBiotechnology150PrivateGermanyBiotechnology103PrivateNetherlandsBiotechnology81PrivateGermanyBiotechnology77PrivateUKBiotechnology76PrivateUKBiotechnology59PrivateUKBiotechnology51PrivateSwitzerlandBiotechnology45Private

2. Key business framework conditions

To achieve sustainable and fast growth, successful location analysis and selection must take into account the varying macroeconomic and business framework conditions. Important site selection factors such as business sophistication, availability of free trade – double tax treaty – and investment protection agreements and governmental efficiency are generally well developed across all six countries. However, there remain considerable differences among other factors such as the macroeconomic environment, impact of innovation on the economy, labor costs, productivity, flexibility of the labor market, level of workforce internationalization, general prices for goods, services and rents, quality of living, infrastructure and international flight connections.

Macroeconomic data

Country	Active Population [1]	Unemployment Rate [2]	GDP [1]	GDP per capita (PPP) [3]	Current Account Balance in % of GDP [4]
France	51.0 m	11.0%	2,200 bn USD	35,156 USD	-2.1%
Germany	71.0 m	5.2%	3,100 bn USD	37,897 USD	6.6%
Ireland	3.6 m	13.6%	182 bn USD	39,639 USD	2.1%
Netherlands	13.9 m	7.0%	704 bn USD	42,183 USD	8.1%
Switzerland	6.6 m	3.2%	340 bn USD	43,370 USD	11.6%
UK	51.9 m	7.7%	2,300 bn USD	36,090 USD	-2.7%

Sources: [1] ILO, [2] Eurostat Unemployment rate 2013, [3] 2013 Index of Economic Freedom by The Heritage Foundation, [4] The Economist 2013/Data Market

Active populations, GDP and GDP per capita

The largest active population and largest GDP in absolute numbers are in Germany. By GDP per capita, Switzerland leads the group. High productivity is generally positive, supporting international competiveness. However it can also upwardly impact exchange rates and salaries. For site selection purposes for sophisticated manufacturing, R&D or HQs operations it might be an option to select a country with high productivity but also high salaries per capita. For lower value-adding or less sophisticated operations, a location with lower productivity and lower salaries might be sufficient and provide better value to the company.

Unemployment rate

Average unemployment rates have reached an unprecedented level in Europe since the outbreak of the financial crisis and exceeded 12% in spring 2013. This average masks considerable differences between countries. France and Ireland have the highest rates while Switzerland, Germany and the Netherlands have some of the lowest unemployment rates in the industrialized world. The UK sits inbetween. Unemployment rates can depress salaries, providing better value for employers but leading to higher social costs, which are ultimately borne by individual and corporate taxpayers.

Current account deficit and debt/GDP ratio

The UK and France have current account deficits. Conversely, Switzerland, Ireland, the Netherlands and Germany have positive current account balances. While the latter is generally a sign of a healthy economy, it can negatively impact international competitiveness through an upward trend in exchange rates (Switzerland). The debt/GDP ratio is also an important factor to keep in mind. Even so there is no clear indicator on when a ratio becomes harmful to economic growth, though leading economists believe that a ratio in excess of 90% may slow down a country's economic growth.

Latest figures for the second quarter of 2013 show some sign of rebound in employment and GDP growth, giving hope that recession or the period of weak growth in the six countries of this study and in Europe more generally are coming to an end.

Innovation and R&D

Innovation bonds the six countries in this report as an integral component of their economies. Workforces are generally well trained due to substantial investments in educational systems, especially secondary and tertiary (universities), and in the case of Germany and Switzerland a high quality vocational training system that focuses on practical skills. This creates an overall healthy environment for knowledge-based industries such as LS and is crucial when transforming invention into sustainable economic success. According to the 2013 study of the European Innovation Scoreboard, Switzerland and Germany are "innovation leaders" with an innovation performance well above the average, while the UK, France, Ireland and the Netherlands are "innovation followers" with an innovation performance closer to the average of all European countries.

European Innovation Index 2013

Country	Score
France	0.57
Germany	0.72
Ireland	0.60
Netherlands	0.65
Switzerland	0.84
UK	0.62

Note: Figures are normalized scores (from 0 to 1) Source: European Innovation Scoreboard 2013 (based on year 2012)

http://ec.europa.eu/enterprise/policies/innovation/ facts-figures-analysis/innovation-scoreboard/ The European Innovation Scoreboard compares the capacity of EU and non-EU countries to generate innovation-driven economic growth. The 2013 report provides a comparative assessment of the innovation performance of the countries in Europe and the relative strengths and weaknesses of their research and innovation systems.

According to the report, "innovation leaders" and "innovation followers" both enhanced their innovation performance even in the financial crisis period of 2008 to 2012. It is notable that Switzerland, for the fourth time in a row (between 2009 and 2012), by far outperforms all other European countries due to a superior qualified workforce, educational system and availability of financing.

At a global level, the US, Japan and South Korea remain the leading nations for innovation-driven growth. The countries covered in the European Innovation Scoreboard have narrowed the gap with the US and Japan, while the gap with South Korea widened between 2008 and 2012.

Note: For companies looking to select a location for R&D it is important to understand the varying types and levels of incentives that can be granted for such activities. Please refer to chapter 3 for an overview of R&D and other incentives.

Labor costs and productivity

Salary costs are clearly a key factor in the site selection process. Huge differences exist between the countries in this report in terms of gross income for various levels of workforce.

Gross Income per Year in USD in the Industrial Sector

Country	Department managers [1]	Skilled industrial workers [2]	Female factory workers [3]
France (Paris)	71,000	32,100	25,400
Germany (Frankfurt)	83,300	48,800	34,100
Ireland (Dublin)	88,800	42,600	28,200
Netherlands (Amsterdam)	104,400	55,400	40,300
Switzerland (Geneva)	105,800	78,400	55,400
UK (London)	80,300	51,700	37,600

Notes:

[1] Operational head of a production department with a staff of more than 100 employees in a sizeable company in the

metalworking industry; completed vocational training and many years, experience in the field; about 40 years old, married, two children

[2] Skilled worker with vocational training and about 10 years, experience with a large company in the metalworking industry; about 35 years old, married, two children

[3] Unskilled or semi-skilled machine operator in a medium-sized company, mainly in the textile industry, about 25 years old, single

Source: UBS Prices & Earning 2012, http://www.ubs.com/global/en/wealth_management/wealth_management_research/ prices_earnings.html

According to a 2012 study by UBS, Ireland is most favorable, as salaries have fallen considerably during the financial crisis, while Switzerland has become comparatively more expensive, mainly due to the appreciation of the Swiss Franc against the Euro and the USD. However, it is insufficient to look only at gross incomes to assess effective labor costs. Factors such as workforce productivity, annual working hours, holidays and paid vacations must be taken into account. Germany and Switzerland have among the highest workforce productivity in the industrialized world, helping mitigatge the comparatively short working hours per year in Germany or the high salaries in Switzerland.

Productivity of Workforce

Country	Score [1]	Ranking
France	6.70	9
Germany	8.49	1
Ireland	7.41	4
Netherlands	7.25	7
Switzerland	8.13	2
UK	5.76	17

Notes: Figures are normalized scores (from 1 to 10)

Source: IMD World Competitiveness Yearbook 2013 (Workforce productivity) https://www.worldcompetitiveness.com/OnLine/App/Index.htm

Average Working Hours per Year

Hours
1,600
1,743
1,707
1,755
1,890
1,787

Source: IMD World Competitiveness Yearbook 2013 https:///www.worldcompetitiveness.com/OnLine/ App/Index.htm

Annual Vacation and Holidays

Country	Annual Vacation	Holidays	Total
France	25	10	35
Germany	20	9	29
Ireland	20	9	29
Netherlands	20	7	27
Switzerland	20	9	29
UK	20	8	28



Flexibility of the labor market

An important factor in relation to workforce is labor law regulations. Companies often need the flexibility to react quickly regarding staffing levels for restructuring or readjustment to new business challenges. Aspects of labor market flexibility include notice periods for termination of employment, collective labor agreements, level of workforce unionization, sick leave regulations and others.

Reflecting the differing attitudes toward free market economies in the various countries covered in the report, there is a broad spread of how labor relations are structured. Anglo-Saxon countries tend to have more flexible labor relations, while continental European countries have stricter labor regulations. Switzerland, as a continental European country, is an exception with the third most flexible labor market globally.

International workforce

The proportion of a workforce that is non-local can indicate an economy's degree of internationalization. Ireland and Switzerland both have a high number of international and regional HQs and therefore also high proportions of their workforces coming from abroad. Other, larger economies such as Germany, France and the UK tend to have smaller percentages of international workforce. The Netherlands is an exception as despite many regional HQs of non-domestic companies, the international workforce percentage is relatively small.

High workforce internationalization as in Ireland and Switzerland but also a general international society such as in the Netherlands and in the UK creates a welcoming environment for newcomers following their employers to a new location.

Price levels

Healthy economic key indicators, good standards of living, high numbers of international HQs and R&D centers all impact a country's cost structure for goods, services and commercial and residential rents. Put simply, the more successful a country is in developing a competitive business environment and in creating jobs, the greater the rise in general prices over time. However it is important to balance the high expense with cost-sensitive factors such as purchasing power or labour and capital productivity. Price indices provide a snapshot of the cost of living for a certain location, which is an important factor when deciding if and how many people can be moved to a new location. The comparison of price levels for a basket of 122 goods and service shows Geneva and London as expensive cities, with Amsterdam and Dublin at the lower end.

Flexibility of Labour Market

Country	Ranking
France	28
Germany	18
Ireland	7
Netherlands	14
Switzerland	3
UK	6

Source: IMD World Competitiveness Yearbook 2013 https://www.worldcompetitiveness.com/OnLine/ App/Index.htm

International Workforce as Percentage of Total Workforce

Country	Percentage
France	5.81%
Germany	7.91%
Ireland	15.04%
Netherlands	3.60%
Switzerland	21.88%
UK	7.29%

Note: Range 5.5% to 22% or from 0% to 22% Source: IMD World Competitiveness Yearbook 2013 (Foreign Labor force), https://www. worldcompetitiveness.com/OnLine/App/Index.htm

Ease of Attracting Foreign High Skilled People

Country	Ranking
France	18
Germany	10
Ireland	5
Netherlands	4
Switzerland	1
UK	2

Source: IMD World Competitiveness Yearbook 2013 https://www.worldcompetitiveness.com/OnLine/ App/Index.htm

Price Index

Country	Excluding Rent	Including Rent
France (Paris)	83.9	77.5
Germany (Frankfurt)	86.4	77.2
Ireland (Dublin)	76.2	69.7
Netherlands (Amsterdam)	77.0	69.0
Switzerland (Geneva)	106.5	96.8
UK (London)	87.3	83.0

Notes: These calculations are based on the cost of a basket of 122 goods and services weighted according to European consumption habits (New York = 100) Range from 0 (1) to 120

Source: UBS Prices & Earning 2012, http://www.ubs.com/global/en/wealth_

management/wealth_management_research/prices_earnings.html

A more precise measurement, however, is purchasing power. This indicates what employees can purchase with their net wages (after social security contributions and taxes). The figure below sorts the locations according to to the purchasing power of net hourly wages. Zurich and Dublin have high purchasing powers, while employees in London, Amsterdam, Paris and Frankfurt can buy considerably less with their salaries.

The highest apartment rents between the six peer cities can be observed in London. An 80 square meter flat in the city center costs on average USD 4,600 per month. In Paris the average rent amounts to USD 3,700 per month, while in Frankfurt it is around USD 1,900 per month.

The highest Central Business District (CBD) prime rents can be seen in Zurich and Paris. In both markets the CBD rents are in excess of USD 1,000 per square meter per annum. In comparison, Amsterdam (USD 450) and Dublin (USD 430) are less than half the prices of the most expesive locations.

Important to note is that this comparison includes only data for central business districts and top residential areas. Prices can be considerably lower outside the main centers.

Domestic Purchasing Power

Country	Hourly pay net
France (Paris)	87.7
Germany (Frankfurt)	90.5
Ireland (Dublin)	103.3
Netherlands (Amsterdam)	90.1
Switzerland (Zürich)	120.3
UK (London)	86.2

Note: Net hourly wages divided by the cost of the entire basket of goods excluding rent (New York = 100) Range from 0 (1) to 121

Source: UBS Prices & Earning 2012

http://www.ubs.com/global/en/wealth_management/ wealth_management_research/prices_earnings.html

Housing Costs

Country	Average monthly cost for a 80 sqm apartment in USD/month	Prime rents CBD in USD/sqm/year
France (Paris)	3,676	1,059
Germany (Frankfurt)	1,854	604
Ireland (Dublin)	2,304	428
Netherlands (Amsterdam)	2,200	450
Switzerland (Zurich)	3,478	1,066
UK (London)	4,644	920

Notes: Housing cost for an unfurnished apartment in the city center with 80 sqm per month and for office prime rents in central business district

Standard of living and of infrastructure – international flight connections

A good quality of life is important in selecting a site. Companies should keep in mind that this rating can be highly biased and should be taken into account with individual corporate cultures. For instance, a fast-growing start-up company might choose a location with a lower standard of living rating but with a more exciting lifestyle that appeals to younger employees and better fits its brand strategy. A more mature company might select a location that appeals more to senior executives with children. In most cases also international flight connections and quality of infrastructure are a key site selection factor across industries.

Best Place to be Born 2013

Country	Ranking
France	26
Germany	16
Ireland	12
Netherlands	8
Switzerland	1
UK	27

Source: The Economist Index 2013 (The-where-tobe-born index), http://www.economist.com/blogs/ graphicaldetail/2013/01/daily-chart

Mercer Quality of Living Ranking 2012

Country	Ranking
France (Paris)	29
Germany (Munich)	4
Ireland (Dublin)	35
Netherlands (Amsterdam)	12
Switzerland (Zurich)	2
UK (London)	38

Source: Mercer Quality of Living Index 2012 http://www.mercer.com/press-releases/quality-ofliving-report-2012

The Economist Intelligence Unit (EIU) has rated countries globally regarding their potential to provide for a future good living for their citiziens. The **"where-to-be-born index"** focuses on a location's potential to provide a promising economic and social environment for future generations. According to this index, Switerland and the Netherlands (along with Australia, Canada, New Zealand, Hong Kong, Singapore and the Nordic countries) score in the top ten while Germany, France, Ireland and the UK are among the top 30. The USA is ranked in 16th place.

The widely used Mercer Quality of Living Index evaluates 221 cities around the world according to quality of life and how companies compensate senior executives to move there. Germany and Switzerland score highly here.

Quality of Infrastructure

Country	Quality of overall infrastructure	Quality of roads	Quality of railroad infrastructure	Quality of air transport infrastructure
France	6	2	4	10
Germany	10	11	7	8
Ireland	35	29	34	31
Netherlands	9	10	11	4
Switzerland	1	8	2	7
UK	28	28	14	28

Source: The Global Competitiveness Report 2013 - 2014, http://www3.weforum.org/docs/WEF_GlobalCompetitiveness Report_2013-14.pdf

In terms of quality of infrastructure, France tops all countries regarding its road system while the Netherlands is top for air transport infrastructure. Global flight connectivity is clearly a key factor in site selection. Figure below shows direct flight connections from the main airports in the six countries to leading LS destinations overseas, as well as to London Heathrow Airport (Europe's largest airport by passenger numbers).



International Flight Connections (Direct Flights per Day)



Source: KPMG 2013 – Airport Information

International Competitiveness Rankings

International businesses may compile the factors discussed above together with other factors relevant to them, into rankings on competitiveness and on economic freedom. While they are useful indicators for effective site evaluation, such findings can only complete a site selection search that is based on a sound business strategy. Two of the most widely regarded rankings are the "Index of Econonomic Freedom" by the Heritage Foundation and the "Global Competitiveness Report" issued by the World Economic Forum.

The Index of Economic Freedom measures economic freedom of countries around the world based on freedom of trade, business freedom, investment freedom, and property rights. The Global Competitiveness report ranks countries according to twelve different pilars, including innovation, macroeconomic environment and labor market efficency. Both indices are global comparisons that clearly show the substantial differences between the countries ranked in this report. Switzerland, Germany and the Netherlands are among the freest and most competitive countries in Europe.

International Competitiveness Rankings

Country	Ranking [1]	Ranking [2]
France	62	23
Germany	19	4
Ireland	11	28
Netherlands	17	8
Switzerland	5	1
UK	14	10

[1] **Source**: 2013 Index of Economic Freedom by The Heritage Foundation, www.heritage.org/index/explore

[2] **Source**: The Global Competitiveness Report 2013 - 2014, http://www3. weforum.org/docs/WEF_GlobalCompetitivenessReport_2013-14.pdf



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3. Key tax and incentive considerations

Irrespective of whether an LS company is commencing its international expansion journey or already has a well-established international footprint, it needs to gain, maintain and enhance competitiveness through business and tax model optimization.

Aspects such as ordinary tax rates for various types of income, tax rulings, incentives, value chain management, double-tax treaty networks or transfer pricing regulations, become crucial in selecting the most appropriate location for different activities. A further aspect is the level and type of incentives granted by governments for performing certain activities within their boundaries.

Comparison of corporate tax rates for various types of income streams

A first step towards analyzing a location is to compare the ordinary corporate tax rates of each country applicable to general business activities.



Reasonable taxation of IP income from patents, technology or trademarks is also an important element to consider for LS companies owning mature income-producing IP.

In certain countries, trading income is also taxed at a lower level. This is the case in Ireland and Switzerland, whereas in the other countries trading income is generally subject to ordinary taxation.

first GBP 300,000 UK depending on location Switzerland The Netherlands first EUR 200,000 passive income active income Ireland depending Germany on location France first EUR 38,120 for SMEs France Germany Ireland Netherlands Switzerland UK 36.1% 33.0% 25.0% 25.0% 24.4% Ordinary high 23.0% Ordinary low 15.0% 22.8% 12.5% 20.0% 11.4% 20.0% IP 16.2% n/a 12.5% 5.0% 8.5% 10.0% Trading n/a n/a 12.5% n/a 5.0% n/a

Overview of taxation rates for ordinary income, income from IP and trading income

Country	Ordinary tax rates	Tax rates applicable to IP income	Tax rates applicable to trading income
Netherlands	The headline rate of corporate income tax is 25% levied on taxable profits (including capital gains) in excess of EUR 200,000. The rate applicable to the first EUR 200,000 of taxable profits is 20%.	The "innovation box" is available for income from self-produced qualifying intangible assets, taxed at an effectiverate of 5%.	n/a
France	The corporate tax rate is including social contribution and surtax is 36.1%. Small and medium size companies are subject to a corporate income tax rate of 15% for taxable profits of up to EUR 38,120.	Licensing fees relating to certain IP rights can benefit from a 16.2% tax rate.	n/a
Ireland	The corporate income tax rate on trading income and certain foreign dividends is 12.5%. Passive income is taxed at a rate of 25%, capital gains at a rate of 33%.	IP income is considered to be active income, subject to12.5% tax rate.	The corporate income tax rate on trading income is 12.5%.
Germany	Corporate income tax amounts to 15% (plus 5.5% solidarity surcharge thereon) and trade tax amounts to about 7%-17.15% (depending on municipality), resulting in a total tax rate of 22.8%-33.0%.	n/a	n/a
Switzerland	Income taxes are applied on federal, cantonal and communal level in Switzerland. The pre-tax corporate income tax rates range between 11.4% and 24.4% (depending on municipality).	IP income may be subject to tax rates of 8.5%-1 2% (mixed companies) or 8.8% (license box in the Canton of Nidwalden).	Trading income may be subject to tax rates of 5% (principal companies) or 8.5%-12% (mixed companies).
UK	The main corporate income tax rate is 23%. Profits up to GBP 300,000 are taxed at a rate of 20%. Marginal relief applies to profits between GBP 300,000 and GBP 1.5 million	A new patent box regime with a tax rate of 10% on qualifying patent-derived income is phased in from April 2013.	n/a

Taxation Rates for Ordinary Income, Income from IP and Trading Income

In summary, Switzerland and Ireland have relatively competitive tax rates for all three types of activities. This is reflected in the fact that many LS companies locate their regional or international HQs there. However, the Netherlands and the UK are rapidly catching up through the introduction of tax incentives applied to income from innovation-related activities. Together, Ireland, Switzerland, the UK and the Netherlands all offer attractive solutions for the management of IP (please refer to the next section for further details).

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Main considerations with regard to IP

Given the R&D-driven nature of the LS Industry, forward-looking and sophisticated planning of the development and exploitation of IP, built up centrally within the group in the form of patents, technology or trademarks, is essential. The main questions are where the IP has been developed or will be developed, where it should be exploited and at what stage and price it should be moved from the place of development to the place of exploitation.

A diligent analysis of the various locations in question should be performed with a focus on IP management, tax rates, collaboration with tax authorities and availability of rulings, transfer pricing regulation, double tax treaty network, and availability of incentives, among other factors.

IP related activities



The following IP topics are important from a tax perspective:

IP in early stages of development

- Tax capacity to offset costs;
- R&D tax incentives;
- Risk of development failure.

Mature income-producing IP

- Low tax rate;
- IP relief / amortization;
- Favorable treaty network.

Transferring IP

- Exit taxation;
- Wither on the vine;
- Branch incorporation.

Incentives

Due consideration is needed of tax and other incentives as a part of the organization's holistic tax and business planning. Most in-scope countries offer some form of incentives for R&D or for other activities. The selection of a "wrong" location can therefore result in the loss of R&D incentives or in effective tax rates above the optimal level. Subsequent attempts to correct sub-optimal set-ups can be expensive.

Country	R&D Tax Incentives	Other Incentives
Netherlands	Employers engaged in certain R&D activities ("WBSO") are entitled to a payroll tax reduction of 38% (in certain cases 50%) of the relevant payroll costs, up to a maximum base amount of EUR 200,000, and 14% for any excess base (maximum reduction of EUR 14 million). In addition, the R&D deduction (RDA) of 54% of the eligible cost and expenditure is available for investments in new business assets.	Financial support is available in various forms.
France	R&D tax credit of 30% for the portion of the R&D expenses below EUR 100 million is available, reduced to 5% for the portion exceeding that amount.	Financial support is available in various forms. In addition, small and midsize innovative start-up companies ("JEI") may benefit from a one-year corporate tax exemption and a 50% rebate for the following year.
Ireland	Ireland also provides a tax credit of 25% of capital and revenue expenditure on qualifying research and development expenditure. It is possible to claim excess R&D credits as a cash refund.	Certain start-up companies are exempt from tax in each of their first 3 years.
Germany	n/a	Financial support is available in various forms, e.g. investment subsidies of 2.5% for investments started in 2013 in the former Eastern German parts or regional subsidies as well as subsidies on European, Federal and State level, see http://www.foerderdatenbank.de.
Switzerland	Accruals for future R&D projects executed by third parties are permitted in an amount of up to 10% of the taxable profit, maximum CHF 1 million.	Full or partial tax holidays of up to ten years on cantonal and – in certain regions – federal tax level can be granted to substantial investment projects. In addition, funding in case of a collaboration between the company and a university may be available.
UK	Tax incentives for R&D expenditure are available, with an enhanced deduction of 130% for large companies and of 225% for small and midsized enterprises. From April 2013, an optional above-the-line R&D tax credit of 10% of qualifying expenditure is available for large companies	Twenty-four new enterprise zones have been set up in economically declining areas of the UK. Possible measures include a five- year holiday up to GBP 275,000.

Incentives, including R&D tax incentives

France, Ireland, the UK and to a certain extent the Netherlands offer attractive tax incentive programs for R&D. Many LS companies have consequently located R&D and manufacturing operations in these countries. By contrast, Germany and Switzerland seek to support such activities by direct subsidies.

In addition, Swiss authorities are able to grant full or partial tax holidays of up to ten years for substantial investment projects. France, the UK and Ireland have similar provisions for start-up companies.

Value Chain Management (VCM)

VCM involves the combination of tax planning and business planning models to optimize the flow of products from R&D to manufacturing and distribution in a tax-efficient manner. Many multinational LS companies are structured in this way in order to optimize their effective tax rates. The effectiveness of the model depends on the ability to consolidate cross-border flows and to centralize strategic and administrative functions. In turn, this requires the reconfiguration of cross-border flows together with their associated functions and risks.

An optimal transition to a centralized business model entails careful planning in the fields of corporate income tax, transfer pricing, value added and sales taxes, customs, accounting, legal, treasury and IT systems. Within this, international tax is primarily concerned with the analysis, design and implementation of entity conversion strategies, permanent establishment and CFC planning, group restructuring, transfer pricing, tax benefits modeling and tax-enabled IT process designs.

Value Chain Management – Basic Business Model



The Figure "Value Chain Management" illustrates limited risk distribution (with a flash title mechanism) for the sales and marketing cycle. Thus, while the legal effect is a sale from the principal to the distributor, and from the distributor to the customer, the economic effect concentrates the larger part of the sales margin in the principal. There are of course other possible solutions such as marketing representation (commission agent) or undisclosed agency (e.g. common law or civil law commissionaire). In a centralized model, each of the local operating and service companies is rewarded for services provided to the Central Entrepreneur and so earns a relatively consistent but small profit that is taxed locally.

Restructuring a group to achieve pan-regional centralization involves the reconfiguration of cross-border flows and business processes to create structures that integrate strategic HQs, principal trading and value chain management entities with contract manufacturers, commissionaires, stripped distributors, IP holding structures, shared services, centralized distribution & logistics, etc. In many structures, the principal trading entity is itself an intellectual property holding entity and may also be the strategic HQs and/or shared services center. A centralized business model on a regionally integrated basis therefore replaces country-based structures.

To maximize the tax benefits of a centralized business model (which illustrates contract manufacturing and stripped distribution), the principal trading entity may be located in a country that offers an effective infrastructure for both operational and tax purposes. This will invariably mean that a tax-preferred jurisdiction is chosen, ranging from those that are genuinely low-tax (such as Ireland, the Netherlands and Switzerland) to those that are effectively low-tax in the corporate group's specific circumstances, such as due to unrelieved tax losses.



4. Our services

KPMG's Global Location & Expansion Services (GLES)

KPMG's GLES team provides assistance for site selection projects or expansion projects. From planning to post implementation, KPMG has developed key parameters relevant to site selection and expansion, based on extensive expertise in location evaluation across Europe and internationally and working in close collaboration with clients. Insights include on:

- business and legal environment (e.g. applicable tax rates, ease of doing business, flexibility of labor law, protection of intellectual property, etc).
- key cost factors (e.g. labor costs, office rental costs, cost of housing, etc).
- presence and activities of peer companies per region.
- relevant aspects relating to the workforce.
- tax planning opportunities and incentives (e.g. for job creation or R&D).
- infrastructure (e.g. proximity to airports, international flights, international schools, public transport, etc).
- access to international markets (e.g. free trade agreements, social security agreements, investment protection agreements, etc).

The parameters are weighted in relation to their importance to the project. The result is a balanced international location overview that serves as basis for the selection of an appropriate jurisdiction.

Our approach – Location Evaluation Project Steps



Services by Venture Valuation

Industry Intelligence services

Venture Valuation has built up a global Life Sciences Database – Biotechgate (http:// www.biotechgate.com) – containing profiles of more than 29,000 Life Science companies worldwide. Data from Biotechgate are is available to private and public entities interested in regional or topical information on Life Sciences companies from the Americas, Europe and Asia.

Valuation services

With access to scientific, product development, regulatory affairs, patenting and financial expertise, Venture Valuation provides for comprehensive valuation reports. Company experts perform comprehensive financial and technical valuations while taking into account soft factors such as management experience and track record, assessment of scientific and technological quality, intellectual property and market developments and trends. Venture Valuation has also developed a sophisticated system to follow a company's progress, providing valuation updates based on balanced scorecard measurements. Using Venture Valuation's market expertise the company offers individual product valuations and tools for licensing deal negotiations.

5. Quick Facts

France

Quick Facts		
Facts and Figures	 Active Population: ~ 51 million Size: 260,558 sqm % of International Workforce: 5.41% Employees in Life Sciences: 143,600 GDP per Person PPP 2012: USD 35,19 Account Balance in % of GDP: -2.1% Unemployment Rate: 10.6% Large international airports in Paris, Mag 	56 rseille and Nice
International Rankings	 Flexibility of Labor Market Quality of Life Index of Economic Freedom Global Competitiveness 	28 29 62 23



French LS Industry Structure – Overview

363
147
71

Employees in France	
Biotechnology	6,000
MedicalTechnology	40,000
Pharma	97,600

Number of Global and Regional HQs of Life Sciences in France

	Global HQs	Regional HQs
Biotechnology	35	18
Medical Devices	9	2
Pharmaceuticals	13	2
Overall	57	22

Source: www.biotechgate.com

Ordinary tax rates	Tax rates applicable to IP income	Tax rates applicable to trading income	R&D Tax Incentives	Other incentives
The corporate tax rate including social contribution and surtax is 36.1%. Small and medium size companies are subject to a corporate income tax rate of 15% for taxable profits of up to EUR 38,120.	Licensing fees relating to certain IP rights can benefit from a 16.2% tax rate.	n/a	R&D tax credit of 30% for the portion of the R&D expenses below EUR 100 million is available, reduced to 5% for the portion exceeding that amount.	Financial support is available in various forms. In addition, small and midsize innovative start-up companies ("JEI") may benefit from a one-year corporate tax exemption and a 50% rebate for the following year.

Examples of LS Companies based in France

Example of Life Sciences Companies based in France					
Name	Employees	Sector	Public/Private		
Sanofi	110,000	Pharmaceuticals	Public		
Stallergenes	1,100	Pharmaceuticals	Public		
Stentys	35	Medical Devices	Public		
EOS imaging	57	Medical Devices	Public		
Cellectis	120	Biotechnology	Public		
BioAlliance Pharma	55	Biotechnology	Public		

Germany

Quick Facts		
Facts and Figures	 Active Population: ~ 71 million Size: 137,847 sqm % of International Workforce: 7.89% Employees in Life Sciences: 220,000 GDP per Person PPP 2012: USD 37,897 Account Balance in % of GDP: 6.0% Unemployment Rate: 5.3% Large international airports in Frankfurt, N 	Лunich, Berlin
International Rankings	 Flexibilty of Labor Market Quality of Life Index of Economic Freedom Global Competitiveness 	18 4 19 4



German LS Industry Structure – Overview

Number of Companies in Germany	
Biotechnology	982
MedicalTechnology	584
Pharma	83

Employees in Germany	
Biotechnology	30,000
Medical Technology	87,000
Pharma	103,000

Number of Global and Regional HQs of Life Sciences in Germany

	Global HQs	Regional HQs
Biotechnology	46	8
Medical Devices	53	1
Pharmaceuticals	10	5
Overall	109	14

Source: www.biotechgate.com

Ordinary Tax Rates	Tax Rates Applicable to IP Income	Tax Rates Applicable to Trading Income	R&D Tax Incentives	Other Incentives
Corporate income tax amounts to 15% (plus 5.5% solidarity surcharge thereon) and trade tax amounts to about 7% to 17.15% (depending on municipality), resulting in a total tax rate of 22.8% to 33.0%.	n/a	n/a	n/a	Financial support is available in various forms, e.g. investment subsidies of 2.5% for investments started in 2013 in the former East Germany or regional subsidies as well as subsidies on European, federal and state level, see http://www. foerderdatenbank.de.

Examples of LS Companies based in Germany

Example of Life Sciences Companies based in France				
Name	Employees	Sector	Public/Private	
Bayer	110,000	Pharmaceuticals	Public	
Boehringer Ingelheim	44,000	Pharmaceuticals	Public	
Siemens	400,000	Medical Devices	Public	
Carl Zeiss	24,000	Medical Devices	Public	
MorphoSys	460	Biotechnology	Public	
4SC	94	Biotechnology	Public	

Ireland

Quick Facts		
Facts and Figures	 Active Population: ~ 3.6 million Size: 32,595 sqm % of International Workforce: 12.71% Employees in Life Sciences: 45,000 GDP per Person PPP 2012: USD 39,639 Account Balance in % of GDP: -2.80% Unemployment Rate: 14.7% Large international airport in Dublin 	
International Rankings	 Flexibilty of Labor Market Quality of Life Index of Economic Freedom Global Competitiveness 	7 35 11 28



Ireland's LS Industry – Overview

Number of Companies in Ireland	
Biotechnology	61
MedicalTechnology	43
Pharma	13

Employees in Ireland	
Biotechnology	4,000
MedicalTechnology	24,000
Pharma	17,000

Number of Global and Regional HQs of Life Sciences in Ireland

	Global HQs	Regional HQs
Biotechnology	9	1
Medical Devices	4	3
Pharmaceuticals	3	4
Overall	16	8

Source: www.biotechgate.com

Ordinary Tax Rates	Tax Rates Applicable to IP Income	Tax Rates Applicable to Trading Income	R&D Tax Incentives	Other Incentives
The corporate income tax rate on trading income and certain foreign dividends is 12.5%. Passive income is taxed at a rate of 25%, capital gains at a rate of 33%.	IP income is considered to be active income, subject to 12.5% tax rate.	The corporate income tax rate on trading income is 12.5%.	Ireland also provides a tax credit of 25% of capital and revenue expenditure on qualifying research and development expenditure. It is possible to claim excess R&D credits as a cash refund.	Certain start-up companies are exempt from tax in each of their first 3 years.

Examples of LS Companies based in Ireland

Example of Life Sciences Companies based in Ireland					
Name	Employees	Sector	Public/Private		
Shire	4,000	Pharmaceuticals	Public		
Warner Chilcott	2,700	Pharmaceuticals	Public		
Covidien	41,000	Medical Devices	Public		
Trulife	600	Medical Devices	Private		
Elan	250	Biotechnology	Public		
Amarin Corporation	110	Biotechnology	Public		

The Netherlands

Quick Facts		
Facts and Figures	 Active Population: ~ 13.9 million Size: 16,039 sqm % of International Workforce: 3.60% Employees in Life Sciences: 28,550 GDP per Person PPP 2012: USD 42,18 Account Balance in % of GDP: -8.9% Unemployment Rate: 5.8% Large international airports in Amsterd 	33 am, Rotterdam
International Rankings	 Flexibility of Labor Market Quality of Life Index of Economic Freedom Global Competitiveness 	14 12 17 8



The Netherlands, LS Industry Structure – Overview

Number of Companies in the Netherlands		
Biotechnology	296	
MedicalTechnology	172	
Pharma	31	

Employees in the Netherlands	
Biotechnology	2,150
MedicalTechnology	9,500
Pharma	16,900

Number of Global and Regional HQs of Life Sciences in the Netherlands

	Global HQs	Regional HQs
Biotechnology	13	2
Medical Devices	3	2
Pharmaceuticals	1	4
Overall	7	8

Source: www.biotechgate.com

Ordinary Tax Rates	Tax Rates Applicable to IP Income	Tax Rates Applicable to Trading Income	R&D Tax Incentives	Other Incentives
The headline rate of corporate income tax is 25% levied on taxable profits (including capital gains) in excess of EUR 200,000. The rate applicable to the first EUR 200,000 of taxable profits is 20%.	The "innovation box" is available for income from self- produced qualifying intangible assets, taxed at an effective rate of 5%.	n/a	Employers engaged in certain R&D activities ("WBSO") are entitled to a payroll tax reduction of 38% (in certain cases 50%) of the relevant payroll costs, up to a maximum base amount of EUR 200,000, and 14% for any excess base (maximum reduction of EUR 14 million). In addition, the R&D deduction (RDA) of 54% of the eligible cost and expenditure is available for investments in new business assets.	Financial support is available in various forms.

Examples of LS Companies based in the Netherlands

Example of Life Sciences Companies based in the Netherlands						
Name	Employees	Sector	Public/Private			
Philips Healthcare	37,000	Medical Devices	Public			
DSM	24,000	Medical Devices/ Pharmaceuticals	Public			
Qiagen	3,900	Biotechnology	Public			
Keygene	135	Biotechnology	Public			
Pharming	90	Pharmaceuticals	Public			

Switzerland

Quick Facts		
Facts and Figures	 Active Population: ~ 6.6 million Size: 15,940 sqm % of International Workforce: 20.45% Employees in Life Sciences: 95,900 GDP per Person PPP 2012: USD 43,37 Account Balance in % of GDP: 11.8% Unemployment Rate: 3.1% Large international airports in Basel, Zu 	0 urich, Geneva
International Rankings	 Flexibilty of Labor Market Quality of Life Index of Economic Freedom Global Competitiveness 	3 2 5 1



LS Clusters in Switzerland

Swiss LS Industry – Overview

Number of Companies in Switzerland		
Biotechnology	338	
MedicalTechnology	341	
Pharma	65	

Employees in the Netherlands	
Biotechnology	19,200
Medical Technology	40,000
Pharma	36,700

Number of Global and Regional HQs of Life Sciences in Switzerland

	Global HQs	Regional HQs
Biotechnology	24	12
Medical Devices	11	10
Pharmaceuticals	6	7
Overall	41	29

Source: www.biotechgate.com

Ordinary Tax Rates	Tax Rates Applicable to IP Income	Tax Rates Applicable to Trading Income	R&D Tax Incentives	Other Incentives
Income taxes are applied on federal, cantonal and communal level in Switzerland. The pre- tax corporate income tax rates range between 11.4% and 24.4% (depending on municipality).	IP income may be subject to tax rates of 8.5% -1 2% (mixed companies) or 8.8% (license box in the Canton of Nidwalden).	Trading income may be subject to tax rates of 5% (principal companies) or 8.5% - 12% (mixed companies).	Accruals for future R&D projects executed by third parties are permitted in an amount of up to 10% of the taxable profit, maximum CHF 1 million.	Full or partial tax holidays of up to ten years on cantonal and – in certain regions – federal tax level can be granted to substantial investment projects. In addition, funding in case of a collaboration between the company and a university may be available.

Example of Life Sciences Companies based in Switzerland

Example of Life Sciences Companies based in Switzerland					
Name	Employees	Sector	Public/Private		
Novartis	110,000	Pharmaceuticals	Public		
Roche	80,000	Pharmaceuticals	Public		
Sonova Holding	5,300	Medical Devices	Public		
Straumann	1,800	Medical Devices	Public		
Actelion	2,400	Biotechnology	Public		
Lonza	11,000	Biotechnology	Public		

United Kingdom

Quick Facts		
Facts and Figures	 Active Population: ~ 51.9 million Size: 94,060 sqm % of International Workforce: 7.29% Employees in Life Sciences: 165,000 GDP per Person PPP 2012: USD 36,090 Account Balance in % of GDP: -3.5% Unemployment Rate: 7.8% Large international airports in London (4) Edinburgh, Birmingham)), Manchester,
International Rankings	 Flexibilty of Labor Market Quality of Life Index of Economic Freedom Global Competitiveness 	6 38 14 10



UK LS Industry Structure – Overview

Number of Companies in the UK			
Biotechnology	646		
Medical Technology	138		
Pharma	84		
Employees in the UK			

Linpioyees in the OK	
Biotechnology	23,000
MedicalTechnology	64,000
Pharma	78,000

Number of Global and Regional HQs of Life Sciences in the UK

	Global HQs	Regional HQs
Biotechnology	57	3
Medical Devices	6	1
Pharmaceuticals	8	13
Overall	71	17

Source: www.biotechgate.com

Ordinary Tax Rates	Tax Rates Applicable to IP Income	Tax Rates Applicable to Trading Income	R&D Tax Incentives	Other Incentives
The main corporate income tax rate is 23%. Profits up to GBP 300,000 are taxed at a rate of 20%. Marginal relief applies to profits between GBP 300,000 and GBP 1.5 million.	A new patent box regime with a tax rate of 10% on qualifying patent-derived income is phased in from April 2013.	n/a	Tax incentives for R&D expenditure are available, with an enhanced deduction of 130% for large companies and of 225% for small and midsized enterprises. From April 2013, an optional above-the- line R&D tax credit of 10% of qualifying expenditure is available for large companies.	Twenty-four new enterprise zones have been set up in economically declining areas of the UK. Possible measures include a five-year holiday up to GBP 275,000.

Examples of LS Companies based in the UK

Example of Life Sciences Companies based in Switzerland			
Name	Employees	Sector	Public/Private
GlaxoSmithKline	95,000	Pharmaceuticals	Public
AstraZeneca	57,000	Pharmaceuticals	Public
Smith & Nephew	11,000	Medical Devices	Public
BTG	580	Biotechnology	Public
GW Pharmaceuticals	150	Biotechnology	Public





Contact us

Hartley Powell

Principal, Global Head Global Location and Evaluation Services Duke Energy Center Charlotte, 28202 NC, USA T: 001 704 335 5583 E: whpowell@kpmg.com

Thomas Linder

Director, Head Global Location and Expansion Services Switzerland

Badenerstrasse 172 CH-8026 Zurich **T:** +41 58 249 54 58 **E:** tlinder@kpmg.com

André Guedel

Head International Market Development Badenerstrasse 172 CH-8026 Zurich T: +41 58 249 28 24 E: aguedel@kpmg.com

www.kpmg.ch

Patrik Frei CEO, Venture Valuation AG CH-8004 Zurich T: +41 43 321 86 60 E: p.frei@venturevaluation.com

www.venturevaluation.com

