Canton of Zurich
Department for Economic Affairs
Office for Economy

Attractiveness of the Canton of Zurich for Business and Talent – A Comparison 2024

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Zurich, January 2024

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The Canton of Zurich in the competitive landscape of locations

The economy of Zurich is enormously successful. Our canton features a strong ecosystem of world-renowned educational and research institutions, and of innovative, successful small, medium-sized and large companies. Zurich's residents are highly motivated and very well educated. An excellent transport infrastructure and a very high quality of life are further attributes that add to Zurich's appeal.

All of this supports Switzerland and fuels the engine that drives our country forward. But this success is neither a given nor achieved without challenges. The competition is getting tougher, with the world's strongest business locations gearing up to compete for the most successful and most innovative companies and the best of talent. The Canton of Zurich is not shying away from this competition – a competition that is also calling critics onto the scene. What goals should our location strive to achieve? What sort of growth do we want? And how does it affect, inter alia, labour market competition, living space and sustainability?

"You snooze, you lose" ("Wer rastet rostet") is a well-known German proverb that fits the business location that is Zurich well: snoozing is not an option. Because the social and economic challenges we face are no small feat. The only way to tackle them is by taking a critical stance and continuously questioning whether we are on the right path. That was the mandate given for this study: identify strengths, recognise weaknesses. In which areas is our canton well-equipped for international competition – and where do we need to improve in order to stay ahead or take the lead? To give an example of an interesting finding from the analysis: although Zurich's SMEs are innovative, they lag behind in innovation collaborations. Shortage of labour presents another increasingly pressing problem.

We are thus faced with major challenges. We must look after political stability and our rule of law, and counter the pressing labour market situation by making even better use of the potential offered by our domestic workforce. New regulations will not protect us from businesses moving away from Zurich – but good economic conditions will. We must ensure a healthy cantonal budget so as to have financial room for manoeuvre in future crises as well. The new working worlds must be made possible through digitalisation – with contemporary legislation. And, finally, our capacity to innovate must be further strengthened – through research excellence, an innovation-friendly environment, openness to technology and networking.

The Canton of Zurich offers excellent conditions for a successful future. Let's make good use of them!

Zurich, January 2024

Government Councillor Carmen Walker Späh
Department for Economic Affairs of the Canton of Zurich

Executive Summary

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1. Executive Summary

The Canton of Zurich plays a decisive role in Switzerland's competitive and innovative capacity. As a major business location, Zurich faces competition from other economic regions, both international and within Switzerland. Compared to its most important competitors, Zurich does especially well for education, economic performance and quality of life. But there is room for improvement in the domains of research, innovation, tax and regulatory environment.

Meaning and structure of Zurich's economy

"Per capita GDP in the Canton of Zurich is 22,000 Swiss francs above the Swiss average."

Zurich's economy has grown steadily over the past thirty years, (inflation-adjusted) by an average of 1.8 per cent per year, and Zurich's residents have become wealthier: per capita GDP grew by 0.8 per cent and amounts, today, to 102,000 Swiss francs, which is approximately a quarter above the Swiss average. At the same time, Zurich's residents work around seven per cent less per capita today than thirty years ago. This means they have almost half an afternoon more leisure time. If this increase in leisure time is taken into account, wealth, measured in terms of GDP per hour worked, has actually increased by as much as 1.1 per cent per year.

"Almost forty per cent of all Swiss start-ups that receive capital from external investors are founded in Zurich."

The fact that almost forty per cent of all Swiss start-ups that receive capital from external investors are founded in Zurich highlights the canton's innovative strength and high innovation potential. Especially young enterprises in the domains of ICT and biotech are popular among investors in the Canton of Zurich. The canton's top universities are important drivers of Zurich's start-up scene.

"Zurich's tax burden is high by national standards and moderate by international standards."

Corporate tax rates in the Canton of Zurich are high by national comparison, albeit the fact that the profit tax rate was reduced from eight to seven per cent, effective 2021, and a further reduction is planned. Zurich's slight drop in the resource index in the national fiscal equalisation system is an indicator that economic capacity has declined compared to other cantons. Zurich has a competitive tax system by international standards.

"Zurich's mix of industry sectors contributes to the stability and resilience of its economy."

The Zurich financial centre, with its banks, insurance companies and more than 76,000 employees, still constitutes the most important pillar of Zurich's economy. However, in recent years, the canton has developed into a diversified business location that is, today, home to other strong industry sectors as well: information and communications technology (ICT), cleantech, life sciences and tourism, together with the finance sector, contribute significantly to GDP and jobs in the Canton of Zurich, generating gross value added of sixty billion Swiss francs.

The Canton of Zurich by international comparison

"Being a highly attractive location facilitates sustainability."

In order for businesses to want to locate, stay long-term and create jobs in Zurich, the canton needs to be a highly attractive location of choice. Because when businesses make decisions on where to locate, Zurich is in direct competition with other European economic regions. Being a highly attractive location facilitates environmental, economic and sustainable development. Location competitiveness is not about economic growth at all costs; it is about sustainable growth within these three core dimensions. An attractive location draws in innovative industry sectors and businesses that invest in research and development and contribute to achieving climate and environmental goals. An attractive location creates jobs, prosperity, value added and rising tax revenues which can be used for environmental and social policy. The study at hand measures the Canton of Zurich's attractiveness as a location based on eight central factors, namely: labour market and human capital, education, research and innovation, tax and regulatory environment, cost environment, infrastructure, economic performance and quality of life. To compare how the Canton of Zurich is faring in terms of location attractiveness, five European regions were identified as significant competitors: Munich (Upper Bavaria), Stockholm, Amsterdam (Noord Holland), Dublin (Eastern and Midland) and London.

"Zurich is world class thanks to its top universities."

The Canton of Zurich has some key strengths compared to its main European competitors, ranking well above average for **education, economic performance** and **quality of life**. Factors contributing to this are a strong economy with high labour productivity as well as excellent universities and a very hands-on vocational training system. Stability, security and good healthcare are further important success factors. Zurich also has the highest concentration of international corporate groups compared to other regions.

"Zurich attracts international talent, yet there is still a shortage of labour."

Zurich shows ambivalent results in regard to four location factors: even though it performs well to very well in many sub-indicators, there is still clear potential for improvement. As to the location **factor labour market and human capital**, Zurich and Switzerland are faced with significantly more recruitment challenges than their competitors. Although Zurich is highly appealing to international talent, nowhere else is it more challenging for businesses to find sufficient qualified personnel. Apart from demographic reasons, this is due to the canton's economic success. In terms of **research and innovation**, potential for improvement lies, on the one hand, with venture capital: whereas a good deal of capital is available in Switzerland in the early phase of start-ups, Zurich's five main competitors boast a higher volume in the scale-up phase. On the other hand, Zurich lags behind its competitors in innovation collaborations of SMEs.

Potential for improvement in relation to tax and regulatory environment is seen, on the one hand, in regard to labour market regulation, especially Swiss labour law which is less liberal than the equivalent laws in the comparison regions. On the other hand, while the Canton of Zurich ranks in the upper midfield by international comparison for corporate taxes, it brings up the rear in Switzerland. With respect to infrastructure, Zurich performs well thanks to good accessibility by road, rail and air, but is lagging in E-government, as is Switzerland as a whole.

"Success comes at an expense"

Zurich's performance in regard to the **cost environment** factor can be looked at in different ways: because the canton is a long-established, thriving business hub and a highly attractive location, prices and wages are also high. Nowhere are labour costs per hour worked higher. While high labour costs are a disadvantage for businesses, high wages are favourable for employees. The high wages in Zurich contribute to its appeal as a place to live, especially as Zurich also scores well for purchasing power and quality of life. It can be said, therefore, that Zurich's high-cost environment is a reflection of its success.

Looking to the future

"Zurich faces major challenges that will impact its location factors."

In spite of Zurich's good current position, the canton faces major challenges. Ageing, immigration and digitalisation are likely to have a considerable impact on the labour market in terms of labour force availability and potential. In the field of education, the shift towards technology- and knowledge-centred industry sectors is leading to changing requirements. Furthermore, Switzerland's relationship with the EU will have a decisive effect on universities and research institutions, as well as on research and innovation as a location factor; permanent exclusion from the EU's research and exchange programmes would have negative consequences.

In the domain of tax, international competition is likely to shift towards subsidy-based competition as a consequence of the OECD's introduction of a minimum tax rate. This will make it even more important for Zurich to offer an efficient and transparent tax and regulatory environment.

A major challenge for the location factors cost environment and infrastructure is likely to be achieving the climate and environmental targets, while at the same ensuring security of supply without costs getting out of hand or jeopardising competitiveness. Quality of life as a location factor may also be affected depending on how successfully this is achieved.

Economy of Zurich

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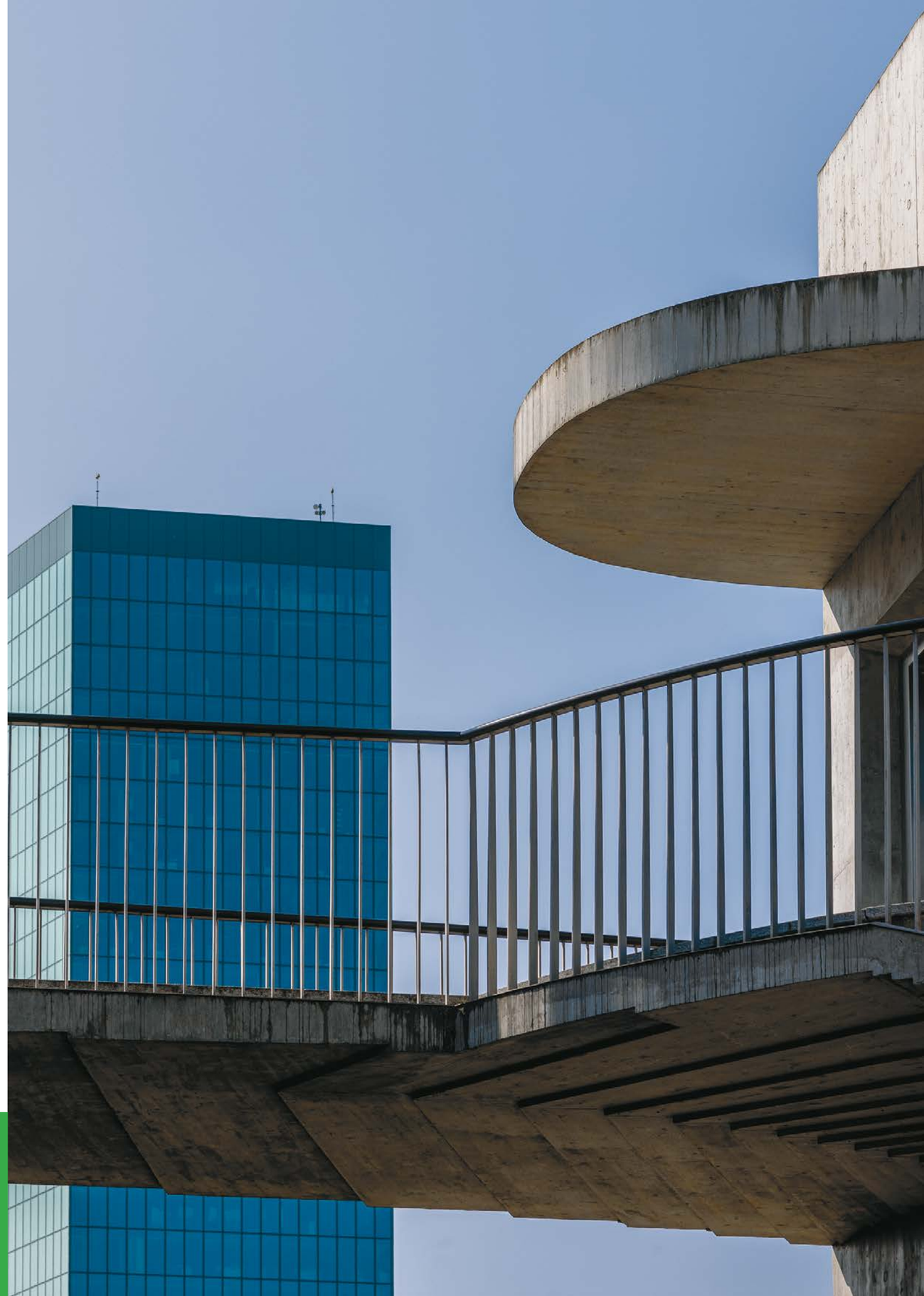

2. Economy of Zurich

Zurich is an economic engine that plays a key role in driving the Swiss economy forward. Home to more than 1.58 million residents, it is not only the country's most populous canton but also provides one in five jobs in Switzerland. With a gross domestic product (GDP) of 167 billion Swiss francs, it accounts for more than twenty per cent of Switzerland's national economic output.

Over the past few decades, Zurich has developed into an attractive location for innovative and technology-driven companies. Many factors have contributed to this, most notably the canton's favourable business climate, extensive access to the European single market, freedom of movement, attractive international travel connections made possible by Zurich Airport, the quality of jurisdiction and legal certainty, multifarious scientific institutions of world renown as well as its dual-track education system and high quality of life.

Wealth of Zurich's residents is growing

Zurich's economy has grown steadily in the past thirty years. Adjusted for inflation, GDP increased on average by 1.8 per cent annually. This increase is due to two factors, one being population growth, the other an increase in economic output per capita. If GDP grows, but the average GDP per capita does not, prosperity is not increasing. Put simply, the pie gets bigger without the individual slices – in this case wealth – getting any bigger. The latter occurs through higher labour market participation and, above all, productivity growth.

Per capita GDP in the Canton of Zurich has increased on an annual average of 0.8 per cent since 1991. It currently amounts to 102,000 Swiss francs, which is approximately a quarter, or 22,000 Swiss francs, above the Swiss average. At the same time, Zurich's residents work seven per cent less today than thirty years ago, which means they have close to half a day more leisure time. This has been compensated by a higher labour market participation of women and foreign workers who are taking on an ever-growing share of hours worked in the overall economy.

If this increase in leisure time is taken into account, wealth in the Canton of Zurich has risen even more sharply: GDP per hour has increased by 1.1 per cent annually since 1991. Thus, in the past thirty years, what the Canton of Zurich has experienced is overall growth of the economy mainly through increase in productivity.

SMEs – diverse, dynamic and internationally interwoven

The Canton of Zurich is a dynamic business location and home to many SMEs as well as big national and international corporations. In the past twenty-five years, the manufacturing industry has lost significance while specialised services have gained in importance: today, eighty-seven per cent of businesses in the canton are service companies; across Switzerland the figure is seventy-five per cent. Zurich's many SMEs constitute the backbone of its economy: 99.5 per cent of businesses in Zurich have fewer than 250 employees and thus correspond to the definition used by the Federal Statistical Office (FSO)[1] for SMEs. Whether it be the local bakery, the beauty parlour, the self-employed physiotherapist, the plumber's shop, the law office, the IT store or the internationally renowned biotech company: they all belong to the wide spectrum of Zurich's SME landscape.

As a nation with a small domestic market, Switzerland is closely interwoven with other countries. On the one hand, Swiss SMEs conduct business as suppliers, service providers and contractors for local companies. On the other hand, one in thirteen SMEs exports directly to other countries – making up a total of forty-two per cent of the country's export volume. That is twice as much as in Germany or France.[2] The Canton of Zurich hosts Switzerland's main airport, which presents an important location advantage for export-orientated SMEs. Moreover, thriving local businesses are also interesting for big national and international corporations and for innovative technology companies, serving as suppliers, service providers or producers in supply chains.

Key Figures

Jobs

940,000 jobs
(21 % of Switzerland)

Labour force participation rate
82%
(80 % in Switzerland)

GDP

167 billion CHF
(22 % of Swiss GDP)

102,000 CHF per capita
(80,000 CHF in Switzerland)

Companies

105,000 companies
(18 % of Switzerland)

Share of high-growth companies
8%
(7 % in Switzerland)

Annual changes
9,097 newly established companies
6,487 company insolvencies and liquidations
1,219 businesses relocating to Zurich
1,356 businesses leaving Zurich

Economic structure

Services
87%
(Switzerland 75 %)

128,000
inbound commuters from other cantons
(20 % of all inbound commuters in Switzerland)

Sources: BAK, FSO, CRIF. All figures shown are based on the latest available data.

“When collaborating with start-ups I have noticed that many leave Zurich or Switzerland as soon as they have to scale their products. This is a real shame as it means we are losing so much added value and so many jobs.”

Jan Hofstetter, Managing Director, Digipack-Kappeler

ICT and biotech start-ups on trend

Besides established SMEs, successful young enterprises operating in innovative fields of technology exemplify a location’s innovation potential and competitiveness. The fact that almost forty per cent of all Swiss start-ups that receive capital from external investors are established in the Canton of Zurich underscores the canton’s innovation potential.[3] For many years, Zurich has been home to by far the largest share of the Top 100 Swiss start-ups: of the 100 Swiss start-ups that received a Swiss Start-up Award in 2023, 42 were from the Canton of Zurich. That is twice as many as would be expected based on share of population or value added. Young enterprises in the ICT and biotech sectors are very popular among investors in Zurich. The canton’s first-rate universities –including the University of Zurich, the Zurich University of Applied Sciences (ZHAW) and the Federal Institute of Technology Zurich (ETH)– are important drivers of Zurich’s start-up scene and foster the creation of new technologies and business opportunities. However, while there is plenty of venture capital available for start-ups in the early stage, Switzerland falls behind when it comes to funding scaling and long-term growth of start-ups.

The Switzerland Innovation Park Zurich is currently being established on the Dubendorf airfield – as a platform for research, development and innovation that promotes collaboration, networking and knowledge sharing between universities and research institutions as well as national and international companies. Featuring its own research, test and aircraft factory airfield, the research foci of the innovation park are on robotics and mobility, space and aviation, as well as on advanced manufacturing.

Up to 10,000 jobs could be created in the innovation park by 2050, when its construction will have been fully completed.

Zurich – a business location with great momentum

For the dynamic business location that is Zurich, newly founded companies are a pivotal driver of innovation and an engine for locational attractiveness and growth. Every year, newly founded companies create more than 10,000 jobs.[4] Close to 8,000 companies per year have been newly registered in Zurich’s commercial register in recent years. This figure has risen sharply since the middle of 2020, surpassing the threshold of 9,000 for the first time in 2022. The COVID-19 pandemic spawned new business ideas, resulting in the creation of new companies. At the same time, some 6,500 companies “disappeared” from Zurich’s commercial register in 2022, as a result of bankruptcy or closure due to lack of succession planning, for instance. This is not purely negative, as in a dynamic environment it frees up resources for future-viable business ideas.

Economic momentum is also influenced by inward and outward migration of companies. On balance, slightly fewer companies moved to Zurich than left Zurich in 2022. However, in terms of number of jobs and size of business, these departures are of minor significance overall, as ninety per cent of the companies that left Zurich had maximum five employees. There are multifarious reasons why companies move to or leave the Canton of Zurich. As a non-representative survey conducted by the Office for Economy and Labour in autumn 2023 showed, tax levels, availability of building land or of suitable and affordable rental or purchasing property are just as relevant as proximity to universities or to suitable ecosystems. The Canton of Zurich has just 6.8 per cent of buildable land available, which puts it below the Swiss average (9.6 per cent) and in sixth-last position.[5] However, to ensure qualitative growth, the Canton of Zurich will need sufficient space for expanding companies and an investment-friendly environment in the future as well.

High tax burden and highest NFA net payer

As the engine that fuels the Swiss economy, the Canton of Zurich generates correspondingly high tax revenues. Tax revenues from companies and residents are of great significance for the business canton that is Zurich and for its towns and municipalities.

About twenty per cent of the canton’s tax revenues stem from legal entities. Switzerland’s tax environment has changed quite significantly in recent years. Numerous cantons have lowered their profit tax rates, in some cases significantly so. The Canton of Zurich also lowered its profit tax rate, effective 2021, from eight to seven per cent, with plans to drop it further to six per cent. However, Zurich still ranks in one of the last two positions by national comparison.

The main source of income of the canton and its municipalities is, however, tax revenue from natural persons. They are, therefore, just as important for financing and developing a business location. They form the basis for a well-functioning public infrastructure, a good education system, and a strong and competitive economy. The largest portion of tax revenue from natural persons stems from income tax, and the smaller portion from wealth tax. In an inter-cantonal comparison, the Canton of Zurich ranks in eleventh and tenth place respectively for income and wealth tax, with a high tax progression and, thus, tax burdens above the Swiss average for high incomes of over one million Swiss francs and for wealth of more than five million Swiss francs.[6]

The high tax revenue by virtue of the canton’s economic strength and population size makes the Canton of Zurich the highest net payer, in absolute figures, since the introduction of the fiscal equalisation and division of fiscal responsibilities between the Swiss Confederation and the cantons (NFA) in 2008. In 2023, the Canton of Zurich accounted for thirty-seven per cent of all contributions from the cantons to the NFA. However, its slight drop in the NFA resources index indicates that economic performance has declined compared with other cantons. Measured against population size, the highest contributions come from the cantons of Zug, Schwyz and Nidwalden. The Canton of Zurich pays 326 Swiss francs per capita into the NFA – the canton of Zug pays nine times as much. Calculations made by the federal administration and stated in the dispatch on the OECD minimum tax rate[7] show that Zug is very likely to supersede the Canton of Zurich as the highest net payer within the next few years.

Zurich's Industry Sectors

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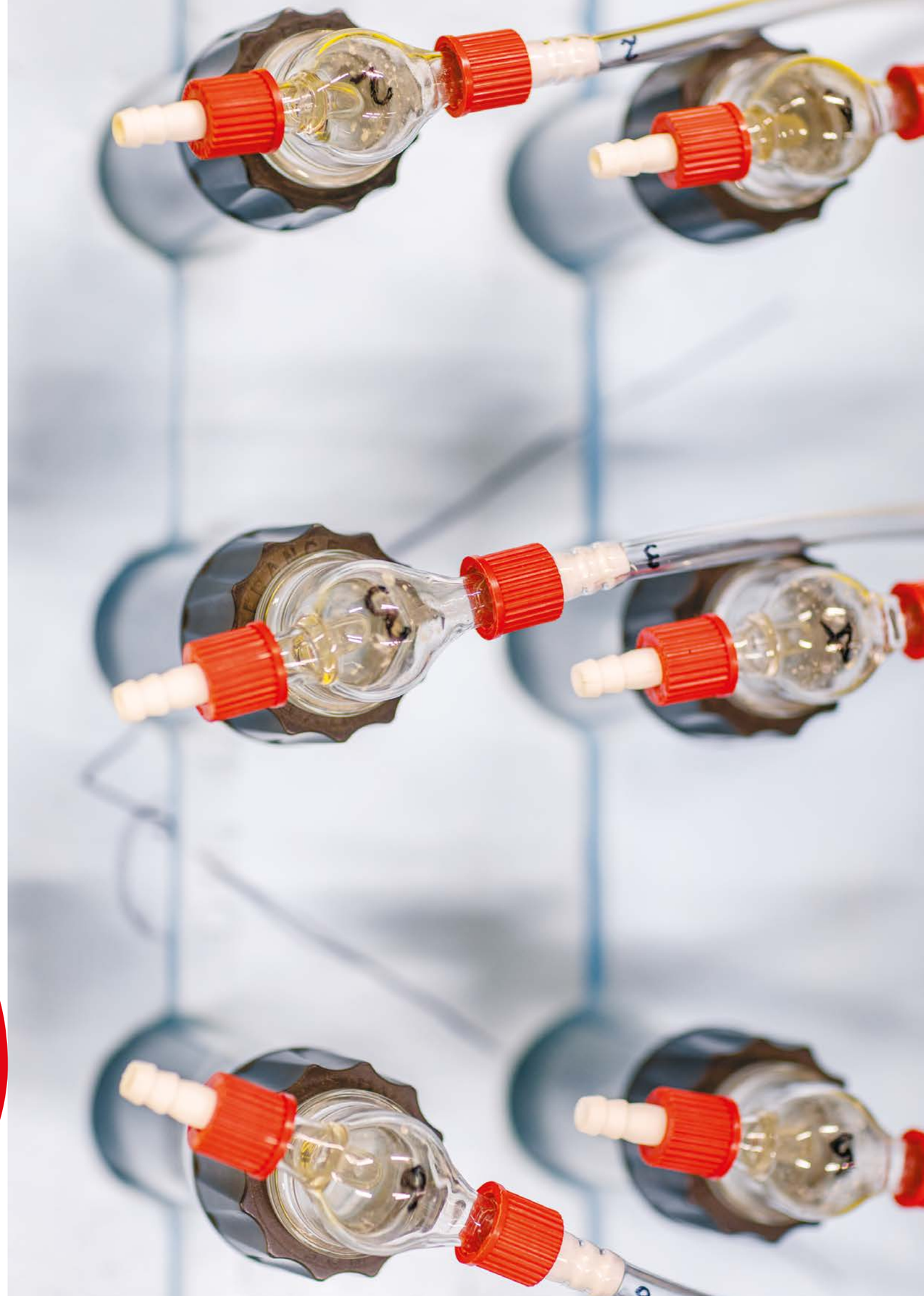

3. Zurich's Industry Sectors

The Canton of Zurich is no longer just Switzerland's largest financial centre; it is also a vibrant and innovative business location for information and communications technology (ICT), cleantech and life sciences, as well as an attractive tourist location. This mix of industry sectors contributes to the stability of Zurich's economy and mitigates the risk of dependency on individual industries.

Diverse mix of industries stabilises the economy

Generating a gross value added of more than sixty billion Swiss francs, the five industries – financial services, ICT, cleantech, life sciences and tourism – contribute decisively to GDP and jobs in the Canton of Zurich. When compared to other cantons, the Canton of Zurich comes up tops for economic structure, as the UBS study "Cantonal Competitiveness Indicator" shows.[8] A diversified economy with a wide spectrum of industries is in a better position to cushion the effects of a downturn of a sector or of an overall crisis than a specialised economy.

"Zurich is home to a large number of innovative institutions, hospitals, universities and very many biotech start-ups, SMEs and international corporate groups. However, what Zurich needs is more connecting and networking among these entities, as well as with public authorities."

Samuel Moser, Roche Glycart (Schlieren), Chief of Staff

Zurich with the second-most jobs in Switzerland's life sciences sector

Generating a value added of 26.8 billion Swiss francs and providing more than 76,000 full-time jobs, Zurich's financial centre, which includes banks, insurance companies and other financial services providers, is still the largest sector of industry and the most important pillar of Zurich's economy. Development of real gross value added in the finance sector between 2011 and 2021 was, overall, more dynamic than the economy as a whole. The next few months and years will show how the Credit Suisse takeover by UBS will affect the finance sector and jobs.

Public perception of Swiss life sciences is strongly linked to the pharmaceutical industry and, thus, to a particular canton, which is Basel-Stadt. However, as an inter-cantonal comparison shows, the Canton of Zurich is already in second place and hosts by far the most medtech jobs of all Swiss cantons. Furthermore, Zurich provides the most jobs in the biotech sector, in medical research, as well as in the development and laboratories sector. One in seven jobs in life sciences is based in the Canton of Zurich. With a value added of five billion Swiss francs, the life sciences sector is contributing decisively to Zurich as a business location.

These days, hardly any industry can do without information and communications technology (ICT); banks and insurance companies are also using more and more ICT services. ICT has thus become a strategic competitive factor. Almost forty percent of Switzerland's ICT value added is generated in the Canton of Zurich and thirty-four per cent of all ICT jobs are located in Zurich. In terms of share of Switzerland's total value added, this makes the ICT sector comparable to the finance sector. Cleantech companies are also important employers, with 96,000 jobs and a value added of more than thirteen billion Swiss francs. Although the tourist sector accounts for a comparatively small share of value added in the Canton of Zurich, it creates more than 31,000 jobs and is, therefore, an important employer. With a share of nineteen per cent of Switzerland's tourism value added, the Canton of Zurich is, in fact, one of the most important tourist destinations in Switzerland.

More facts and figures about Zurich's industry sectors are available under the following link:
zh.ch/cluster-data

Key Figures

Financial services

26.8

billion CHF
(40 % of value added of financial services providers in Switzerland)

76,309 full-time employees
(36 % of all full-time employees of financial services providers in Switzerland)

ICT

14.7

billion CHF
(39 % of ICT value added in Switzerland)

57,756 full-time employees
(34 % of all ICT full-time employees in Switzerland)

Life sciences

5.0

billion CHF
(9 % of life sciences value added in Switzerland)

20,401 full-time employees
(14 % of all life sciences full-time employees in Switzerland)

Tourism

1.5

billion CHF
(19 % of tourism value added in Switzerland)

31,686 full-time employees
(18 % of all tourism full-time employees in Switzerland)

Cleantech

13.4

billion CHF
(17 % of cleantech value added in Switzerland)

96,167 full-time employees
(17 % of all cleantech full-time employees in Switzerland)

Source: Statistical Office of the Canton of Zurich (2022)

Location Factors

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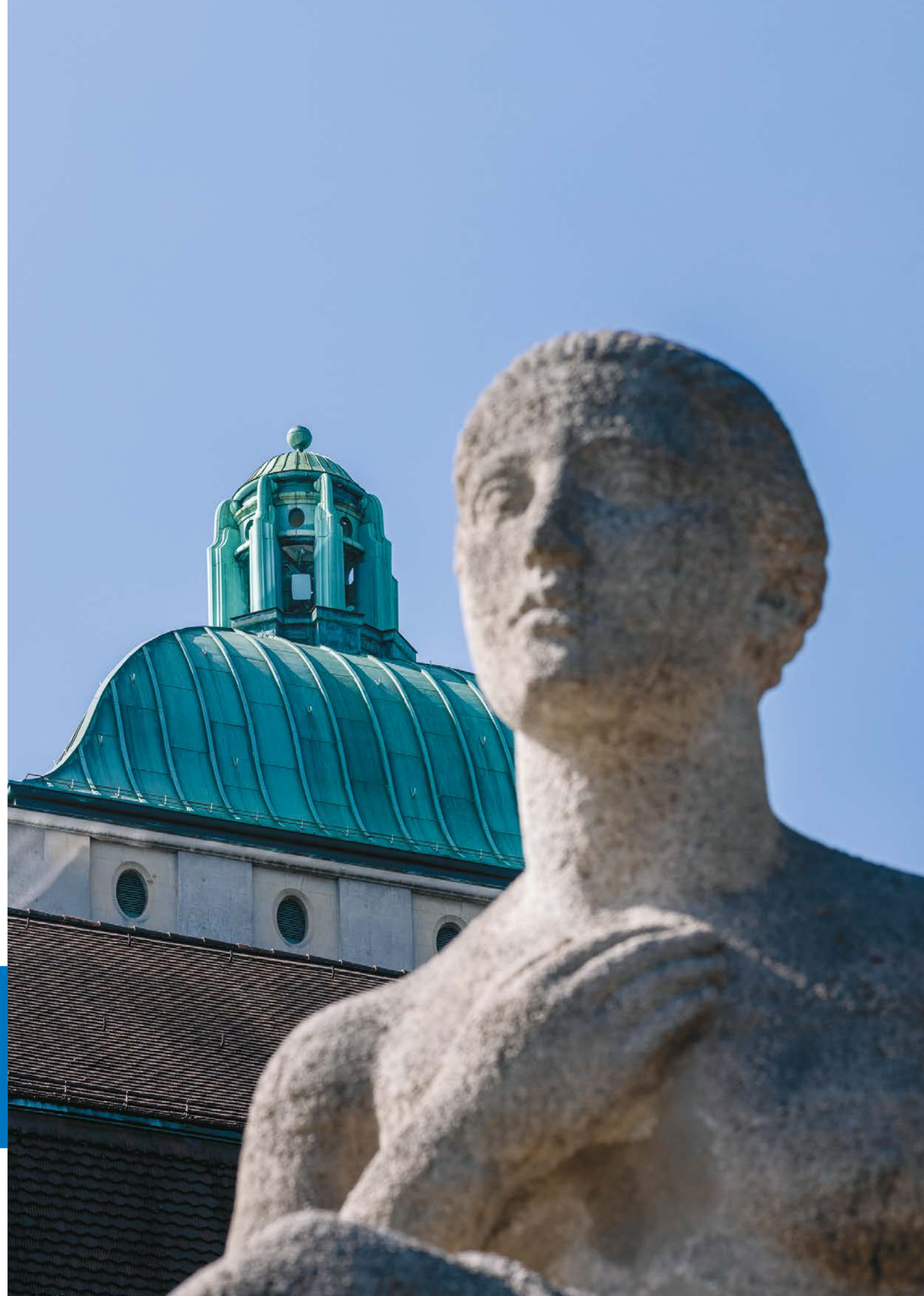


4. Location Factors

The Canton of Zurich is the economic engine that fuels Switzerland. To preserve and continue being a successful and competitive international location requires having talented minds and innovative companies – start-ups, SMEs and large globally operating corporations.

Being an attractive location enables sustainability

For innovative companies to choose and remain entrenched in Zurich long-term requires being an attractive business location. This is what enables sustainable development, achieved through a triad of economic, environmental and social aspects. The goal is not, therefore, quantitative growth at all costs. Rather, high-level attractiveness as a location is based on an interplay of various factors, ranging from economic performance to quality of life.

Put differently: only an appealing business location will attract innovative industries and companies that invest in research and development and, in so doing, contribute meaningfully to achieving the climate and environmental targets. Furthermore, an attractive location creates value added as well as high-quality, well-paid jobs that increase the wealth of Zurich's residents. And, finally, it takes an appealing location to generate tax revenue which, in turn, can be used for environmental and social policy.

However, the attractiveness of a location is not easy to measure. It is influenced by various interplaying factors which form an economic ecosystem. The aim of this chapter is, therefore, to more accurately define, measure and compare Zurich's attractiveness as a location. The majority of well-known rankings chiefly focus on the country level, most notably the WEF Global Competitiveness Report. These rankings often equate attractiveness of a location with competitive capacity, understanding it to mean a pool of different parameters of an economy.[9]

Eight central location factors

In the analysis presented here, the attractiveness of the Canton of Zurich as a location is measured along eight central factors. They are based on the aforementioned rankings at country level, but are also rooted in the expertise of the experts from the cantonal Division of Business and Economic Development who provide support to companies locating in the Canton of Zurich. The eight selected location factors are thus the result of practical experience as well as a comprehensive literature review.

– Labour market and human capital
– Education
– Research and innovation
– Tax and regulatory environment
– Cost environment
– Infrastructure
– Economic performance
– Quality of life

Without employees, companies are unable to achieve value. Therefore, when searching for a suitable location, the availability of skilled workers and access to the labour market will often figure at the top of a company's list of criteria. For the labour market to be able to count on qualified workers requires having a good education system and investment in research and development. A location's tax and regulatory environment is another important criterion for many companies, with the cost environment factor closely linked to this. Another important factor is the availability of a well-developed and modern infrastructure, both in physical and digital form. And, finally, the economic capacity of a location and the ecosystem of companies attached to it, and the overall quality of life are further relevant factors. In order to measure these eight factors, indicators were identified for which there is reliable data and which is also comparable with other European regions (see Appendix, p. 48). The focus is on a comparison of European economic regions as these regions are often in direct competition with Zurich when businesses and people decide on choice of location.

Methodology and data

The data for the individual indicators stems from various sources, with the database of the European Innovation Scoreboard (EIS) of the European Union (EU) serving as the main source. The said database encompasses information on 250 European regions, including the Canton of Zurich. However, not all eight factors could be adequately presented. In cases in which the EIS database did not offer the desired indicator, data from Eurostat at regional level (NUTS 2 level) was used. Where no data for the comparison regions was available, the Canton of Zurich was compared at OECD country level. For some of the indicators no data is available for the Canton of Zurich, which is why the value for Switzerland was used (see exemplary Smartspider). It should be noted, furthermore, that for some factors national specifications – such as legislation – provide the framework within which Swiss cantons often have some scope for shaping and developing.

To be in a position to better contextualise the performance of the Canton of Zurich, the cantonal Division of Business and Economic Development identified five European regions that constitute important competitors of Zurich in terms of location competitiveness and in terms of specifically attracting companies to locate in a region, and that have a comparable economic structure. These regions are: Munich (Upper Bavaria), Stockholm, Amsterdam (Noord-Holland), Dublin (Eastern and Midland) and London.

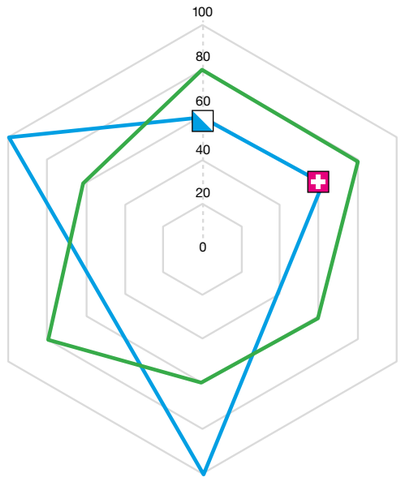
The results of the present analysis were discussed in several workshops with experts from Zurich's business and scientific community. We would like to take this opportunity to thank Anton Aschwanden (Google), Anna Eldring (Takeda), Beatrice Henes (communications expert), Jan Hofstetter (Digipack-Kappeler), Balz Hösly (Greater Zurich Area), Stephan Koller (UBS), Viktoria Mauz (ERNI), Samuel Moser (Roche Glycart), Maria Olivares (University of Zurich), Tobias Straumann (University of Zurich) and Jan Zimmermann (ETH Zurich) for their valuable assessments and suggestions which were incorporated in the analysis.

Exemplary Smartspider: Smartspider compares Zurich with 249 European regions.

For the sake of comparison, all of the original data was standardised. The region with the highest value is assigned 100 points, the region with the lowest value is given 0 points. Apart from the Canton of Zurich (blue line), the median of the five main competitor regions (green line) was also included in this scale.

The regions concerned are considered important competitors of Zurich in terms of location competitiveness and in terms of specifically attracting companies to locate in a region, and that also have a comparable economic structure. These regions are: Munich (Upper Bavaria), Stockholm, Amsterdam (Noord-Holland), Dublin (Eastern and Midland) und London.

The rule is: the further out on the graph, the better the results of the Canton of Zurich. The Swiss flag marks indicators for which there is no value available for the Canton of Zurich, only for Switzerland as a whole.



Location Factor 1:

Labour Market and Human Capital

Companies depend on qualified employees. A region's labour market and human capital are, therefore, a key location factor, with two different areas being measured: labour force potential of the resident population and the ability of a location to attract and mobilise manpower.

The first area includes the share of the population at working age, the share of ICT specialists (as a crucial cross-sectional function for the future) and the share of the population pursuing lifelong learning. The second area encompasses the attractiveness of the location for talent and specialists, the employment rate and recruitment challenges.

Domestic labour force potential

Zurich does very well in the first area, ranking at or above the median of the five comparison regions for all indicators. Demographic change is causing the percentage of people of working age to decline in Switzerland. However, in contrast to the comparison regions, Zurich and Switzerland are still in a fairly good position. This is because population ageing is even more advanced in the other regions, notably in Germany.

The Canton of Zurich achieves the highest value of 100 with respect to share of ICT specialists. They are a significant success factor for the economy by virtue of their cross-sectional function and digital expertise. Zurich also performs very well in regard to lifelong learning – with Zurich's residents showing high ongoing readiness to acquire new skills and qualifications. Zurich's labour market with its wide spectrum of industries has a labour force that is not only qualified but also adaptable and developable.

High attractiveness

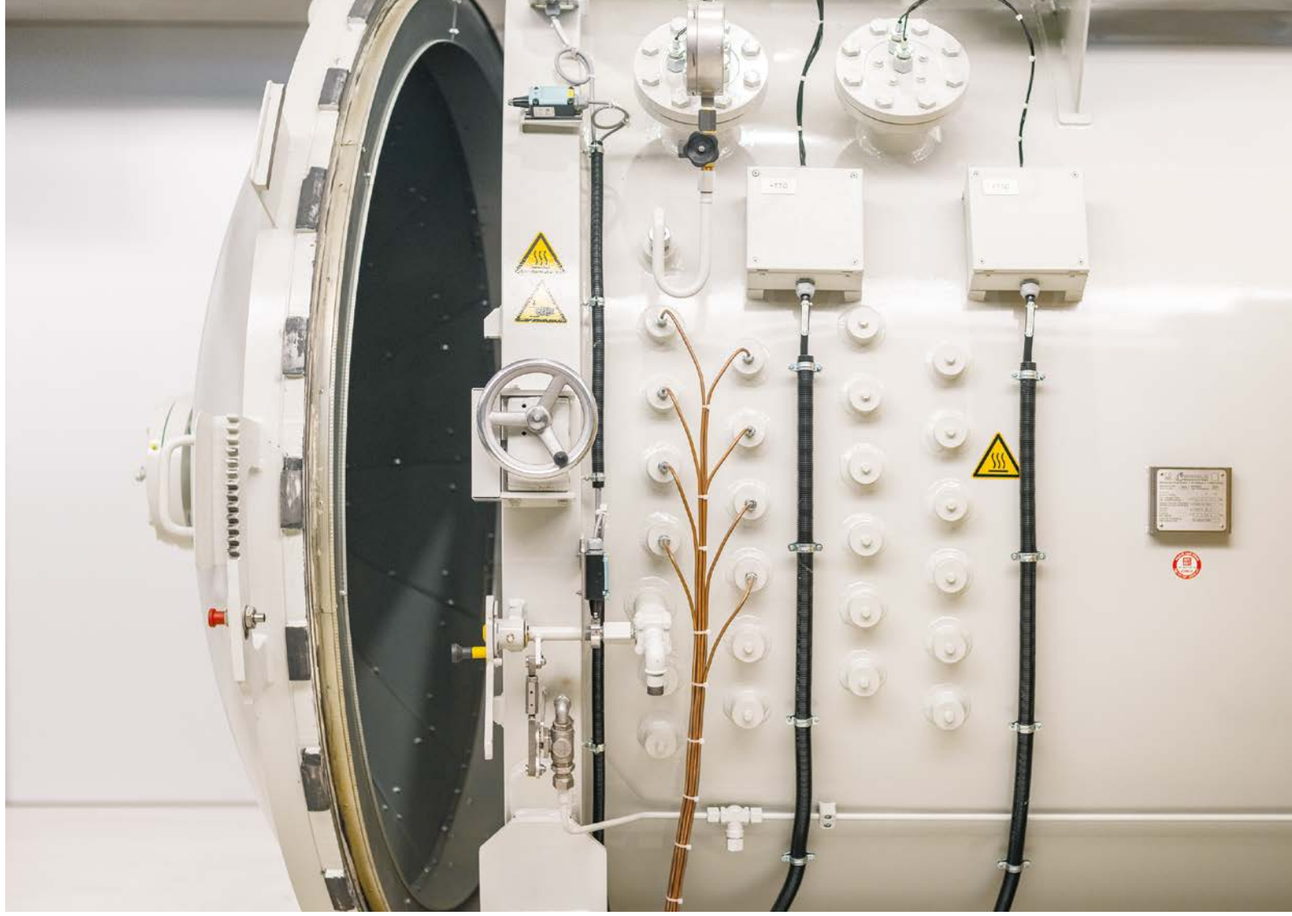
Switzerland and hence also the Canton of Zurich also do fairly well in the second area of the labour market and human capital location factor.

According to the IMD World Talent Ranking (WTR), Switzerland comes in well above average in terms of capacity to attract international talent. This indicator measures how well a location is equipped to attract, develop and also sustainably retain talent.

Furthermore, a high employment rate shows that a large proportion of the working-age population is able to find work and to contribute productively to the economy. Having said that, marked recruitment difficulties point to a well-known problem: shortage of labour. In many industry sectors, demand outweighs supply. Apart from demographic trends, the economic success of the Canton of Zurich is an important driver of this development. The growing supply of jobs is a consequence of the positive economic development. Seen from that vantage point, Zurich's recruitment challenges are also the flip side of the coin and put its poor performance for this indicator slightly into context.

"The need for part-time jobs is increasing for men and women. Therefore, job and top sharing models are important so as to be in a position to recruit sufficient qualified workers in the future as well."

Viktoria Mauz, ERNI (Value Stream Lead, SME consulting in the domain of digitisation)



An autoclave in the Switzerland Innovation Park Zurich produces fibre-reinforced composites.

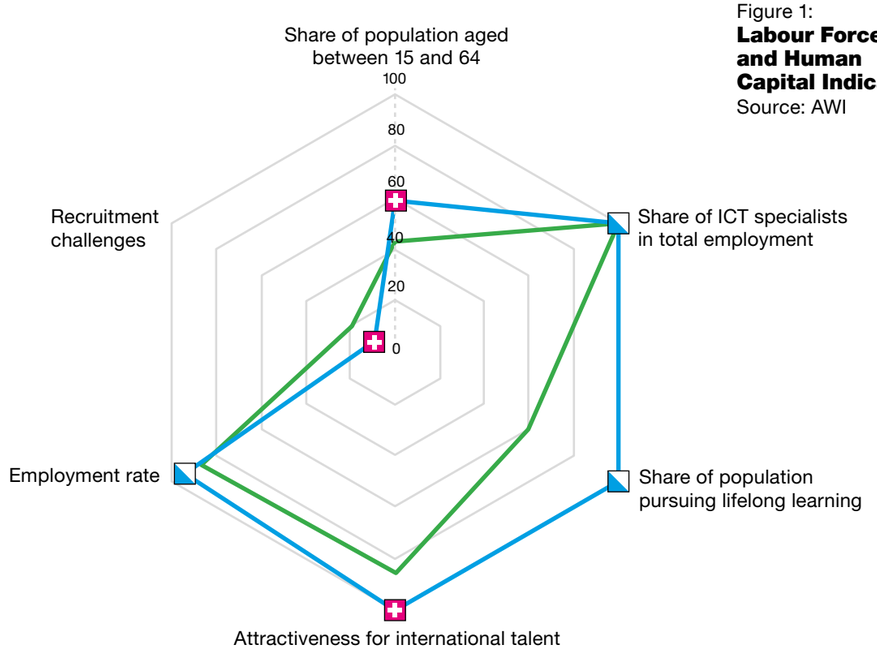


Figure 1:
Labour Force and Human Capital Indicators
Source: AWI

Location Factor 2:

Education

In order to secure a sufficient labour force and sufficient skilled workers, a location must have a functioning education system that produces the qualifications that businesses need. University education is an important factor in this regard. Highly qualified university graduates, and thus also the quality of the universities, are an important location factor, especially for highly value-added companies. But equally important is good vocational education which trains practically oriented workers and specialists and also provides the foundation for local trade which, in turn, renders a wide range of services for companies, as a cross-sectoral function so to speak. This is where Switzerland with its dual-track education system holds a major advantage, but one that cannot be measured or assessed with an indicator due to lack of comparability of education systems.

"Zurich's excellent education landscape and its desirability as a business location are central factors for our access to the best talent. These factors must be looked after in the long term."

Juan Beer, Chief Executive Officer Zurich Switzerland

Excellent university landscape

The quality of university education can, by contrast, be measured using various indicators. Several established university rankings exist already, most notably the QS World University Ranking. Zurich with its internationally renowned universities does very well: if the number of top 200 universities is measured relative to the population of a country, Switzerland achieves the highest value of 100 overall within the OECD countries. Seen in relation to the population, Switzerland is thus world class. This top position is also reflected in other university rankings.

Zurich's universities have a strong appeal to students and offer an excellent educational infrastructure. At the same time, the high proportion of frequently cited scientific publications are a reflection of the excellent research work and high scientific reputation of the universities in the Canton of Zurich.

Vocational education – a key resource

In terms of number of scientific publications resulting from international collaborations, Zurich is on a par with the five comparison regions. This indicator provides information on networking and collaboration of research institutions of a region on a global level. The fact that Zurich does not stand out more clearly from the comparison regions is presumed to be due to the fact that the universities in the comparison regions have a similarly strong international focus and are also well connected.

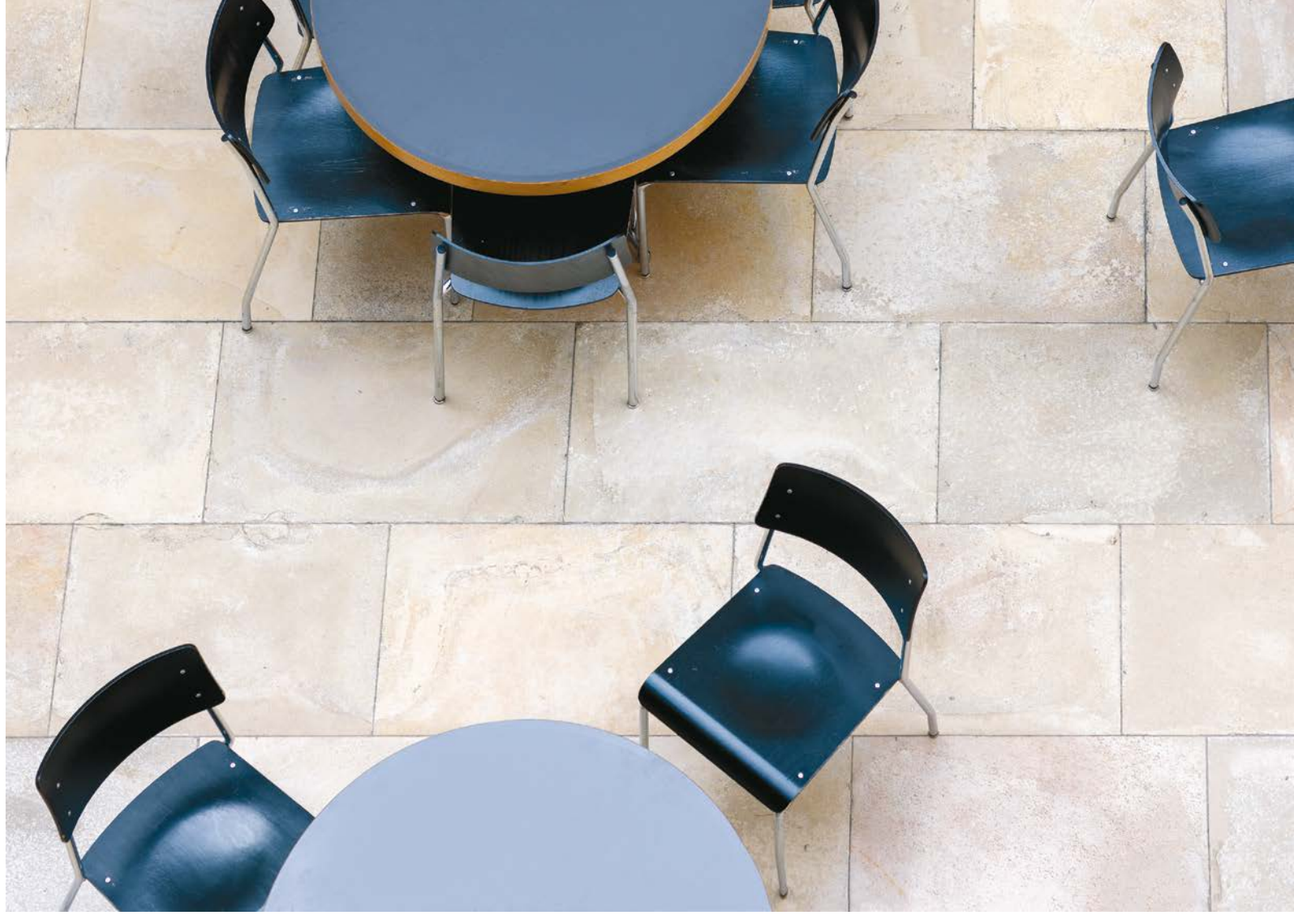
Zurich performs slightly better than the comparison regions in terms of share of tertiary level graduates relative to its total population. Switzerland's integrative approach to education and the immigration of highly qualified individuals are likely to play a role in this regard. Unlike most other European regions, a tertiary qualification can also be earned in Switzerland by dint of an apprenticeship. This broad educational offering contributes decisively to vocational development and to bolstering the labour force.

Lack of tertiary STEM graduates

A weakness is discerned in terms of STEM graduates: Switzerland is merely on a par with the other regions in this regard. In an increasingly digitalised and technology-oriented world, STEM knowledge and skills are, however, of pivotal significance for innovation and competitive capacity.
Accordingly, a higher number of STEM graduates could make Zurich even more attractive for high-tech companies and further bolster the economy. It should be noted here that this indicator only compares tertiary-level STEM degree graduates.

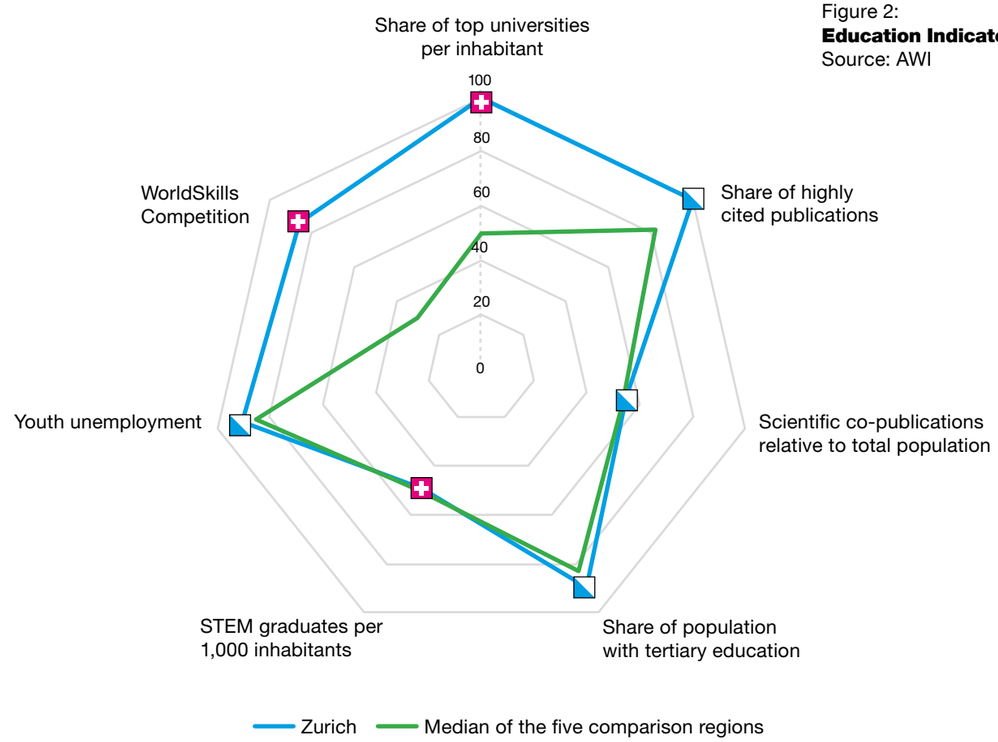
However, a large number of computer scientists, automation engineers, electronics engineers and surveyors also receive training in Switzerland – meaning they are more hands-on STEM specialists: on completing an apprenticeship with a vocational baccalaureate, they also have access to tertiary-level (further) education, thanks to Switzerland's permeable education system.

Switzerland's dual-track education system is what makes its education system unique. However, the quality of vocational education is much harder to measure than the quality of educational institutions. This is because many countries are unfamiliar with vocational training and education, or their system is different from that of Switzerland. That is what makes it difficult to compare the quality of vocational education with other regions. However, Switzerland's low youth unemployment rate points to the fact that it is very successful in integrating young people into the labour market after completing school. Switzerland performs better in this regard than the comparison regions. Young apprentices from Switzerland regularly achieve top results at the WorldSkills vocational championships.



The University of Zurich's atrium is a place where students can meet, eat and chat.

Figure 2:
Education Indicators
Source: AWI



Location Factor 3:

Research and Innovation

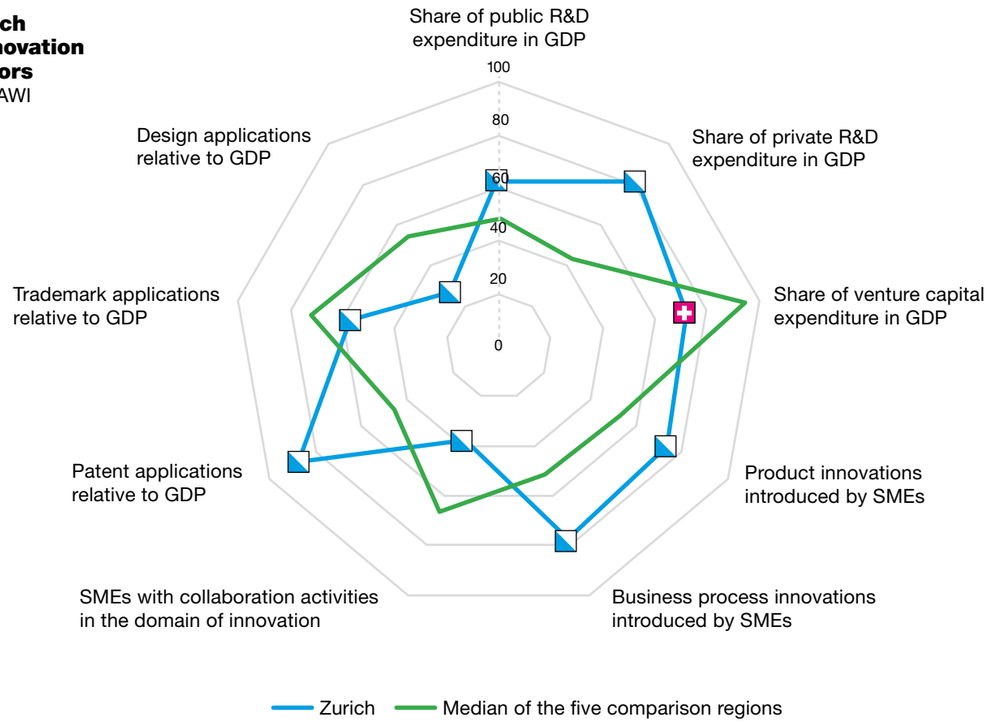
Apart from a labour force and a good education system, research and innovation also play an important role in the attractiveness of a location. Anyone looking for long-term growth needs innovation and, thus, a well-developed research landscape. But innovations are also central to the economy and to society as a whole because innovation creates prosperity. This rings particularly true for the Canton of Zurich which has to make do without any natural resources and with just a small domestic market.

High research expenditure

This location factor can be measured along two areas: investments made (input factors) and innovations resulting therefrom (output factors). The former can be measured against expenditure for research and development as well as venture capital expenditure. In terms of both public and private R&D expenditure, the Canton of Zurich performs very well compared to the median of the five comparison regions. Particularly the private sector invests a great deal in research and development activities.

This good result stands in some contrast to venture capital expenditure where Switzerland (no values are available for the Canton of Zurich) performs below average. Start-ups and innovations are less frequently financed via the venture capital market than in Anglo-Saxon countries, for example. Different risk tolerance levels may offer an explanation for this. What may also play a role is the fact that well-established SMEs are already important drivers of innovation in the Canton of Zurich, in relation to which other forms of financing generally prevail while, by contrast, venture capital is chiefly used to support young enterprises and start-ups. It is noted that a relatively large amount of venture capital is available in Switzerland in the seed and early stage. In contrast, Switzerland falls behind on scaling and long-term growth of start-ups (later-stage financing). Besides a lower risk tolerance, this may to some extent also be due to Switzerland's relatively small sales market that makes it less interesting for cost-intensive later-stage investments.

Figure 3:
Research and Innovation Indicators
Source: AWI



Strickhof is a centre of excellence for agriculture, food and home economics.

Innovative but poorly connected SMEs

There are significantly more indicators available for measuring output – including very comparable indicators for SME innovation activities. The Canton of Zurich has a high share of innovations compared to the five comparison regions. This is positive insofar as SMEs are often rooted locally and innovation activity is diversified across various industry sectors. By contrast, SMEs in the Canton of Zurich lag behind the comparison group for innovation collaborations.

This is surprising to the extent that the Canton of Zurich, with its proximity to ETH, the University of Zurich and the universities of applied sciences, is in a good position for this. However, it is conceivable that these favourable local conditions together with Switzerland's well-established associations ("Verbände") may tend to slow down supra-regional collaborations of individual SMEs. There is catching up to do on all accounts, seeing that a well-connected innovation ecosystem also facilitates funding and access to venture capital.

"Zurich already offers many aspects required of an innovative location, such as universities, talent, players from industry, SMEs and a vibrant start-up scene. What is needed is better interaction between these players. Stronger networking and collaboration will further strengthen the location along the value-added chain of research, research and development and production."

Maria Olivares, UZH Innovation Hub

So far, going by the number of innovations and patent applications (output) across all industry sectors and companies, innovation activity of Zurich's economy has not been hampered by this. Zurich takes the lead for patent applications in the regional comparison. However, it is questionable whether Zurich can maintain this position if cooperation activities of its SMEs do not improve. These activities are important for Zurich's economy. As for trademark applications and application design, the Canton of Zurich comes in behind the comparison group.

Location Factor 4:

Tax and Regulatory Environment

Tax burden and regulatory parameters play an important role in the competition between locations. For many international companies, they are a decisive factor in opting to locate in Switzerland and in the Canton of Zurich. In this respect, not only international but also inter-cantonal competition plays a role.

Zurich performs comparatively well in the international context for general regulatory parameters. To a considerable extent this is due to the rule of law, the level of which is nowhere higher than in Switzerland. It is measured using a combination of factors, such as protection of property rights or integrity of the legal system. Zurich also does better than the comparison regions in regard to company and product market regulations. This indicates that state involvement in Switzerland is less strong. There is, however, room for improvement – in regard to product market regulation, for instance.

Not such a liberal labour market after all?

What comes as a bit of surprise is the below-average result for labour market regulation, particularly in view of the fact that Switzerland's liberal and adaptable labour market is generally regarded as a model for success.

The core element of a flexible labour market is the ability to hire staff according to need and, if need be, to lay them off again – for instance, if a new business idea does not work out as hoped or in the event of a deterioration of the economic situation. This flexibility is crucial for companies to invest in innovation which, by nature, involves a greater risk of failure. In this respect, the Swiss labour market offers companies a locational advantage. The fact that Switzerland nonetheless ranks below the comparison regions for this indicator is due to its less liberal labour law which, inter alia, contains strict specifications regarding maximum working time and rest periods. It is also due to the collective labour agreements (GAV) declared to be generally binding, as well as to minimum wage requirements.

The fact that, unlike the comparison regions, Switzerland has compulsory military service also has a negative impact on the rating. This explains why the median of the five comparison regions ultimately shows a higher value despite Switzerland's flexible labour market.

A popular indicator for location comparisons in the domain of regulatory parameters is the length of time needed to set up a company; a likely reason for this is because it can be measured in hours and days, giving an impression of the speed of public administration processes.

Switzerland, and thus also Canton of Zurich, performs slightly below average in this respect. However, it needs to be borne in mind that setting up a company is only a small step, the decisive part being what follows thereafter. When deciding on a location, it is unlikely to matter whether setting up a company takes a day more or a day less. Rather, what will matter is the environment in which a newly founded company can thrive and grow. With the exception of availability of venture capital, Switzerland does well in this regard.

Moderate tax burden by international standards, high tax burden by national standards

The tax burden is a hard factor in the competition of locations, both for companies and for their employees. While for companies the amount of tax they pay to the state is directly relevant for profits, it is an indirect, but co-decisive factor for top executives as to how attractive a location is for them.

That is the reason for measuring the tax burden for both companies and highly qualified professionals. The BAK Taxation Index for companies measures the effective average tax rate for companies and takes different types of tax burdens into account. The Canton of Zurich fares better in regard to this indicator than the five comparison regions, there being considerable differences between the regions: companies in Dublin pay slightly less tax than companies in the Canton of Zurich; companies in the Munich region, by contrast, pay significantly more. A comparison within Switzerland paints a very different picture, with Zurich ranking in the bottom two.

When it comes to the tax burden of highly qualified professionals, the Canton of Zurich has an even bigger lead compared to the five comparison regions, which is also measured using the BAK indicator. Zurich also scores highly within Switzerland on this indicator.

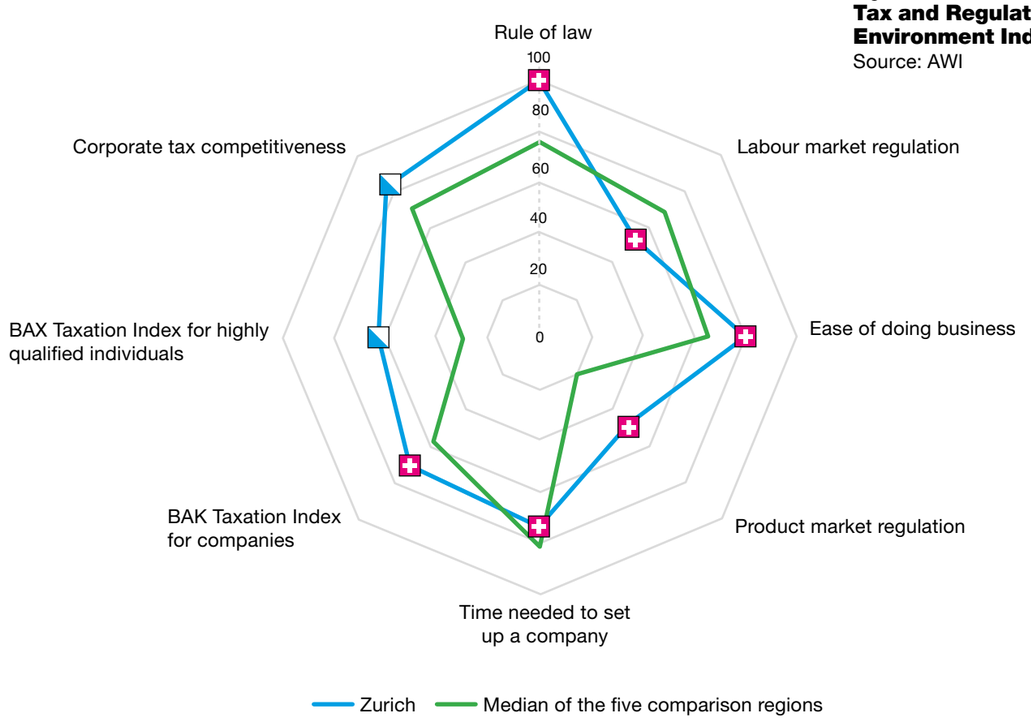
Ultimately, what is important, however, are not just tax rates, but also the structure and the transparency of the tax system. Zurich scores particularly well in this regard, as the indicator for tax system competitiveness shows. The tax authorities also play an important role in this context. If they work efficiently and prove to be a collaborative contact partner, this can contribute considerably to the attractiveness of a location.

«Die direkten Kommunikationswege zwischen Unternehmen und Behörden in der Schweiz werden sehr geschätzt und erleichtern die Geschäftstätigkeit.»

Anna Eldring, Schweizer Steuerexpertin bei Takeda

The Department of Finance focuses on healthy and strong public finances.

Figure 4:
Tax and Regulatory Environment Indicators
Source: AWI



Location Factor 5:

Cost Environment

The general cost environment is a key location factor for businesses. In the case of the Canton of Zurich, it is also an ambivalent one. Roughly summarised, success comes at an expense: the fact that the Canton of Zurich has been a thriving business location for many years, as well as a high-quality location for employees and their families to live, means that prices and wages are high.

Bringing up the rear for labour costs

Accordingly, the Canton of Zurich performs poorly in comparison with all of the other regions for labour costs: nowhere else are labour costs per hour worked higher than in Switzerland and in the Canton of Zurich.

"The OECD minimum tax rate reduces international tax competition and, in so doing, increases the significance of a location's other cost factors."

Anna Eldring, Swiss tax expert at Takeda

Wages, and not excessively high social security contributions, are primarily what make labour costs more expensive in Zurich compared to other locations. This is shown in the indicators "Costs for social security contributions" and "Average tax burden" (which measure the share of tax and social security contributions in average labour costs), in relation to which the Canton of Zurich performs better than the other regions. However, this comparison does not take occupational pension contributions (BVG) into account which are mandatory in Switzerland from a certain income threshold and which employers pay half of. If BVG contributions were also taken into account, costs for social security contributions would probably be closer to the comparison regions.

Wages – also a locational advantage

While high labour costs tend to be a disadvantage for businesses, the situation is different for employees: the high wages in Zurich contribute to its appeal as a place to live, especially as it also scores well for purchasing power and quality of life. In the competition for the best talent, high wages can also be advantageous for businesses, especially in view of labour shortage: companies succeed in attracting and retaining highly qualified and productive employees. High wages and good quality of life are precisely what make qualified workers want to settle in the Canton of Zurich. Thus, they are ultimately an expression of the canton's attractiveness as a location to live and work in.

Zurich's high labour costs are also slightly offset by its moderate tax burden by international standards on legal entities and natural persons. The Canton of Zurich performs better on this indicator than the five comparison regions.

Switzerland, which includes Zurich, performs better than the comparison regions in regard to electricity prices for businesses. However, electricity prices are, in effect, significantly lower in many OECD countries. High electricity prices present a particularly heavy cost burden to the manufacturing industry. Since companies in the Canton of Zurich are predominantly in the services sector, accounting for eighty-seven per cent of value creation, electricity prices are ultimately a subordinate cost factor.

New materials, technologies and products are tested and further developed in the modular NEST research and innovation building of Empa.

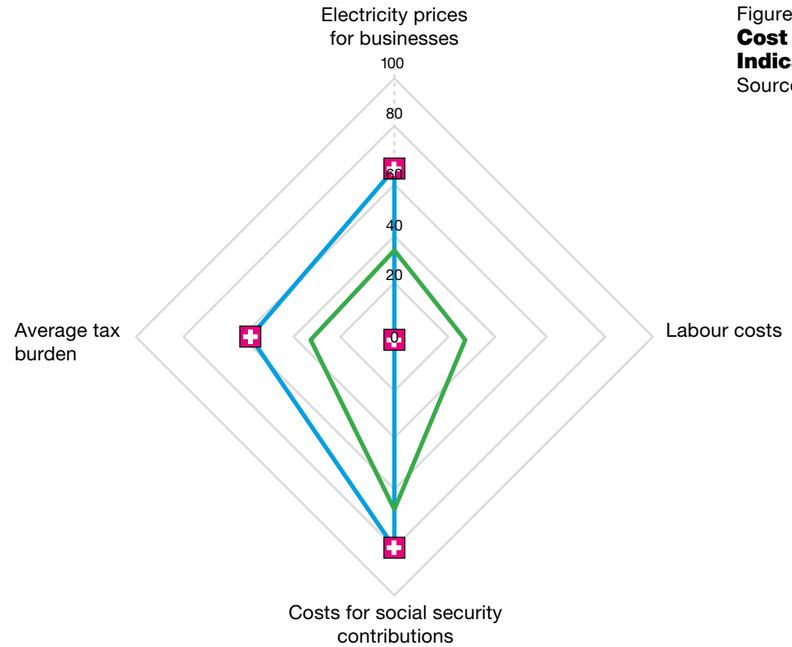


Figure 5:
Cost Environment Indicators
Source: AWI

Location Factor 6:

Infrastructure

Businesses depend on a functioning infrastructure system, in physical and in digital form. Both can be measured using international indicators.

Easily accessible – globally, regionally and locally

In terms of physical infrastructure, it can be said that Switzerland and the Canton of Zurich are easy to reach by air, rail and road thanks to their favourable location in the heart of Europe. Zurich Airport is an intercontinental hub in continental Europe with direct connections to a host of destinations across the globe. In addition, the Swiss railway network is connected to the high-speed rail networks of France and Italy (TGV, Frecciarossa). Within the canton, municipalities and recreational areas are easy to reach thanks to the services provided by the Zurich Transport Network (ZVV): S-trains, buses and trams run frequently and their timetables are coordinated so as to offer continuous travel chains for passengers.

Despite this ease of accessibility, the Canton of Zurich performs only slightly better than the five comparison regions for both BAK accessibility indices. These indices show the continental and intercontinental accessibility of economic hubs. The result can be explained by the extremely high benchmark set by London, Amsterdam and Munich: these three destinations have highly populated catchment areas and are home to the most important hub airports in Europe, with high flight frequencies and a multitude of intercontinental destinations.

Improvable E-government

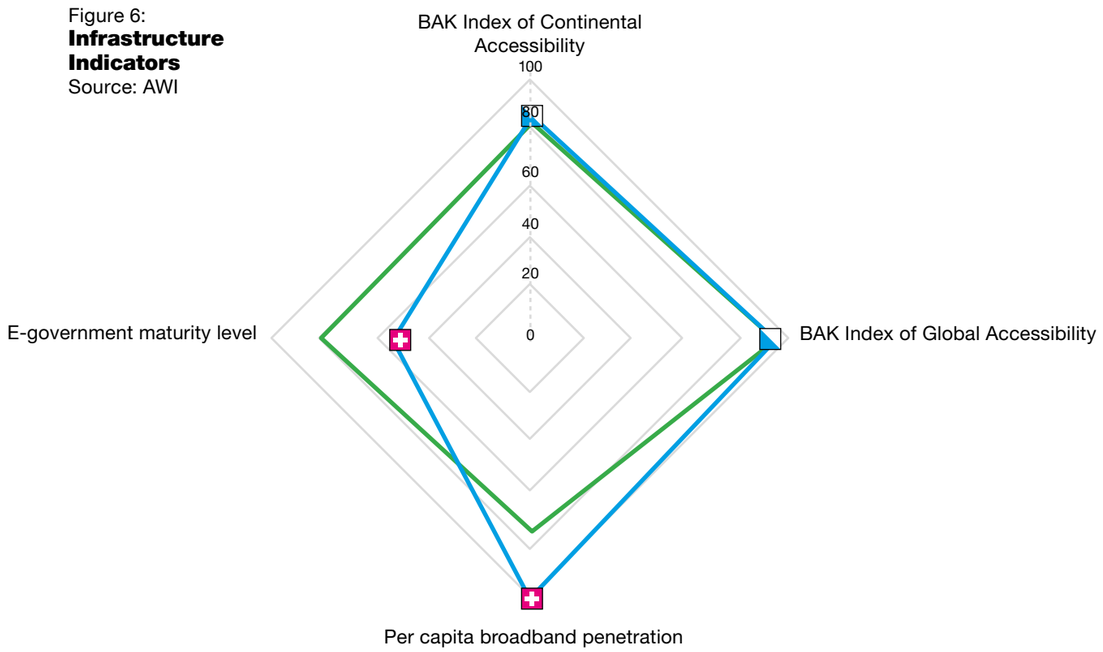
Digital infrastructure offers a slightly ambivalent picture: on the one hand, and as the per capita broadband penetration indicator shows, Switzerland is digitally well connected and, hence, so is Zurich. For Zurich's residents, access anywhere and anytime to a high-performance broadband network is a matter of course, be it in the office, when working from home, in a café, in a park or when travelling on a train. Many households in the city of Zurich are connected to the high-performance fibre network. Most of the Greater Zurich Area already has 5G network coverage.

By contrast, the E-government indicator reveals a clear need to catch up. This applies to the Canton of Zurich and to Switzerland as a whole. Despite its undisputed advantages, federalism tends to slow things down, particularly in the domain of E-government. The consequence is poor performance by international standards: Switzerland's E-government maturity level is markedly below the median of the five comparison regions.

Little space to expand

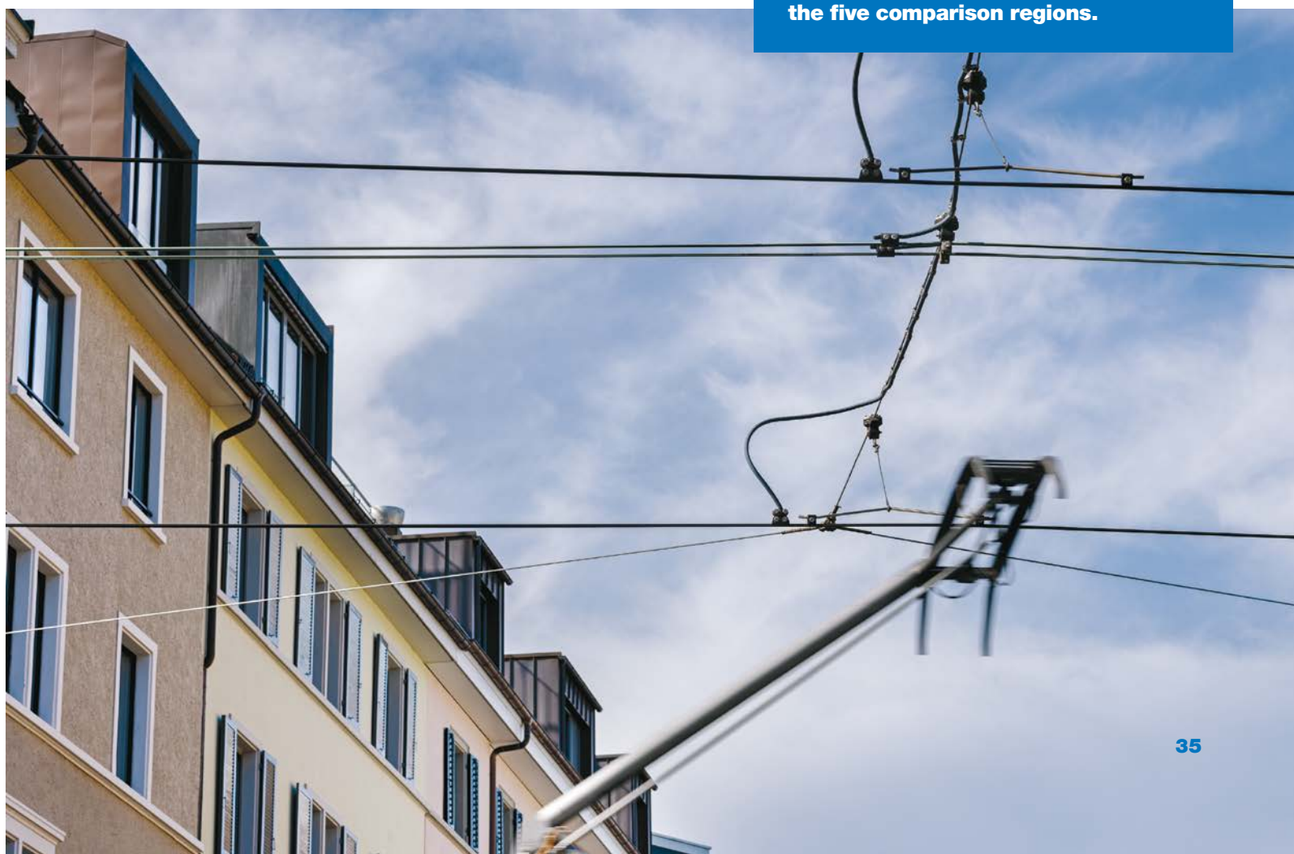
In addition to public infrastructure, businesses also rely on the availability of office and production space. Demand for space often tends to increase or change over time – when a company grows or is subject to restructuring, for instance. A restraining factor in this respect is the Canton of Zurich's limited availability of unused building zones compared to other cantons.[10] Furthermore, rents and land prices for commercial space are comparatively high, which also reflects this paucity.[11] Since there is no easily measurable data to perform an international comparison on availability of space, this value could not be included in the Smartspider.

Figure 6:
Infrastructure Indicators
Source: AWI



Switzerland's E-government maturity level is markedly below the median of the five comparison regions.

Trams are the most important mode of transport within the city of Zurich.



Location Factor 7:

Economic Performance

Economic performance, though less of a hard factor, is nonetheless an important location criterion. It measures how economically strong and productive a region already is, and shows what businesses can expect to find in terms of economic structure when locating in a new business environment.

High prosperity

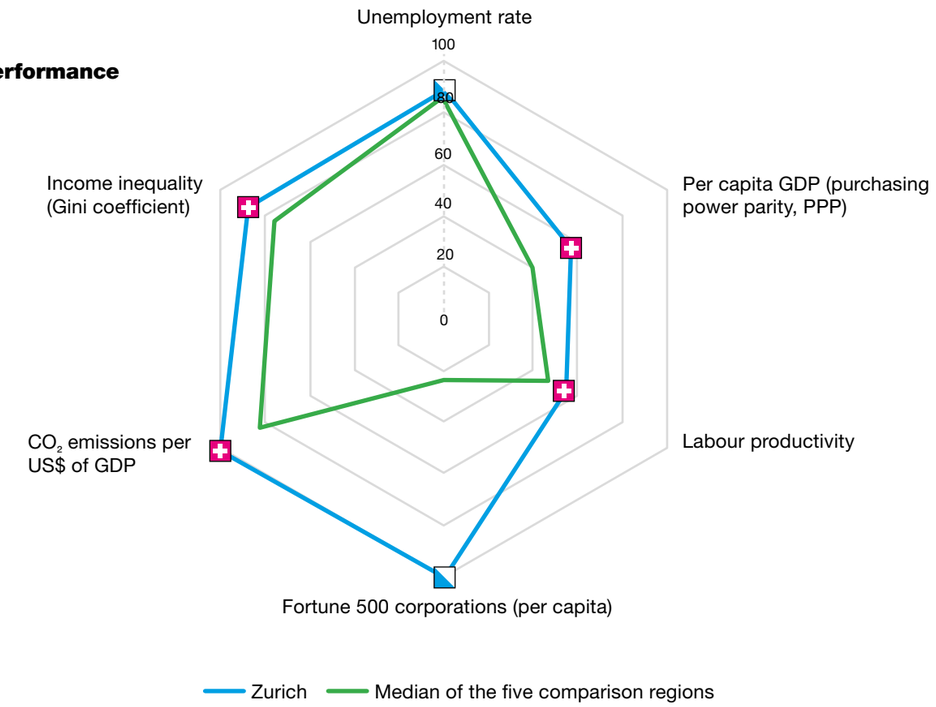
Per capita GDP and labour productivity provide easily measurable indicators. Both show the level of prosperity in a region. Zurich performs very well for per capita GDP in comparison with the other regions. Dublin is the only region with a higher per capita GDP at purchasing power parity (the Smartspider compares GDP at purchasing power parity at country level; Zurich's per capita GDP is above the Swiss average). Zurich and Switzerland also score better than the median of the comparison regions for labour productivity, with Dublin again achieving the highest values. The gap between Zurich and the comparison regions is, however, slightly smaller than for per capita GDP. Zurich's high employment level in OECD comparison and its strong growth in personnel-intensive and thus less productive industry sectors, such as healthcare and social services, are likely to have contributed to this result.[12]

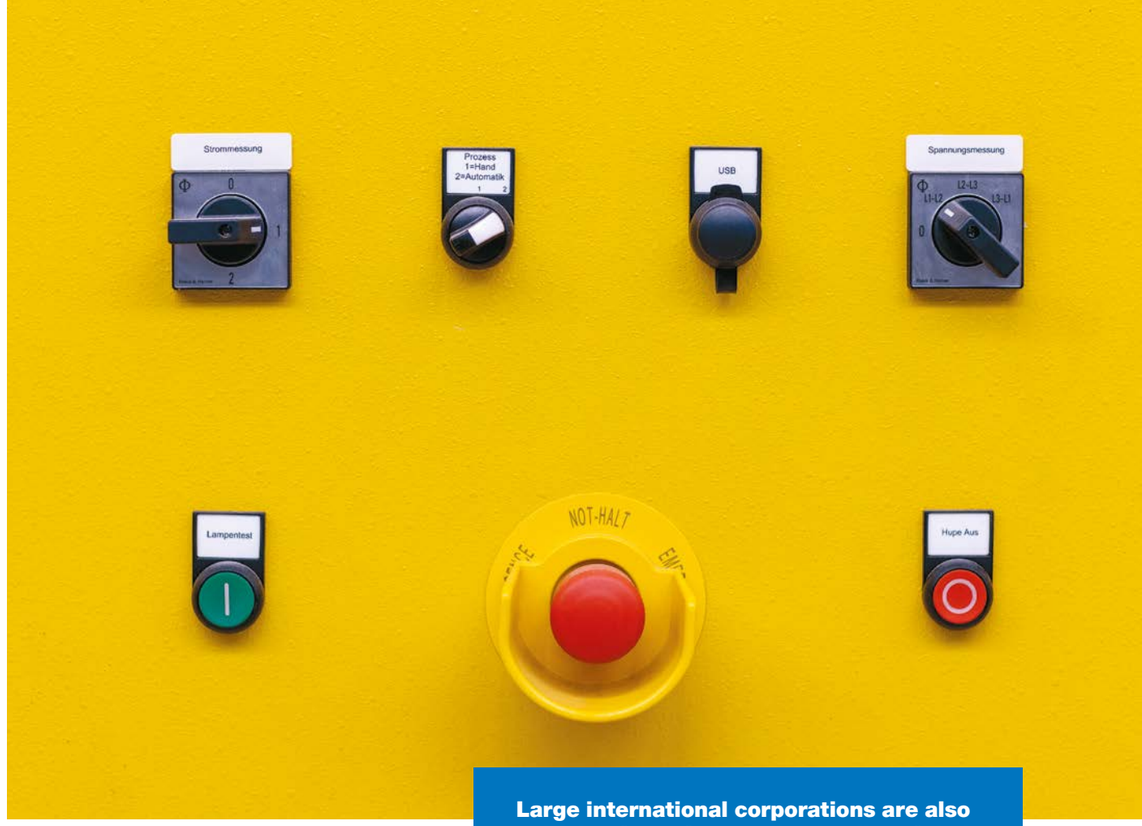
There is room for improvement here, particularly with a view to being in a better position to tackle the structural and increasing shortage of labour. At the same time, and paradoxically, the Swiss labour market's high integration capacity has a somewhat unfavourable effect on this indicator because it is more successful at employing less productive individuals in the regular labour market.[13]

High concentration of international corporate groups

The strong economic performance of the Canton of Zurich, as measured by per capita GDP and productivity, is achieved by virtue of a mix of SMEs and large national and international corporations. None of the comparison regions has more high-revenue corporations (Fortune 500 companies) per capita than the Canton of Zurich. Though only five in number, and thus significantly fewer than the hundreds of thousands of SMEs that account for over ninety-nine per cent of companies in the Canton of Zurich, they have a major direct and indirect impact on the region's economic performance. They are direct employers for thousands of employees and they are clients for a multitude of SMEs and tradespeople from the services and manufacturing sector. Large international corporations are also a driving force for a region by dint of their international profile, and develop an important multiplier effect for a region.

Figure 7:
Economic Performance Indicators
Source: AWI





The autoclave in the Switzerland Innovation Park Zurich produces lightweight and equally high-strength components using heat and pressure.

Large international corporations are also a driving force for a region by dint of their international profile and, thus, develop an important multiplier effect for a region.

The unemployment rate is closely linked to GDP, productivity and number of large corporations. It shows how many people in a region find work and, in so doing, contribute to economic performance. A low unemployment rate means that a high proportion of the population is contributing to economic performance. SMEs and large national as well as international corporations in the Canton of Zurich benefit from a well-functioning labour market: the unemployment rate is low and employment correspondingly high. Of the five comparison regions that all score a high value, only Munich/Upper Bavaria has an even lower unemployment rate than the Canton of Zurich.

Relatively low CO_2 intensity, evenly distributed market income

It transpires, furthermore, that economic performance in Switzerland can be achieved with relatively low emissions – CO_2 intensity is lower than in the five comparison regions. Reasons for this are a highly developed and innovative economy and a comparatively large services sector. This measurement does not consider CO_2 emissions caused by imported products in other countries – which a location also has far less influence over.

Economic performance is achieved not only with relatively low emissions; it also leads to fairly evenly distributed income. The Gini coefficient shown in the Smartspider measures how (un)evenly income generated in an economy is distributed. The higher the value in the Smartspider the more evenly income is distributed. Switzerland achieves a score above the comparison regions' median in this regard. It can be said, therefore, that the local labour market ensures that achieved economic performance benefits a broad population. Looking at the Gini coefficient of disposable income rather than market income, Switzerland falls slightly below the median of the five comparison regions. This means that significantly more income is redistributed through government transfers in the comparison regions, in order to achieve a similar or slightly lower level than Switzerland. In other words: due to the relatively even distribution of income generated on the labour market, less government intervention to redistribute is needed in Switzerland than in other countries.

Location Factor 8:

Quality of Life

Quality of life is the last of the eight location factors – and a particularly important one for employees. It is much easier to generate employee enthusiasm about a location that offers a high quality of life which, in turn, also contributes to a productive and sustainable work performance.

Zurich takes top positions in various international quality of life rankings – including the EIU Global Liveability Index, Mercer Quality of Living Survey and the Deutsche Bank Liveability Survey. These rankings often compare cities and provide a source of information for businesses considering to move to a new location, which is why they focus, inter alia, on expat needs.

Different qualities within a small area

But how can quality of life be measured? For some, it means good air and environmental quality, others value a wide cultural offering. The EIU Global Liveability Index, for instance, includes those factors in its yearly assessment, as well as security and stability, infrastructure and work commutes, quality of healthcare and availability of good state and international schools.

Generally speaking, it can be said that the Canton of Zurich successfully satisfies diverse needs within a small geographical area: people who enjoy living close to nature can do so in Zurich and can still pursue a highly skilled job in the city without having to endure hours-long commutes – as would be the case in a metropolis like London, for instance. Zurich also performs well by international comparison for environmental quality, security, stability, quality of healthcare and availability of schools.

In contrast, Switzerland's high cost of living has a negative impact on quality of life, especially costs for housing and healthcare. The same applies to shortage of housing that makes it especially challenging for newcomers to find suitable and affordable housing. However, this also needs to be put into perspective: whereas purchasing power comparisons show that prices and cost of living in Zurich are high, wages are also high, resulting in high purchasing power by international standards.

"Today, we are successful in attracting talent to Zurich because Zurich is a place that draws employees from all over the world: there is a high quality of life, political stability, the school system is good and there are abundant recreational activities on offer to pursue and enjoy."

Samuel Moser, Roche Glycart (Schlieren), Chief of Staff

International Rankings on Quality of Life

	EIU	Mercer	DB
Zurich	3	2	1

Quality of Life Indicators
Sources: Economist Intelligence Unit Global Liveability Ranking (EIU)
Mercer Quality of Living Survey Deutsche Bank Liveability Survey (DB)

Conclusions: How Well Does the Canton of Zurich Do Overall?

Zurich has key strengths and is a cut above its most important European competitors for the location factors "education", "economic performance" and "quality of life". Zurich's excellent universities and very hands-on vocational training system, its high economic strength and concentration of innovative industry sectors and businesses, as well as its stability, security and good healthcare system, all factor into these above-average results.

Four other location factors present a more ambivalent picture. They are "labour market and human capital", "research and innovation", "tax and regulatory environment" and "infrastructure". While Zurich scores well to very well on many sub-indicators, there is also clear potential for improvement.

Zurich scores mixed results in the location factor "cost environment", primarily due to Zurich's very high labour costs. Since labour costs are both a boon and a bane for location attractiveness – high costs are ultimately an expression of economic success– the need for action in regard to this location factor is limited.

The situation is a different one for the location factors marked "Good with some room for improvement", in relation to which the need for action is more urgent. Due to the recruitment challenges that Zurich and Switzerland as a whole face, they are clearly behind the competition for the location factor "labour market and human capital": In hardly any other location is it more difficult for companies to find sufficient qualified employees. Potential for improvement in terms of "research and innovation" lies, on the one hand, in venture capital: whereas during the early stage of setting up a start-up there is a good deal of capital available in Switzerland, the five main competitors show a higher volume in the scale-up phase. On the other hand, SMEs in the Canton of Zurich lag far behind with respect to innovation collaborations. Compared to the other regions, SMEs in Zurich enter far fewer cooperation activities which hampers the innovation capacity of SMEs in the long run. Potential for improvement with respect to "tax and regulatory environment" is seen in labour market regulation which is somewhat rigid due to Switzerland's dated labour law. The Canton of Zurich ranks in the upper midfield by international comparison for corporate taxes but takes bottom place within Switzerland. Zurich scores well for the location factor "infrastructure" thanks to good accessibility and Zurich Airport, but lags behind, just like the rest of Switzerland, with respect to E-government.

General Performance of the Canton of Zurich

Labour Market and Human Capital
+ Employment rate
+ Continuing education rate
- Recruitment challenges

Cost Environment
+ Electricity prices
- Labour costs

Education

Infrastructure
+ Accessibility
+ Broadband connections
- E-government

Research and Innovation
+ Patents
+ Research expenditure
- Innovation collaboration

Economic Performance

Tax and Regulatory Environment
+ Ease of doing business
+ Rule of law
- Labour market regulation

Quality of Life

Leading

Good with some room for improvement

Mixed results

Source: AWI

Possible Areas of Development

5

5. Possible Areas of Development

This comparison of the Canton of Zurich's location attractiveness with its main European competitors is an analysis of the current state of Zurich's environment. Possible future changes are not considered. However, this does not imply that location factors do not change over time. On the contrary: despite its good current position, the Canton of Zurich faces major challenges. There are various medium- and long-term developments from which considerable momentum and a high relevance can be expected for the business location that is Zurich.

Labour market and human capital

The location factor "labour market and human capital" is likely to be shaped, primarily, by three developments in the next few years: ageing, immigration and digitalisation.

According to forecasts of the Statistical Office of the Canton of Zurich, societal ageing will further increase in spite of immigration and rising birth rates. This will lead to a growing proportion of old-age pensioners and will likely further compound the shortage of labour, as a study conducted by the Office for Economy and Labour (AWA) suggests.[14]

Societal ageing concerns most European countries which means that the competition for talent, specialists and workers is likely to become even more intense.

The number of asylum seekers and refugees is also unlikely to decrease in the future. The associated effects on Zurich's labour market will be determined primarily by the expected length of stay and level of integration.

Digitalisation is likely to further drive structural change, especially through increased use of artificial intelligence (AI). This harbours the potential to mitigate the shortage of labour; at the same time, it also presents new challenges for both employers and employees, as a study carried out by the Swiss job market monitor AMOSA shows.[15]

Education

There has been a notable shift of jobs towards technology- and science-intensive industry sectors in recent years.[16] Digitalisation is a significant driving force behind this structural change. This alters the requirements on the job market.

The education system must anticipate which qualifications will be in demand in the future. Digital skills, data management, creativity and soft skills are likely to become even more important, while repetitive and administrative tasks will increasingly be eliminated.[17]

The rapid pace of change increases the significance of lifelong learning. Switzerland and the Canton of Zurich are well positioned thanks to their dual-track and practically oriented education system, but must adapt it to increasing qualification requirements.

Switzerland's relationship with the EU plays an important role for the education system, particularly at university level. Permanent exclusion from the EU exchange programme (Erasmus) would have negative consequences.

Research and innovation

Climate change and security of supply are two major challenges of the future that call for innovative solutions and, thus, for investments in research and development. The Canton of Zurich needs good framework conditions in order to continue being one of the leading locations for cleantech, energy security and security of supply. Looking to the future, innovations and start-ups are also likely to be increasingly financed through venture capital. It will be important for Zurich as a business location to improve access to venture capital, especially in regard to later stage funding.

For Zurich as a research and innovation location, access to the EU's research programmes (Horizon) is particularly significant. A permanent exclusion would weaken Zurich's position as a location for research and could only be partly offset by increased collaboration with third countries.

Tax and regulatory environment

To date, the level of corporate tax has been an important factor in the international competition between locations. However, with the new OECD minimum tax rate which is being be implemented in Switzerland by levying a supplementary tax from 1 January 2024, international tax competition will increasingly shift towards subsidy competition. This presents a paradigm move with corresponding effects on the Canton of Zurich.

It will, therefore, be even more important for Zurich to offer efficient and transparent tax and regulatory parameters, while not losing sight of overarching objectives, such as climate protection (incentives for CO_2 reduction) and security of supply (incentives for energy efficiency).

Apart from a change of paradigm in tax competition, increasing social and political scepticism towards growth may also impact the location factor "tax and regulatory environment". A resulting call for greater regulation could narrow the Canton of Zurich's desirability as a location.

Cost environment

So far, the location of Zurich has been able to partly offset high labour costs with a low tax burden, by international standards. For companies with an annual revenue of 750 million Swiss francs, this option will become more difficult in future as a consequence of the OECD minimum tax rate. This is likely to increase the pressure on the "cost environment" location factor, making it even more important to ensure that high labour costs, meaning wages, at the location of Zurich are in tandem with high productivity and value creation, and that the costs for social security contributions – despite an ageing society – remain moderate by international standards.

Achieving the climate goals while at the same time guaranteeing security of supply is likely to have a significant impact on the cost environment. What will matter for the location of Zurich is that both goals can be met simultaneously and without any major rise in costs.

Infrastructure

Over the next few years, the location factor "infrastructure" is likely to be significantly influenced by several simultaneous developments: population growth, climate change, geopolitical risks as well as structural change.

Population growth increases the pressure on both natural resources and physical infrastructure. The existing scarcity of available building and commercial space, as well as conflicts of use, could further increase. Opportunities arise through digitalisation making it possible to work from any location and also allowing peripheral locations to gain in appeal.

Whereas the structural shift towards a knowledge- and service-oriented economy reduces an economy's CO_2 intensity, it increases dependency on electricity, IT and telecommunications infrastructure.

In spite of the development of renewable energy sources and a more conscious use of natural resources, Switzerland is not energy self-sufficient. A well-regulated relationship with the EU and with neighbouring countries is, therefore, important for security of supply. A further requirement is digital infrastructure. Large-scale data is increasingly available, but can only be used with a corresponding digital infrastructure. An important focus is on interfaces, on data security and on collaboration between governmental levels, as well as between industry and government.

Economic performance

Moving forward, the location factor "economic performance" will continue to be significantly influenced by demographic trends and structural change.

Ageing of society reduces the availability of the labour factor which is already manifesting itself today in the form of shortage of labour. From an economic perspective, this demographic trend will likely hamper prosperity, unless losses can be compensated for through higher labour force participation, e.g. of women and older citizens, through immigration and, above all, through productivity growth.[18]

Structural change and digitalisation offer opportunities for increasing productivity and bolstering Zurich as a location for research and innovation. Zurich's economic structure and existing innovation ecosystems provide a solid position to work from.

Quality of life

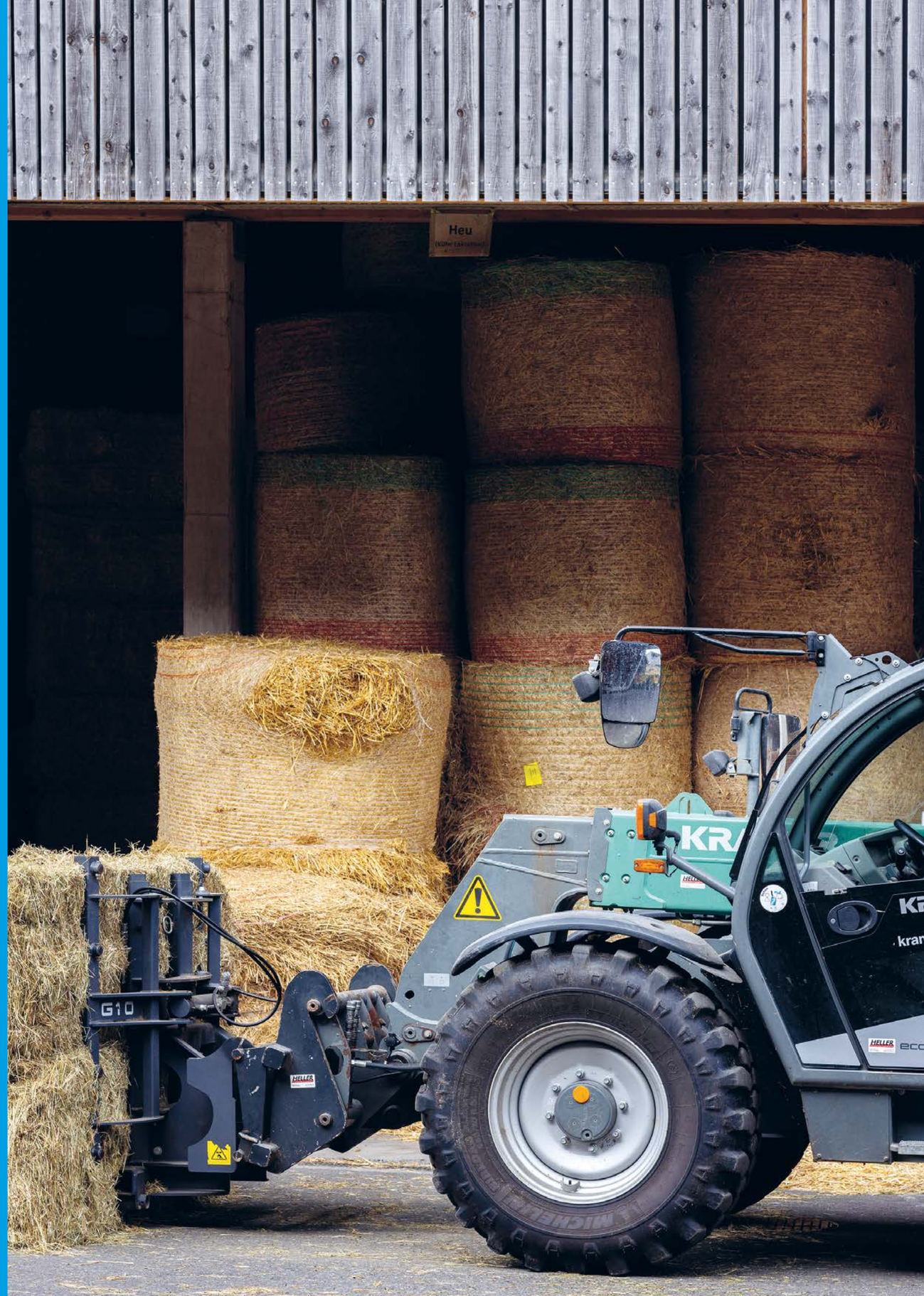
The factor "quality of life" is tied to many other factors: social and population development, environmental quality, security and stability, supply security, housing market, cost environment.

Population growth and the unwavering global trend towards urbanisation present challenges for the future which also affect the Canton of Zurich and could make the situation on the housing market even tighter. Solutions are called for that better balance supply and demand on the housing market and that address and promote densification of an attractive living and working environment.

The rise in cost of living due to inflation is likely to burden both individuals and businesses in the next few years. However, compared with other regions, this is likely to remain a relatively minor issue in the Canton of Zurich. Increasing geopolitical risks augment the collective need for security as an important aspect of quality of life.

Appendix

Definitions and Sources



Definitions and Sources of the Location Factors

Research and Innovation

Indicator	Definition	Source
Share of public R&D expenditure in GDP	Total R&D expenditure of the government sector relative to GDP (Eurostat). 2021 estimate.	EIS
Share of private R&D expenditure in GDP	Total R&D expenditure of the business enterprise sector relative to GDP (Eurostat). 2021 estimate.	EIS
Share of venture capital expenditure in GDP	Share of equity investment by location of the portfolio company relative to GDP. The data is from Invest Europe/EDC and includes information on equity investments (broken down by business location). 2022 estimate.	EIS
Product innovations introduced by SMEs	Share of small and medium-sized enterprises (SMEs) that introduced at least one product innovation. 2021 estimate.	EIS
Business process innovations introduced by SMEs	Share of small and medium-sized enterprises (SMEs) that introduced at least one business process innovation, which is either new for the enterprise or new for their market (Eurostat). 2021 estimate.	EIS
SMEs with collaboration activities in the domain of innovation	Share of SMEs with collaboration activities with other business enterprises and institutions in the domain of innovation. 2021 estimate.	EIS
Patent applications relative to GDP	Number of patent applications filed under the Patent Cooperation Treaty (PCT) at international level at the European Patent Office (EPO) compared to GDP (patents in relation to GDP). 2021 estimate.	EIS
Trademark applications relative to GDP	Number of filed trademark applications filed at EUIPO (European Union Intellectual Property Office) in relation to GDP (trademark applications in relation to GDP). 2021 estimate.	EIS
Design applications relative to GDP	Number of individual designs applied for at EUIPO in relation to GDP. 2021 estimate.	EIS

Human Capital and Labour Market

Indicator	Definition	Source
Share of population aged between 15 and 64	Share of population aged between 15 and 64. The higher the value, the “younger” the working population. 2021 estimate.	OECD
Share of ICT specialists in total employment	Share of ICT specialists (classification is based on ISCO codes) relative to total employment. 2021 estimate.	EIS
Share of population pursuing lifelong learning	Further education/training regardless of relevance for the individual’s current or future job. Data is collected through household surveys. The key figure is ultimately the ratio between number of persons who stated that they are pursuing further education and the total population. 2021 estimate.	EIS
Attractiveness for international talent	The IMD World Talent Ranking assesses the extent to which an economy succeeds in developing, attracting and retaining talent. The ranking is based on three factors: “Investment and Development”, “Appeal” and “Readiness”. Statistical data as well as survey data are used. 2022 estimate.	IMD WORLD COMPETI-TIVENESS
Employment rate	Indicates the percentage of the population in the age group 15-64 who are in employment. This indicator is based on the EU labour force survey. 2021 estimate.	Eurostat
Recruitment challenges	Percentage of companies experiencing difficulties in filling jobs. 2021 estimate.	Manpower

Education

Indicator	Definition	Source
Share of top universi-ties per inhabitant	Four metrics are used to rate universities: academic reputation, learning and teaching environment, research influence and internationalisation. Our index looks at all of the universities in OECD countries that are represented in the top 200 universities. The sum of points achieved in the ranking is then set in relation to the total population. 2023 estimate.	QS World University Rankings
Share of highly cited publications	Number of publications that will belong to the 10% most cited publications worldwide, divided by the total number of scientific publications. The result is an indicator for the quality of the research system. 2021 estimate.	EIS
Scientific co-publica-tions relative to total population	Number of scientific publications with at least one co-author resident abroad set in relation to the total population. International scientific co-publications are an indicator of quality of scientific research, as collaboration increases scientific productivity. 2021 estimate.	EIS
Share of population with tertiary education	Share of working-age population (aged 25-64) with a tertiary degree. 2021 estimate.	Eurostat
STEM graduates per 1,000 inhabitants	STEM graduates per 1,000 inhabitants aged 20-29. 2020 estimate (UK & Romania: 2019).	Eurostat
Youth unemployment	Youth unemployment rate is the percentage of unemployed persons in the 15-24 age group as a proportion of the total working population (sum of employed and unemployed persons) of the same age. 2022 estimate (Germany: 2021).	Eurostat
WorldSkills Competition	Average number of points achieved in all disciplines of the WorldSkills vocational championships. 2022 estimate.	WorldSkills

Tax and Regulatory Environment

Indicator	Definition	Source
Rule of law	This indicator looks at various aspect of the legal system and property rights (independence of judges, impartial courts, protection of property rights, military interventions in politics and in the rule of law, integrity of the legal system, legal enforcement of contracts, regulatory costs for the sale of land, reliability of the police). Indicators are compiled from various sources. 2022 estimate.	Fraser Institute
Labour market regulation	This indicator is composed of hiring regulations and minimum wage, hiring and termination regulations, labour union collective bargaining, working time regulations and compulsory military service. It is compiled by the Fraser Institute. Sources used are the World Bank and WEF reports. 2022 estimate.	Fraser Institute
Ease of doing business	This indicator looks at various business regulations (administrative regulations, costs of bureaucracy, setting up a company, impartiality of public administration, license restrictions, tax compliance costs). Indicators are compiled from various sources. 2022 estimate.	Fraser Institute
Product market regulation	The OECD's product market indicators are based on qualitative information drawn from laws and regulations that are coded as quantitative data (survey). They include the following sub-indicators: – Public ownership – Involvement in business operations – Simplification and evaluation of regulations – Administrative burden on start-ups – Barriers in service and network sectors – Barriers to foreign trade and direct investments 2018 estimate.	OECD
Time needed to set up a company	Time needed to set up a company measured in days (for all OECD countries). 2019 estimate.	World Bank
BAK Taxation Index for companies	The BAK Taxation Index for corporations measures the effective average tax rate (EATR) for companies. The calculation takes into account the different types of tax rate burdens, how taxes interact and the main regulations used to determine tax bases (e.g. rules on depreciation and inventory valuation). 2021 estimate.	BAK Economics
BAK Taxation Index for highly qualified individuals	The BAK Taxation Index for highly qualified individuals measures the EATR burden for highly qualified employees, meaning the effective burden of taxes and non-wage labour costs on the deployment of highly qualified individuals. 2021 estimate.	BAK Economics
Corporate tax competitiveness	The International Tax Competitiveness Index (ITCI) of the Tax Foundation measures the extent to which the tax systems of the 37 OECD countries promote competitiveness by way of a low tax burden on corporate investments and neutrality through well-structured tax law (competitiveness of corporate taxation). 2022 estimate.	Tax Foundation

Cost Environment

Indicator	Definition	Source
Electricity prices for businesses	Average electricity prices for businesses (in US cents/kWh). 2023 estimate.	Global Petrol Prices
Labour costs	Labour costs per hour worked (including apprentices) in the manufacturing and services sector. Labour costs consist of wages and salaries, social security contributions paid by employers, and other costs, particularly those related to vocational training and recruitment of personnel. 2016 estimate.	FSO
Costs for social security contributions	Provides information on income tax paid by employees and on social security contributions, family allowances as well as contributions and taxes to be paid by the employers. A high value implies low social security contributions for employers. The data is based on a single person working full-time (100%) and earning an average income, without children, as a household type. 2021 estimate.	OECD
Average tax burden	Measures the portion of labour costs remaining after deduction of taxes and social security contributions. The data is based on a single person working full-time (100%) and earning an average income, without children, as a household type. 2021 estimate.	OECD

Infrastructure

Indicator	Definition	Source
BAK Index of Continental Accessibility	The Accessibility Index for Europe evaluates the travel time between 412 locations within Europe (representing the entire economy of Europe). The index takes air, road and rail travel times and combinations thereof into account to determine the fastest travel options from city centre to city centre during six different windows of time on a weekday. 2023 estimate.	BAK Economics
BAK Index of Global Accessibility	In order to make accessibility comparable, an index value is calculated which shows the time needed to reach all economic activities in a target area from place of origin. The gross domestic product of the target regions (as a measure for the attractiveness of the corresponding economic activities in the target region) is evaluated using the travel time needed. 2023 estimate.	BAK Economics
Per capita broadband penetration	Number of landline broadband subscriptions per 100 inhabitants. 2022 estimate.	OECD
E-government maturity level	The E-government benchmark compares how governments provide digitised public services across Europe. Inhabitants from participating countries rated digital government services. 2020 estimate.	European Commission

Economic Performance

Indicator	Definition	Source
Unemployment rate	European Labour Force Survey (EU-LFS), quarterly household sample survey; the survey follows the definitions of the International Labour Organisation (ILO). The LFS target population comprises all persons in private households aged fifteen and over. 2021 estimate.	Eurostat
Per capita GDP (purchasing power parity, PPP)	Per capita GDP measured in constant prices (adjusted for purchasing power parity). 2021 estimate.	OECD
Labour productivity	Key indicator for labour productivity. GDP is divided by the total number of hours worked. It is measured in US dollars (constant prices and adjusted for purchasing power parity). 2021 estimate.	OECD
Fortune 500 corporations (per capita)	Number of Top Fortune 500 corporations with the highest revenue and headquarters in an OECD country set in relation to the population. 2023 estimate.	Fortune
CO_2 emissions per US$ of GDP	Amount of CO_2 emitted in tonnes per US dollar of GDP. Emissions include emissions from fossil fuels and industry. Land-use change is not included. GDP data is adjusted for inflation and differences in cost of living between countries. 2018 estimate.	Our World in Data
Income inequality (Gini coefficient)	The Gini coefficient is used to measure the distribution of income or wealth in a society. It measures inequality on a scale from 0 to 1, where 0 indicates perfect equality and a value of 1 indicates maximum inequality. A higher Gini coefficient is an indication for a more unequal distribution, whereas a lower value indicates a more equal distribution. Income is defined as the disposable household income in a given year. In the form presented here, income is pre-tax, meaning taxes to be paid and government transfers are not included. 2019 estimate.	Our World in Data

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Innovation Zurich – The Platform for Networking, Guidance and News on Innovation Topics

The Canton of Zurich convinces with forward-looking industries, successful companies, first-rate universities and clever minds. With Innovation Zurich, we want to make these strengths visible and bolster networking across industry sectors, offer guidance and showcase Zurich as a location for innovation.

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A joint initiative of the Division of Business and Economic Development within the Office for Economy of the Canton of Zurich, of Switzerland Innovation Park Zurich and of Greater Zurich Area.

Full Page Picture Captions

Cover page
The wooden pavilion in the Switzerland Innovation Park Zurich was created using a sustainable, modular construction method and is designed as a space to meet and interact.

Picture 1 – inside cover
NEST atrium – a versatile space for exhibitions and events. This is where research, industry and society meet to share and discuss new ideas.

Chapter heading picture – Executive Summary
A host of private and public events are held in the Switzerland Innovation Park Zurich in Dubendorf on robotics, mobility, aviation and space as topics.

Chapter heading picture – Economy of Zurich
Prime Tower is located near the Hardbrücke railway station on the site of the former Maag-Zahnräder AG.

Chapter heading picture – Zurich's Industry Sectors
The rumen simulation technique can be applied under standardised laboratory conditions to analyse how methane emissions from ruminant animals can be mitigated through feed.

Chapter heading picture – Location Factors
The University of Zurich belongs to the best research universities in Europe and offers the widest choice of fields of study in Switzerland.

Chapter heading picture – Possible Areas of Development
NEST is the modular research and innovation building of Empa und Eawag in Dubendorf.

Chapter heading picture – Appendix
Strickhof focuses on an in-depth connection to vocational practice and research in all vocational fields through actively networking with companies and other training and educational centres.

End picture – Legal Notice
Kalkbreite in the city of Zurich is a residential and commercial estate that hosts a lively microcosm above the Kalkbreite tram depot.

Picture on page 39
Zurich offers a wide choice of public transport options which is complemented by a broad range of private transport modes. Zurich's residents have a modern and well-developed transport infrastructure at their disposal.

Picture on page 55
The sustainability railcar is one of the event facilities within the Switzerland Innovation Park Zurich and used as office space by UZH Space Hub and Angst + Pfister.

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