

# Cantonal Competitiveness Indicator

2023



**UBS**

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# Editorial

Dear reader,

Overall, regional economic developments in Switzerland have been uneven: The cantons of Basel-City, Zug, Zurich, and Geneva have achieved the highest economic output per capita for decades. The Lake Geneva region has tended to lose some ground compared with the Swiss average, while Central Switzerland has been able to catch up. In retrospect, the attractive cost environment for companies has been an important driver of Central Switzerland's rise.

A closer analysis reveals two aspects: On one hand, major centers are cementing their economic success thanks to structural factors developed over the years, such as strong infrastructure. On the other hand, far-sighted, business-friendly policies have achieved a lasting impact. This generally requires dogged perseverance over a long period of time, beyond one legislative period.

Our *Cantonal Competitiveness Indicator* shows the regions where the prerequisites for future economic growth are the most promising today. At present, the OECD minimum taxation of companies and the shortage of skilled workers are reshuffling some of the cards. In this edition, you'll discover how this is influencing the cantons' long-term growth potential.

We wish you a stimulating read.

Claudio Saputelli  
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Senior Economist



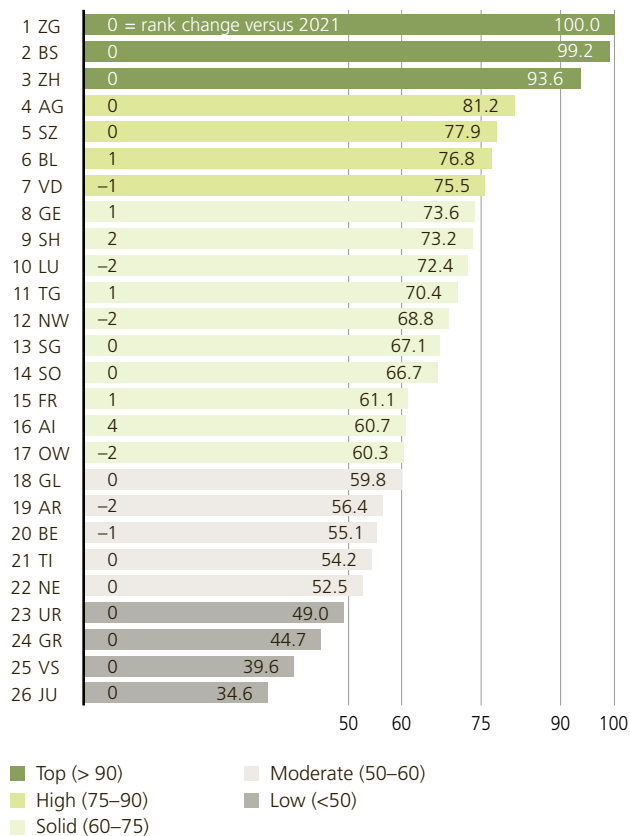
# Cantonal competitiveness

Which cantons have the best long-term growth prospects? The Cantonal Competitiveness Indicator provides insights into the cantons' relative growth potential.

According to the *Cantonal Competitiveness Indicator (CCI) 2023*, the canton of Zug has the highest long-term competitiveness of all cantons. The canton of Basel-Stadt comes a close second, and Zurich completes the top three. These are followed some way behind by four cantons with a high level of competitiveness: Aargau, Schwyz, Basel-Landschaft, and Vaud. Ten other cantons with solid growth prospects can be seen in the middle part of the ranking, with Geneva coming out best among them.

This group also includes Schaffhausen; the central Swiss cantons of Lucerne, Nidwalden, and Obwalden; the eastern Swiss cantons of Thurgau, St. Gallen, and Appenzell Innerrhoden; as well as Solothurn and Fribourg. Glarus, Appenzell Ausserrhoden, Bern, Ticino, and Neuenburg have a moderate level of competitiveness. The long-term growth prospects in the mountain cantons of Uri, Graubünden, and Valais as well as Jura are low relative to other cantons.

## Cantonal Competitiveness Indicator 2023



Source: UBS

## Interpretation and methodology

The CCI provides insight into a canton's long-term relative competitiveness. In the long run, cantons with a high relative competitiveness are likely to grow more than the Swiss economy as a whole. By contrast, cantons with a low relative competitiveness are expected to undergo below-average growth. A low CCI score only means that a canton has below-average growth opportunities relative to the other cantons, not that it necessarily has low absolute growth potential. Since many highly regarded studies rank Switzerland among the most competitive countries in the world, even low-CCI cantons are still competitive in an international comparison.

To determine the CCI, an average is calculated from eight thematic pillars for each canton and scaled so that the highest cantonal score is 100.

### Central and eastern Switzerland utilize their potential

Most of the factors relevant for economic growth are very difficult to change, or can only be changed over a very long timeframe. Basel-Stadt, Zurich, and Geneva benefit from their urban infrastructures, large catchment areas, and access to highly skilled workers. Conversely, the mountain cantons are disadvantaged by their geographical location.

There are also many other factors, such as tax rates, that can be influenced by political measures within a reasonable timeframe. Thanks to an attractive cost environment and exemplary government finances, the cantons of Schwyz, Nidwalden, Obwalden, and Appenzell Innerrhoden were able to grow significantly above their more modest factors that cannot be influenced. The CCI also notes there is currently scope for political measures to improve competitiveness, especially in the cantons of Ticino, Geneva, Bern, Neuenburg, and Solothurn.

### German-speaking Switzerland; Reshuffling the cards

Compared to the previous edition of the CCI in 2021, growth prospects in the eastern and northwestern cantons of Solothurn, Aargau, Thurgau, Schaffhausen, and Appenzell Innerrhoden have improved relative to the central Swiss cantons of Lucerne, Nidwalden, and Obwalden as well as Appenzell Ausserrhoden and Valais. Most of the changes in the long-term growth prospects can be attributed to new developments in the cost environment and labor market.

### Cost environment: taxes and living

Inter-cantonal tax competition is becoming less important due to the general public's acceptance of the OECD minimum taxation of corporate profits. Cantons that previously had low corporate taxes will become less attractive as business locations for the companies in question relative to cantons with higher taxes. This is especially the case for the central Swiss cantons, Schaffhausen and Basel-Stadt, as well as for both Appenzell cantons.

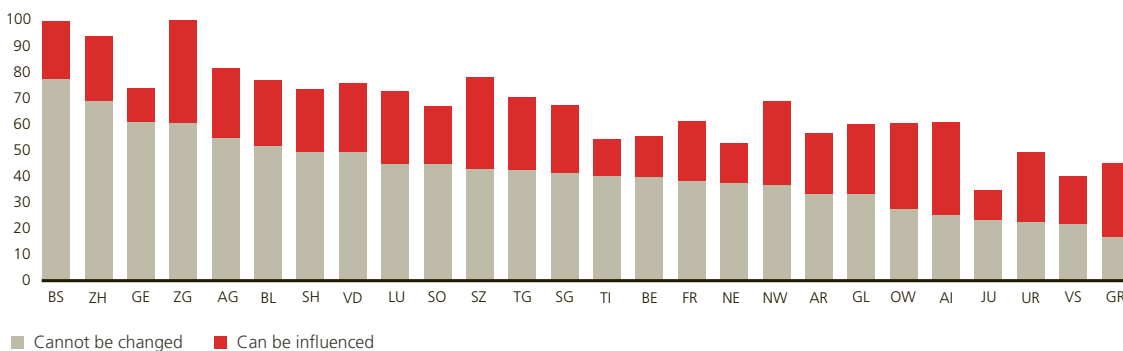
A new issue on the table is the availability of housing. Available and affordable residential properties are needed for employment growth, as otherwise the location is put at a disadvantage. The availability of housing has deteriorated since 2021, especially in the cantons of central Switzerland, Zurich, and Graubünden. The cantons of Appenzell Innerrhoden; Schaffhausen; Solothurn; the French-speaking cantons of Freiburg, Neuenburg, Valais, and Jura; and Ticino enjoy advantages in this regard.

### The labor market: a shortage of skilled workers

The third factor that leads to shifts in the cantons' competitiveness is the shortage of labor. According to the Swiss Federal Statistical Office (BFS), more than 40% of companies find it difficult to fill vacancies. As the large baby boomer generation approaches retirement age, there is little improvement in sight. The demographic trend in the working population and the labor force potential is therefore expected to play an even greater role than before in the long-term economic growth of the cantons.

## Best conditions in big cities

CCI values based on factors that can be influenced and cannot be changed, sorted by unchangeable factors



Source: UBS

The cantons of Zurich, Vaud, Geneva, Zug, and Aargau, where the number of people in employment is forecast to rise significantly, are at an advantage here. On the other hand, a decline is expected in the cantons of Graubünden, Ticino, Appenzell Ausserrhoden, and Jura, as well as Nidwalden and Obwalden.

### **A matter for politics**

We do see ways politicians can help address these factors to a certain extent. While some cantons are under more pressure than others, we think those that are benefitting from these trends can take action as well:

#### *Business environment*

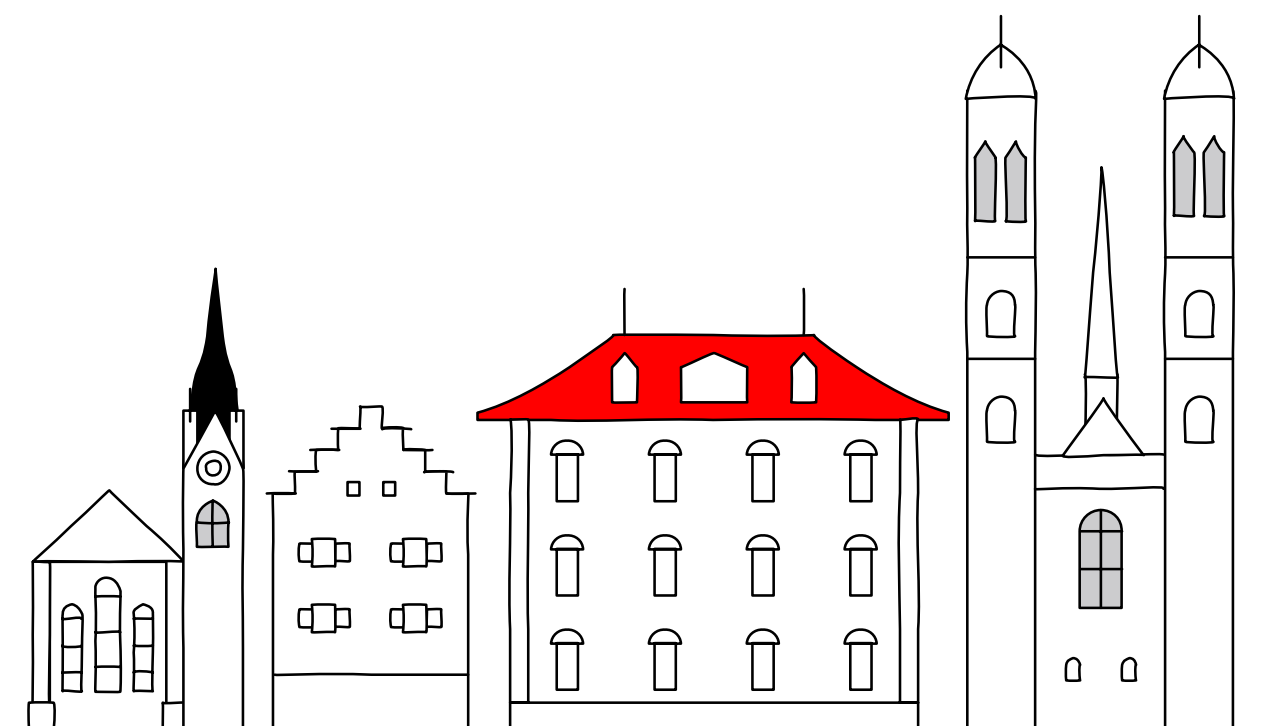
If the cantons that are affected by the OECD tax want to retain their attractiveness relative to other cantons, they can invest in their business environment to ensure it's a good place to do business. This can be achieved by investing any additional income generated through higher corporate taxes into technology-related basic research, providing support for start-ups, and encouraging corporate networking—as well as tax reductions outside the OECD guidelines. However, ascertaining the effectiveness of such measures in offsetting the taxation impact will be difficult.

#### *Tackling the weakness in construction activity*

The quickest and most effective means of improving housing availability include measures at the cantonal level to boost construction activity. These comprise reducing, simplifying, and digitalizing the process of granting construction permits. It currently takes nearly 230 days on average for a residential building permit to be granted in Switzerland, which is around 40 days longer than in 2015. Densification can also be promoted to a greater extent.

#### *Boosting female employment*

Fixing the labor shortage will need more than increasing productivity through technological advances like artificial intelligence. Key will be activating sections of the workforce, for example through measures aimed at retaining older employees for longer. More can also be done to increase female employment, which requires childcare provision to be improved.

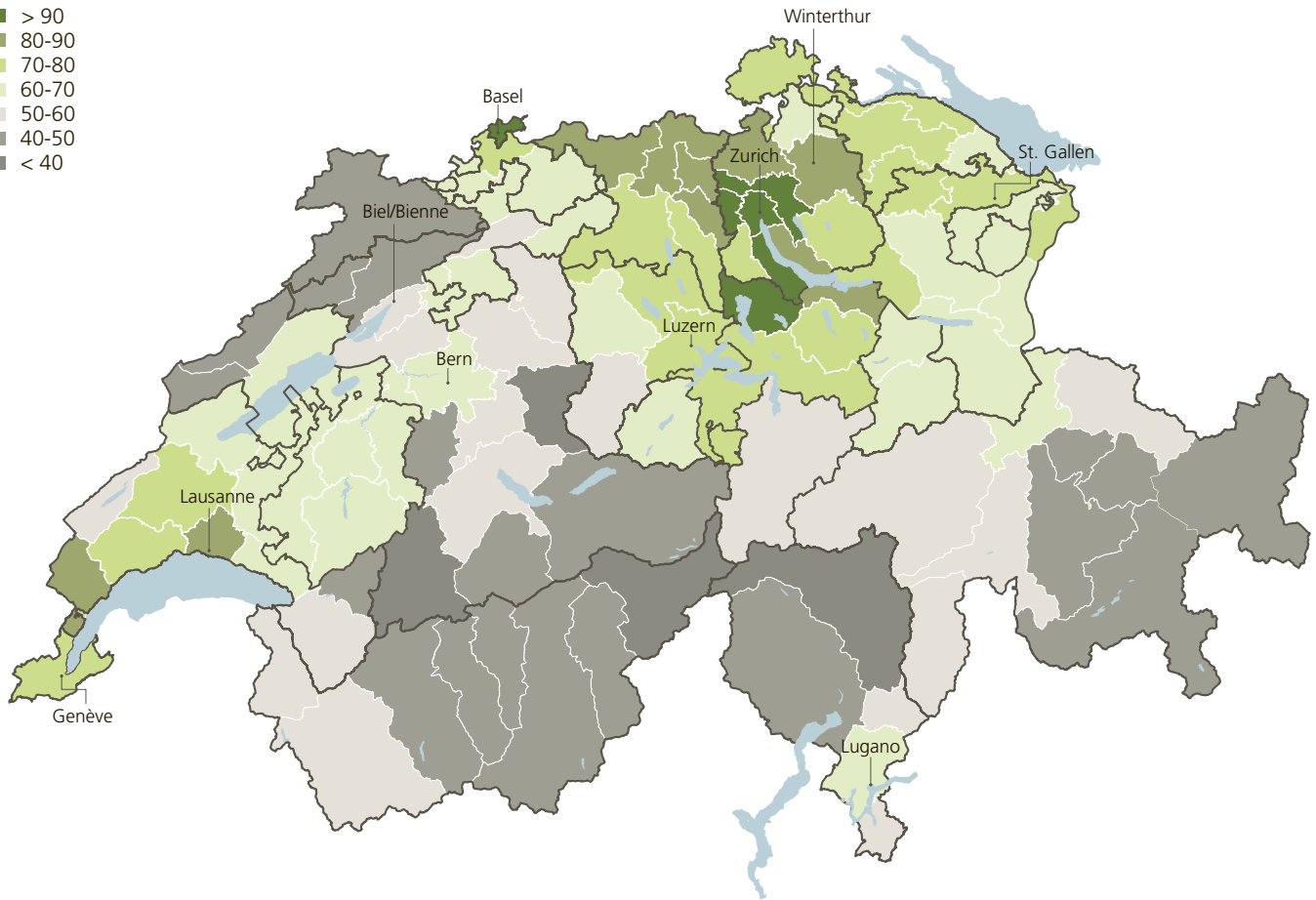


# Growth hotspots Zug, Basel-Stadt and Zurich

Indicative regionalization of the CCI 2023

Regional Competitiveness

- > 90
- 80-90
- 70-80
- 60-70
- 50-60
- 40-50
- < 40



Source: UBS

## The capitals as growth drivers

To address the regional differences within cantons, which in some cases can be considerable, we have calculated a regional ranking based on 106 economic regions. This is also led by the region of Zug. The other top 20 regions are in the cantons of Zurich, Basel-Stadt, Aargau, and Schwyz, as well as three Vaud regions. This results in a geographically connected growth engine in German-speaking Switzerland. Growth in French-speaking Switzerland is driven by a part of the canton of Vaud and the canton of Geneva. Alpine regions, on the other hand, tend to have lower competitiveness.

In many places, the regions around the cantonal capitals enjoy an advantage over their cantons as a whole. This discrepancy is highest in the cantons of Vaud and Bern, where the capitals Lausanne and Bern score more than 30 points higher than the weakest region of each canton. The regions Lucerne, Zurich, Chur, and Lugano also stand out from the rest of their respective cantons. Schwyz, Aarau, and Liestal,

however, each lag behind the best region in their respective canton. On the one hand, these three capitals are further away from the nearest big cities of Zurich and Basel, which reduces their catchment area and accessibility. On the other hand, they are failing to keep pace with their respective cantonal champions when it comes to innovation.

# Competitiveness and economic success

A canton's economic performance is closely tied to its competitiveness. One key ingredient for success over the past decade has been an attractive cost environment for companies.

Long-term economic success should be reflected in a high level of productivity and per-capita economic output. The resource potential from the national fiscal equalization also provides information on income levels of natural persons and legal entities in the cantons. Another indicator of success is employment growth, which can be easily measured at a regional level as well.

In general, competitiveness, as estimated by the CCI, and economic success are closely linked. The cantons' relative economic power can be effectively explained by the short-term "unchangeable" CCI factors of economic structure, accessibility, catchment area, and human capital. But tax competition, fiscal equalization, infrastructure development, and digitalization have prevented the economically strong cantons from becoming more decoupled from the others. Over the past decade, short-term "influencable" CCI factors such as low corporation taxes have been a particularly important part of the recipe for success.

## *"Low-tax canton" recipe for success*

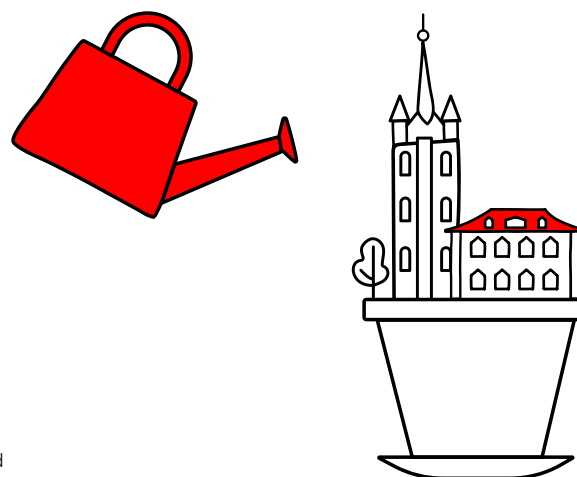
The central Swiss cantons and Appenzell Innerrhoden have significantly improved their resource potential as a result of their low-tax policies. In the French-speaking part of Switzerland, the top spots are taken by the cantons of Fribourg and Jura, which are also relatively well-positioned in terms of the CCI cost environment. By contrast, the cantons of Basel-Landschaft, Solothurn, and Aargau, which have been in the bottom half of the cost environment ranking, have posted a below-average performance across the board. The canton of Zurich is an exception, as it reports relatively robust growth despite high location costs and competition from low-tax cantons.

But the new OECD tax calls into question whether optimizing the cost environment will still be such a successful strategy in the decade to come. Given their currently strong competitiveness, Basel-Landschaft and Aargau are especially likely to better capitalize on their growth potential in the future, thanks to this reduced tax competition.

## *Productivity winners and employment boomers*

Basel-City has experienced strong per-capita economic growth, primarily thanks to a jump in productivity in the pharmaceutical sector. But apart from this, the city canton on the Rhine has stagnated, highlighting the risk that comes from a high concentration of industries. Despite experiencing significant employment growth, the cantons of Geneva and Zug have not achieved high growth in value creation.

In general, the French and Italian-speaking regions of Switzerland have struggled with low productivity growth in the past decade and also lost ground in terms of resource potential. The canton of Vaud, as the most competitive canton in French-speaking Switzerland, has the best chance of catching up here.



<sup>1</sup> Cantonal gross domestic product per full-time equivalent position.

<sup>2</sup> In the national fiscal equalization, the economic strength of the cantons is calculated based on the income and assets of natural and legal persons compared with the Swiss average. Resource-rich cantons make payments to resource-poor cantons to achieve a legally defined minimum level of resources in the latter.



## Economically most successful cantons

Level of GDP<sup>1</sup> per FTE<sup>2</sup> and resource potential as well as their average; growth of GDP<sup>1</sup> per FTE<sup>2</sup>, resource potential and FTE as well as their average, over the last ten years of available data, standardized and smoothed

Canton	Level			Growth			
	Average	GDP	Resource potential	Average	GDP per FTE	Resource potential	FTE
ZG	★★★★	★★★★	★★★★	★★★★	★	★★★★	★★★★
BS	★★★★	★★★★	★★★★	★★★	★★★★	★★	★
SH	★★★★	★★★★	★★	★★	★★★	★★	★★
SZ	★★★★	★★	★★★★	★★★★	★★	★★★★	★★★★
ZH	★★★★	★★★★	★★★	★★★	★★	★★★	★★★
NW	★★★	★★	★★★★	★★★★	★★	★★★★	★★★
GE	★★★	★★★	★★★★	★	★	★	★★★★
NE	★★★	★★★★	★★	★★	★★★★	★	★
BL	★★★	★★★	★★	★	★★	★★	★★
AI	★★★	★★★	★★	★★★★	★★★	★★★★	★★★
OW	★★	★★	★★★	★★★	★★	★★★★	★★
BE	★★	★★★	★★	★	★★	★★	★
VD	★★	★★	★★	★★	★	★	★★★★
AR	★★	★★	★★	★★	★★★	★★★	★
TG	★★	★★	★★	★★★	★★★	★★	★★★
FR	★★	★★★	★★	★★★	★★★	★★	★★★
AG	★★	★★	★★	★	★★	★	★★
SG	★★	★★	★★	★★	★★	★★★	★★
TI	★★	★★	★★	★	★	★	★★★★
SO	★★	★★	★★	★	★★	★	★★
GL	★★	★★	★★	★★	★★★	★★★	★
LU	★★	★	★★	★★★★	★★★	★★★★	★★★
GR	★	★	★★	★★	★★★	★★	★
UR	★	★	★★	★★★★	★★★★	★★★	★
JU	★	★	★	★★★	★★★	★★★	★★★
VS	★	★	★	★★	★★	★★	★★★

1 Gross domestic product

2 Full-time equivalent

★★★★  
far above average

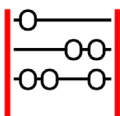
★★★  
slightly above average

★★  
slightly below average

★  
significantly below average

# The eight pillars of competitiveness

The Cantonal Competitiveness Indicator covers 57 individual indicators of cantons' competitiveness. The individual indicators are grouped into eight competitive pillars: Economic structure, innovation, human capital, labor market, accessibility, catchment area, cost environment and government finances. For each competitive pillar, cantons are given a relative score between 0 and 100.

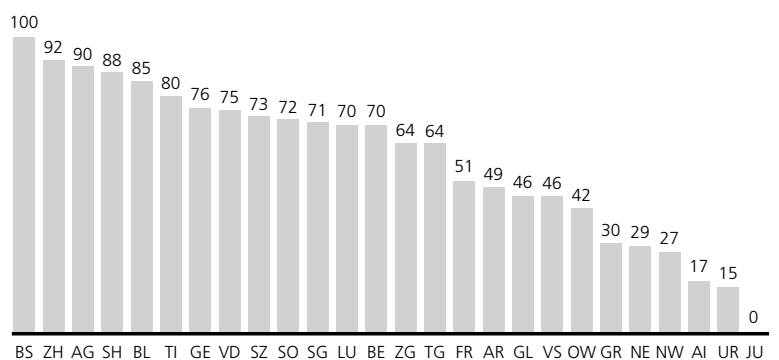


## Economic structure

The most important indicator for the economic structure is our sector positioning. International trade is also included in the cantonal comparison,

with growth potential taken into consideration based on export intensity and the growth prospects of the main trading partners. The economic structure can also exhibit cluster risks if growth is driven by just a few industries. Broadly diversified cantonal economies are better placed to make up for weakness in one industry or a crisis in an export destination. A measure of concentration assesses the extent to which cantonal economic output is dependent on individual sectors and trading partners.

Cantons on a scale of 1 to 100

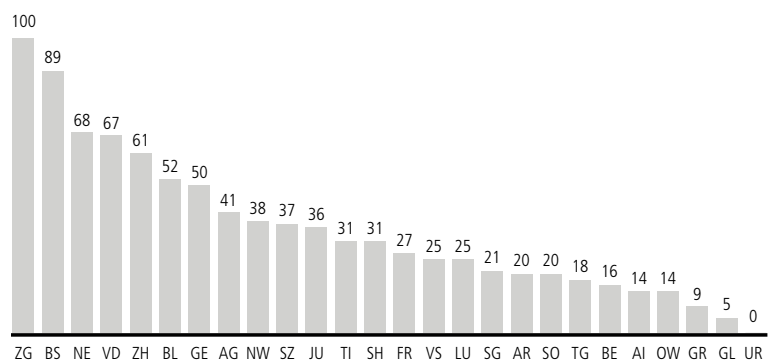


## Innovation

Entrepreneurial progress and maintaining economic competitiveness are based on innovation— the ability to create and market new products and services.

Industry clusters (high regional concentrations of people working in related industries) offer an optimal environment for innovation. A canton's level of innovation also depends on the percentage of people engaged in research and development. The number of patent filings and the amount of venture capital investments highlight the potential for future competitive advantages arising from innovation. Other indicators of innovation include the number of successful startups, newly founded companies and jobs created at these companies.

Cantons on a scale of 1 to 100



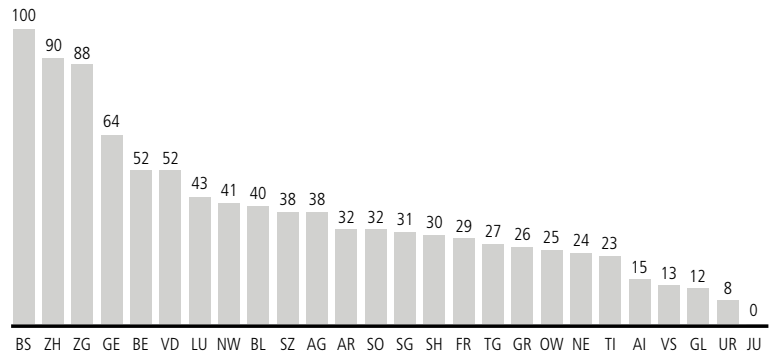


### Human capital

The level of education of the population and the human capital are key drivers of economic growth. A better-educated population normally generates more added value. Local availability of a skilled workforce also makes a canton more attractive for companies. To compare the level of education among cantons, the percentage of the population with a university degree or higher professional qualification is determined. Another indicator used is net migration of graduates between cantons.

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Cantons on a scale of 1 to 100

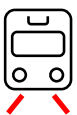
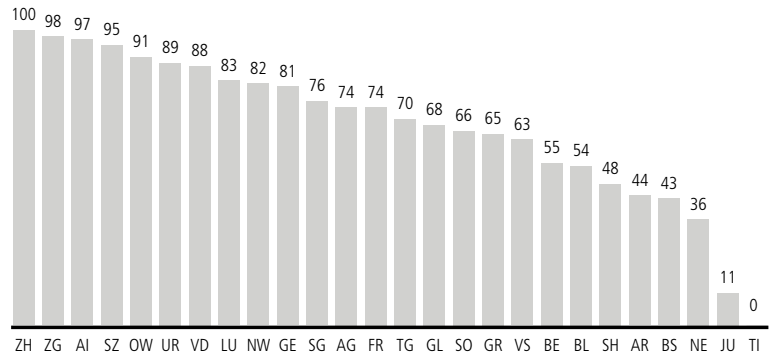


### Labor market

The more heavily the population participates in the labor market, the better use is being made of a canton's economic potential. However, high shares of pensioners, people on disability benefits and the unemployed reduce participation in the labor market. Youth and long-term unemployment are considered particularly bad, as these can permanently reduce the labor force potential. By contrast, expected growth in the working population (growth in the cohort of 16- to 64-year-olds) has a positive effect on a canton's score, as it implies a higher percentage of the population is potentially productive.

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Cantons on a scale of 1 to 100

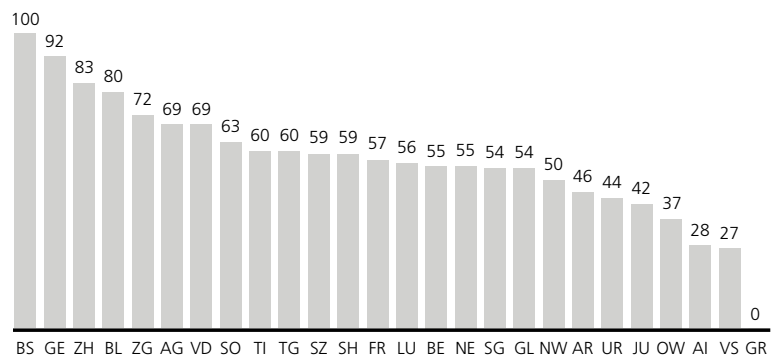


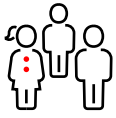
### Ease of access

Good accessibility means infrastructure as well as procurement and sales markets can be reached quickly. Accessibility describes the average time needed to reach airports, universities or regional centers. The calculation is based on travel times using public transport and private car. All Swiss universities, the nearest metropolitan area and the closest regional center are taken into consideration. The four international airports of Basel, Geneva, Zurich and Milan are taken into account when assessing accessibility to flight connections, along with regional airports.

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Cantons on a scale of 1 to 100

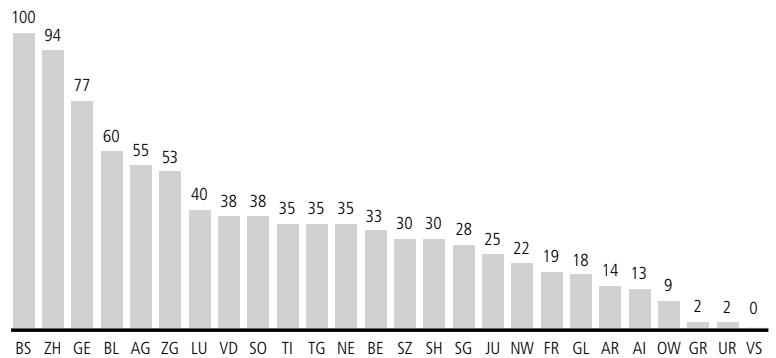




### Catchment area

The catchment area refers to the number of people that can reach an area within a certain time. A large catchment area is doubly advantageous for companies: They enjoy greater availability of suppliers and potential employees, and the sales market is larger. The catchment area is determined based on travel time by private car and public transport. The number of cross-border commuters in a canton indicates the catchment area from neighboring countries.

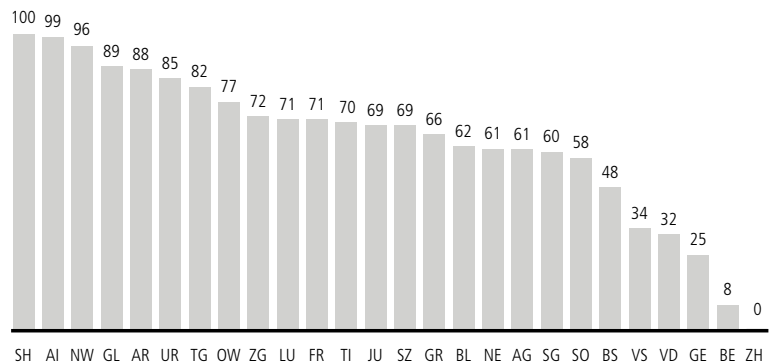
Cantons on a scale of 1 to 100



### Cost environment

Local costs are a key variable when companies are deciding where to locate. They include office rents, energy prices, wages and tax rates for companies, exemptions from patent boxes, and excess deductions for research and development. Income taxes for high-income individuals matter as well. The availability of residential properties and the level of housing rents also play a role for labor force growth.

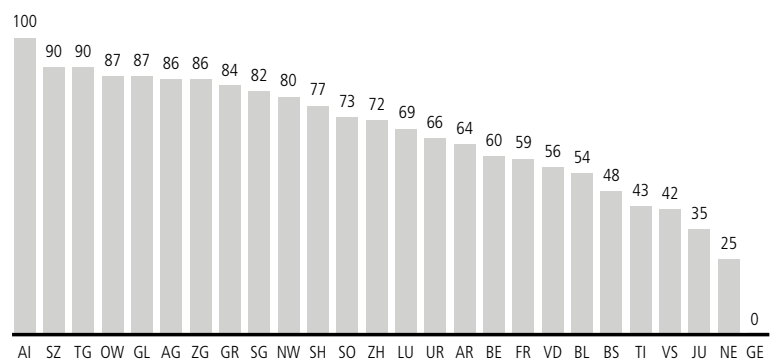
Cantons on a scale of 1 to 100



### State finances

Sound state finances are essential for a growth-oriented fiscal and economic policy. Sustainable use of scarce financial resources is reflected in a lean administration and a high percentage of capital investment. A canton's scope to improve its competitiveness through fiscal policy measures (such as tax cuts or infrastructure investments) is reduced as the level of debt rises. In addition to the debt level, net investments, average interest costs and coverage of the public-law pension funds of a canton are taken into account.

Cantons on a scale of 0 to 100



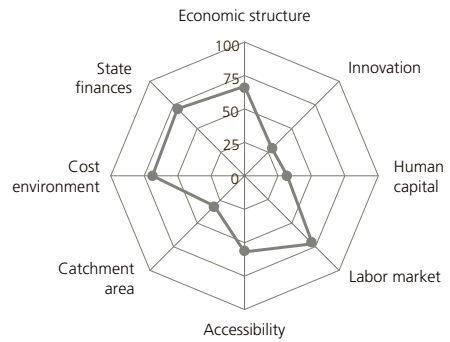
# Cantonal competitive profiles

The cantonal competitiveness profiles show the values of the eight pillars of competitiveness for each canton in comparison with the median canton. The profiles appear according to the order in the CCI ranking.

The *median canton* is a reference canton made up of the median values of the eight pillars of competitiveness. The median value of each pillar divides the ranking list of the cantons into an upper and a lower half, each consisting of 13 cantons.

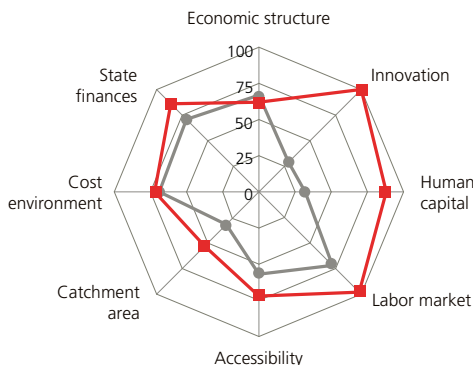
When it comes to interpreting the cantonal competitiveness profiles, the higher a canton's score, the better its relative ranking.

## Median canton

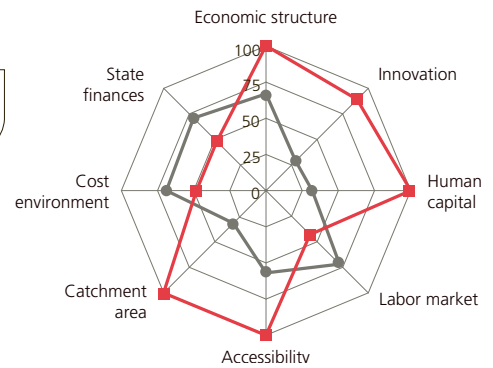


■ Cantonal value    ● Median canton

### 1 ZG

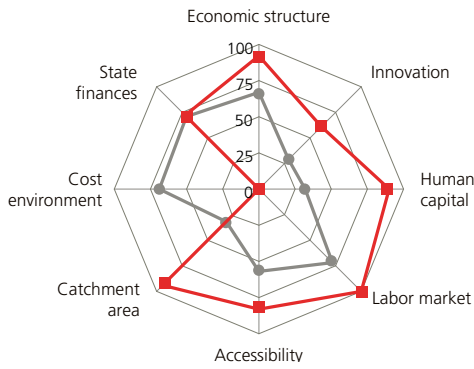


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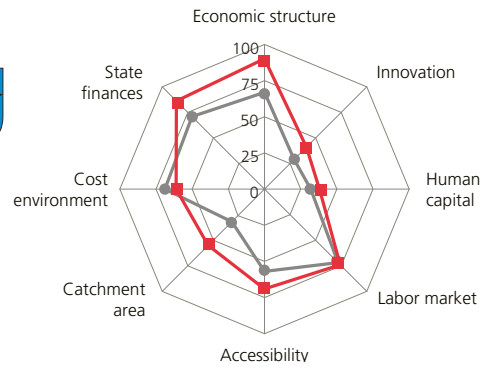


—■ Cantonal value —● Median canton

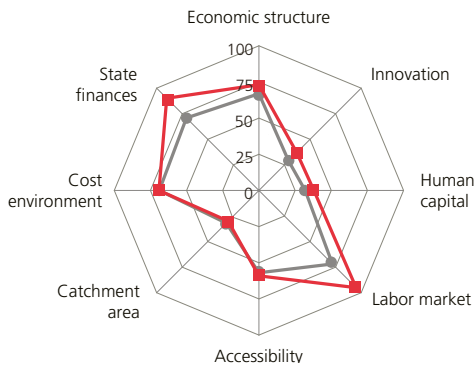
3 ZH



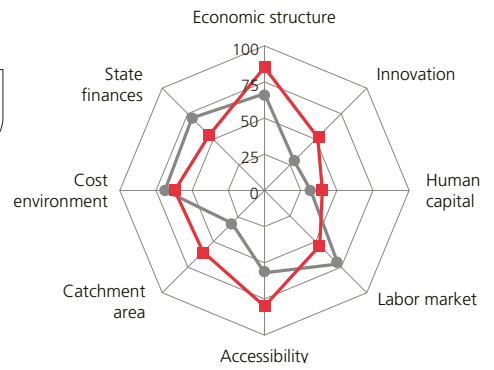
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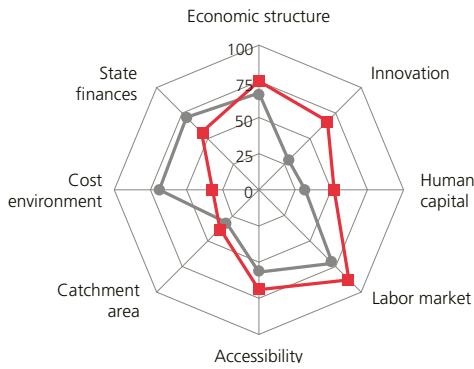
5 SZ



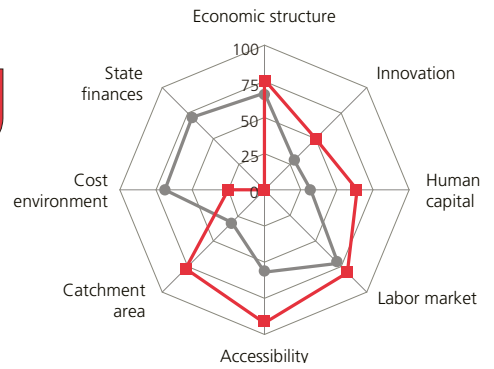
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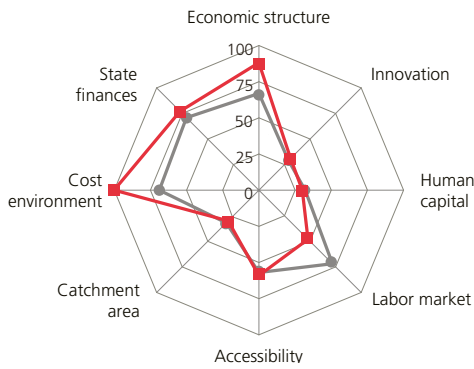
7 VD



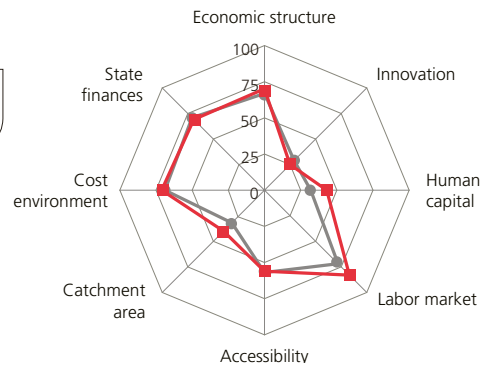
8 GE



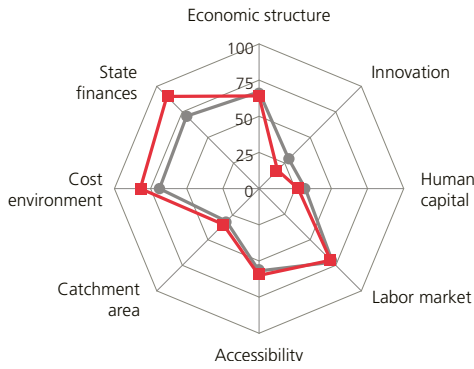
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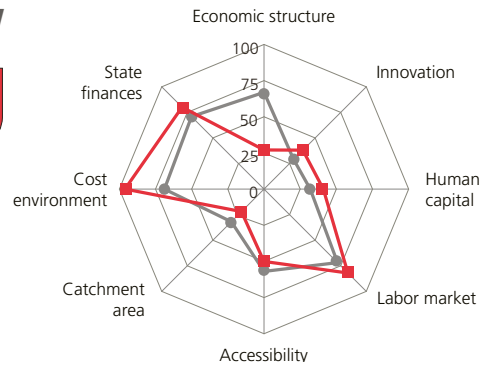
10 LU



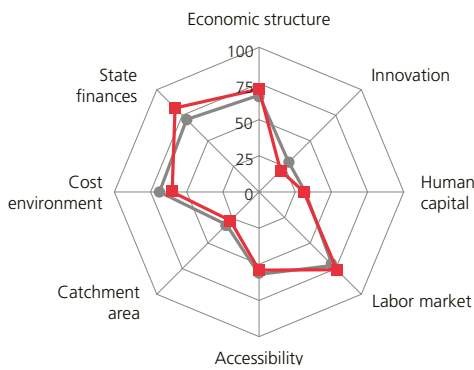
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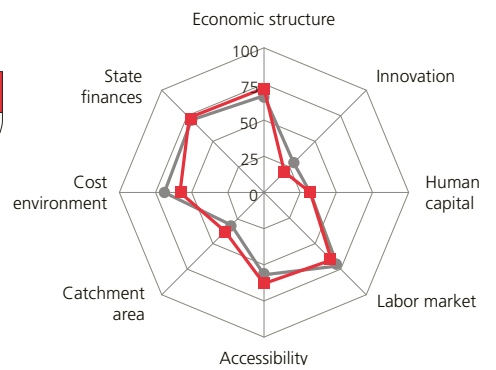
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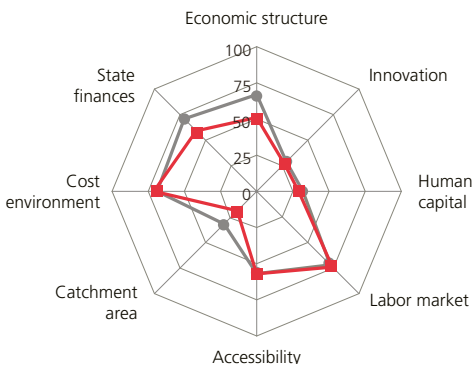
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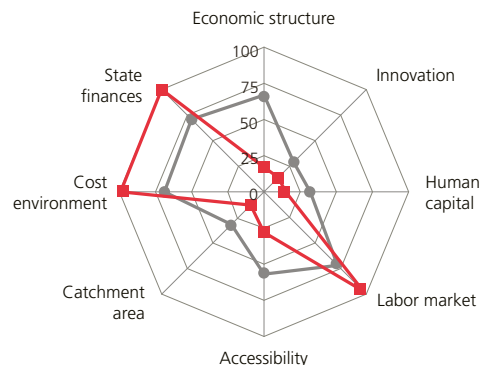
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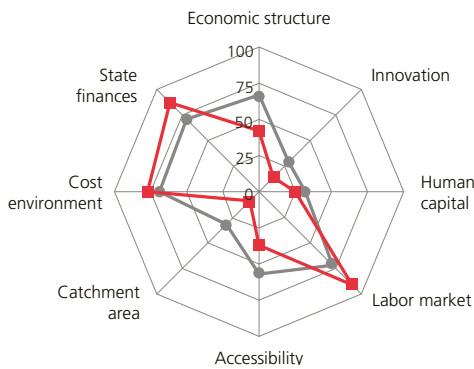
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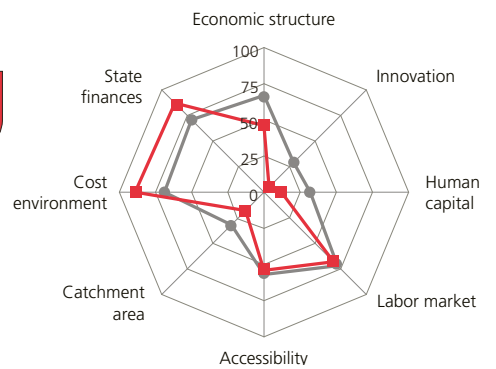
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### 17 OW

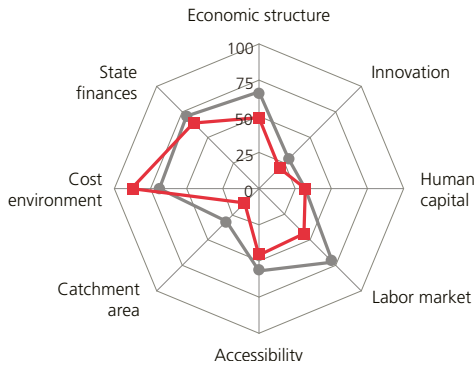


### 18 GL

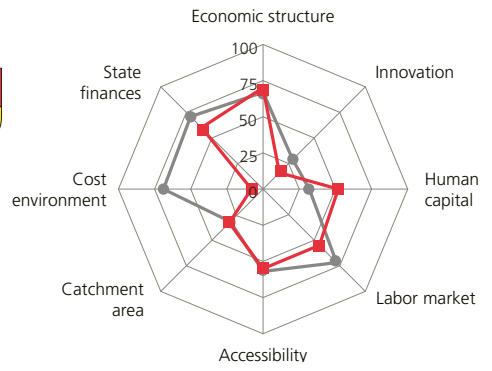


—■ Cantonal value —● Median canton

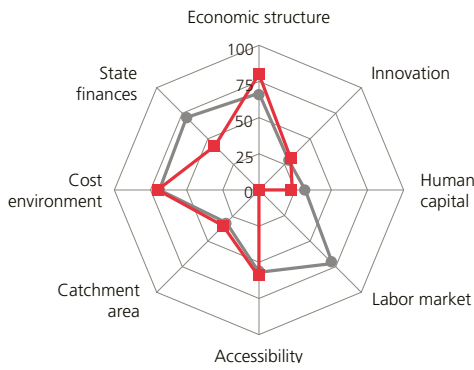
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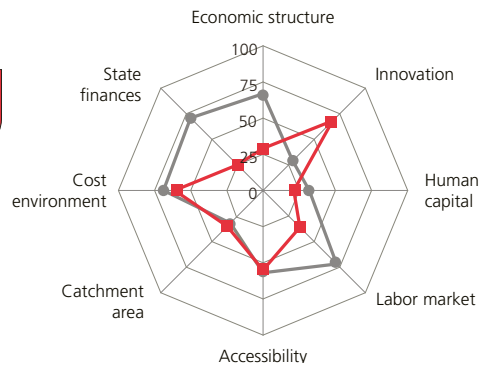
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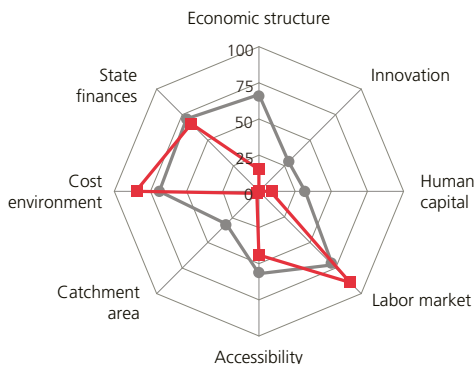
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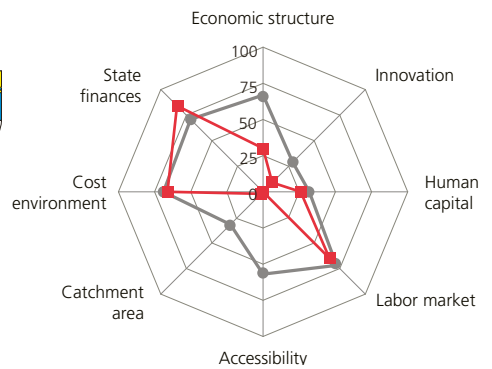
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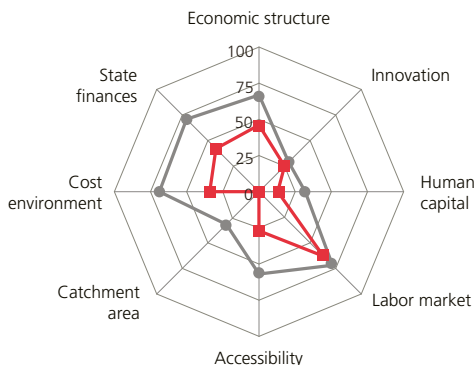
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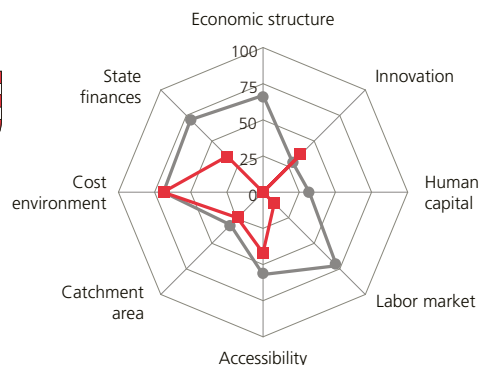
### 24 GR



### 25 VS



### 26 JU





# List of variables

		+/- <sup>1</sup>	Sources:
<b>Economic structure</b>	Sector positioning according to growth potential	+	SFSO, UBS
	Export intensity	+	SCA, UBS
	Percentage of export-intensive sectors	+	SFSO, UBS
	Average economic growth in international trading partners	+	SCA, IMF, UBS
	Average economic growth in country of origin of guests, weighted by overnight stays	+	SFSO, IMF, UBS
	Diversification of jobs within growth sectors	+	SFSO, UBS
	Diversification of jobs within all sectors	+	SFSO, UBS
	Export diversification by country	+	SCA, UBS
	Diversification of overnight stays by country	+	SFSO, UBS
<b>Innovation</b>	Percentage of FTEs <sup>2</sup> in sector clusters	+	SFSO, UBS
	Percentage of FTEs <sup>2</sup> in research and development	+	SFSO, UBS
	Patent filings per inhabitant and FTE <sup>2</sup>	+	OECD, SFSO, UBS
	Venture capital investments per FTE <sup>2</sup> and financing rounds	+	SECA, University of Basel, UBS
	Number of startups per inhabitant and FTE <sup>2</sup>	+	Startup.ch, UBS
	Newly started companies compared to number of existing companies	+	SFSO, UBS
	Jobs in newly started companies compared to overall employment	+	SFSO, UBS
	Percentage of new entries in commercial register	+	BFS, Bisnode, EHRA, UBS
<b>Human capital</b>	Percentage of population with higher professional education	+	SFSO, UBS
	Percentage of population with tertiary education	+	SFSO, UBS
	Net migration rate of graduates one year after graduation	+	SFSO, UBS
	Net migration rate of graduates five years after graduation	+	SFSO, UBS
<b>Labor market</b>	Unemployment rate	-	SECO, UBS
	Long-term unemployed as a percentage of total unemployed	-	SECO, UBS
	Youth unemployment rate compared to unemployment rate	-	SECO, UBS
	People receiving disability benefits as a percentage of the total population	-	SFSO, UBS
	People over age 65 as a percentage of the total population	-	SFSO, UBS
	Cohort potential of 16- to 64-year-olds for the next five to ten years	+	SFSO, UBS
<b>Accessibility</b>	Travel time to nearest international airport by private transport	-	DETEC, FOCA, UBS
	Travel time to nearest regional airport by private transport	-	DETEC, FOCA, UBS
	Travel time to nearest metropolitan area by private and public transport	-	DETEC, SFSO, UBS
	Travel time to regional center by private and public transport	-	DETEC, SFSO, UBS
	Travel time to nearest university by private transport	-	DETEC, SFSO, UBS
<b>Catchment area</b>	Catchment area (people) by private transport with/without traffic congestion	+	DETEC, SFSO, UBS
	Catchment area (people) by public transport	+	DETEC, SFSO, UBS
	Catchment area (people) from abroad by private transport with/without traffic congestion	+	DETEC, foreign statistics auth., UBS
	Percentage of cross-border commuters	+	SFSO, UBS
<b>Cost environment</b>	Income tax burden for legal entities	-	Hinny, cantonal tax offices, UBS
	Capital tax burden for legal entities	-	Hinny, cantonal tax offices, UBS
	Exemptions from patent boxes	+	Hinny, cantonal tax offices, UBS
	Excess deductions for R&D	+	Hinny, cantonal tax offices, UBS
	Income tax burden for high-income individuals	-	Hinny, cantonal tax offices, UBS
	Office rents	-	Wüest Partner, UBS
	Energy prices	-	ElCom, UBS
	Wages	-	SFSO, UBS
	Apartment rents (high-end segment)	-	Wüest Partner, UBS
Level and percentage change in vacancy and offered rates	+	SFSO, Meta-Sys, Wüest & Partner, UBS	
<b>State finances</b>	Gross debt per inhabitant (cantonal and municipal debts)	-	SFFA, SFSO, UBS
	Gross debt ratio (cantonal and municipal debts)	-	SFFA, SFSO, UBS
	Average debt interest rate	-	SFFA, UBS
	Net interest charges	-	SFFA, UBS
	Net debt per inhabitant (cantonal and municipal debts)	-	SFFA, SFSO, UBS
	Net debt ratio (cantonal and municipal debts)	-	SFFA, SFSO, UBS
	Public-sector pension fund shortfall	-	Cantonal pension funds, SFSO, UBS
	Investment efforts	+	IDHEAP, SFFA, UBS
	Net investment per inhabitant and FTE <sup>2</sup>	+	SFSO, SFFA, UBS
	Administrative expenses per inhabitant and FTE <sup>2</sup>	-	SFFA, UBS
	Employees in public administration (canton, district and municipalities) per inhabitant and FTE <sup>2</sup>	-	SFSO, UBS

<sup>1</sup> "+" = positive impact on CCI score; "-" = negative impact on CCI score

<sup>2</sup> FTE = full-time equivalent

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