UNICORN Nation Switzerland –

A status-quo analysis and theoretical strategy for Switzerland to become a global frontrunner in entrepreneurship

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All illustrations in this report have been created by the authors specifically for the purpose of this study.

List of abbreviations

AG	Aktiengesellschaft (incorporated company)
AHV	Alters- und Hinterlassenenversicherung (Old-age and survivors' insurance)
BAG	Bundesamt für Gesundheit (Federal Office of Public Health)
CVC	Corporate Venture Capital
EEA	European Economic Area
ESOP	Employee Stock Option Plans
EU	European Union
FCA	Financial Conduct Authority
FINMA	Swiss Financial Market Supervisory Authority
GDP	Gross Domestic Product
GmbH	Gesellschaft mit beschränkter Haftung (limited liability company)
ICT	Information and communication technologies
KTG	Krankentaggeldversicherung (daily sickness benefits insurance)
MRA	Mutual Recognition Agreement
PK	Pensionskasse (pension fund)
ROI	Return on Investment
SME	Small and medium enterprises
SNF	Schweizerischer Nationalfonds (Swiss National Science Foundation)
SSK	Schweizerische Steuerkonferenz (Swiss Tax Conference)
SVA	Sozialversicherungsanstalt (Social Insurance Institution)
VAT	Value added tax
VC	Venture Capital
WIPO	World Intellectual Property Organization
3Fs	Family, Friends & Fools (collective term for sources of early-stage startup funding from the close social environment)

1. Introduction

While national prosperity in the 20th century can mainly be attributed to the economic achievements of the middle class, national as well as supranational economic structures are currently undergoing a major transformation.[1] Technological progress, digital innovations, a blurring of national borders and the ecological emergency of our natural livelihood (known as the *Global Grand Challenges (GCG)*[2]) are calling social forms with all their economic conventions into question - and presenting major challenges. The amount of technological progress in the past 25 years is equal to that which was previously realized in a 100-year period.[3] With exponential growth of technological progress and change, our society is moving towards a new era on a global level, in which competitiveness is characterized by increased efficiency and continuous innovation with scaling potential.[4]

Startups play an important role in this context. Startups are newly founded companies that are characterized by a high levels of innovativeness, aim at fast-paced scaling and employ technology as a decisive differentiation criterion.[5] While existing companies drive innovation largely incrementally in the context of research and development projects, the innovation activity of startups is primarily disruptive, i.e. involves technological innovations that imply the redefinition of markets and their business model logics, thus enabling competitiveness vis-à-vis companies with high market shares.[6] Startups play a particularly important role in driving structural change in many industries.[7]

According to a projection by McKinsey & Company from 2021 - exemplary for the German market - the market capitalization of startups founded by 2030 will exceed the market capitalization of the DAX40, the 40 largest German listed companies, by 20% in 2030 and create an overall social value added of EUR 2.3 trillion.[8] According to this forecast, startups will also have created 1.44 million new jobs during this period, which corresponds to an increase of 150,000 new jobs and an overall social value added of CHF 455 billion (referenced to GDP) when transferred to the Swiss market. Startups thus contribute disproportionately to job growth. Companies founded less than five years ago are responsible on average for just under 20% of total employment, but for almost 50% of newly created jobs.[9]

Within this study, following a case study approach, we put our focus on the national particularities of Switzerland. To be able to realize the beforementioned ambitious value contributions through startups and innovative companies in Switzerland, the Swiss economy and society need to be more strongly oriented toward entrepreneurship.[10] Entrepreneurship refers to both innovation-driven startups and those existing

[1] Bozesan (2020)

[2] Reid, et al. (2010)

[3] Kurzweil (2005)

[4] Cf. Dutta, Lanvin, Rivera Leòn, & Wunsch-Vincent (2021); BMWi (2021)

[5] Economiesuisse (2020)

[6] BMWi (2021)

[7] Economiesuisse (2020)

[8] Dörner, et al (2021)

[9] Calvino, Criscuolo, & Menon (2016)

[10] Cf. Eichler, Jank, & Zwankhuizen (2021).

companies that compete with startups through outstanding innovative activity. In order to align society and the economy with a stronger focus on entrepreneurship, political intervention is needed to promote and enable the development of appropriate framework conditions.

This study is intended to provide support at the political level in aligning Switzerland in the long term as one of the leading international nations in the field of entrepreneurship - as the "Unicorn Nation Switzerland". The goal is to improve the framework conditions for startups in Switzerland in order to favor their founding rates and successful growth on the market as Swiss scale-ups. This is aimed at strengthening and expanding Switzerland's existing competitive advantages and national focus areas. Switzerland should be positioned as an attractive location for entrepreneurship from a domestic and foreign perspective in the long term in order to maintain its international competitiveness. What is unique about our study is that we are taking both a high-level perspective through our meta study as well as provide a fine-grained deep dive by integrated to additional sources of data. Patterns and mechanisms of the entrepreneurial ecosystem analyzed along the example of Switzerland are captured with a high attachment to detail and depth of understanding, and their underlying mechanisms could, after an additional validation in the new context, be transferred to other countries.

This study begins with a comprehensive analysis of the status quo, taking into account the strengths and problem areas of the Swiss overall economy and social structure. Building on a comprehensive analysis of existing studies, the collection of primary data is carried out in two steps:

i. in the form of a digital survey addressing relevant stakeholders from different fields associated with entrepreneurship, followed by

ii. interviews with other experts from the startup ecosystem.

The aim is to achieve broad coverage of relevant stakeholder groups and to ensure an up-to-date picture of opinion. Based on these analyses, the findings will be translated into concrete fields of action and impulses for implementation in legislation at the federal level.

Our study contributes to entrepreneurship research in manifold ways. Firstly, we testify the mechanisms that connect a country's innovation landscape with entrepreneurial activity, in our case based on Switzerland as the reference country. Our innovative case study approach, combining different sources of data, enables us to identify clear causalities. This builds the fundament for future studies to extract individual mechanisms and assess them, for example in a cross-country approach. Secondly, we contribute to research in entrepreneurial finance. We highlight the importance of a well-established funding ecosystem to enable innovation and entrepreneurial activity, and the role it plays to make the created value accessible to society. Furthermore, we analyze the role of regulatory framework conditions to stimulate the funding market for startups.
Thirdly, we contribute to research in political sciences by highlighting the importance of entrepreneurship to foster national prosperity in the long-term as well as a nation's competitiveness. We show the importance of political measures, inter alia through regulatory reforms, to stimulate startup financial markets and their role as a motor for other dimensions of the entrepreneurial ecosystem.

For practitioners, our study provides a rich reservoir of potential measure to be taken in order to foster the national entrepreneurial ecosystem. Even though our findings refer to the country of Switzerland, is can be assumed that to a certain extent they can also be applied in other national contexts. Practitioners aiming at improving the accessibility to funding for startups, for example, could take our finding and exploratory patterns as a starting point to analyze the strengths and weaknesses of their own domestic entrepreneurship ecosystem, and out of the broad portfolio of suitable measure choose a subset for concrete implementation.

The practice-oriented approach of this study enables effective measures to be taken also at the legislative level.

With our study, we go beyond the sample case of Switzerland: With Switzerland being the globally leading nation in innovation output, and at the same time only average-scoring in the field of entrepreneurship, it is a fruitful reference country to analyze the mechanisms connects the one with the other. Prior research has shown the importance of innovation activity as an antecedent of entrepreneurial activity. Therefore, Switzerland is a great case to analyze this fundamental relationship from a national, comprehensive perspective. To large extent, the insights generated as part of this studies can be transferred to other national contexts.
With the empirical evidence we provide, we highlight the importance of a well-functioning funding ecosystem and access to startup financing across all development stages. Entrepreneurial excellence is not all about funding; though, it is the very decisive factor to unleash outstanding achievement in other dimensions and make them find their way to the market.
Our study provides a status quo analysis and theoretical strategy, focusing on Switzerland as a reference country, what can be done on a national level to foster a development towards a "Unicorn Nation […]": a national economy, that comprises a flourishing startup ecosystem, with an effective transition of innovation output into commercialization, high founding rates, increasing success rates, manifold high-growth cases, and across all stages suitable regulatory framework conditions, as well as sufficient access to funding.



2. Status quo analysis

The starting point for the development of concrete recommendations for action is an overview of the national status quo. This is based on a condensed meta-study along the most important political, economic and social dimensions for entrepreneurship and innovation and, building on this, a more in-depth analysis of these areas with relevant stakeholders of the Swiss entrepreneurship ecosystem (see chapter 3).
As part of the meta-study, the focus on Switzerland is supplemented by selected best practices from abroad, which can be classified as exemplary with regard to entrepreneurship and provide impulses for the concrete design of measures in Switzerland.

2.1 Focus Switzerland

With a 7th place in the category "Best locations for entrepreneurship and startups" according to the "Best Countries Ranking 2021", Switzerland plays a significant role in the international startup scene. This ranking is even more motivating in view of other nations with which Switzerland shares one of the places in the top 10, large countries such as the USA and smaller nations with technology leadership such as Singapore. In terms of general attractiveness as a business location, Switzerland even ranks 4th worldwide according to this ranking. [11]

Analyses of the World Bank's "Doing Business" report paint a far less positive picture. According to this list of relevant economic indicators, Switzerland ranks 36th out of 149 countries - behind nations known for their innovative strength and startup culture, such as Lithuania, Israel, the USA and Singapore, but also behind some countries that at first glance appear to be less entrepreneurial, such as Turkey and Georgia. While Switzerland scores very well in dimensions such as legal certainty in general (5th place) and infrastructural concerns (e.g. "quality and accessibility of power supply", 11th place), low rankings in the categories "ease of starting a business" (81st place) or "costs of starting a business" (90th place) are decisive for a rather moderate overall result. [12]

2.1.1 Innovation and infrastructure as the foundation for entrepreneurship

One of the most important and internationally comprehensive analyses for assessing a nation's innovativeness is the "Global Innovation Index" of the World Intellectual Property Organization (WIPO). The innovation profiles of 132 countries worldwide are recorded annually, enabling targeted benchmarking in individual dimensions in an international comparison. The respective national ranking is made up of the following factors:[13]

<u>Innovation input</u>

- Science and human capital: Research & development, education system, secondary / higher education systems
- Institutions: Political, regulatory and economic environment
- Infrastructure: Information and communication technologies (ICT), general infrastructure, environmental sustainability
- Market complexity: Market size, trade, diversification; access to financing, investments and credit
- Business complexity: Link between innovation and business activities (*knowledge absorption, innovation linkages*), role and availability of qualified specialists

<u>Innovation Output</u>

- Knowledge and Technology Outputs: Knowledge generation, impact and distribution
- Creative outputs: Intangible goods, creative products and services (incl. *online creativity*)

[11] Best Countries Ranking 2021 (2021)

[12] World Bank Group (2020)

[13] Dutta, Lanvin, Rivera Leòn, & Wunsch-Vincent (2021).

Measured against the above factors, Switzerland ranks first both in the overall international ranking and in relation to the regional peer group of European countries and the reference value of other OECD high-income nations.[14] For a detailed breakdown along the core dimensions mentioned above, see Figure 1:

Country / Economy	Overall GII	Institutions	Human capital and research	Infrastructure	Market sophistication	Business sophistication	Knowledge & technology outputs	Creative outputs
Switzerland	1	13	6	2	6	4	1	2
Sweden	2	9	2	3	11	1	2	5
United States of America	3	12	11	23	2	2	3	12
United Kingdom	4	15	10	10	4	21	10	4

Figure 1: Dimensions of the Global Innovation Index- Ranking and Positioning of Switzerland in International Comparison

While other reference countries are subject to annual fluctuations in terms of innovativeness, Switzerland has consistently occupied the top position in the Global Innovation Index ranking over the past five years.[15] This is particularly relevant in view of current global economic uncertainties, increasing crisis situations and the ongoing international impact of the Covid 19 pandemic: The ability to innovate represents one of the most important resilience factors for economic prosperity under volatile framework conditions.[16] There is a clear link between innovation activity and social development or prosperity, both in terms of the individual national economy and at the supranational economic level. It is therefore even more positive that national investments in research and development did not decline during the Covid 19 crisis, as was the case, for example, in the wake of the dot-com bubble in 2001 or at the time of the banking crisis in 2008, but instead reached a new high.[17]

The reason for Switzerland's leading position in terms of innovation is in particular an excellent and competitive university and research landscape: 100 of the total of 400 startups founded in Switzerland each year are academic spin-offs.[18] In terms of the number of associated Unicorns, ETH Zurich ranks third in Europe behind the University of Oxford and the University of Cambridge. [19]

In terms of the input-to-output ratio of innovation activity, Switzerland stands out in particular; testifying high efficiency and effectiveness of investments in research and development.[20]

Figure 2 shows an overview of the subdimensions of innovation inputs and outputs relevant for entrepreneurship.[21]

[14] Dutta et al (2021).

[15] Dutta, Lanvin, & Wunsch-Vincent (2020).

[16] Dutta et al (2021).

[17] Dutta et al. (2021); State of European Tech (2021).

[18] Eichler, Jank, & Zwankhuizen (2021).

[19] Mohout (2019)

[20] Dutta et al (2021).

[21] Dutta et al (2021).

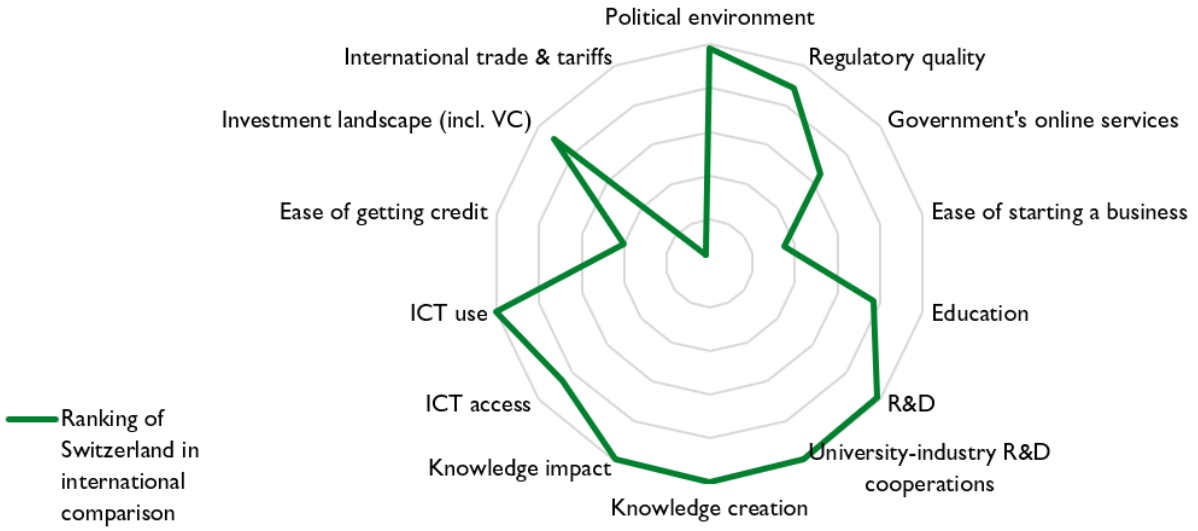


Figure 2: Ranking of Switzerland along relevant innovation dimensions. Source: *Global Innovation Index 2021* data.

Infrastructure represents the basis for innovation activity, for social equality of opportunity to participate in the innovation process and its commercialization.[22]



Outlook: Investments as an indicator for national homogeneity of infrastructure

63% of the total financing volume in Europe flows into startups that have their headquarters in a capital city or a metropolis similar to the respective capital city. This figure is significantly lower in Switzerland (reference city Zurich as the largest metropolis) at 25%. The reason for this is that an excellent nationwide infrastructure increases attractiveness for startups to settle in non-metropolitan areas. In Switzerland, for example, the canton of Zug and the city of St. Gallen attract an above-average amount of startup capital in terms of population. [23]

Innovations form the basis for the foundation of new, technology-driven companies. Pronounced innovativeness is a decisive factor for growth and the success chances of young companies, which can be derived, among other things, from an above-average probability of survival of so-called spin-offs. [24]

Considering the high level of innovation activity in Switzerland, this has so far only been partially exploited in terms of the effective number of startups. In a European comparison, Switzerland ranks as a top 7 nation in terms of the number of startups per population;[25] and thus behind countries such as Finland and Denmark, which, however, only rank 5th and 6th in terms of their innovation output.[26] Acknowledging the excellent level of innovation and the relatively low startup rates, future political measures should be geared towards promoting the transfer of Swiss innovativeness into marketable companies. This will ensure that the world-class level of innovation as an input factor is also reflected on the output side in corresponding value creation for the national economy.

[22] Kurniawati (2020)

[23] State of European Tech (2021)

[24] Czarnitzki, Rammer, & Toole (2014).

[25] State of European Tech (2021)

[26] Dutta et al (2021).

2.1.2 Formal aspects of starting a business, political framework conditions and taxation

From the perspective of "Ease of Starting a Business", Switzerland ranks 36 out of 190 countries in an international comparison, placing it in the middle of the field. This is due to a high number of individual steps in the process of registering a company (total: 6), a long time to complete the administrative process of setting up a company (10 days on average), high process costs associated with setting up a company (2.3 % of average per capita income) and high requirements with regard to the minimum capital contribution for corporations.[27] The latter is due to the legal requirements for founding a limited liability company, which is the corporation with the smallest initial capital in Switzerland. With a share capital of at least CHF 20,000,[28] which must be fully paid up, the financial hurdles for founding a corporation are very high compared to other countries. Models such as the "haftungsbeschränkte Unternehmergesellschaft (UG)" in Germany, which can be founded with a minimum capital contribution of one euro, are not provided for in Swiss company law. [29]

In terms of the efficiency of the tax system, Switzerland ranks in the upper midfield in 20th place internationally, surpassed by countries such as Singapore and Bahrain (significantly less time required) as well as Canada, Estonia, Finland and Denmark (with 10-12 instead of >19 almost 50% fewer individual tax payments per year). An average medium-sized company in the manufacturing sector in Switzerland, which makes use of all digital services, makes 19 individual tax payments per year, invests 63 hours in the settlement of taxes, and waits 14.5 weeks for the refund of value-added taxes (VAT) paid.[30] These figures are only slightly lower for startups. While established companies generally have standardized processes for handling tax processes internally, startup founders and their teams often find these tasks very challenging.[31] The same applies to the settlement of social security contributions for teams of particularly early-stage startups, which are often perceived by founders as a threat to their business because they cannot be postponed.

In the area of general legislation and jurisdiction, Switzerland considers itself very well positioned in the international context. The neutrality, availability and relative objectivity of the judiciary make Switzerland a legally secure location, which is a hygiene criterion for being perceived as an attractive business hotspot from a foreign perspective as well. However, especially for startups and less well-capitalized companies, the long average time required to resolve legal disputes (598 days on average) and high associated litigation costs (24% of the value of the lawsuit on average) prove to be a challenge.[32] This not only threatens the solvency and liquidity of startups, whose cash flow management often has runways of 12 months or less until the next financing round,[33] but also puts them at a competitive disadvantage in the event of litigation with established entities, which can specifically build up reserves for this purpose.

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[27] World Bank Group (2020)

[28] Art. 773 CO. (Federal Act on the Supplementation of the Swiss Civil Code (Fifth Part: Code of Obligations) of March 30, 1911 (as of January 1, 2022)).

[29] Chamber of Commerce and Industry IHK (2021)

[30] World Bank Group (2019)

[31] Cf. Vogel, Peter, Hess, & Scherrer (2016).

[32] World Bank Group (2020)

[33] Moro-Visconti (2021)

2.1.3 Funding: From Pre-Seed Funding to Exit

Startups' access to external capital is an essential factor for survival, growth, and success.[34] Due to a distinct risk profile of startups, equity financing forms are the most widespread financing vehicle for early-stage development stages.[35] Debt financing is particularly important for innovation projects of companies already established on the market.

The financing stages according to the startup development are divided into the phases Pre-Seed (< approx. CHF 1 million), Seed (CHF 1-4 million), Series A (CHF 5-15 million) / Series B (> CHF 10 million) / Series C (> CHF 20 million average funding volume) /... (collectively referred to as scale-up or growth phase), and usually aim at a liquidity event in the form of an exit at the end of the financing horizon.[36] Ventures are classified as scale-ups if they grow exponentially at annual rates of 50-100%, employ between 100 and 1,000 people on average and accumulate a financing volume of approximately CHF 20-100 million.[37] In case of a successful development, the exit typically takes the form of an initial public offering (IPO), merger, acquisition, leveraged buyout, secondary purchase to a financial investor or trade sale to a strategic investor.[38]

Pre-Seed / Seed

The most typical form of pre-seed financing are equity investment by business angels and early-stage venture capital companies (VCs).[39] Likewise, financing by family, friends and acquaintances (the "3Fs" = "family, friends, & fools") of the founding team plays an important role. Scientific projections assume that the 3Fs exceed that of professional early-stage investors in terms of total financing volume.[40]

In terms of the number of completed early-stage funding rounds (pre-seed, seed), Switzerland ranks third worldwide with an average of four funding rounds per 100,000 citizens. This value corresponds to the funding activity in the USA, exceeds that in Sweden by a factor of two and that in Germany by a factor of four.[41]



Should "family, fools, & friends" financing be promoted in parallel with business angel investments?

Although comprehensive market data are lacking due to their informal nature, statistics suggest that the social environment of founders / founding teams is the most important source of financing in terms of volume, especially in the very early startup phase.[42] Data from the United States and the

[34] Davila, Foster, & Gupta (2003).

[35] Moro-Visconti (2021)

[36] Alemany & Andreoli (2018)

[37] Grichnik, Hess, Greger, Goeldi, & Schweitzer (2023).

[38] Roosenboom (2018)

[39] Mason & Botelho (2018)

[40] Bygrave & Hunt (2004)

[41] Kyora & Rockinger (2021)

[42] Riding (2008)

United Kingdom, show that incentives at the income and property tax level are powerful to stimulate investment activity in the informal sector.[43] Studies show an inverse relationship between tax rates and the overall volume of informal investments.[44] Against this background, the question arises whether a political-tax incentive for private individuals to increase informal investment activity is a suitable measure to support startups in their early phases by facilitating access to capital. Results of pilot projects from abroad (including in the form of partial tax reform in some U.S. states)[45] are a clear indicator that desired positive effects on the startup ecosystem are not in proportion to the associated costs from an overall societal perspective.[46] This is caused by the following reasons:

- Tax benefits primarily incentivize investments by amateur investors, who may not be able to assess the high risk profile of startups [47]→ Private assets are invested in high-risk assets instead of conventional forms of investment (which, for example, represent an important contribution to retirement provision for private investors).
- Amateur investors are less able to assess the quality of startups than business angels with existing investment experience→ Access to financing is a quality gateway[48]
- The return on investment (ROI) of professional business angels exceeds that of 3Fs investors by many times[49]→ ROI as an indicator of the societal value added

Based on international evaluations of government measures, the following approaches have proven to be particularly effective in promoting and strengthening early-stage investments:

- In the area of early-stage financing, the greatest added value for society and the startup ecosystem can be created by focusing on business angels.[50]
- The quality (operationalized by ROI) of business angel investments increases with the experience of the individual.[51] Formal knowledge can be promoted via government-supported business angel academies.[52]
- Co-investment models as top-ups of private business angel investments by government funds increase the available financing volume without undermining the functioning of important quality gateways (including privately motivated due diligence processes).[53]

[43] Boyns, Cox, Spires, & Hughes (2003).

[44] Bygrave & Hunt (2004)

[45] Cf. Boyns, Cox, Spires, & Hughes (2003).

[46] Gompers & Lerner (2003)

[47] Gompers & Lerner (2003)

[48] Blohm, Antretter, Sirèn, Grichnik & Wincent (2020); Gompers & Lerner (2003).

[49] Riding (2008)

[50] Riding (2008)

[51] Capizzi (2015)

[52] San Josè, Roure, & Aernoudt (2005).

[53] Aernoudt (2005)

- Business angel syndicates increase the quality and the available financing volume, incl. "smart money" aspects. The activities of professional business angel clubs can be supported by clear regulatory frameworks and a simplified legal structure for syndicate formation and management.[54]



Outlook: INVEST Wagniskapitalzuschuss grant - a funding measure for early-stage investments by the German Federal Office of Economics and Export Control

Since May 2013, the German Federal Ministry for Economic Affairs and Climate Protection has been promoting investments by private individuals (business angels) in startups with tax-free grants through the "INVEST - Wagniskapitalzuschuss" program. Funding is provided exclusively for investments in startups with high innovation and technology content. Business angels are reimbursed 20% of the issue price of the shares in the case of a direct investment, and 10% in the case of a convertible loan. The minimum investment amount eligible for funding is EUR 25,000 per investor. Only investments by private individuals who are not otherwise affiliated with the company are eligible for funding. The minimum amount per ticket size and the focus on direct investments by external private individuals ensure a minimum degree of professionalism and a funding focus explicitly on business angels, not on 3Fs investors.[55] The INVEST grant of the German Ministry of Economics has contributed to a strengthening of the German startup scene in recent years. [56]

Series A

As total financing volumes increase, venture capital funds (VCs) gain in importance from the Series A stage onwards. While Switzerland performs excellently in international comparison in pre-seed and seed financing, the framework conditions for financing startups from the Series A onwards become less favorable.[57] Average financing volumes for startups as well as venture valuations are below the average of OECD reference countries.[58] This indicates more intense competition among startups to obtain financing from institutional investors, or a market imbalance with too few and too few strong investors in relation to the number of startups worth financing.

Levelling out minor fluctuations, the absolute financing volumes of Swiss venture capital funds have shown a growth trend for more than ten years. In terms of total VC investments measured as a share of gross domestic product (GDP), however, the trend is downward. In an international comparison, Switzerland is thus following the general trend of increasing VC investment volumes, but at a slower growth rate. While Switzerland still held fifth place worldwide in terms of VC investments as a share of GDP in 2019, it fell back to eighth place in 2020 and, caused by a less pronounced financing surge during the Covid 19 pandemic, to 12th place the following year. Leading nations in the field such as Sweden and Israel have a fivefold higher VC investments-to-GDP ratio. [59]

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[54] Aernoudt (2005)

[55] Federal Office of Economics and Export Control BAFA (2022)

[56] Gottschalk, et al. (2016).

[57] Eichler, Jank, & Zwankhuizen (2021).

[58] Kyora & Rockinger (2021)

[59] Kyora & Rockinger (2021); State of European Tech (2021).

Series B / Series C / Series D

As the size of the financing round and the maturity of the startup increases, the framework conditions for domestic financing deteriorate. Since 2018, the total volume of investments by U.S. investors in Swiss startups has been higher than that of Swiss investors; resulting from the structure of later-stage financing rounds, in which foreign investors show higher activity than domestic investors.[60] Between 2010 and 2019, about 80% of the venture capital invested in Swiss startups came from foreign investors (Israel, Sweden: about 60%). The reasons for this are a low number of Swiss venture capital funds with a focus on growth phase financing as well as a more pronounced networking of the U.S. American investor scene, which again favors the structuring of follow-up financing rounds with foreign capital.[61]

A high proportion of the value created by good conditions for early-stage financing is withdrawn from access by the Swiss economy and society in the medium to long term, since the capital returns from successful investments flow back to the foreign investors and are not necessarily reinvested in the Swiss ecosystem. [62]

Despite the high presence of foreign investors, this does not fully compensate for the low number of domestic growth-stage investors. The probability of a Series C financing round after a successful Series A round is relatively low at 9% for Swiss startups, compared to the USA (20%) or Israel (16%).[63]

Exit

It takes an average of 10 years for Swiss startups from foundation to exit. The largest exits in terms of volume can be found in the pharmaceutical and biotech sectors.[64] In 2021, no Swiss startup was recorded among the 20 largest international VC-backed exits (UK: 11; Germany: 4; Sweden: 2 ventures).[65] This should be regarded as critical, since the largest part of the previously created value is released at the moment of the exit, and thus the probability of an exit is decisive for the extent to which the local economy benefits from startup support in the longer term and retrospectively.[66]
The probability of an acquisition (trade sale), the most common form of exit, after a successful Series A round is 13% for Swiss startups, which is significantly lower than for nations such as the USA (24%) and Israel (17%).[67] The decisive factor for lower chances of an exit in the form of an acquisition is a below-average M&A activity of existing Swiss companies, which reduces the repertoire of potential acquisition partners in Switzerland and at the same time favors the probabilities of a buyout by foreign companies.[68]

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[60] Kyora & Rockinger (2021)

[61] Keil, Markku, & Wilson (2010).

[62] Cf. Dörner, Flötotto, Henz, & Berger-de Leòn (2021).

[63] Kyora & Rockinger (2021)

[64] Kyora & Rockinger (2021)

[65] State of European Tech (2021)

[66] Dörner, Flötotto, Henz, & Berger-de Leòn (2021).

[67] Kyora & Rockinger (2021)

[68] Pisoni & Onetti (2018)

The lower M&A activity of Swiss corporates is also accompanied by a relatively low share of corporate venture capital (CVC) in the total financing volume.[69]

2.1.4 International trade and external economic relations

Compared to the European Union (EU) and other startup nations such as the UK and the US, Switzerland has a small domestic market, making access to international markets highly relevant for Swiss startups from the early stages of development on. Only for a few startups, Switzerland remains the most important core market. [70]

50% of all Swiss startups already have an international market orientation in their early development phase; around one in three startups serves the EU market, and 16% are globally active. Nonetheless, the degree of internationalization among startups in the EU periphery is higher on average than in the Swiss comparison group. This is due to a lower administrative burden when EU-domiciled startups tap into the EU market. [71]

In terms of the modalities of foreign trade, Switzerland ranks 39th internationally.[72] The average time required to process documents relevant to the export of a non-regulated product is two hours; plus an additional hour at the customs office when crossing the border, as well as processing costs of around CHF 75-201 (depending on the complexity and quantity of the product to be exported). [73]

For access to global markets, the institution "Switzerland Global Enterprise" is particularly relevant for startups. It offers support programs and services explicitly tailored to the needs of startups, which are used extensively by Swiss startups and enjoy great popularity.[74]

While importing goods tends to be more complicated than exporting them, the situation is reversed for financial resources. Startups with headquarters in Switzerland are seen as attractive investment objects by foreign financial investors, which favors an influx of capital from international capital markets. Another factor that makes Swiss startups attractive as investment objects is the tax exemption of capital gains in private assets.[75] Access to foreign capital and the inclusion of foreign investors in the cap table is associated with low barriers for Swiss startups.[76] Only the formal aspects of the investment process are seen by investors and founders as in need of reform, including comprehensive notary requirements and the lack of internationally valid digital signatures (see Sections 3.2.1 and 3.2.3).

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[69] Kyora & Rockinger (2021)

[70] Switzerland Global Enterprise (2022); Unger (2020)

[71] Kollmann, Stöckmann, Hensellek, & Kensbock (2016).

[72] World Bank Group (2019)

[73] World Bank Group (2019)

[74] Switzerland Global Enterprise (2022)

[75] Eichler, Jank, & Zwankhuizen (2021).

[76] Heimann & Kyora (2022)

2.1.5 Labor market: Access to top talent and competitiveness

The Swiss labor market is characterized by a high proportion of skilled workers. Startup founders in Switzerland stand out in an international comparison due to their high level of education; 90% have a university degree, 50% have a master's degree as their highest level of education, and a further 21% obtain a doctorate (average for the OECD reference group: 10%).[77] The high level of education of founders refers both to the group of Swiss citizens and to foreigners who found a startup in Switzerland.
At 31%, the proportion of foreigners among company founders is higher than in other economic sectors.[78] On the part of the first startup employees ("early stage employees"), there is also a positive migration balance in terms of the inflow versus outflow of qualified specialists.; referred to as "brain gain".[79]

Difficulties on the national labor market arise for startups in particular with regard to potential skilled workers with citizenships in non-EU countries.[80] Foreign professionals are highly relevant for Swiss startups; 57% of all employees do not have a Swiss passport.[81] Access to foreign talent pools is becoming increasingly important for ventures in the growth phase, in which personnel expansion of the team often represents a limiting factor.[82] Administrative framework conditions complicates the immigration of relevant top talent from non-EU countries and have a negative impact on Swiss-based startups with high scaling requirements.[83] Top talent in this context refers to (potential) employees who, due to their above-average skills, level of knowledge and/or previous work experience, as well as their willingness to perform, contribute significantly to the success of a startup and represent a success-critical resource.[84]

Another characteristic of the Swiss labor market is the relatively high level of wage costs. Switzerland does not have a minimum wage at the federal level. The average minimum wage in the five cantons that do have one is CHF 20.50 per hour, which is significantly higher than comparable values in the rest of Europe (Germany: €12; France: €10.85).[85] For qualified specialists, the high wage level represents a strong pull factor, which increases the attractiveness of Switzerland as a location from the employee's point of view. For young companies with strong resource constraints, however, a high wage level on the other hand represents a significant cost factor.[86] While the core team in Switzerland works under high labor costs, specific areas of activity are handed over to team members based in low-wage countries (e.g., full-stack IT development by experts in Romania) in order to adjust overall labor costs to a level that is competitive compared to the surrounding EU countries.[87]

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[77] Kyora & Rockinger (2021)

[78] Kyora & Rockinger (2021)

[79] Kyora & Rockinger (2021)

[80] Siegenthaler & von Wartburg (2021); Kalt, Weisser, & Bee (2019).

[81] Kollmann, Stöckmann, Hensellek, & Kensbock (2016).

[82] Eichler, Jank, & Zwankhuizen (2021).

[83] Brandes, Stutzer, Grampp, & Naville (2020); Eichler, Jank, & Zwankhuizen (2021).

[84] Martin & Schmidt (2010)

[85] Press and Information Office of the Federal Government (2022); Foreign Trade Center Paris (2021)

[86] Eichler, Jank, & Zwankhuizen (2021).

[87] Unger (2020)

In general, the effective number of new jobs created by startups in Switzerland is relatively low in relation to total startup activity.[88] This is due to the fact that the maximum of value creation and job creation along the life cycle of a startup occurs at the beginning of the growth phase.[89] In the absence of options for domestic growth financing of startups (see sections 2.1.3 and 3.2.3), the potentially positive effects on the labor market are not fully exploited.

In terms of gender balance in startups, Switzerland lags slightly behind in an international comparison.[90] Although there is a trend toward more startups by female entrepreneurs, they are still in the clear minority at 19.6 %.[91] Looking at the share of women among CEOs in startups, it is particularly low at less than 10 % (UK: 12.9 %). The low number of female founding members also has the effect of underrepresenting women in startup teams, with female founders playing a key role in the function of CEO: If a startup has a female CEO, 44 % of all team members are female on average; in case of a male CEO, it is only 9 %. [92] Significant gender differences also exist in the area of startup financing in the form of a "gender funding gap".[93] In Switzerland, a venture with a male founding team raises 2.7 times more capital than a female-founded startup (Israel: 1.7).[94] There are many reasons for this, including socio-cognitive factors as well as the low proportion of women among investors.[95] A positive trend can be observed with regard to both the gender-funding gap and the proportion of female investors: Both have improved slightly in recent years.[96] In summary, the persistent underrepresentation of women in founding, financing and working in startups is still a major untapped potential for Switzerland.[97]

2.2 Selected Best Practices

In the following, two best practice examples are presented: the national development of Sweden and a selected startup program established in the United Kingdom.

2.2.1 Startup Nation Sweden: Overview of a development towards a unicorn hotspot - the Swedish Paradox

Within the last five years, the Swedish startup scene has developed into a lively hotspot with a high proportion of serial entrepreneurs, good financing conditions and high chances of success for startups. Prominent examples are Spotify, Klarna, NA-KD, voi., and Volta Trucks. Surpassed only by Silicon Valley,

[88] Handelszeitung (2020)

[89] Dörner, Flötotto, Henz, & Berger-de Leòn (2021).

[90] Meyer, Meyer, & Merz (2021)

[91] Wall & Steigerthal (2018)

[92] Kyora & Rockinger (2021)

[93] Mamou (2021)

[94] Kyora & Rockinger (2021)

[95] Hirschfeld, Guild, & Wöss (2020).

[96] Mastercard Index of Women Entrepreneurs (2022)

[97] Innosuisse (2019)

the region around Stockholm is the second most common regional origin for unicorns worldwide.[98] Two of the three largest VC deals in 2021 went to Swedish scale-ups, with investment amounts of USD 2,750 million and USD 1,000 million.[99]

As a comparison, Sweden is interesting due to some economic parallels to Switzerland: high per capita government spending, corresponding to the Swiss level, and a domestic market, with an annual market volume also similar. Surpassed only by Switzerland, Sweden ranks second in the world innovation rankings according to the Global Innovation Index. Together with Switzerland, Sweden is the only nation that has succeeded in ranking among the top three international innovation nations for more than ten years. In the "Institutions" category, which is made up of the quality of public services, regulatory framework conditions, administrative hurdles and the ease of setting up a company, Sweden is even superior to Switzerland according to the 2021 evaluation.[100] Although Sweden is highly innovative, the number of university-associated spin-offs is relatively low at 5% (Switzerland: 25%).[101]
Sweden has succeeded in moving from an entrepreneurial nation to the clear top of the global entrepreneurship landscape. While the percentage of VC investments five years ago was still at the same level as in Switzerland, Sweden now ranks third internationally with the highest relative VC investment activity, surpassed only by Israel and the U.S. state of Massachusetts.
Another indicator for assessing national investment activity and the availability of high-risk capital is the cumulative VC investment volume in relation to the national population. Also based on this parameter, Sweden leads with a total volume of USD 1,567 per capita annually (Switzerland: USD 777).[102]
The good financing conditions in Sweden not only favor the growth of scale-ups into unicorns, but also the success of smaller or less rapidly scaling startups: 74% of startups survive the critical 3-year threshold.[103]

In addition to a vibrant startup ecosystem, Sweden also stands out for its good intrapreneurship performance. Intrapreneurship refers to entrepreneurial initiatives within an existing company that have been proven to increase innovation outputs and a country's competitiveness.[104] 28% of the working Swedish population is involved in intrapreneurship projects. This figure is significantly higher than in Switzerland and more than twice as high as in the USA, which is already in the international top group with 11.7 %.[105]

The high presence of intrapreneurship projects is reflected in the entrepreneurial imprint of the population as a whole: 65 % of the average population has identified or also seized concrete entrepreneurial opportunities within a period of 12 months (USA: 47 %).[106] While Switzerland is associated with a pronounced risk aversion and the preservation of success-proven economic patterns, a broad anchoring of entrepreneurial initiatives at different levels of society in Sweden leads to a high prevalence of an

[98] Calvino, Criscuolo, & Menon (2016).

[99] State of European Tech (2021)

[100] World Bank Group (2020)

[101] Kollmann, Stöckmann, Hensellek, & Kensbock (2016).

[102] State of European Tech (2021)

[103] Calvino, Criscuolo, & Menon (2016).

[104] Alpkan, Bulut, Gunday, Ulusoy, & Kilic (2010); Morais, dos Santos, da Silva Tolentino, & Martins, (2021).

[105] Stam & Stenkula (2017)

[106] Calvino, Criscuolo, & Menon (2016); Eklund, Kardelo, Lappi, Svensson, & Thulin (2021).

"entrepreneurial mindset".[107] The result: For every 1,000 employed people in Sweden, there are 20 startups less than three years old (USA: 5 startups).[108]

The high presence of entrepreneurship in Sweden appears surprising against the background of the economic, political and social conditions. Above-average tax rates - including a value-added tax (VAT) rate of 25 %, high per capita government spending, high employer costs and an extensive social system are factors that have a significantly negative influence on entrepreneurship activities.[109] Despite these conditions, Sweden has succeeded in establishing a reputation as a global startup hotbed.

Numerous policy measures and legislative initiatives at the federal level have contributed to this development since the 1990s. The following measures turned out to be particularly effective:[110]

- Reduction of corporate taxation from 52% (1990) to 20.6% [111]
- Deregulation of the private sector (including transport (incl. rail transport, air transport), telecommunications, electricity) and thus creation of more freedom for entrepreneurial initiatives and competition
- **Anti-monopolization legislation** increases pressure on existing large companies and enables simplified market entry for young companies[112]
- Comprehensive **Tax Law Revisions:**
    - 1991: Elimination of tax loopholes for large companies vs. massive reduction of tax burden for small companies
    - 2001: Abolition of inheritance tax increases potential investment capital from private individuals
    - Ongoing: Comprehensive **tax benefits** for **founders** and in the startup context
    - Introduction of **flatter, but high taxation rates for** private **income**
- Strongly developed welfare state (especially with regard to education, health care, child care), which forms a "safety net" and thus allows entrepreneurial risks to be taken.[113]
- Flexibilization of labor law (e.g. allowing temporary work with limited employee protection, making wage negotiation systems more flexible, etc.).[114]

2.2.2 FinTech in the United Kingdom: The Regulatory Sandbox

The Financial Conduct Authority (FCA) of the United Kingdom introduced the first Regulatory Sandbox for FinTechs in May 2016.[115] FinTech is short for financial technology and has established itself as a central

[107] Lindberg, Bohman, Hulten, & Wilson (2017).

[108] Aidis, Estrin, & Mickiewicz (2012).

[109] Aidis, Estrin, & Mickiewicz (2012).

[110] Semuels (2017)

[111] Business Sweden (2022)

[112] Bergnehr & Svensson (2021)

[113] Semuels (2017)

[114] Heyman, Norbäck, Persson, & Andersson (2019).

[115] Allen (2019)

term for structural digitalization in the financial services industry. The FinTech market is characterized by a rapidly growing number of startups and companies without a banking license (non-banks). The aim of the UK Regulatory Sandbox was to bring innovative ideas to market within a short time and at low cost, and to make it easier for innovators in the financial sector to finance their startups by reducing regulatory risks. [116]

While the Sandbox was originally only accessible in annual cohorts, applications are now possible at any time.[117] Requirements for inclusion in the Regulatory Sandbox are that (i) FCA-regulated activities are carried out, (ii) an innovative business idea is pursued, (iii) customers can benefit from it and are not exposed to undue risk, (iv) a genuine need for the support in the Sandbox is demonstrated, and (v) that the product to be tested is ready, a test plan has been developed, and regulatory restrictions are known.[118]

The Regulatory Sandbox contains various tools, which are presented by the FCA as follows:[119] Firms that have been accepted into the Regulatory Sandbox benefit from an adapted authorization process when they make the necessary application for authorization by the FCA, which results in an authorization limited to the Regulatory Sandbox. The FCA also acts in an advisory capacity by identifying relevant regulations and guidelines or providing informal information on regulatory issues. Furthermore, regulations that are not part of national or international law can be adapted or suspended. Finally, it is also possible to issue "no enforcement action letters", i.e. letters which assure that no disciplinary measures will be initiated by the FCA in the case of defined transactions whose permissibility is unclear.

A limited form of Regulatory Sandbox, which focuses on FCA advice but generally excludes market testing of innovative products, is offered under the name Innovation Pathways.[120]

The Digital Sandbox, which is an upstream instrument of the Regulatory Sandbox,[121] enables innovative companies, which would be subject to regulation by the FCA after the market launch of their products, to test their technical solutions in a virtual test environment.[122] For this purpose, a wide range of synthetic data and interfaces to existing providers of financial services are available.[123] In addition, various collaboration tools are provided to promote cooperation between developers, mentors and experts.[124] In contrast to the Regulatory Sandbox, the Digital Sandbox is not about enabling testing on the market with real customers, but about testing technical solutions with realistic data and interfaces.

Initial economic studies of the Regulatory Sandbox in the UK show a positive effect: companies that participated in the Regulatory Sandbox recorded an increase in capital raised of around 15% compared to non-participating companies, with the probability of funding increasing by around 50%.[125] A comparison

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[116] FCA (2015)

[117] FCA (March 27, 2022b)

[118] FCA (2022)

[119] FCA (March 27, 2022b), "Regulatory Sandbox tools."

[120] FCA (March 27, 2022a), "Who can apply to Innovation Pathways."

[121] Cf. FCA (April 2021) p. 8

[122] Cf. FCA (April 2021) p. 6

[123] FCA (April 2021) p. 9

[124] FCA (April 2021) p. 10

[125] Cornelli, Doerr, Gambacorta, & Merrouche (2020)

between countries with and without a Regulatory Sandbox also demonstrated an increase in the total amount invested in FinTech companies and the average amount invested, but not an increase in the absolute number of investments in FinTech companies.[126] Criticism of the regulatory sandbox is voiced, among other things, to the effect that it can lead to a reduced perception of the risks of FinTech companies and that there is currently little transparency and accountability.[127]

[126] Goo & Heo (2020)

[127] Cf. Brown & Piroska (2022)

3. Survey: Process and results

3.1 Objectives and methodology

To highlight the strengths and weaknesses of the Swiss startup ecosystem and to identify concrete fields of action at the political-regulatory level, experts from different areas of the startup scene were interviewed. The objectives of these interviews were, on the one hand, to close information gaps and to identify new relevant topics that were not addressed in the previous meta-analysis; on the other hand, to actively involve different stakeholder groups in the analysis of how concrete challenges in the context of startups and innovation could be solved. The non-representative survey of stakeholders relevant to the startup ecosystem was conducted in two steps: an online-based survey and in-depth personal interviews.

Online-based survey. The data collection took place in the period from June to July 2022. 60 experts participated in the survey. The survey took between 20 and 40 minutes to complete. For the main study, a questionnaire was developed in consultation and iteration with industry experts to ensure coverage of all relevant dimensions. The questions focused on the areas of regulatory framework conditions and approaches to improving them, bureaucratic aspects, financial incentives for starting a business, access to the labor market and the recruitment of top talent, including the hiring of specialists from abroad, financing options for startups, access to international markets, the role of universities and colleges in the area of innovation and knowledge transfer, and the innovation activities of existing companies.
The structure of the questionnaire was oriented along the respective topics with a mixture of open and closed questions, to ensure a high degree of comparability of the answers given and, at the same time, to capture divergent opinions and aspects not previously considered. At the beginning of the survey, participants provided information about their industry and (optionally) organizational affiliation.

Relevant experts in the field of startup and innovation were invited individually to participate by email and telephone. Participants are members of important Swiss startup institutions and interest groups from different sectors (MedTech, FinTech, financing, universities, etc.). They cover the most relevant perspectives on the complex "Startup & Innovation". In addition to this pre-defined core addressee group, the survey was shared via social media channels (LinkedIn was used here to address a professional target group), which increased the dispersion of the survey and reduced the risk of "blind spots" and biases in the selection of the participant group.

Interviews. Based on the results of the online-based survey, additional interviews with selected experts were conducted in the period from June to August as well as October and November 2022. A total of 12 interviews were conducted (see Figure 3).
The duration of the interviews was between 20 minutes and 2 hours. The main interview was conducted in each case via a digital conferencing tool (majority) or in person. For two of the ten interviews (total: twelve individual interviews), an additional follow-up interview followed at intervals of 2 to 3 weeks to specify details of the main interview.
Figure 3 provides an overview of the associations, stakeholders and companies involved in the data collection via survey and interviews.



Figure 3: Stakeholders involved in primary data collection (i.a.)

3.2 Results

Overall, the startup and innovation ecosystem in Switzerland is rated by respondents as well positioned and competitive in international comparison. This is reflected in an average rating of 6.14 out of 10 points (response to the question: "*How would you rate the regulatory framework for startups in Switzerland on a scale of 1 to 10?*"; [1: very poor, 10: excellent]; see Figure 4). Switzerland's excellent university system with high research activity is declared as a pronounced competitive advantage. When it comes to transferring research outputs to commercialization, the experts share the opinion that there is a concrete need for action.

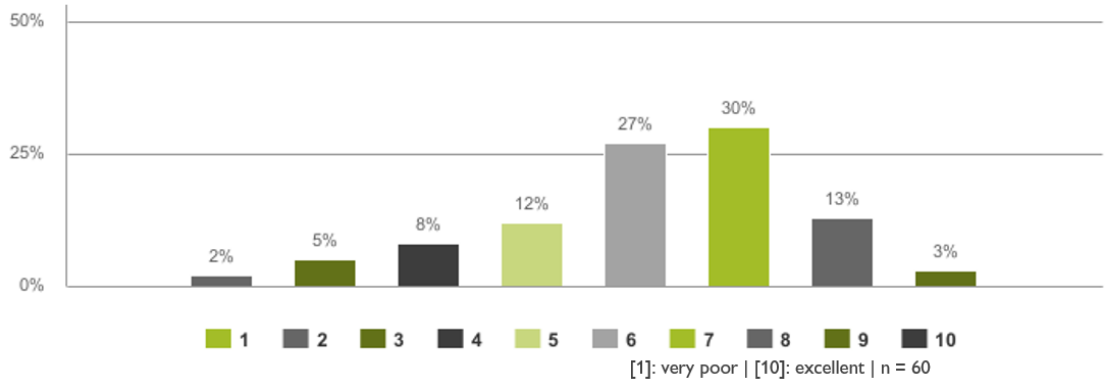


Figure 4: Response structure to the question *"How do you rate the regulatory framework for startups in Switzerland on a scale of 1 to 10?*" - Results of the online survey

If an innovation succeeds in making the leap from research to commercialization by founding a spin-off, the financing prospects in the early startup phase are considered to be very good. Problems arise in later financing phases and with increasing financing requirements.
Switzerland's island position in the EU is cited as a disturbing factor for startups with regard to various topics: the expansion into international markets (free trade) and the harmonization of regulations in areas such as MedTech, as well as the recruitment of top talent from abroad.

Taxation is a relevant concern for all players in the startup scene. Overall, it is emphasized that taxation is very competitive in international comparison. Nevertheless, startups face challenges, due to tax differences between cantons, ambiguities in the assessment of taxation and a high level of bureaucracy. The restricted

possibilities for deferring levies such as social security payments are considered to be burdensome. For business angel investors, problems arise in the context of possibly being classified as professional securities dealers.

Based on the data collected during this study, possible fields of action were defined. These include the regulatory environment for startups, research and knowledge transfer from colleges and universities, the acquisition of top talent, the conditions for financing startups, the startup-relevant dimensions and processes in the tax system, trade and access to international markets, as well as infrastructure, social systems and the entrepreneurial mindset (see Figure 5).
However, not every one of these fields of action is taken up in the legal section (for the selection, see Section 4); this is also due to the fact that legislative measures have already been taken to improve the respective situation or corresponding reform projects are underway.



Figure 5: Identified potential fields of action

The relevant topics and dimensions, which represent important factors for promoting entrepreneurship and innovation activity, are discussed below. Figure 6 provides a condensed overview of the results for the most important core areas.

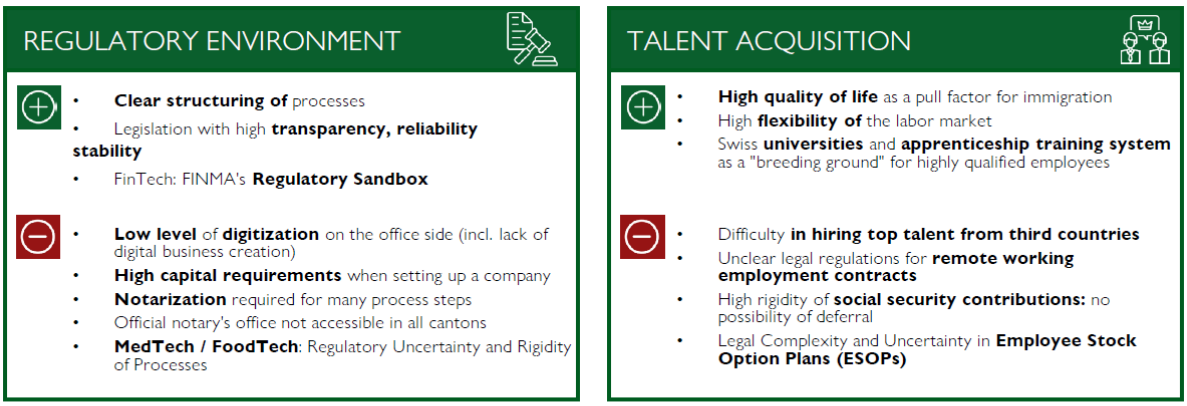


Figure 6: Overview of results by subject area



Figure 6: Overview of results by subject area - continuation

3.2.1 Regulatory Environment: Formal aspects of company formation and management

STATUS QUO: STRENGTHS.

In general, the regulatory quality in Switzerland is considered to be high. The formal processes for setting up a company are clearly structured. Legislation and its application are transparent and objective. For the most part, services from authorities can be used without long waiting times.

In most industries, regulations are comprehensively defined, which in combination with a reliable legal system means higher legal certainty for startups (for example, in comparison to the USA). This increases investor confidence, making Swiss startups more attractive to foreign investors.

In the FinTech sector, experts consider the regulatory framework to be very mature and appropriately flexible. The FinTech sandbox, whose concept could be transferred to other industries, is trendsetting. In an international comparison, Switzerland stands out positively in the area of cryptocurrencies, where the

Swiss Financial Market Supervisory Authority FINMA has proven to be a competent and solution-oriented partner.

STATUS QUO: NEED FOR ACTION AND CHALLENGES.

As a general point of criticism, respondents to the study cite an excessive amount of bureaucracy in terms of administrative, regulatory and tax processes.
There is a plea for comprehensive simplification of administrative processes and regulatory reforms, particularly in the MedTech and FoodTech sectors.
Figure 7 provides an overview of the perceived complexity of process steps relevant for setting up a company:

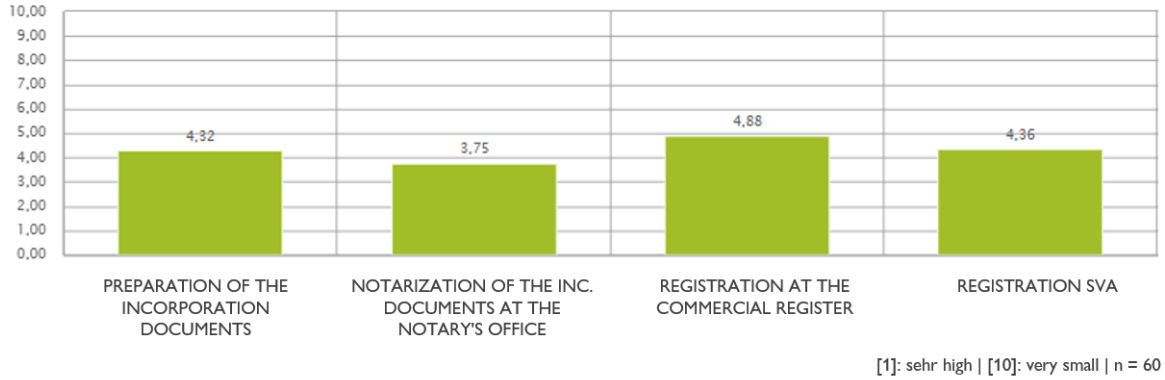


Figure 7: Bureaucratic burden of setting up a company by process steps - results of the online survey

In the following, the most important areas of action from the experts' point of view are described in detail and possible solutions to achieve improvements are provided:

Digitization.

The digitization rate of official processes in Switzerland is low, which is one reason for long process durations and high perceived bureaucratic burdens. The quality and availability of "*public services*" are rated on average at 5.03 out of 10 points (on a scale of [1: very poor, 10: excellent]).
Many processes have to be carried out on site and in person. There is no system for qualified electronic signatures that is compatible with foreign standards. The establishment of companies is not yet possible digitally and only within the opening hours of official offices. Overall, the "*complexity of founding a company*" was rated by respondents to this study's survey at 5.54 out of 10 points (on a scale of [1: very poor, 10: excellent]).

The following measures would be beneficial:

- **Digital company formation**: Enabling the digital formation of corporations via a nationwide formation portal, incl. a digital authentication process to confirm the identity of the founder(s). Alternatively, the founder can be given a deadline (e.g., 2 weeks) within which the formation is already legally valid, but the person must appear in person at an office for identity verification. In addition, the startup platform is connected to a financial institution so that due startup capital can be paid in directly. Digital incorporation is partially linked to the recommendations for action listed in the "Notary services" section.
- **Standard articles of incorporation with digital configurator function**: If founders choose digital incorporation, they are provided with standard articles of incorporation that they can adapt in a modularized system to their individual needs in a digital configurator (integrated into the incorporation portal). This reduces complexity and accelerates the process.

- **Digital signatures**: Establishment of an officially accepted digital signature that is based on and accepts foreign standards. Qualified electronic signatures are integrated into the processes of digital company formation. In the case of capital increases, the acceptance of qualified electronic signatures eliminates the requirement to be present at the notary's office (see section "Notary services").

Capital requirements.
The requirements for the basic capital for the formation of corporations are considered to be very high. For many founders, meeting capital requirements at the time of formation is a major hurdle. Some mention that securing the necessary capital significantly delays the incorporation process, disadvantaging founders who do not have the required equity capital. In particular, the focus here is on the capital requirements of the Swiss GmbH ("Gesellschaft mit beschränkter Haftung" = limited liability company) as the smallest form of capital company.

The following measures may be appropriate:

- **Expansion of partial liberation options**: Waiver of full payment of share capital at the time of formation. This does not affect the liability substance. Limited to the GmbH or applicable to all forms of corporations.
- **Contributions in kind**: Simplification of the contribution in kind for the payment of the share capital. A standardized process is to be established for startups, which does not require the involvement of a financial auditor. For this purpose, standardized price lists will be created, which can be used to determine the value of contributions in kind (flat value approach). The involvement of an external auditor is only necessary if a company wishes to set a value for a contribution in kind that differs from the price list. The standardization procedure is followed "by default", with individual audits on request.
- **Suspension of the formation capital**: Partial or complete suspension of the obligation to pay in the share capital for the new formation over a defined period of time. This special provision is limited to the formation of a limited liability company (GmbH). The liability substrate is not suspended by this.
- **Establishment of a mini-GmbH**: Enabling a GmbH-like foundation with a reduced share capital requirement; comparable to the model of the Unternehmergesellschaft (UG) in Germany. A reduction of the share capital and liability substance is conceivable.
- **Facilitating the conversion of a GmbH into an AG:** Simplification of the conversion processes of a GmbH into an AG ("Aktiengesellschaft" = public limited company). This increases the attractiveness of the GmbH as the first choice and reduces the level of perceived capital requirements.

Notary services.
In the context of notary services, the majority of experts consider the effort required for startups to be very high, Notarial certifications cause high costs: at the time of founding, as well as for later capital increases and further financing rounds. Additional costs are caused by the necessary involvement of a lawyer, e.g. for the drafting of articles of association and shareholders' agreements.

The following measures were suggested by the experts interviewed:

- **Company formation without a notary:** Company formation being possible without the need for notarial certification, e.g. by establishing predefined and federally accepted standard articles of incorporation, which are provided by the authorities as part of the formation process. The measure can be limited to the establishment of a (mini-) GmbH.
- **Standardization of capital increase processes**: To reduce the costs associated with financing rounds and capital increases, templates are provided that have been pretested by the authorities. The use of

these templates eliminates the need for notarial certification. Corresponding templates are made available via a digital platform; linked to a digital startup portal (see section "Digitization").

- **Cross-cantonal official notary's office**: Direct integration of notarial services in official offices ("Amtsnotariat"). For processes related to incorporation, the function of the official notary's office is to be extended uniformly throughout the country.

Industry focus FinTech

The majority of the experts surveyed describe the financial industry as very well regulated, with the exception of the insurance industry, where state regulation tends to be considered too restrictive.
Assessing market conditions from the perspective of active entrepreneurs only (according to the respondents in this study), the regulatory framework conditions are increasingly classified as too restricted and inhibiting innovation. A legal framework for open banking that can be applied to startups is still lacking.

The following measures could strengthen positive developments within the FinTech industry in the future:

- **Open banking regulation**: Issuance of clear guidelines for open banking for legally secure and simple applicability for startups in alignment with international standards.
- **Digital FinTech Handbook by FINMA**: Online platform on which FINMA presents process steps in a quick-to-understand way and provides relevant documents in the form of a checklist; to be applied conceptually to the most important issues relevant to FinTechs.

Industry focus MedTech.

The regulatory environment in the area of MedTech is classified as very critical. The level of digitalization at the Federal Office of Public Health ("Bundesamt für Gesundheit" BAG) is insufficient. Processes and administrative procedures are perceived as opaque and time-consuming.
Experts with a connection to the medical sector consider the suspension of the Mutual Recognition Agreements (MRA) with the EU to be critical (see Section 3.2.6).

The following measures are suggested:

- **Mutual Recognition Agreement (MRA)**: Update of the MRA with the EU.
- **MedTech Sandbox**: Establishment of a regulatory sandbox for the medical technology and engineering sector.
- **Digitization BAG**: Increase the digitization rate of the services of the Federal Office of Public Health (BAG), making processes quicker and easier to handle.

Industry focus FoodTech.

Interviewees in this study criticized Switzerland's often wait-and-see attitude in regulatory issues relating to FoodTech, explicitly in the sub-sector Novel Foods. Although Switzerland, as a non-EU member, has greater freedom, it does not take on an innovation-promoting pioneering role regarding legislation - as is the case, for example, Singapore in the Asian region - but instead bases its decisions on existing EU directives.
A conservative attitude towards the consumer protection in the approval of new products (e.g. cellular meat, new pesticides, genetic engineering) slows down innovations and their successful commercialization. The experts interviewed agree that potential side effects of new food products must be carefully analyzed. However, the necessary administrative and bureaucratic processes in cooperation with the Federal Office for Agriculture should be significantly accelerated and geared towards a solution-oriented partnership - especially in cooperation with startups.

To improve the framework conditions for FoodTech innovation is suggested:

- **FoodTech Sandbox**: Establishment of a regulatory sandbox for the food and agricultural technology sector; based on FINMA's Regulatory Sandbox.
- **Review of existing subsidies in agriculture**: Review of subsidy measures according to their usefulness for increasing sustainability in agriculture. Subsidy budgets could be established that are used to help the conservative agriculture and food sector to become more sustainable by incorporating innovation and technology.

Further
Other possible measures to strengthen the regulatory environment for startups and corporate innovation include:

- **Data protection legislation:** Facilitate data protection compliance for startups and small businesses. Requirements that are reduced in complexity and aligned with international standards should make it easier for startups to comply with without the help of lawyers. In addition, less restrictive use of data (in anonymized or semi-anonymized form) should be made possible in the context of innovation projects.
- **Artificial intelligence (AI)**: Establishing clear legal frameworks for the development and application of AI technologies. Collection of unnecessary data should be prevented, and at the same time a legally secure evaluation of approved data formats to promote innovation should be established.
- **Adaptation of OR Art. 725b**: Establishment of exemptions based on OR Art. 725 on over-indebtedness, to better meet the business characteristics of startups, which are commonly loss-making in the first years. The consequences that can be derived from OR Art. 725, such as the ongoing procurement of new capital to avert insolvency, are often not comprehensible from the perspective of foreign investors. Exemptions could be created for startups, especially in the technology sector.

In the concrete implementation of any proposed measures, a balance must be struck between the general adjustment of the legal framework and an adjustment that relates exclusively to the startup segment. For the implementation of the latter approach, special regulations can be created, which are exclusively applicable to companies with an age of less than 3-5 years and/or with an annual turnover of less than CHF 10 million in the previous business year.

3.2.2 Talent acquisition: Modalities of recruitment and employment in startup teams

STATUS QUO: STRENGTHS.
Switzerland as a location for employees is characterized by a very high quality of life. This increases the loyalty of domestic talent to the home country and is a strong pull factor for foreign specialists.
Compared to countries in the EU such as Germany or France, the Swiss labor market is relatively flexible, which is perceived as positive by startup founders.
Employment contracts for nationals can be designed with acceptable notice periods and thus accommodate the requirements of business development, which are sometimes difficult to predict.
The lack of powerful trade unions in the Swiss labor market is seen as a competitive advantage compared to the surrounding EU countries.
Universities and universities of applied sciences play an important role in the Swiss labor market: Companies of all sizes value talent educated at domestic secondary schools. Likewise, the Swiss vocational training

system is considered very mature (average assessment of the "*quality of skilled workers*" available on the Swiss labor market of 7.53 out of 10 points (on a scale of [1: very poor, 10: excellent])).

STATUS QUO: NEED FOR ACTION AND CHALLENGES.

While a high standard of living is an important pull factor, the associated high wage level in Switzerland is at the same time a hindrance to international competitiveness.
The high level of labor costs is a particular problem for startups, where team compensation is one of the main cost drivers under the condition of constant resource constraints.
At the same time, startups are competing with large technology companies such as Google or Microsoft, which often pay above-market salaries. This aspect is particularly critical regarding the acquisition of top IT talent.
In addition to high wage costs, startups frequently report additional burdens on liquidity due to social security contributions and the lack of flexibility to defer them in critical business situations.
While it is generally perceived as challenging for startups to be able to recruit sufficient skilled employees, the lack of top talent in the software and IT sectors is perceived as particularly severe. In general, the "*general conditions for recruiting and hiring top talent*" are rated with an average of 5.25 out of 10 points (on a scale of [1: very poor, 10: excellent]).

The levers considered most important according to the results of this survey are explained in detail below.

Work permits.

Due to the international competition for recruiting specialists, especially in the areas of IT and software, access to global talent pools is an important component of long-term competitiveness for Swiss startups as well as for established companies. Results of the survey show that startups have major problems recruiting skilled workers and that lack of access to them in later development phases limits rapid scaling. The administrative effort required to hire employees from non-EU countries is rated as very high. Isolated opinions in the survey support the full integration of Switzerland into the EU labor market and full membership in the Horizon Europe program.

Regarding the recruitment of top talent from non-EU countries, many respondents advocated an increase in visa quotas or the introduction of so-called "startup visas". However, it is questionable whether action in this area is needed. Existing visa quotas for non-EU citizens are for the most part not fully exhausted. In some cantons, it is also possible to employ non-EU citizens with a stay of less than 12 months in Switzerland irrespective of all visa quotas. The perceived problem of recruiting top talent from non-EU countries is therefore primarily an informational challenge, rather than a regulatory or political one. Our study survey identifies major gaps in knowledge about the actual handling of visa regulations, especially among the group of founders.

Remote Working - employment contracts.

From the perspective of both industry representatives and startup founders, there are regulatory uncertainties concerning remote working employment contracts with people living abroad. The possibility to work with foreign professionals in remote working models is important for Swiss startups, as the lower wage requirements compared to the national location can facilitate international competitiveness.
From the respondents' point of view, there is no clear guideline for remote employment contracts with foreigners. When working with employees abroad, companies face a high degree of uncertainty; among other things, the risk that foreign employees are subsequently classified as quasi-employees and contributions to social security institutions (SVA) in Switzerland are additionally demanded.

This challenge can be met with the following recommended actions:

- **Legal regulation for remote employment contracts**: Establish a clear legal framework for cooperation between Swiss companies and workers located abroad; both in terms of regular employment relationships and longer-term freelance projects.

Employee Stock Option Plans (ESOP).

Employee Stock Option Plans (ESOP) are important components of compensatory benefits in startups, especially against the background of lower monthly nominal wage payments on average. For startups, the administrative organization of ESOP is often challenging. The legal framework is perceived by interviewed investors and legal experts as unclear and not in line with the requirements of young companies.

Possible measures to improve the applicability of ESOP are as follows:

- **Regulatory clarity in the "sandbox" model**: Creation of clear, supra-cantonal legal structures for the establishment and application of ESOP. In addition, legally recognized templates are to be made available so that ESOP can be implemented without major legal support and bureaucratic effort.
- **Tax benefit**: Concessional treatment of ESOP to increase the financial attractiveness of employment in startups.

Others.

In addition to the approaches described above, experts consider the following aspects to be effective in promoting the recruitment and employment of top talent in startups in Switzerland:

- **Talent acquisition through BVG 1-e plans**: The awareness of BVG 1-e plans, representing an effective mechanism for attracting skilled workers for startups, is rated by experts as relatively low. Communication of the benefits of this provision should be intensified. BVG 1-e plans allow employees to determine how pension assets on insured salary components above CHF 129,060 are invested; tailoring the investment strategy to their personal investment horizon and risk capacity, and optimizing the return on pension assets on an individual basis.[128]
- **Flexibilization of employment contracts**: According to some respondents, startups need more flexibility in the legal framework of employment contracts to better address the high level of uncertainty and risk; including simplified framework conditions for performance-based instead of time-based employment contracts and shortened notice periods. This flexibilization could be limited to companies with an age of 3-5 years.
- **Collaboration with universities to create talent platforms**: Establishment of matching platforms for the recruitment of university and university of applied sciences graduates by startups. The development of these talent platforms can either be limited to national educational institutions or also include international top schools in order to attract foreign professionals.
- **Bring-back program for top Swiss talent from abroad**: The goal is to win back entrepreneurial talent that has emigrated abroad. Subsidies (e.g. temporary, free office space in a technology hub) or tax breaks could help to encourage multiple entrepreneurs to return to Switzerland.

[128] SwissLife (2022)

3.2.3 Financial perspective: General conditions for financing startups

STATUS QUO: STRENGTHS.

Switzerland is characterized by an overall well-developed financing landscape for startups. While surveyed founders rated access to capital in the early development phase as satisfactory, framework conditions at this stage were rated as good to very good by non-founders (other experts) (average: 5.95 out of 10 points for the "*pre-seed*" phase, on a scale of [1: very poor, 10: excellent]). The range of different funding sources is broad: Starting with informal investments (many founders report support from friends and family before the first official round of financing), through a strongly established business angel scene covering a broad repertoire of industry focuses, to institutional capital providers such as VC funds, which operate both domestically and frequently approach Swiss startups from abroad.
The tax exemption of gains from the sale of private assets is cited by investors as a valuable locational advantage of Switzerland.

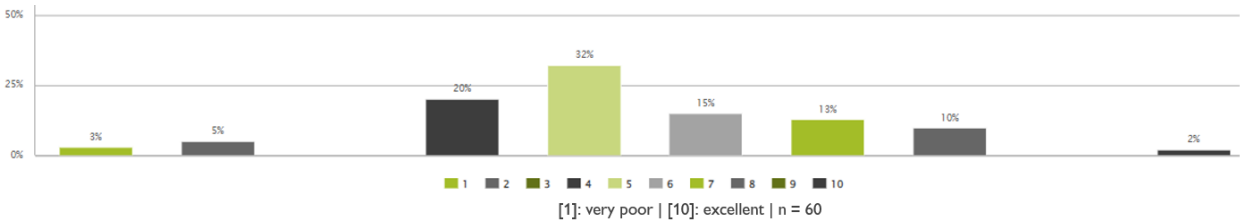


Figure 8: Access to growth capital, aggregated across all development stages - results of the online survey.

STATUS QUO: NEED FOR ACTION AND CHALLENGES.

In the area of growth financing, experts consider the Swiss startup financing market to be too weak. Pension funds and cantonal banks are very reluctant to allocate financial resources to startup funds. On the one hand, this is due to a high degree of risk aversion and conservative investment behavior; on the other hand, there are regulatory hurdles to investing in startups and venture capital funds. In addition, there is a lack of VC funds in Switzerland that are explicitly geared to later growth phases.

The most relevant areas for action to improve financing conditions are discussed below:

Pre-seed and seed phase.

Experts consider access to early-stage capital from private investors to be adequate. However, an increased offer of government subsidies and funds is suggested. Specifically, the following measures are suggested:

- **University investment funds**: Creation of investment funds at universities that are empowered to invest both private and government funds in university spin-offs. (see section 3.2.4)
- **À- fonds- perdu contributions / grants**: Equity-free grants for the startup financing of innovation projects - available for startups as well as for innovation projects of SMEs. Funding should also be provided for projects that do not originate from the university environment.
- **Direct distribution of Innosuisse funds** : Amendment of the Innosuisse funding guidelines so that funding can also be distributed directly to startups as a cash payment for the realization of specific innovation projects.
- **Small government loans**: Provide small government loans with long maturities and short-term availability to support liquidity. Following the example of Austria, these loans could be issued interest-free. A special budget is made available annually by the federal government for this purpose.
- **Government loan guarantees**: In addition to small government loans, loan guarantees are issued to give startups access to loans from regular banks (cf. loan guarantees by the German KfW Bank

Group). This incentivizes banks to provide startups with access to debt capital and reduces the debt service required from the company's perspective.

Business angel investments and syndication.

In general, the conditions for early-stage financing are considered to be good to very good according to the experts surveyed in our interviews. At the same time, active investors in the field of business angel clubs repeatedly cite the problem of forming syndicates. Collective investment laws, banking laws and unclear tax laws make it difficult for small investors to syndicate in a legally secure manner. This makes the coordination of business angels in so-called clubs more difficult, which in turn has a negative effect on the professionalization of the early-stage investment scene.

There is also great legal uncertainty regarding the taxation of exit proceeds for business angels - both for individual investments and for syndications.

Business angels are sometimes classified as professional securities traders. This deters many individuals from acting as business angels.

The knowledge of public authorities about private startup investments is rated as low. This leads to lengthy administrative processes and increased bureaucracy.

The following measures are suggested:

- **Tax classification of business angels**: Creation of tax law certainty for business angels to prevent unjustified classification as professional securities traders. A harmonization of the taxation of exit proceeds of business angels syndicates and on individual level is proposed across all cantons. The tax base must be determinable in advance and the time of collection clearly defined. The current legal situation is perceived as too uncertain, heterogeneous, and lacking transparency.
- **Legal certainty in the formation of business angel syndicates**: Creation of legal clarity for the formation of business angel syndicates and reduction of administrative and regulatory hurdles. The overall syndication process could be facilitated by legal templates that can be used without additional notarial work and are accepted by the authorities, to reduce bureaucracy and achieve process standardization.

Growth financing

There is agreement among founders and other experts that the framework conditions for venture financing deteriorate with the advanced stage of development and the size of the financing rounds. On average, access to growth capital in the "Series C" phase is rated at 4.75 out of 10 points (on a scale of [1: very poor, 10: excellent]).

The availability of growth capital from Swiss investors is rated as too low - from state as well as private sources (e.g. pension funds, insurance companies, asset managers, banks). One of the experts interviewed quantified this with the statement that for financing rounds with a funding volume of more than CHF 10 million, only five Swiss growth funds would come into question. Capital providers for later growth phases come predominantly from abroad.

Another factor contributing to the prevailing bottleneck are high requirements for the establishment and management of investment funds in Switzerland. This leads to a legal settlement of originally Swiss funds in countries such as Liechtenstein and Luxembourg. In the BioTech segment, which is very important for Switzerland, there is no fund domiciled in Switzerland.

In summary, there is a lack of both Swiss general partners in the form of VC funds and limited partners as institutional investors in these funds. A few exceptions are corporate venture capital funds of large companies such as Swisscom, which specialize in Swiss DeepTech companies and have also been able to attract pension funds as limited partners.

At the exit stage, the majority of startups decide to go abroad in the event of an exit. The Swiss stock exchange SIX is perceived as very unattractive by startups (especially in the biotech sector). Instead, Nasdaq in the USA is often named as the preferred exit channel.

The following approaches are conceivable to favor Swiss scale-ups' access to growth capital:

- **Public growth fund**: Establishment of a public fund to finance scale-ups in advanced growth phases (e.g. funding volume > CHF 15 million). The format of a "matching fund" along the lines of the European Investment Fund is conceivable. At the beginning of 2023, the corresponding initiative was suspended by the Federal Council.
- **Promotion of private-sector growth funds**: Improved regulatory framework conditions for and simplified establishment of private-sector growth funds promote the availability of growth capital. Regulatory adjustments can be explicitly limited to startup investment funds with specific fund volumes and possible individual ticket sizes per investment. Tax incentives should also be encouraged.
- **Venture capital investments by pension funds**: Encourage increased involvement of pension funds and institutional buyers in venture capital. An obligation of pension funds to allocate a certain share of capital surpassing a threshold value of total assets under management in startup investment vehicles is conceivable. This can be done, for example, via an indirect investment in a public growth / fund of funds investment fund.

Some of the respondents are skeptical about the necessity of a public investment funds. One expert argues that in principle there is sufficient private capital available on the market. The decisive factor would be to ensure more founder- and investor-friendly tax regulations and thereby enable an optimal distribution of the available financial resources. It should be borne in mind here that a crowding-in effect, as in other countries, can be generated by state investment activity, which can accelerate the development of a strong VC industry, as in Israel, by decades.

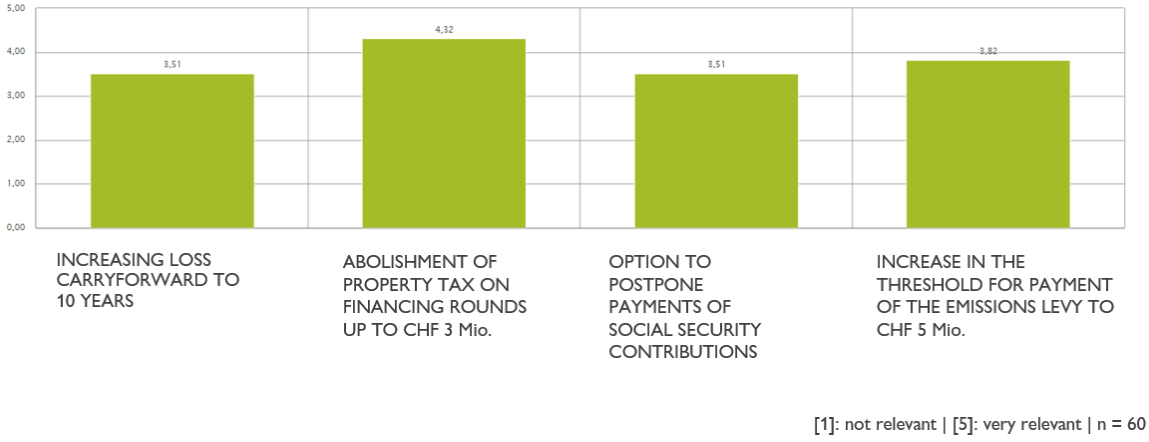


Figure 9: Effectiveness of potential measures to improve the financial framework - results of the online survey.

3.2.4 Knowledge transfer and research: the role of colleges and universities

STATUS QUO: STRENGTHS.

Switzerland is characterized by a highly competitive higher education system in international comparison. The high level of education of graduates as well as the technologies and patents created within universities are highly valued by both startup founders and investors. The academic excellence of the higher education

system and the research institutions are considered important key factors for the high innovation output and the generally very good starting position of the Swiss startup ecosystem. According to our survey, the "*quality and scope of support for startups by universities and universities of applied sciences*" are rated on average at 6.25 out of 10 points (on a scale of [1: very poor, 10: excellent]; see Figure 10).

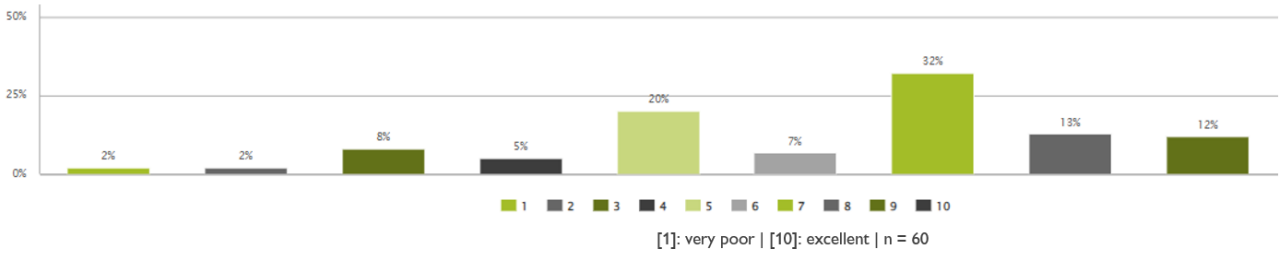


Figure 10: Quality and scope of support for startups by universities and universities of applied sciences - results of the online survey

STATUS QUO: NEED FOR ACTION AND CHALLENGES.

While the Swiss university system is very well positioned from an academic perspective, results of the survey indicate that an even stronger focus on entrepreneurship is needed in the future. Internal structures are perceived as being too focused on theoretical science, with lacking direct linkages between theoretical learning and practical application.
In the area of IP licensing by universities, processes are perceived as non-transparent, time-consuming, and not very founder-friendly.
Cooperation between universities and existing companies (including SMEs) exists only sporadically. This is seen as an obstacle to a frictionless transfer of technologies into the economy.
In addition, the sovereign differentiation of individual universities is criticized. There is a lack of systematic, Switzerland-wide networking between universities of different disciplines, which would favor an interdisciplinary composition of startup teams and their business development.
The most important topics in the context of "Research and Knowledge Transfer" are discussed below.

Integration of entrepreneurship in the curriculum of universities

Although relatively founder-friendly by international standards, the majority of respondents to this survey perceive university education as not sufficiently application-oriented. This point of criticism also applies to the orientation of the curriculum at universities of applied sciences.
In addition, the low presence of entrepreneurship in vocational training is noted (for more details, see section 3.2.8).

The following approaches can help to focus university education more on promoting startup activities by students in the future:

- **Entrepreneurship projects as a compulsory part of the curriculum**: The integration of practical entrepreneurship projects as a compulsory part of the curriculum is recommended for technological as well as business administration and economics courses.
- **Crediting of startup internships**: Creditability of an activity in one's own or an external startup as a study achievement in the form of ECTS credits. Uniform regulations for all Swiss universities are to be created for this purpose. The creditability applies to all fields of study (explicitly not only business administration).
- **Mini-MBA for technological degree programs**: Introduction of a mandatory basic business education geared to startup activities in all technical degree programs (can be limited, e.g., to the master's and PhD levels).

- **Broader range of entrepreneurship courses**: A broader repertoire of entrepreneurship courses is offered for all disciplines. These courses include general startup as well as discipline-specific knowledge (e.g. MedTech startup knowledge for the study program in human medicine).

In all the preceding initiatives, closer collaboration among the individual Swiss universities is to be advocated in order to promote the formation of interdisciplinary teams with a demonstrably higher probability of success.

Collaboration between universities and the business community.
In addition to a general practical orientation of the curriculum, the experts interviewed emphasized the importance of close cooperation between universities and industry. This is currently only the case in certain areas and should be expanded in the future.
In the area of research activities at universities, irrespective of startups, the experts believe that there is a lack of suitable vehicles for passing on new technologies and innovations to established companies. From a corporate perspective, a large number of respondents consider the barriers to collaboration to be very high.

Proposed measures to strengthen cooperation between universities and private-sector companies are as follows:

- **Establishment of long-term scientific collaborations between university institutes and private-sector companies**: Long-term collaborations between scientific research groups and companies promote a continuous flow of scientific findings into practical implementation on the market, promoting the commercialization of innovations. While maintaining scientific neutrality, procedures should be relaxed for university research groups to have scientific projects partially funded by private sector companies. As a cross-institutional entity, "Innosuisse" could take on a consolidating and coordinating function.
- **Active networking between university spin-offs and companies**: Universities act as match-making platforms between established companies and student startups. Startups as catalysts of scientific output promote the dissemination and commercialization of innovations beyond the university context. A Switzerland-wide platform is conceivable on which both existing companies and startups advertise their requests for cooperation and universities in parallel show their possibilities for supporting this cooperation. With the "Innovation Switzerland" foundation and the associated regional innovation parks, such platforms already exist or are being developed and could be used for this purpose.
- **Integration of private-sector companies into university startup incubators**: Support programs at universities involve external companies as partners from the early stages onward, opening up the first opportunities for cooperation beyond the university ecosystem to participating startups. This gives incubators an important networking function between spin-offs and private-sector companies.

Some experts see no need for additional efforts to link universities and industry players. From a regulatory point of view, nothing stands in the way of comprehensive cooperation. Rather, a relatively low number of business collaborations is due to a lack of interest on the part of the companies themselves, especially SMEs.

IP Licensing.
The processes for licensing technologies and patents generated within universities with a view to commercialization are considered to be mostly complicated and to some part not objective. There is a lack

of transparency with regard to the range of licensing fees due. Some respondents consider these to be too high.
Complex negotiations in some cases cause lengthy procedures and critical delays for startups, which is why some of the experts interviewed advocate comprehensive standardization of IP licensing processes. This opinion is countered by concerns that in the case of general process standardization, the balance between predefined equal treatment and case-by-case justice should not be jeopardized.
In addition, the dual role of universities is an obstacle to the smooth handling of the licensing process: While IP transfer offices play an advisory role for founders with regard to their IP strategy on the one hand, they are also negotiating partners on the other, which induces conflicts of interest.

Possible recommendations for action in the area of IP licensing by universities include:

- **Increasing transparency**: Disclosure of IP licensing fees and other conditions for university spin-offs via a Switzerland-wide, central and publicly accessible data center.
- **Standardization**: Establishment of standardized technology transfer processes that apply to all Swiss universities. This will improve comparability between different universities and speed up the process. A corresponding coordination paper has already been drafted at the Swissuniversities level.[129]

A few respondents to the study, especially those without a startup background of their own, see no acute need for action in the area of IP licensing by universities. Some experts consider the framework conditions for licensing to be very startup-friendly already today.

Direct investment by universities.
According to internal calculations of one of the leading Swiss technology universities, university spin-offs prove to be attractive investments, according to an expert interviewed in the course of our survey: With an initial investment in each of the university spin-offs and the use of anti-dilution rights in subsequent financing rounds over a period of 5 years, the realized return would be a multiple of 3 - 5 of the initial investment volume.

It is therefore suggested:

- **Establishment of university startup investment funds**: Possibility of direct investment by university funds in startups founded by students, alumni and the university itself or via a foundation. The fund is managed by a professional investment office. Collaboration with alumni organizations, foundations and university-owned vehicles to increase available investment volumes is conceivable. University funds operate along an evergreen structure and/or feed part of the capital return from successful exits back into the university entrepreneurship support system, e.g. by awarding early-stage grants to student startups or supporting other entrepreneurial projects and initiatives at the university.

The establishment of startup investment funds could also defuse the problem of the dual role of universities in the IP licensing process. If the university not only acts as a negotiating partner, but also participates as an investor in the development of the startup in the long term, potential conflicts of interest are reduced.

[129] State Secretariat for Education, Research and Innovation SERI (2022). For further details see https://www.sbfi.admin.ch/dam/sbfi/de/dokumente/webshop/2022/startup-oekosystem.pdf.download.pdf/Beschleunigung_Wissensnutzung_Startups_Bericht_SBFI_D.pdf

Further.
Further starting points that can promote the transfer of knowledge from universities and universities of applied sciences are described below:

- **"Swiss Darpa"**: Establishment of a research institution within the Swiss Army in the style of the U.S. Defense Advanced Research Projects Agency. Long-term innovation projects are supported in cooperation with national universities.
- **Expansion of incubator offerings**: Establish startup incubators at all Swiss universities and universities of applied sciences, and increase the intensity of support within the incubator programs. The vehicle of the incubator programs can also be used to improve the exchange between universities (and universities of applied sciences) throughout Switzerland.
- **Incentivization measured by startup output**: Government funding is allocated to a certain extent depending on the entrepreneurship activity of a university or university of applied sciences. This is done either on a superordinate national level and/or also within universities at the level of individual institutes. This increases the incentive for professors and lecturers, institutes and universities as a whole to actively support student startups and to consider research projects from a commercial perspective from early on.
- **Closer integration of the higher education landscape and Innosuisse**: Stronger cooperation between (technical) universities and Innosuisse. Among others, this includes the eligibility of patent costs (patent attorneys, patent fees, IP licensing costs vis-à-vis universities) in Innosuisse and SNF budgets.

In addition, making European funding available for scientific projects and the resulting startups was mentioned sporadically as an effective measure.
It is also considered important to support not only projects with unicorn potential, but also less scalable startups that nevertheless potentially contribute a great deal of value (including in less technology-driven areas such as culture and entertainment).

The desire for closer integration between the University of St. Gallen (HSG) and the ETH within the Swiss higher education landscape was mentioned several times and across all disciplines. One respondent compared the geographical distance between HSG and ETH with the size of the Silicon Valley area and sees similarly great potential in a comprehensive collaboration between the two institutions.

3.2.5 Taxation in the startup context

STATUS QUO: STRENGTHS.
From the point of view of the experts surveyed, the issue of taxation is of great importance in promoting startups and innovation. Taxes were mentioned very frequently by respondents in terms of both their facilitating and hindering characteristics. Their importance in terms of company development and choice of location was highlighted.
Switzerland is characterized by low rates of corporate taxation in international comparison, which favors the establishment of new companies.
The tax exemption of gains from the sale of private assets is not only a motivating factor for founders, but also increases the attractiveness of Swiss startups as investment objects from the perspective of international investors. Some experts emphasize that the tax exemption of gains on the sale of private assets represents a major comparative advantage compared to the EU environment and favors the inflow of growth capital into Switzerland.

STATUS QUO: NEED FOR ACTION AND CHALLENGES.

The majority of founders and investors share the opinion that the Swiss tax system presents startups with major challenges in terms of its complexity. The assessment bases for some types of taxes are not clearly defined, which leads to planning uncertainty, especially for events with high tax relevance such as the exit. Differences in tax rates and the definition of assessment bases between individual cantons further increase complexity.

In the following, we will focus on those tax dimensions which, according to the findings of this study, are particularly relevant for the startup ecosystem.

Wealth tax

From the point of view of founders and investors, there is a great deal of uncertainty about when the wealth tax will be levied and on what basis it will be assessed. In the past, the amount of tax due was assessed based on the value of the company in the financing rounds. However, since there is no liquidable countervalue, this approach often leads to liquidity problems. In 2021, the "Kreisschreiben Nr. 28" of the Swiss Tax Conference (Schweizerische Steuerkonferenz SSK) was amended, to no longer use financing rounds as the basis for taxation.[130] From the perspective of startups and investors, this adjustment is seen as a step in the right direction, but not yet as a sufficiently comprehensive measure.

The following measure is suggested:

- **Temporary suspension of wealth tax**: For startups, a temporary suspension of the wealth tax liability is advocated. According to this proposal, the wealth tax is to be suspended until the time of the exit/cash-out and/or until the first distribution of dividends. This increases the attractiveness of startups from the perspective of both founders and investors and reduces the uncertainty of a too early / high levying of corporate tax at a time when the effective company valuation has a primarily future-financial rather than substantial character.

Employee shares and options.

From the point of view of many startups, the tax facets of employee shares and options are seen as very complex and not very conducive to entrepreneurial requirements, involving a great deal of time and administrative effort. Additional complexity arises from cantonal differences. This discourages some of the surveyed founders from issuing so-called "Employee Option Stock Plans (ESOP)"; used in the following as a collective term for pure employee stock option plans and phantom share option plans. This reduces the attractiveness of startups as employers in competition with large corporations. For tax purposes, employee shares are taxed as wage and asset components, which in some cases has a deterrent effect on employees.
The problem was partially alleviated by motion 17.3261, which led to an adjustment of circular no. 37 by the Federal Tax Administration (Eidgenössische Steuerverwaltung ESTV). [131]
In the context of acquiring international professionals, employee stock option plans are not sufficiently included as a component of compensation regarding work permits, which makes obtaining and securing a work permit more difficult (see Section 3.2.2).

The following measures are conceivable:

[130] Cf. Federal Department of Finance (2020).

[131] Federal Tax Administration FTA / Eidgenössische Steuerverwaltung ESTV (2020)

- **Definition of uniform guidelines for the taxation of employee shares and options**: Transparency regarding the taxation of employee stock option plans should be increased and their complexity reduced through standardized tax patterns (incl. uniform definition of the assessment base). The standardization is carried out on a supra-cantonal level, so that flexibility is achieved for startups in the event of a possible change of canton.
- **Special regulation for residence permits**: Crediting of ESOP as a wage component under labor law for residence permits. This advocates a separation between the tax and labor law approaches.

Loss carryforwards.
The limited 7-year eligibility of loss carryforwards appears unfair to the respondents of this study with regard to research-intensive startups, as this leads to overtaxation in the long term (see section 3.2.3, figure 9). In some cases, cycles for amortizing initial research and development investments are ten to 15 years. Affected industries are, for example, BioTech and DeepTech, which are very important in Switzerland. According to the data collected as part of this study, respondents see an increase in the eligibility of loss carryforwards as an effective measure to increase the financial attractiveness of startups.
It is pleaded for the following measure:

- **Time extension of loss carryforwards**: Creating the legal framework to increase the possibility of loss carry forward for high-tech startups to ten to 15 years upon request and within the scope of a case-by-case assessment. To limit the loss carryforward, which may exceed the existing 7-year limit, an additional absolute limit can be defined, e.g. in the amount of CHF 10 million.

Further
Further approaches to better align the Swiss tax system with the requirements of startups include:

- **Abolition of stamp duty ("Stempelsteuer")**: Waiver of stamp duty on equity issues in the context of capital increases by startups. The suspension of stamp duty may be limited to companies with an age of less than five years.
- **VAT facilitation**: Founders perceive the processes of declaraing and paying VAT as complicated and time-consuming. Simplified models, e.g. lump-sum payments, could be introduced for startups (for a limited period of 1-3 years from foundation).
- **Tax classification of business angels**: In the case of portfolios with several active startup investments, business angels are sometimes classified for tax purposes as professional securities traders ("Gewerbsmässiger Wertschriftenhändler") and thus profits from the sale of investments in private assets are declared as subject to income tax. The decision whether a private investor is classified as a trader liable to income tax is made by the respective cantonal tax office and, from an investor's point of view, follows non-transparent processes. Clear classification criteria should be defined at the Swiss level to ensure that business angel capital gains remain exempt from income tax.
- **Defiscalization of private startup investments**: A maximum amount invested in startups (in relation to the individual startup investment or cumulatively in relation to the business angel investor) is excluded from the substance for the assessment of wealth tax for the period of the investment. The corresponding investment amount is only taxed upon repayment of the investment.

3.2.6 Beyond Switzerland: Trade and access to international markets

STATUS QUO: STRENGTHS.

From an international perspective, Switzerland is perceived as an attractive business location.[132] This positively influences the access of domestic startups to international markets. Due to the limited size of the Swiss domestic market, the step of internationalization is already of great importance for startups in the early stages of development (see Section 2.1.4).

Institutions such as Switzerland Global Enterprise are largely successful in supporting startups in internationalization matters - in an advisory capacity and through networks.

STATUS QUO: NEED FOR ACTION AND CHALLENGES.

Due to Switzerland's autonomous position in the EU environment, Swiss startups face several hurdles when entering the European, but also the international market. Trade barriers make it difficult for young companies to internationalize quickly and cost-effectively from both an export and import perspective. The customs system is perceived as very complex and poorly digitized. Survey participants rate the bureaucracy associated with international trade as high.

A lack of framework contracts with the EU makes it difficult for startups to enter the European market quickly and reduces planning security. In the area of consumer goods, some interviewees argue that young companies are sometimes better advised to relocate the startup from Switzerland to the surrounding EU countries, as it would be almost impossible to competitively serve the European market from Switzerland due to high customs duties and shipping costs as well as different price levels. Access to foreign talent is also often easier there (see sections 2.1.5 and 3.2.2).

In addition to the consumer goods segment, there are specific problems in the MedTech sector. According to the experts interviewed, the breakdown of negotiations with the EU on an institutional framework agreement has led to Switzerland being effectively excluded from the EU market.

Possible approaches to improving the framework conditions for Swiss startups include:

- **Digitization**: The measures taken in recent years to digitize individual foreign trade processes are seen as very positive. Nevertheless, a continued high proportion of paper-based process steps is seen as obstructive and time-consuming. Founders advocate the holistic digitization of existing foreign trade processes and a reduction of bureaucratic requirements in general. This could be achieved, among other things, through free trade agreements (see following paragraphs). It is also conceivable to establish a "foreign trade app" via which a company can manage all documents relevant for import and export, make payments and call up the status of individual administrative processes in real time.
- **Institutional framework agreement with the EU**: The urgent need for framework agreements with the EU was most frequently raised by respondents. Specifically, framework agreements with the EU should lead to a reduction in export and import barriers - in administrative, fiscal and regulatory terms.
- **Free trade USA**: The majority of experts advocate the introduction of a free trade agreement with the USA. This is particularly important for startups with high-tech products and would at the same time increase the attractiveness of Swiss startups for U.S. investors. The effect of such a free trade agreement on established companies was not the focus of the survey, but it can be assumed to have a positive impact on the economy as a whole.

[132] See United Nations Conference on Trade and Development (UNCTAD) (2022).

In general, experts support greater openness for the Swiss economy. Some are in favor of Switzerland joining the EU or the European Economic Area (EEA).

3.2.7 Infrastructure and social system

STATUS QUO: STRENGTHS.

Switzerland is characterized by a well-developed infrastructure, both in urban and rural areas. The quality of educational institutions is homogeneous throughout the country. The availability of high-speed Internet is largely guaranteed even in rural areas.

A comprehensive connection of all areas of the country to a well-functioning transport network increases the mobility of the population.

The experts interviewed see little fundamental potential for improvement regarding the general infrastructure and share a high degree of satisfaction with the status quo.

STATUS QUO: NEED FOR ACTION AND CHALLENGES.

Experts see starting points for further improvement of the framework conditions for startups primarily around the social infrastructure. Startups are obliged to pay into the unemployment insurance scheme (ALV), but have only limited entitlement to payments in the event of the company's failure. While the social safety net in Switzerland is generally very strong, some experts identify gaps in the context of startups that can put founders in social emergency situations. The public authorities are also not very attuned to the needs of startups when it comes to paying social security contributions, including unemployment insurance: In contrast to taxes, there is hardly any possibility of postponing payments in the event of liquidity bottlenecks. Respondents rate the need for legal reforms in the social system as highly relevant with 3.63 out of 5 points (on a scale of [1: not very relevant; 5: very relevant]).

The following starting points are conceivable for optimizing the infrastructural framework conditions for startups:

- **Reform of the unemployment insurance (ALV) enabling founders to receive unemployment benefits**: For founders (in employer-like positions), coverage by unemployment insurance should already be guaranteed in the case of acute illiquidity (limited in time to companies with an age of 1-3 years). Flat rates could be set for founders via unemployment insurance benefits.
- **State subsidies for retirement plans of startup founders**: Due to low basic salaries, payments into the state pension scheme are below average for many startups. Here, state subsidies could cushion the long-term consequences of low salaries with flat-rate top-up amounts.
- **Enlargement of existing innovation parks**: Increasing the capacities of existing startup centers and incentivizing large companies (e.g., through inexpensive office space) to set up small office units at these innovation centers; to increase the chances of networking between startups and large companies, e.g. for the purpose of joint innovation commercialization and financing.
- **Opening up existing innovation parks to SMEs**: Small and medium-sized enterprises (SMEs) with innovation projects and an interest in external collaborations are to be given easier access to technology incubators (in conjunction with an increase in the capacities of existing innovation parks). This strengthens the chances of potential collaboration between startups and SMEs and facilitates mutual knowledge transfer.

3.2.8 Entrepreneurial Mindset: Entrepreneurial orientation of the general population

STATUS QUO: STRENGTHS.

According to the respondents to this study, a high willingness to perform on the part of Swiss people in general is an important contribution to promoting entrepreneurial activity. A prevailing quality orientation and a demand for reliability are also beneficial. These characteristics are advantageous for not only conceptualizing strategies for new ventures and innovation projects, but also for implementing them in an effective manner (for details and external analyses, see Section 2.1.1).

STATUS QUO: NEED FOR ACTION AND CHALLENGES.

A high degree of risk aversion prevailing in Switzerland is considered critical. A low willingness of investors to take risks means results in investments increasingly made in established business models, which makes access to financing for high-risk but promising deep-tech startups more difficult and favors their migration abroad.

The level of risk tolerance on the part of the authorities is also very low. It is considered extremely difficult for startups to acquirer the public sector as a customer.

The generally high probability of survival of Swiss startups is an indication of their high quality, but it is also an indication that too few risks are being taken by founders and investors. There is a lack of visionary and risky "moonshot" projects.

Experts agree that the Swiss failure culture is a hindrance in the context of entrepreneurship. Failure is not perceived as a valuable experience, but as a form of defeat to be avoided. Even after the deletion of an insolvent company from the commercial register, the associated managing director can be identified at the time of the bankruptcy, which has a deterrent effect on many outsiders and sometimes has long-term negative consequences for the former managing director.

The highly conservative failure culture and low willingness to take risks is largely due to the Swiss education system. Entrepreneurial content is not very present there. Education focuses on imparting knowledge and is geared toward later application in an employee relationship.

The following measures are possible:

- **Establishment of an entrepreneurship education concept:** Switzerland-wide anchoring of entrepreneurship at all levels of the education system. Entrepreneurship is integrated into the curriculum on a mandatory basis via a educational mandate. Part of the entrepreneurship education mandate is, among other things, the teaching of leadership skills, a constructive approach to mistakes, training in risk-taking and basic business management skills.
- **Greater willingness of public institutions to take risks through "startup quota"**: Incentivizing public administrations to apply innovations. When awarding external projects, public institutions are obliged to comply with a "startup quota", according to which, for example, 5-20% of all awarded projects (in terms of absolute number or nominal order volume) must have a company less than 7 years old as a contractual partner.

3.2.9 Other

In addition to the areas of action outlined above, respondents to this study's survey considered the following additional topics to be relevant:

Systematic data collection and presentation.

According to the experts, there is a lack of general data on the size and activity of the Swiss startup ecosystem. Switzerland as a location is therefore sometimes underestimated from the perspective of foreign investors. There is a lack of public visibility of successful startups.

It is suggested:

- **Establishment of a "Swiss Startup Map"**: Systematic data collection of all startups and investors throughout Switzerland as a sovereign federal task through an annual survey as well as anonymized analysis of tax data and commercial register entries, to improve the statistical basis for startups and make successes more visible. Based on this data and individual profiles of startups and investors, the "Swiss Startup Map" (based on the Israeli "Startup Nation Finder") is created. Implementation can be led by the federal government as a partnership between federal institutions and private sector stakeholders (e.g. venture capital funds).

Gender and Equality: Female Founders in Switzerland.
Despite of the overall societal aim of gender equality, major differences in the gender distribution in some economic segments, such as the startup ecosystem, are prevalent. To increase the number of female founders and female startup CEOs, regulatory interventions appear to be ineffective. Experts call for a general change in society that affects the mindset of the population at large. There is a lack of successful role models for future female founders: The stereotype of the "successful founder" is still associated with primarily male characteristics.
At the general societal level, family tasks continue to be performed more by women than by men (including childcare). High childcare costs would make it difficult for aspiring female founders to take the step into self-employment, as the initially very low wage level in startups makes it difficult to finance external childcare. One interviewee mentions the example of Sweden, where the compatibility of family and career is much better regulated by state-funded childcare services, which benefits women in particular - also as entrepreneurs.

The following approaches to promoting female founders are suggested:

- **Venture capital subsidy for female-led startup teams**: Establishment of a government subsidy program for financing rounds of startups whose founding team includes at least one woman who holds the CEO position in the startup (e.g. in the amount of 5-10% of the volume of the first financing round, paid out once). If the founding team consists entirely of female founders, it is conceivable to apply a higher funding rate (e.g. base rate + 5%). The structuring of the A-fund perdu contribution in the context of external financing rounds can be based on the INVEST venture capital grant of the German Federal Government. [133]
- **Provide childcare services as part of technoparks and incubators**: Offer free daycare places in technoparks, innovation parks and incubators.

Innosuisse.
The majority of the founders surveyed consider the effort required to apply for Innosuisse funding projects to be too high. Many of the founders are dependent on external help from mentors to submit applications.

[133] For more details on the INVEST venture capital grant, see https://www.bafa.de/DE/Wirtschaft/Beratung_Finanzierung/Invest/invest_node.html .

From the point of view of active founders, the focus of Innosuisse in the evaluation of projects is too strongly on their novelty. It is emphasized that the implementation of an idea is often more important than its degree of innovation, which is why less disruptive projects should also be approved for funding.
Innosuisse's project evaluation also pays too little attention to the area of social entrepreneurship.

Starting points for improving the initial conditions are:

- **Adjustment of the evaluation criteria for Innosuisse projects**: Revise the criteria for evaluating funding applications to allow less novel projects with high market potential to access funding. In addition, sustainability should be weighted more strongly as an evaluation dimension, among other things to increase the number of funded social entrepreneurship projects and projects with a strong sustainability dimension.
- **Reduction of the administrative work involved in submitting applications**: Simplification of the application process and reduction of the number of documents required. It would be possible to reduce complexity by restructuring the application process into several process steps that can be completed more quickly (stage-gate structure).

Entrepreneurship- activity in older populations.
Although the stereotyped startup founder is described as being between 25 and 40 years old, experts mention the high and so far underutilized entrepreneurial potential in older populations.

To encourage entrepreneurial activity in older populations is encouraged:

- **Expansion of adult education offerings around entrepreneurship**: Offering public courses on entrepreneurship, possibly in cooperation with technical colleges and universities, which address the 40-60 age group.

4. Discussion

Switzerland is a hub of innovation and a hotspot for startups. The country boasts a thriving entrepreneurial ecosystem that is built on a solid foundation of scientific and technological advancements, a highly skilled workforce, and a supportive business environment.

In international comparison, Switzerland is the leading nation in terms of effective innovation output, as well as regarding its innovation input-output ratio, testifying high levels of efficiency and effectiveness in the Swiss innovation landscape. Strong focus areas are biotechnology, nanotechnology, food technology, MedTech and information technology, as well as with a specific focus on startups FinTech and blockchain systems. Startups in Switzerland benefit from access to state-of-the-art facilities and the latest research in their respective fields. However, in some industries, from the perspective of startup founders, regulatory framework conditions seem to hinder the innovation process and the commercialization of its outputs. Focusing for example in NovelFoods, it is a common opinion among practitioners that access to the market as well as product testing is highly restricted and processes for accreditation are too slow; leading to a competitive disadvantage for Swiss startups.

One of Switzerland's additional strengths is its highly educated workforce. One factor hereto is a well-established university landscape. In international comparison, Swiss founders are top ranked in terms of their academic education. This talent pool is a significant asset for startups in need of technical expertise. However, founders as well as investors criticize that education programs in Switzerland could be more strongly geared towards entrepreneurship in order to increase the commercialization rate of scientific findings and to strengthen an entrepreneurial mindset within the Swiss population. Furthermore, recruiting top talent from abroad is oftentimes perceived as very complicated and as a restricting factor to venture growth.

For the early-stage startups, Switzerland is providing a strong ecosystem to access funding. Growth capital is broadly available from private -such as business angels- as well as from institutional sources, for example venture capital funds. The further a venture grows, the more difficult access to funding gets. We identify a lack of growth funds in Switzerland, leading to on average lower chances of securing later-stage funding. In addition, the largest part of investment volumes in the later-stage sector is provided by foreign investors. This results in many cases in foreign investors taking the dominant position in Swiss startups, and critical value generation, which usually materializes especially in later growth phases, frequently drains away to other countries.

Another aspect contributing to Switzerland's success in the startup arena is its robust infrastructure. The country has a well-established transportation network and a reliable electricity supply, which facilitates efficient logistics and enables startups to focus on their core activities. The country's central location in Europe also makes it a good location for businesses looking to expand their operations across the continent. Due to the limited size of the Swiss domestic market, access to international markets is of great importance from early growth stages on. However, trade barriers of regulatory nature and/or tariffs complicate the access to foreign markets for some startups. This is sometimes mentioned by founders as a reason to move their venture to a country being part of the EU, in order to better access the EU market.
In general, Switzerland has a supportive legal framework for startups, with a high degree of stability and legal security. In some industries, regulations are too restrictive and not geared towards the generation of innovation, specifically in the sectors of FoodTech and MedTech, which are commonly criticized.
Comparatively low tax rates contribute to the attractiveness of the country as a business location. From perspective of investors, the tax exemption of investment income from private assets in particular is

considered to be very favorable. Regulatory uncertainties exist with respect to the taxation of business angels. In this respect, need for action has been identified.

Within this study, based on the results of the meta-study and the primary data collection, a portfolio of possible measures and development opportunities was established that are geared toward strengthening Switzerland as a hotspot for entrepreneurship and innovation. These proposed measures include inter alia the following areas (see Figure 11):

- Abolition of the obligation to be a notary for individual processes
- Establishing a digital notary's office (digitization of certification processes)
- Regulatory Sandboxes:
    - Regulation of Novel Foods
    - Regulation of MedTech
- Improve and clarify legal regulations for remote work contracts
- Regulatory Toolbox for Employee Stock Option Plans (ESOP)
- Reduction of hurdles in tax law for investors and founders (incl. the tax classification of business angels)
- Improving the regulatory framework for funds and investors abroad
- Support for the expansion of retirement provisions for founders and employees

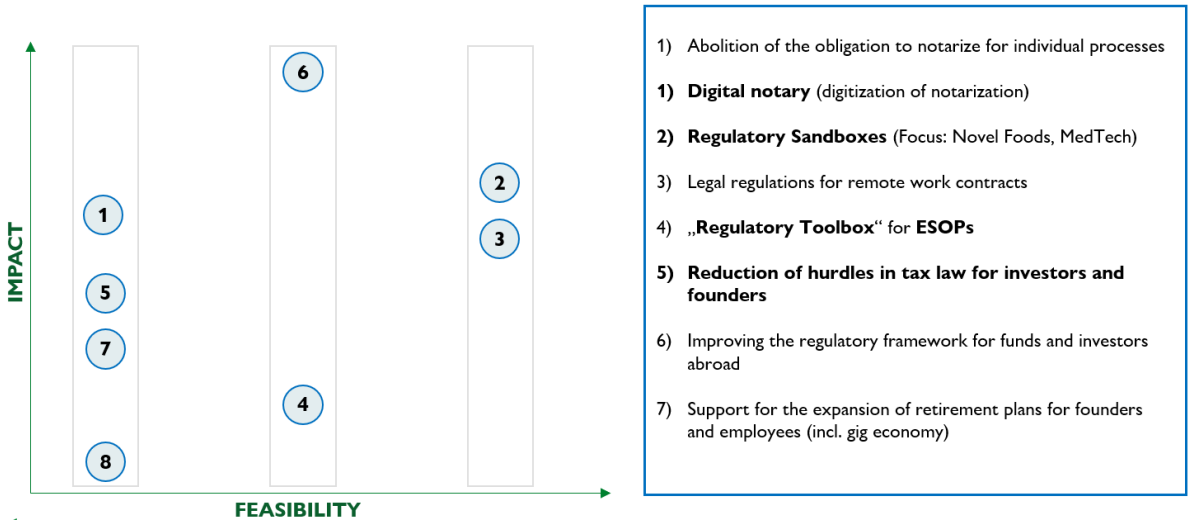


Figure 11: Possible measures and development areas

Based on our data analyses and in close feedback loops with experts from the different contextual divisions, for each of the measures we determined their potential effectiveness and efficiency in achieving the long-term goals as defined in this study under the overarching "Unicorn Nation Switzerland" maxim. We also assessed the proposed measures in terms of their political feasibility by discussing them with Swiss politicians from a broad spectrum of parties on the national level. The results of the merged effectiveness and practical feasibility assessment are presented in Figure 11 in the format of an Impact Feasibility Matrix.

Our Impact Feasibility Matrix is a weighted summary of the most effective national-level measure to be taken, as assessed from the standpoint taken in this study, in order to improve the framework conditions in Switzerland towards the desired "Unicorn Nation […]" development. It is a strong tool for practitioners and researchers to better understand the specificities of Switzerland as a startup and innovation nation, including their concrete improvement areas.

Contributions to research and practice

With our study, we contribute to the stream of research about entrepreneurship on a societal level in several ways. Firstly, testify the strong connection between the innovation landscape of a country and its entrepreneurial activity, in our case, based on the example of Switzerland, which is especially well suited due to its globally leading position in the innovation context. By analyzing different streams that connect innovation activity with entrepreneurial outcome, for example the university system and properties of the labor market, we particularize the core drivers that pave the way for innovations to lead to positive effects on the national level.
Secondly, we give evidence about the importance of a strong funding ecosystem, thereby contributing to prior research in the field of entrepreneurial finance. We highlight the positive impact of well-established funding opportunities on the funding rates and success of startups, in the case of Switzerland, focusing on the early-stage phase; and at the same time evince the negative impact a less developed funding ecosystem, referring to the conditions of later-stage funding.
Thirdly, by giving special attention to individual industries such as the FoodTech and MedTech sector, we also contribute to entrepreneurship research in this area. We show how the regulatory environment can foster or hinder innovation in specific verticals.

We also contribute to research in political sciences. As our findings are taking the national-level perspective, they highlight the importance of entrepreneurship from a societal perspective. In an era characterized by exponential rates of change and technological progress, entrepreneurship is an important engine to safeguard national welfare in the long-term future. We link the phenomenon of entrepreneurship to broader social sciences and translate findings into concrete areas that are of interest from a political perspective. We thereby strengthen the role of politics in the creation and promotion of an entrepreneurship-friendly society. We condense and connect prior theoretical work with the analytical findings based on a primary data collection. This creates a both theory-driven and practice-oriented fundament for subsequent studies to further elaborate the role of politics in the field of entrepreneurship.

Lastly, we also contribute to research through the unique methodological design of our study. We combine a structured literature review resulting in a meta-study component with proprietary survey data and insights from deep-dive interviews. Even though due to the limited number of interviews, data captured through this method may not meet statistical standards to be declared representative, we succeed in capturing the perspectives of all relevant stakeholder groups and by combining them with survey and secondary data, generate in-depth insights. Our methodological approach to combine data from different sources and of diverging level of detail could be a source of inspiration for future studies; especially those that analyze complex environments and aim at both understanding the overarching causalities and the underlying core drivers.

For practitioners, especially in the political sphere, our findings provide a rich reservoir of ideas how entrepreneurship can be promoted in the daily political discourse. Future political initiatives could take our insights as a starting point to gear their concrete measures towards an optimum output in terms of effectiveness on the entrepreneurship ecosystem. A great advantage of our methodological approach is that we do not solely draw upon historical data but include very recent voices from actual practitioners – to not only limit ourselves to describing the "what", but also delivering evidence about the "why". Our multi-stakeholder approach that captures opinions from manifold interrelated as well as standalone perspectives helps to approximate the presumed political feasibility and acceptance among important domain representatives.

Limitations and further research

The insights provided by our study are restricted by certain limitations inherent to the design, methodological approach and scope of our study.
Firstly, the findings of our study to a large extent build upon a non-representative sample of primary data. Event though we comprise prior theoretical findings in a meta study and use it as a starting point for our subsequent data collection, especially the total sample size number of our methodological interview component is not meeting conventional statistical standards. For the survey, with n = 60 we are theoretically meeting basic statistical requirements. As the survey constitutes solely one component of the overall study, the overall goal of representativeness can only partly be met. Future studies could take this shortcoming as their starting point and conduct similar analyses with a larger sample. As the fundamental work has already been completed with this study, future research could build upon the causalities that have been observed through our multi-source methodology and focus on a single source of data to make findings more statistically robust.

Secondly, our findings to large extent our findings are constrained to a qualitative and descriptive level. Even though we identify and outline concrete areas were tailored measures are assumed to be of great impact, we do not leave the theoretical perspective. As our study is meant to provide insights with a direct impact on practice, future studies or concrete initiatives could take our insights as a starting point to develop very concrete action plans for an implementation, in the political or regulatory context. For example, the area of business angel taxation would be a promising field to translate our theoretical findings to concrete measures with a presumably high impact.

Thirdly, even though in our meta- study we include sources and secondary data referring to international entrepreneurship ecosystem, the clear focus of our study is on Switzerland. This enables a very fine-grained deep-dive analysis to identify patterns that potentially can also be transferred to other countries; however, identifying causalities based on a methodology that is akin to a single-case-study approach bears the risk of limited generalizability. It would be a fruitful avenue for future research to apply our study approach to other or several countries and/or entrepreneurial ecosystems in order to validate the extent to which our findings can be generalized.

5. Conclusion

Being the global leader in innovativeness, Switzerland bears great potential to also become one of the leading countries in the context of entrepreneurship. Switzerland offers several advantages for startups, including a highly educated workforce, robust infrastructure, world-class research facilities, and to a large extent a supportive legal framework. These factors, coupled with a focus on innovation and a favorable economic environment, make Switzerland a well-suited location for founding a venture. The country's high levels of investment in research and development and its central location in Europe also contribute to its thriving startup scene.
As part of this study, we identified areas with potential for improvement in order to position Switzerland even better in the field of startups and innovation.
Entrepreneurship is not just a zeitgeist. It is a way to think, on an individual as well as national level; a way to do business, and to shape: To catapult an entire nation into a new age that is going to be impacted by one continuum: Discontinuity – especially in terms of exponentially increasing level of change.

Appendix

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