

Resilience of the Swiss Economy

Deloitte Resilience Barometer 2022

November 2022



Introduction

The meaning of resilience and an overall view from the perspective of Switzerland



Problem

We live in a highly developed yet fragile economic system that is dependent on a small number of areas. These areas can be disrupted significantly by individual events. Individual events can cause parts of the system to fail and consequently trigger a chain reaction. All this can severely limit the entire economic and social system.



Objective and approach

The aim of this study is to measure the resilience of the Swiss economy. To this end, eight key pillars of the Swiss economy were identified and divided into further sub-areas. Based on three scenarios that could realistically occur in the medium term, the resilience of the individual sub-areas was then assessed by recognised experts for those areas. The experts rated the resilience of the sub-area on a scale of 100% to 0%, on which 100% means no noticeable disruption and 0% means complete failure of the sub-area.



Basic level of provision

For the purpose of this study, 'basic level of provision' means that despite disruption, the sub-area concerned remains functional to the extent that vital needs can still be met. Using food as an example, this means that the public still has enough food, even though it may be more expensive/difficult to obtain and the variety may be limited. We chose not to provide a detailed definition for each sub-area, and we left it to the different experts to carry out the assessments for each sub-area.



Resilience

By resilience, we mean the ability of a national economy to cope with and recover from an external shock (not self-inflicted), or its ability to avoid one altogether (adapted from Hallegatte, 2014).

Discussions with experts

Own analyses and assessments based on qualitative discussions with experts

Problem

For the purpose of assessing a sub-area, the experts were asked the following questions:

1. How severely has the sub-area been disrupted in each scenario?
2. What has the disruption been caused by?
3. Do you expect any knock-on effects in other sub-areas?

Preliminary work by Deloitte experts

In the first step, the sub-areas were assessed by internal experts. Further information (where available) was also collected, analysed and included in the internal assessment.

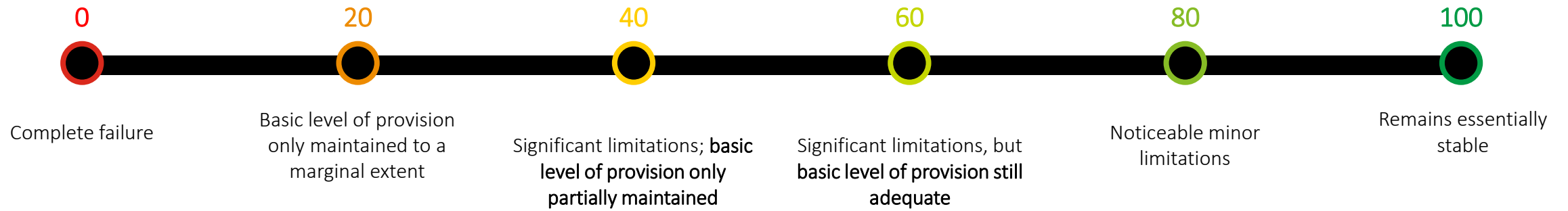


Validation by external experts

In the second step, the internal analysis was validated with external experts. If their assessments differed from the internal assessment by more than 20 per cent, the differences were discussed until everyone agreed.

Scale for measuring resilience

The impact of the scenarios was assessed on the basis of this scale



The group of experts

The resilience was assessed by these experts

Internal group of experts, Deloitte Switzerland

These experts performed the initial resilience assessment

Remo Baltensperger, Director, Public Sector, Security Expert

Reto Häni, Cyber Risk Service Partner

Marcus Kutzner, Partner, Sourcing and Procurement Lead Switzerland and EMEA

Chris Tattersall, Partner, Infrastructure Sector Lead

Annieck de Vocht, Director, Healthcare Sector Lead

Florian Widmer, Partner, Cyber Vigilance, Cyber Resilience and Data Privacy Lead

Dr Ralph Wyss, Partner, Defence, Security & Justice Sector Lead



External group of experts

These external experts then validated the resilience

Dr August Benz, Deputy CEO, Head Private Banking & Asset Management SwissBanking, Swiss Bankers Association

Dr Stefan Brem, Head of Risk Analysis & Research Coordination, Federal Office for Civil Protection (FOCP)

Dr Stefan Brupbacher, Director, Swissmem

Daniel Caduff, Deputy Head of Secretariat ICT, Federal Office for National Economic Supply (FONES)

Stefan Hostettler, Deputy General Secretary, Federal Department of the Environment, Transport, Energy and Communications (DETEC)

Beni Hurschler, Head Crisis Management, BCM & Physical Security, SIX

Dominique Jeitziner, Senior Analyst, Strategic Market Intelligence, Swisscom

Lionel Kapff, Chief of Staff for Governance and Research, State Secretariat for Migration (SEM)

Felicia Kölliker, Chief Risk Officer, PostFinance

Laura Kronig, Economist, Federal Department of the Environment, Transport, Energy and Communications (DETEC)

Professor Sita Mazumder, Professor of IT and Business, Lucerne University of Applied Sciences and Arts

Dr Carlos Beat Quinto, Specialist physician for internal medicine, member of the FMH Board of Directors

Patrik Reiniger, Head of Military and Civil Protection, Head of Cantonal Management Staff, Basel-Landschaft Security Directorate

Beat Rösli, Head of International Affairs, Swiss Farmers' Union

Franz Steiger, Chief Financial Officer, SBB CFFS FFS

Rolf Stettler, Head of Group Controlling, Swisscom


Peter Wullschleger, Deputy Director Protection & Rescue, City of Zurich

André Zemp, Chairman of the Hospital Advisory Board, University Hospital Zurich USZ

Eight areas of the economy and their dimensions


The eight areas of the Swiss economy I

These areas and their dimensions are key to a well-functioning economy


Food

- Domestic production
- Imports
- Distribution within CH
- Total inventories
- Availability of drinking water
- Distribution of drinking water


Dimensions

Healthcare

- Pharmaceutical supply
- Reusable medical products
- Disposable medical products
- IT support in healthcare
- Healthcare staff
- Infrastructure (building maintenance, energy supply and waste management)
- Financial management

Public security

- Crisis teams (federal, cantonal)
- (Criminal) justice
- Army
- Police
- Civil defence
- Fire brigade
- Ambulance service
- Private security

Energy supply

- Natural gas procurement
- Natural gas storage
- Natural gas infrastructure (pipelines)
- Electricity procurement
- Electricity storage
- Electricity infrastructure
- Oil procurement
- Oil storage
- Oil infrastructure

The eight areas of the Swiss economy II

These areas and their dimensions are key to a well-functioning economy



Information and communication technology (ICT)

- Hardware
- Software
- Communication and data networks
- Providers (cloud, telecommunications, storage location and access)
- Specialists
- Research & development



Financial market infrastructure

- Cash transactions
- Electronic payment transactions (domestic)
- Electronic payment transactions (international)
- Deposits
- Lending
- Exchange trading
- F/X trading



Critical resources

- Rare earth elements
- Electronics
- Frontier workers
- Immigration



Logistics

- Road
- Rail
- Rhine shipping
- Air traffic
- Logistics companies (storage, transport, packing)

The three scenarios

The three scenarios

The following assumptions and principles apply for all three scenarios

I. Period

We find ourselves three to five years in the future.

II. Possibility and likelihood

Each scenario could realistically occur. The exact likelihood of occurrence is not specified.

III. Events

Each of the three scenarios gives rise to various events. A few possible events are shown for each scenario. These could potentially occur but do not necessarily have to. They simply make it easier to imagine the scenario. The list of possible events is therefore not exhaustive.

Scenario 1: Geopolitical tension and bloc formation



International situation

There has been greater formation of **geopolitical blocs** in recent years, with escalating tension between them.

There is a significant danger of an armed conflict between the blocs, possibly even a nuclear war.

Individual, more powerful states are using the fears of a major escalation as a **land-grabbing opportunity**. As a result, **more sanctions** have been imposed.

The exchange of knowledge and important intermediate products and raw materials between the blocs is severely limited.



Situation in Switzerland

Cyber-attacks and acts of sabotage on businesses and critical infrastructure are increasing; they are intended to destabilise Switzerland both politically and economically.

The **sanctions and the growing fears of a war** force Swiss companies to change their **international procurement and sales structures**, which results in delays and longer lead times. Businesses start stockpiling, which causes further supply chain squeezes in the short term.

In the last couple of months, the growing fears of an armed conflict have also led to more **panic buying** of long-life food products by the Swiss public.

Migration pressure on Switzerland as a safe country has also increased further. This leads to **tension among the public, who are less willing to help others** in view of their own shortages.

Scenario 2: Increase in extreme climatic events



International situation

Extreme environmental conditions are becoming increasingly common **worldwide**, and this trend is set to continue in the future.

This causes political **tension** between states, who are fighting over access to water, the submergence of land and food shortages in certain regions of the world.

What was once fertile **agricultural land** in the south has become barren, driving people to migrate northwards. Discussions about the **fair distribution of water from the Alpine region** add to the political tension between the states.



Situation in Switzerland

In Switzerland, climate change is manifested in droughts and heavy precipitation. Permafrost continues to thaw.

As a country situated in and around the Alps, Switzerland **generally has sufficient water resources**, even during a drought. However, problems can arise when it comes to distributing it evenly. Switzerland comes under pressure from neighbouring countries to also consider their interests when regulating the retention of water in reservoirs.

Rivers sometimes carry so little water that **river water cooling** is affected. Water levels in the Rhine river sometimes drop below navigation level. Conversely, water levels rise so much that the low height of bridges **disrupts navigation**.

Significant **warming** in the Alpine region causes glacial retreat and **permafrost** degradation, which in turn leads to increased rockfall or even landslides. This can disrupt **transalpine transport and energy carriers**.

Scenario 3: Global pandemic outbreak



International situation

A **highly contagious virus** spreads throughout the world in the space of three months. It is transmitted primarily via respiratory droplets. Face coverings only partially reduce the risk of infection.

The virus is **not generally life-threatening**, but it does lead to **severe illness** and **inability to work** for **several weeks**.

Immunity against reinfection wears off after just three to six **months**. A **vaccine** providing long-term protection is **not** yet available.



Situation in Switzerland

Switzerland's international links and business activities have made it a **hotspot for the virus**.

Around **50 per cent** of the working population are **mostly working from home at present**. However, employees are also allowed to go into work as an exception and if appropriate safety precautions are taken. Companies and events that pose a significant risk of spreading the disease are legally prohibited from operating or taking place during the winter months ('lockdown').

In the past month, around **25 per cent** of the working population has been **unable to work** as a result of **catching the virus**. The proportion of those unable to work is roughly equal between home-based and office-based workers.

Large sections of the population question the measures taken by the government, while others believe they do not go far enough. This leads to **rising tensions** between the two sides.

Assessments of resilience

Resilience of food supply within the economy

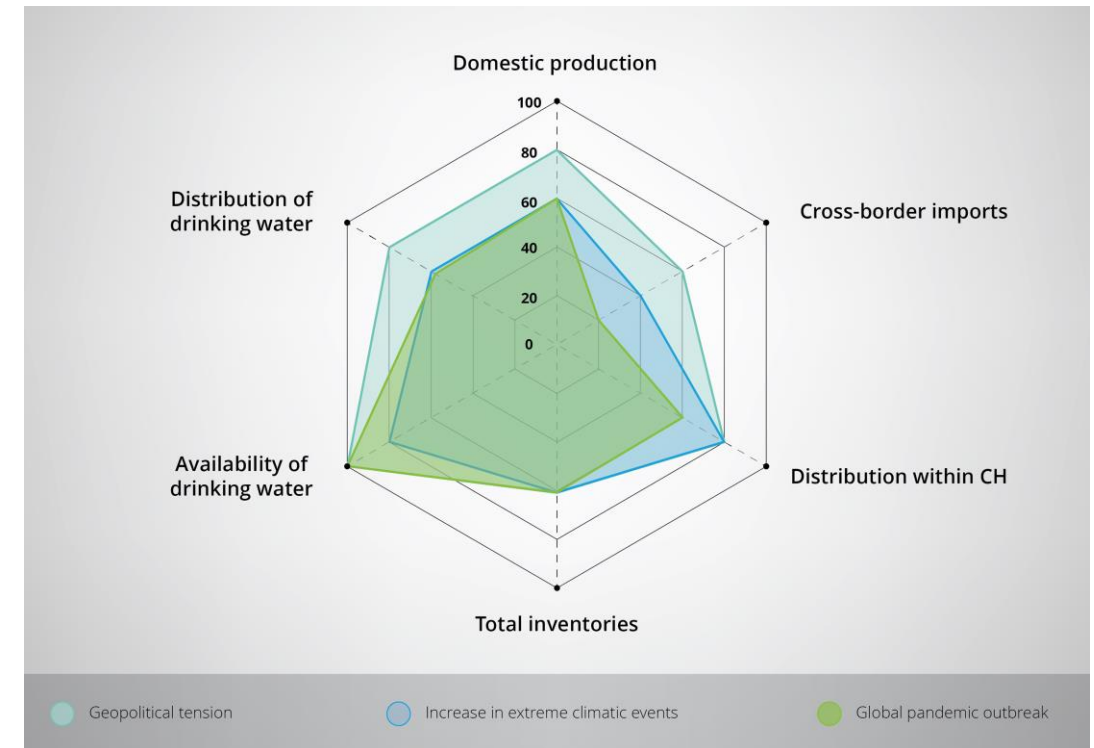
Findings and insights for all three scenarios

Statements

- One thing that stands out is how vulnerable food imports are. In extreme climatic events or a global pandemic outbreak, a basic level of provision is no longer guaranteed.
- Imports are the most heavily affected by a global pandemic outbreak. The consequences are far-reaching. Since Switzerland is not self-sufficient when it comes to food production, there are negative knock-on effects on production and inventories.
- While the supply of drinking water initially remains stable in the event of geopolitical tension and a global pandemic, the infrastructure is definitely vulnerable to sabotage or staff shortages.

Findings

- The weakness in the area of imports underlines the importance of domestic production and inventories. These are not completely resilient, either.
- Even though Switzerland itself has plenty of drinking water, it will face pressure from abroad. When water becomes a scarce commodity, there is a high risk of strategic conflict.
- Drinking water infrastructure is relatively resilient across the different scenarios. However, recent examples of civilian infrastructure (energy, water) being sabotaged show that it can also be vulnerable.



Resilience of healthcare within the economy

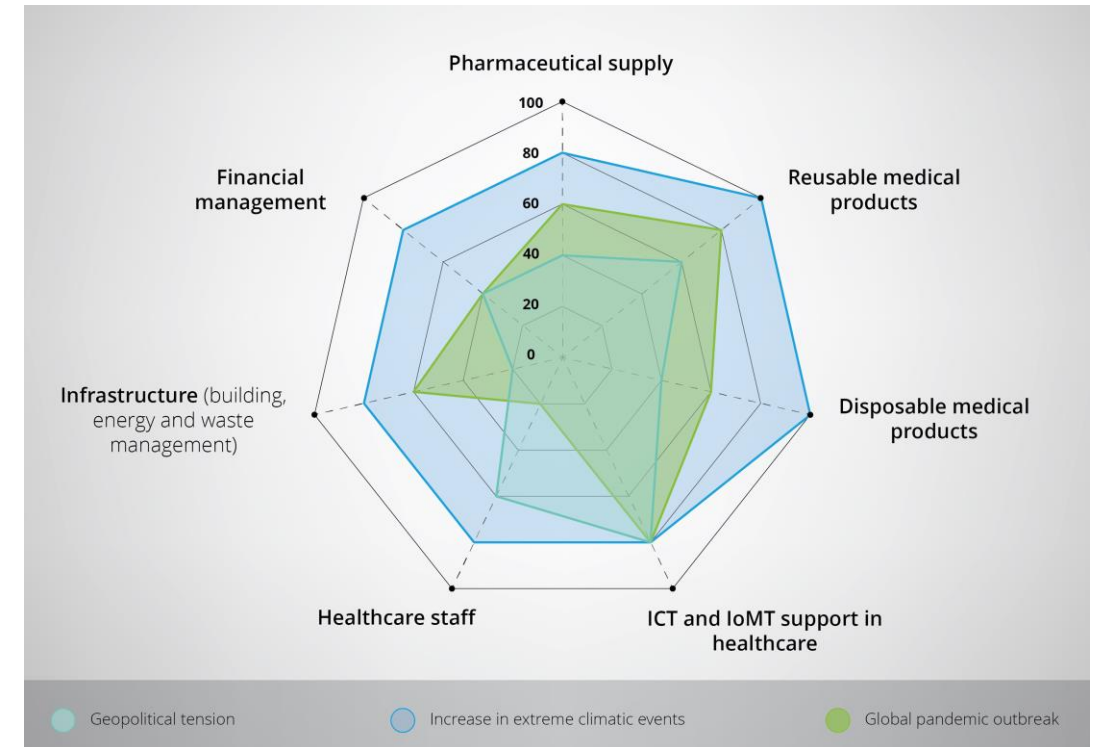
Findings and insights for all three scenarios

Statements

- Despite the lessons learned from the last pandemic, there is still a feeling that resilience would be insufficient in a serious pandemic.
- What also stands out is the vulnerability of the healthcare system to geopolitical tension. This is largely due to its reliance on an uninterrupted energy supply.
- Extreme climatic events also put pressure on the infrastructure and can lead to more hospitalisations. Overall, however, healthcare is not significantly affected by this.

Findings

- The low resilience of healthcare during a pandemic is almost impossible to avoid. After all, in such a situation, sick people are helped by healthy people. Thus, until humans have been largely replaced by technology, the weakness in the system will remain.
- However, the weakness of the healthcare system during geopolitical tension is less inevitable. It is caused by the high dependence on products from abroad, as well as the uncertainty with regard to an uninterrupted energy supply.



Resilience of public security within the economy

Findings and insights for all three scenarios

Statements

- Public security was found to be relatively resilient. The ambulance service would only reach its limits – unsurprisingly – in the pandemic scenario.
- The weakness that the army was found to have in the geopolitical tension scenario was primarily due to the difficulty in procuring armaments during a crisis.

Findings

- Numerous institutions in Switzerland are based on the 'militia' system of part-time public service. In a prolonged crisis, decision-makers would eventually have to return to their normal jobs. It would be hard for them to keep performing these dual roles in the long term and they could potentially end up with a double workload.
- The army's weakness in the face of political tension is due to the arms and financial policies of the last 20 years or so, which in many areas have relied on growth during a crisis.



Resilience of energy supply within the economy

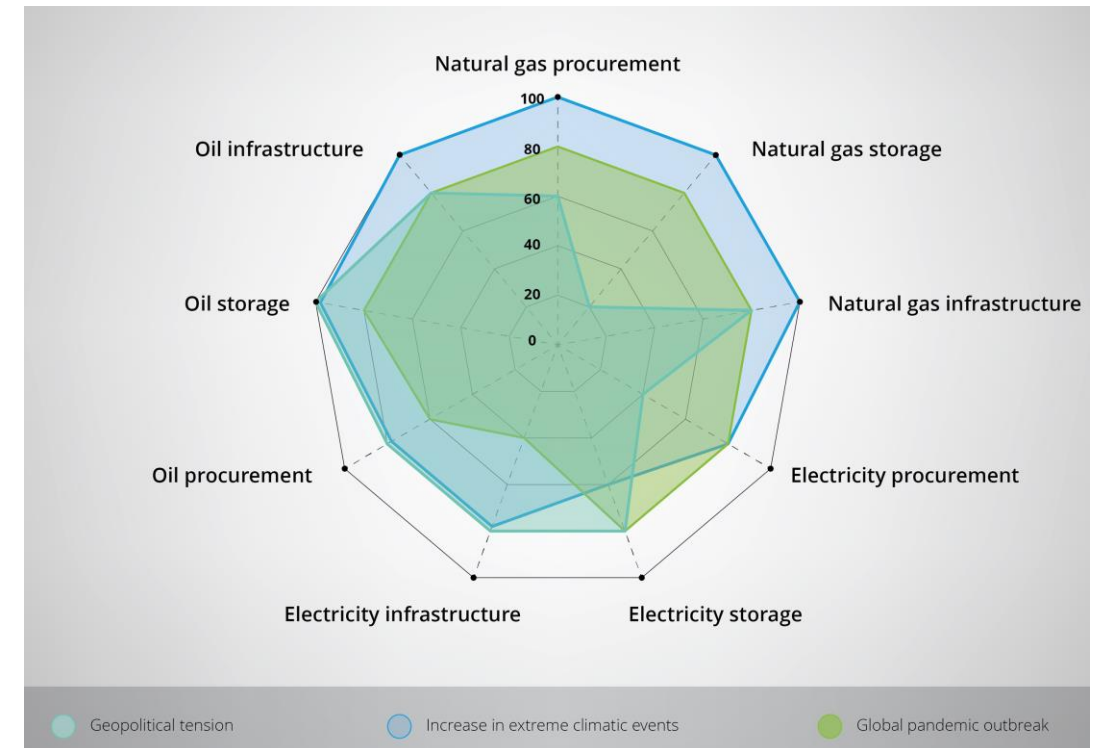
Findings and insights for all three scenarios

Statements

- The energy supply is mainly affected in the geopolitical tension scenario – but to a considerable degree.
- Electricity supply shortages could be cushioned with Switzerland's own electricity-storage facilities.
- Resilience to geopolitical tension is especially low for natural gas. Here, the results of the study have to some extent been preceded by recent events.
- The situation for natural gas is exacerbated by the fact that Switzerland has hardly any gas storage facilities, and some of these are located on foreign soil.
- The maintenance of nuclear power plants is carried out by specialists, some of whom have to be brought in from abroad. Because a pandemic leads to staff shortages and travel bans, this has a significant impact on infrastructure maintenance.

Findings

- The resilience of the energy supply in the event of geopolitical tension is too low. In combination with the increasing digitalisation of the economy, this is problematic.



Resilience of information and communication technology (ICT) within the economy

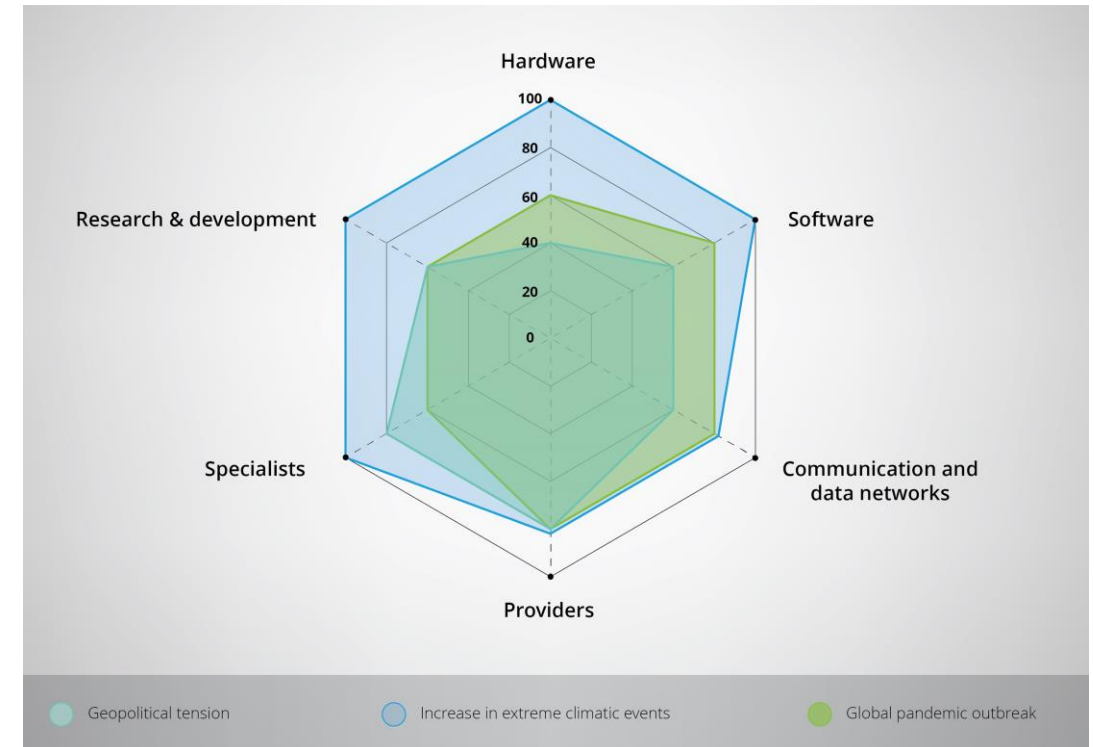
Findings and insights for all three scenarios

Statements

- In the pandemic scenario, personnel-intensive areas – specifically R&D and infrastructure renewal – are affected most. The impact on actual operations is less severe. ICT, on the other hand, cushions some of the consequences of a pandemic by virtualising social contact.
- Geopolitical tension affects personnel-intensive areas as well, but it also disrupts operations, for example due to temporary electricity shortages, cyber-attacks or sabotage. The physical infrastructure of the digitalised economy is highly exposed to geopolitical disruption.
- In the case of hardware, there is considerable dependence on certain countries or providers. The effects of this are felt in the geopolitical tension scenario in particular.

Findings

- The clear weaknesses in the pandemic and geopolitical tension scenarios are a source of major problems for the economy. In many cases, these can be temporarily cushioned with automated processes and virtualised infrastructures, but only with considerable effort and expense.



Resilience of financial market infrastructure within the economy

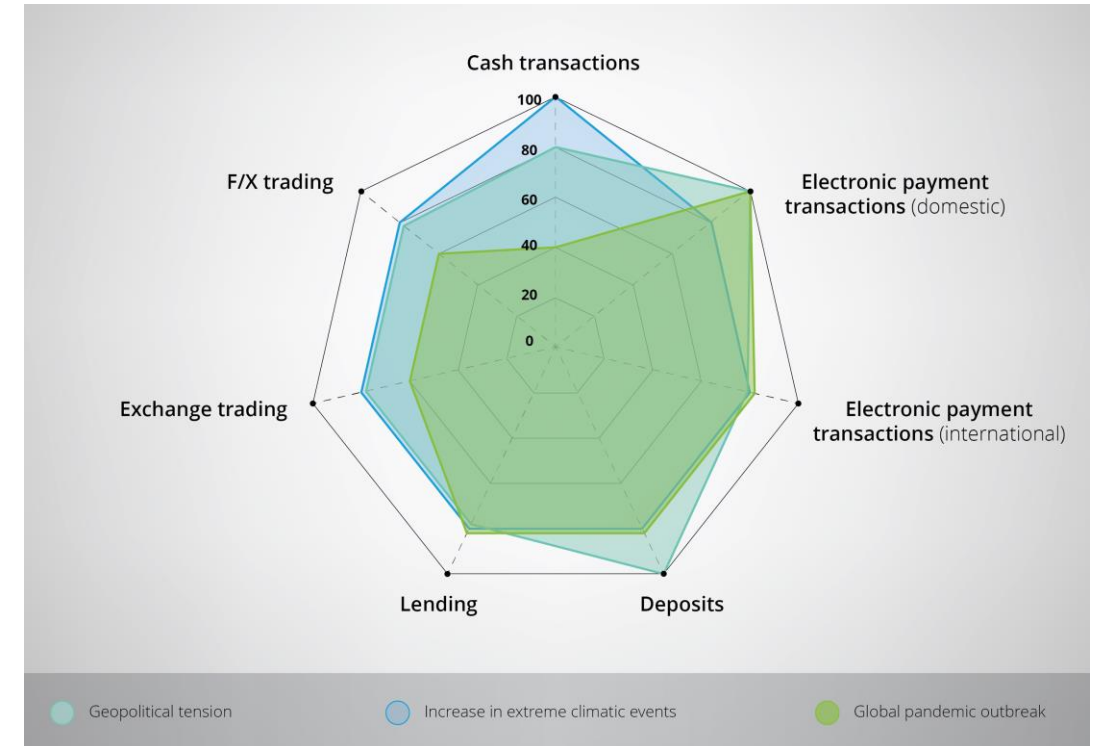
Findings and insights for all three scenarios

Statements

- The financial market infrastructure is encouragingly resilient in all scenarios. The only significant restriction in the pandemic scenario is in cash transactions, which is practically unavoidable due to hygiene requirements and mistrust among the market participants.
- Payment transactions are still possible in all scenarios. The slightly lower resilience for international transactions is mainly due to the expected prioritisation of national interests in the crisis.
- The lower resilience of trading and payment transactions in the pandemic scenario is down to the fact that personnel is needed for maintenance and operation. However, a basic level of provision can be maintained in all scenarios.

Findings

- With the exception of cash transactions, the financial market infrastructure is sufficiently resilient in all scenarios. The only real weakness (cash transactions) in the pandemic scenario is almost impossible to avoid.



Resilience of critical resources within the economy

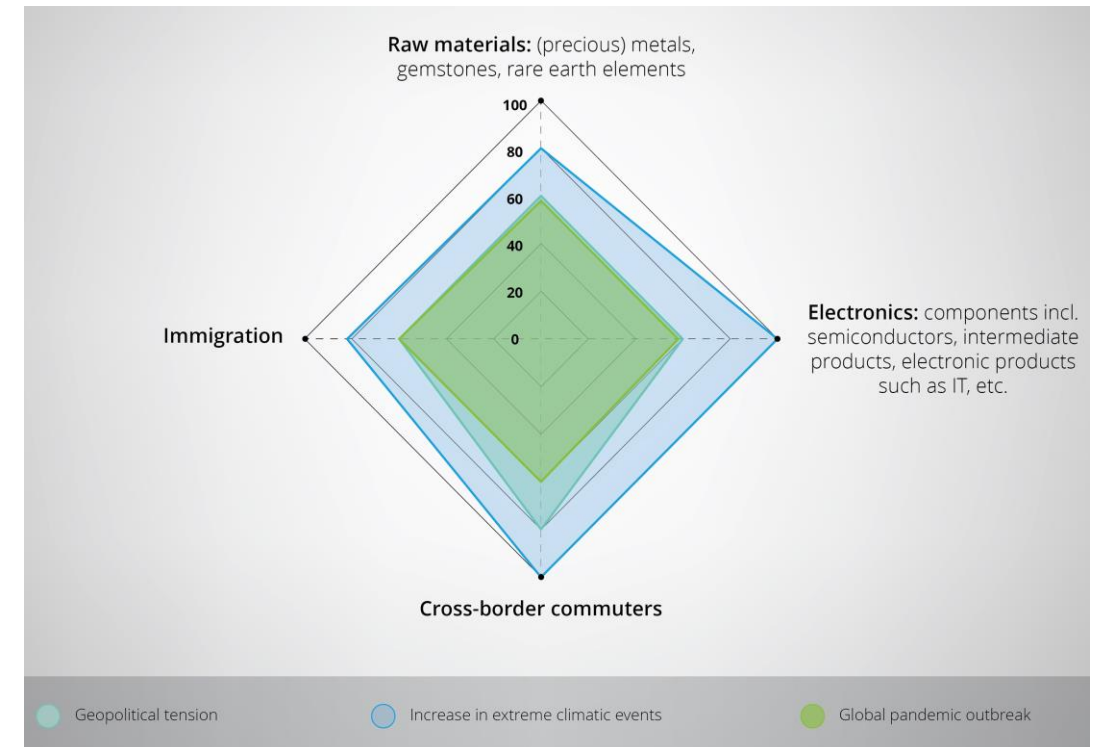
Findings and insights for all three scenarios

Statements

- With regard to personnel resources from abroad, resilience is high in all scenarios. This was also confirmed during the COVID-19 pandemic. Nevertheless, cross-border commuting has become less frequent due to people working from home.
- In the case of geopolitical tension, the immigration that the economy needs can be expected to fall as a result of an increase in the required formalities and potential loyalty conflicts.
- The area of raw materials and components is more vulnerable. Major limitations can be expected in both the pandemic and the geopolitical tension scenarios. On the one hand, these limitations are due to the prioritisation of national interests and sanctions; on the other hand, they can be caused in particular by stockpiling due to fears of supply shortages.

Findings

- The rather low resilience in the area of raw materials and components has implications for the production and maintenance of capital goods. This then has a negative knock-on effect on the resilience of other areas, such as ICT, logistics and some other public services and infrastructure.
- In many areas, digitalisation and automation have made it possible to reduce inventories and thus capital tied up in stock. However, this has a negative effect on resilience in the area of availability of electronics.



Resilience of logistics within the economy

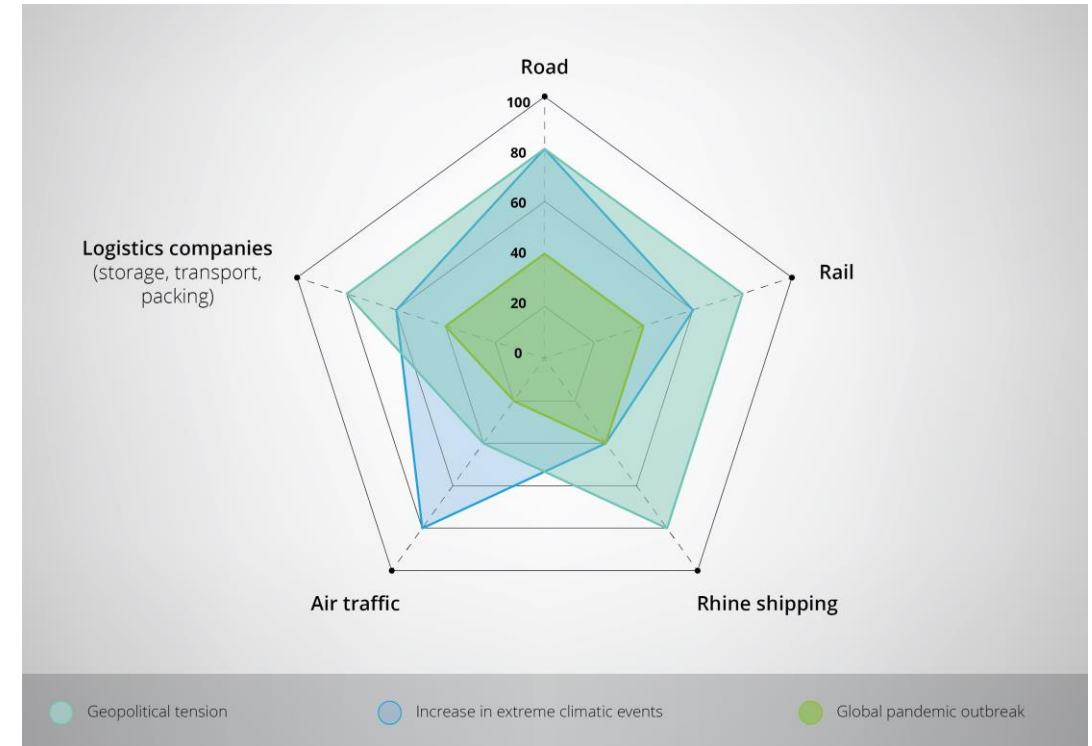
Findings and insights for all three scenarios

Statements

- Logistics is heavily dependent on the availability of personnel in many areas, making it very vulnerable during a pandemic.
- Geopolitical tension and the associated sanctions and possible acts of sabotage make themselves felt in air traffic in particular. However, they do not cause any major limitations to logistics companies, road, rail and shipping.
- For air traffic, some differences stand out: though resilient to extreme climatic events, it is much more vulnerable to geopolitical tension and pandemics.
- One positive exception is shipping on the Rhine, though it is very vulnerable to climatic events (high/low waters) and the availability of captains.
- Extreme climatic events put pressure on infrastructure (rail, road; high temperatures or precipitation) and storage.

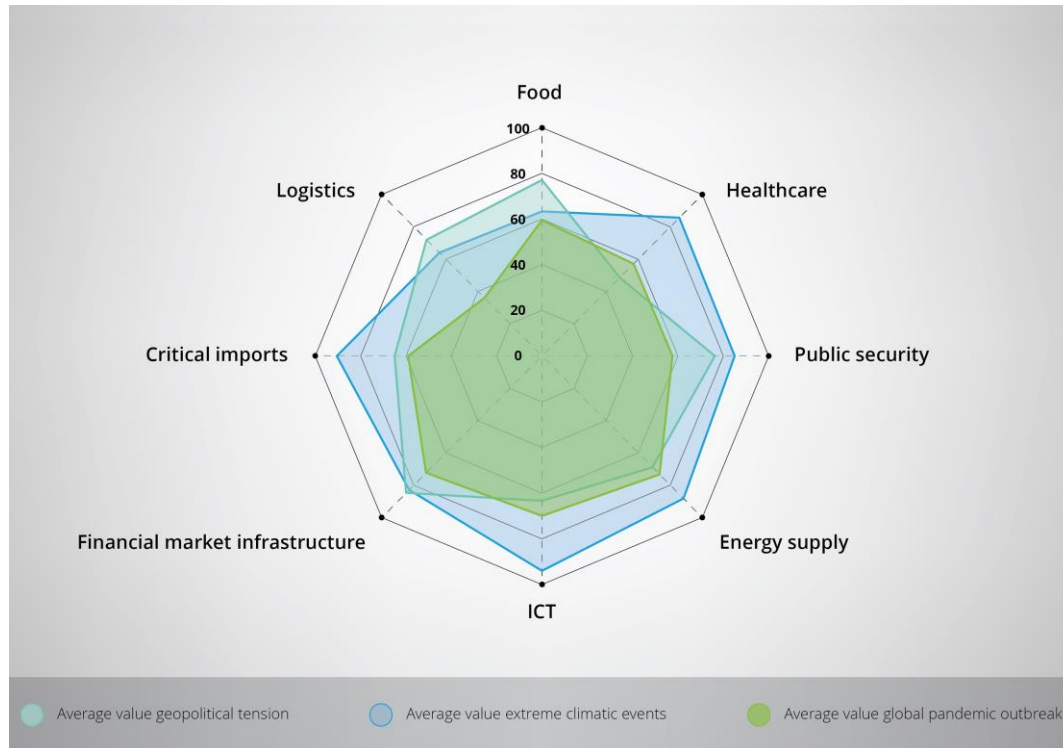
Findings

- The high vulnerability of logistics during a pandemic is concerning.



Resilience across all areas of the economy for each scenario

Resilience measured by the weakest link



Statements

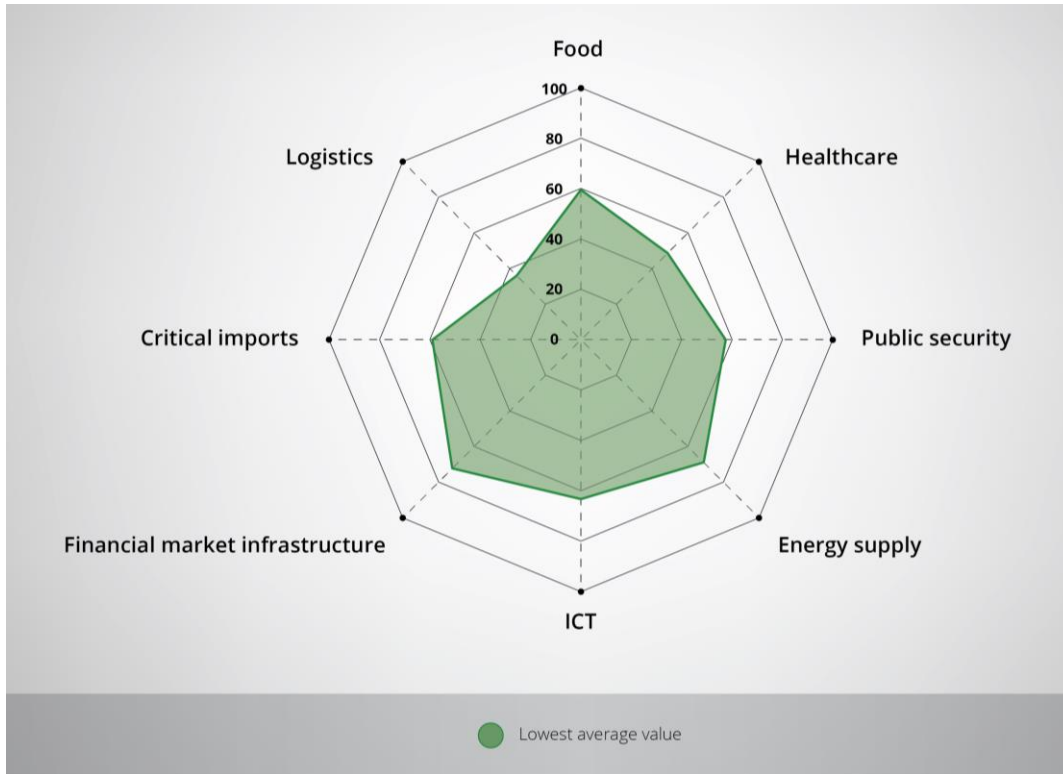
- A global pandemic poses the biggest challenge to resilience. This is because many areas remain heavily dependent on people being available and fit to work.
- Extreme climatic events only have a minor effect on resilience in the period investigated. The areas of food and logistics are particularly vulnerable.
- One thing that stands out is how heavily resilience is affected by rising political tension, especially in the area of healthcare.
- The financial market infrastructure is resilient in all scenarios.

Findings

- While it is difficult to achieve a high degree of resilience to a global pandemic, it would surely be possible to improve resilience in the geopolitical tension scenario.
- The considerable resilience of the financial market infrastructure is due, on the one hand, to the high degree of automation and digitalisation and, on the other, to the very high level of standardisation between the market participants.

Resilience of Switzerland

The lowest average value across all scenarios for each area of the economy



Statements

- The graph shows the lowest average value for each area of the economy. It is a possible indicator of the resilience of Switzerland as a whole.
- The financial market infrastructure has the highest average resilience, and logistics the lowest.
- One thing that stands out is the high resilience of the financial market infrastructure across all scenarios. Healthcare and public security, however, are less resilient.

Findings

- The average for all lowest resilience values per area is **58 per cent**. This is a relatively good result for the Swiss economy as a whole.
- However, there is still a need for action in individual areas, especially healthcare, logistics, critical resources and, to some extent, public security.

Summary

The basic level of provision is stable in Switzerland



At an average of 58 per cent, **the Swiss economy has a sound level of resilience**. With a few exceptions, it is well equipped to maintain a good level of basic provision in all scenarios.

However, the study also shows that there are **serious vulnerabilities in some areas**, which **need to be addressed**:

- For example, the Swiss economy is still poorly prepared for a global pandemic. Although it would not be possible to achieve a high level of resilience in this scenario in the foreseeable future, individual dimensions such as the availability of medical products could increase the level of resilience.
- The weaknesses are prominent in the case of an escalation of geopolitical tension. The Swiss economy needs to adapt quickly to global political and economic upheavals in order to be equipped to overcome future challenges.
- After all, current events are already showing us how important it is to have a certain degree of autonomy when it comes to energy supply. The same also applies for the food supply, for which we also identified certain vulnerabilities.
- A high degree of resilience can only be achieved if the Swiss economy regularly addresses all potential crisis scenarios. The COVID-19 pandemic and the energy crisis triggered by the war in Ukraine have revealed weaknesses in sub-areas. Gaps are currently being closed in these sub-areas.
- However, forward-looking planning also requires us to anticipate further crises and eliminate the corresponding weaknesses pre-emptively. In this sense, the study has shown that there is still a considerable need for action.

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