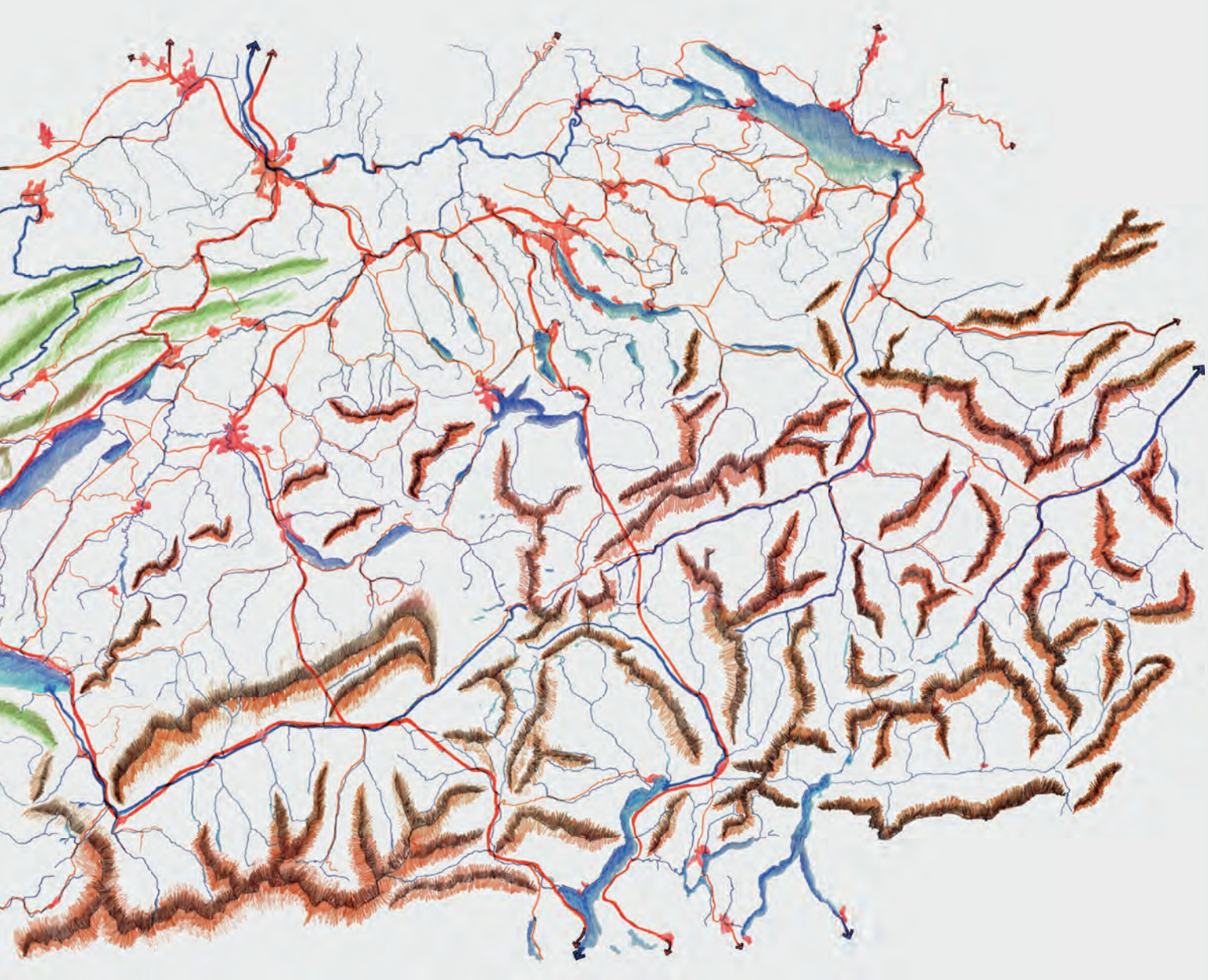
Outlook 2030

Opportunities and risks for federal policy



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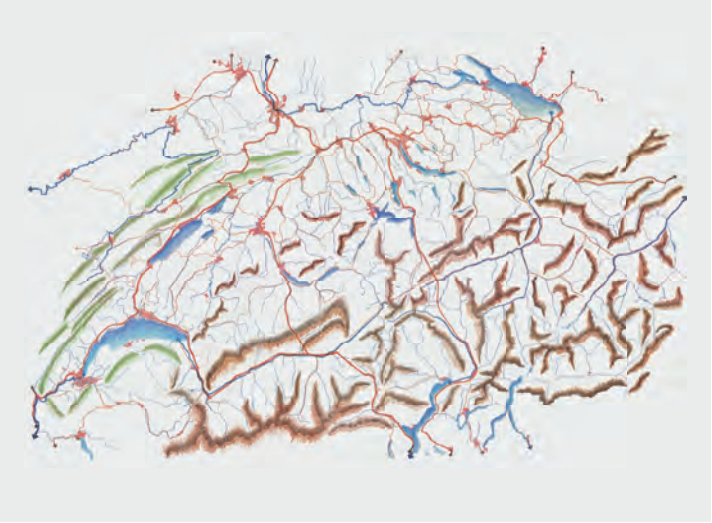

The cover picture is an illustration from the Swisstopia project by the Haute école du paysage, d'ingénierie et d'architecture (hepia) in Geneva. This project won an ideas' competition entitled "morgen? Die Schweiz" [„tomorrow? Switzerland"], launched by Federal Councillor Doris Leuthard, which invited candidates to present their idea of how life in Switzerland will look in 2035. The winning contribution from the hepia university of applied sciences addressed an important issue in future urban development – the settled landscape.

http://hepia.hesge.ch/

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Published by: Swiss Federal Chancellery
www.bk.admin.ch/themen/planung/

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Statement by the Federal Council

Every four years the Forward Planning Staff of the Federal Administration prepares an interpretive document for legislature planning purposes on behalf of the Federal Council, which serves as an overview of the most important future issues in terms of federal policy (Parliament Act of 13 December 2002, SR 171.10, Art. 146 Legislature Planning).

The Federal Council acknowledges this report without commenting specifically on or necessarily agreeing with the statements therein. When drawing up its programme for the next legislature period, the Federal Council will concentrate on future opportunities and risks and then set out the political priorities and focuses for the future in the 2015-2019 legislature planning report at the beginning of 2016.

As it has previously stated, the Federal Council is prepared to play a leading role in the discussion on future challenges. The question as to which political conclusions to draw is, however, not only a matter for the national government but, given our federalist and liberal political system, also the task of all those involved in politics. It will also greatly depend on parliament, the cantons and the politically interested public as to what direction the discussion on our future will take and how far it will go. It is with this in mind that the Federal Council is making the report available to the general public.

Summary

No-one knows how Switzerland will develop over the next ten-fifteen years. However, by imagining different scenarios and combining these with trend analysis, it is possible to sketch a number of ways in which it may evolve in future. The different combinations of scenario parameters[1] selected in this report, "Switzerland's economic networks" and "global technologisation", result in four possible scenarios for the year 2030. The scenarios, *Fast Lane*, *Congestion*, *Rocky Path* and *Silk Road,* depict four different views of the world and Switzerland's situation in 2030, presenting the possible political, economic, socio-cultural, technological, ecological and legal dimensions. This report is intended to serve as a planning basis for strategic decision-making.

Developments with far-reaching consequences for Switzerland are played out differently in the four scenarios. If the geopolitical balance of power becomes more stable and globalisation continues to spread, Switzerland's economic networks will become stronger. If, however, the world becomes a less stable place because of rivalry between the major powers or erosion of the international order, the security situation and Switzerland's economic integration will deteriorate. The scenarios look in particular at how Switzerland's relations with the EU may develop. The strength of economic networks influences economic growth and structures in industry; if networks are strong, the economy grows. Wealth distribution and the development of values in Switzerland affect social cohesion. There is a demographic shift in society as immigration patterns change and the population ages; this has an impact on the health and social security systems. When the technological and financial means are available to introduce environmentally compatible and resource-efficient technologies, the impact on the environment and climate is reduced. International cooperation leads to greater technological developments; furthermore, rivalry between the major powers results in a technology race, and this also leads to the far-reaching spread of technology throughout the world.

The four scenarios depict different opportunities and risks with which Switzerland could be confronted in 2030:

- As the system of global governance becomes stronger and there is greater international stability, the security situation in Switzerland improves. Even if the system of global governance becomes weaker, Switzerland can still exercise its influence as a mediator and bridgebuilder.
- Economic growth in Switzerland is driven by healthy economic networks. Even if Switzerland's economic networks become weaker, it can nonetheless occupy niche markets and build on its strong economic basis and innovative strengths.
- The spread of globalisation and greater economic growth creates greater wealth inequality and cultural diversity. This threatens social cohesion, but at the same time presents an opportunity for Switzerland. As society becomes more diverse, education and culture play an increasingly important role in maintaining stability. Thanks to a thriving economy, more money is available to resolve conflicts over distribution of wealth.
- Subject to Switzerland's economic situation, more women join the labour market and pressure on the social security and health systems grows.
- Technological advances provide new solutions for using increasingly scarce raw materials. This, however, involves risks which are difficult to determine.
- Information and communication technologies (ICT) are key technologies with huge impact. The level of the cyber threat depends on international cooperation in developing security technology.
- High levels of economic growth lead to greater resource consumption. With the use of new technologies, the impact on the environment can be limited. Environmental pollution increases when the technological and financial means to do this are insufficient.

1 The different scenario parameters are explained in the chapter entitled Procedure and Methodology, Phase 2.

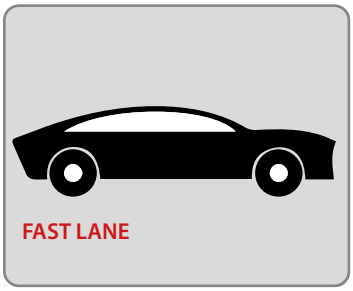
Background

The purpose of the Outlook 2030 report is to develop an overview of the major opportunities and risks that could affect Switzerland in general and in particular impact federal policy-making over the next 10 to 15 years. The final report does not formulate any political priorities or define any actual objectives. Its purpose is to enable the Federal Council to recognise the key opportunities and threats faced by our country at an early stage, and to ensure that strategic decisions are taken at the right time.

The Outlook 2030 report is primarily intended to provide the Federal Council with a basis for political debate on legislature planning for the period 2015–2019. In order that the Outlook 2030 report can contribute to ensuring that federal policy remains forward-looking and coherent, it deliberately looks beyond the short-term four-year period of the legislature plan.

At the same time, Outlook 2030 provides important inputs for the period beyond the four-year legislature plan, and influences ongoing strategy development in the federal departments and offices. The Outlook 2030 report gives agencies both within and outside the Federal Administration an overall view of the main opportunities and risks in key policy areas and encourages them to take a view of the future based on the four scenarios. Furthermore, the special committees of the Federal Assembly can take account of Outlook 2030 in their discussions on the legislature plan. The report is also sent to the cantons and political parties for consideration.

Main elements of the scenarios



Fast lane

The world in the *Fast Lane* scenario is characterised by multilateralism, globalisation and economic interdependence. The global economy is increasingly driven by free trade. Globalisation intensifies social and economic inequality between countries and within societies. The increasing demand for resources creates incentives to develop efficiency-enhancing technologies. The dynamic global economy frees up funds for major investments in research and development, and rapid advances in technology alter production process and different aspects of daily life.

By reducing its trade barriers under World Trade Organization (WTO) regulations, Switzerland has established strong economic networks and is world-renowned as a location for research and business. However, adapting to the dynamic global economic and technological situation also places demands on state institutions, the Swiss domestic economy and export sector and residents, who due to increased wealth and trade activity tend to be increasingly internationally mobile. There is a stable arrangement establishing Switzerland's relationship with the EU. Wealth distribution in Switzerland is increasingly unequal. Economic and social changes and growing cultural diversity in Switzerland have triggered an "identity reflex", since not all professional and social groups benefit equally from these changes.

Main influencing factors:

Geopolitical power structures: The geopolitical situation gives considerable influence to international organisations. A system of global governance develops in response to the need to solve global problems. Numerous actors share responsibility in a range of constellations. Switzerland's position and influence in the world have improved.

Globalisation of the economy: The global economy is growing and so is the interdependence of states. Switzerland maintains multilateral trade agreements with countries in all regions of the world. Immigration rates remain high.

Developments in the global supply of resources and raw materials: The highly dynamic economy has accelerated the consumption of natural resources and raw materials. Resource-rich African states are gaining in importance.

Technological development: The shortage of raw materials has made the use of efficiency boosting technologies more profitable, in particular in the energy sector. The booming economy generates a high level of investment in research and development, thereby creating favourable conditions for innovation and the dissemination of technologies.

Social cohesion: The high rate of immigration to Switzerland slows down the ageing process of society. In addition, thanks to a strong economy sufficient public funds are available for the welfare state to close the resulting wealth gap in Switzerland. Switzerland guarantees universal access to medical care. Forms of employment that promote gender equality and allow people to reconcile work and family life are bringing more women into the workplace and into management positions, while more men work part time.

The winners

The situation in Switzerland in 2030 has improved compared to the situation in 2015 for the following in particular:

Economic dimension
- Tertiary sector
- Raw materials, energy, pharmaceutical and financial industries, and export industries
- Multinationals
- Dual-track vocational education and training system and universities

Political dimension
- International Geneva and metropolitan regions

Technological dimension
- Switzerland as a location for research and business
- STEM[2] professions

Socio-cultural dimension
- People with qualifications, intercultural skills and who are adaptable and mobile
- Women, a greater share of whom are in work and hold leadership positions
- High-income population groups

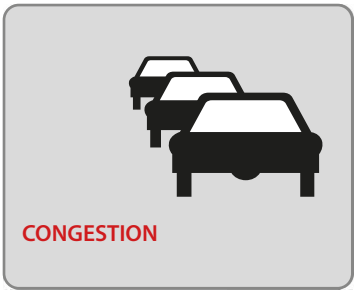
The losers

The situation in Switzerland in 2030 has deteriorated compared to the situation in 2015 for the following in particular:

Economic dimension
- Companies which have been unable to make the necessary technological adjustments and fully adapt to the new international standards
- Branches in the secondary sector without patent protection

Socio-cultural dimension
- Population groups socially excluded due to the digital divide
- People lacking in qualifications, intercultural skills, adaptability and mobility
- Low-income population groups

2 STEM = Science, Technology, Engineering and Mathematics.



Congestion

The world in the *Congestion* scenario is marked by rapid technological advances and rivalry between the major powers, the USA and China. Competition for raw materials results in a technology race. Transatlantic networks between the USA and the EU are strengthened. At the same time, there is a rapprochement between Russia and China, accentuating the East-West divide. Although the population is ageing in the western industrialised societies, as it is in China and elsewhere, the global population continues to rise, and with it the demand for raw materials.

With this demographic development and geopolitical instability, the commodity prices on the global markets increase rapidly. This, in turn, encourages the introduction of new energy-efficient technologies. Switzerland finds it difficult to assert itself politically and economically on the world stage. Relations between Switzerland and the EU have become very cool. It takes time to build up trade relations with other, non-European countries. Economic networks with other parts of the world – Asia in particular – are still weak.

New technologies in part offset the negative effects of the decline in foreign trade, and energy consumption in Switzerland can be greatly reduced thanks to technological advances and strict regulation. As Switzerland's networks with other countries are weakened, immigration levels fall. It becomes more difficult to recruit labour abroad. Women are encouraged to join the labour market in order to close the gap this leaves. This creates a greater burden for women, who are still the main carers of children and older relatives.

Main influencing factors:

Geopolitical power structures: The USA and the EU have formed a free-trade area; China intensifies its economic relations with Southern and East Asia and in Central Asia. Both power blocs impose protectionist measures to exclude the other from their markets. Competition for influence and commodities becomes more intense.

Threat situation in and outside of Switzerland: Rivalry between the major powers gives other nations more room for manoeuvre, resulting in more local and regional conflict. As cooperation and coordination between the major powers is weak, potentially dangerous technologies, such as military technology or IT, become harder to control. It becomes more difficult to protect against cyber events such as cybercrime, espionage and sabotage, as poor links between states and private individuals prevent the exchange of expertise.

Relations between the EU and Switzerland: Relations between the EU and Switzerland have deteriorated.

Global resource and food supply: High commodity prices drive the spread of new technologies to increase efficiency. Poorly connected markets mean that electricity and energy imports are highly unstable and subject to fluctuations. Fewer raw materials and less energy are imported into Switzerland, and material cycles are closed: more and more of what is consumed in Switzerland is also recycled (e.g. phosphorus is extracted from waste water). An ecologically sustainable intensification of production in Switzerland can meet the growing demand for food.

Swiss labour market: Immigration levels fall, and more and more young, well-qualified Swiss leave the country in search of better economic opportunities, in particular in the USA and Asia. This results in a lack of skilled labour, although this gap is in part filled by higher employment levels among women.

Social cohesion: Low immigration levels and a declining birthrate lead to a rapidly ageing society. This increases the pressure on the social security system. In order to mitigate the impact of this demographic trend, people are expected to remain in work for longer. The three-pillar system of pension schemes remains in place, but higher contributions are needed.

The winners

The situation in Switzerland in 2030 has improved compared to the situation in 2015 for the following in particular:

Economic dimension
- Primary sector
- Manual occupations
- Sectors with high potential for automation
- Switzerland as a major datacentre

Socio-cultural dimension
- Women, a greater share of whom are in work and hold leadership positions
- Flexible and mobile labour

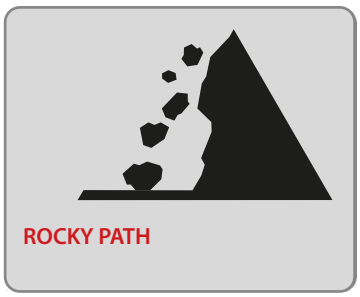
Ecological dimension
- The environment, as efficient technologies and slow economic growth lead to a reduction in resource use and so less environmental damage

The losers

The situation in Switzerland in 2030 has deteriorated compared to the situation in 2015 for the following in particular:

Economic dimension
- Tertiary sector
- Importing and exporting companies
- Sectors with little potential for automation
- Border regions, as a result of poor relations with the EU
- Financial centre
- Internationally active service industry

Socio-cultural dimension
- Women, because of difficulties of reconciling family and paid work
- Health sector, as society rapidly ages
- The less well-off who are in need of care
- Cities, as more people move to the suburbs



Rocky Path

The world in the *Rocky Path* scenario is split into competing regions and is marked by power politics and trade restrictions. The resulting conflicts over access to commodities are becoming more acute around the world. The regional powers Brazil, China, India, Russia and South Africa are gaining in importance vis-à-vis the West. Technological development suffers as funding is cut and the risk of espionage grows. Energy use and energy prices on the world market are high, a situation from which the energy-exporting states benefit. High energy prices restrict economic growth in countries which are net importers of energy.

Switzerland finds itself in an economically and politically unstable environment and trade restrictions lead it to concentrate increasingly on the domestic market. As unemployment rises, the country becomes less attractive to immigrants. The result is an ageing population and subsequently a social security system coming under increasing pressure. The public's desire for stability and security rises in the face of this insecurity.

Main influencing factors:

Geopolitical power structures: As the regions gain in power, international organisations lose their significance and so Switzerland's ability to influence global events declines. The EU is weakened and decision-making powers are being returned to national governments; cohesion wanes.

Switzerland's economic networks: Switzerland maintains its bilateral political and economic relations with EU countries. The strained economic situation experienced by its main trading partners, however, has an impact on foreign trade.

New technological developments: A stagnating economy in the USA and western industrialised countries severely restricts their innovative power and technological development. A lack of cooperation between countries in the field of international research further restricts technological development throughout the world.

Demographic development: Immigration levels remain low as unemployment rises and Switzerlands domestic orientation increases. Furthermore, increasing numbers of highly qualified Swiss consider moving abroad. As the population ages, demographic-dependent public expenditure rises sharply. The global population grows at a moderate pace.

Social cohesion: With the economy stagnating and political instability increasing throughout the world, in Switzerland there is greater cohesion among the public and an increased focus on traditional values and local identity. The three-pillar pension plan system continues to exist, but a growing proportion of the population relies solely on a state pension. Because the financial pressure on the social security system is so great, family members are now required to shoulder previously externalised tasks. Increasing numbers of people leave Switzerland to live abroad. It is no longer possible to provide the same level and quality of medical care to the public.

The winners

The situation in Switzerland in 2030 has improved compared to the situation in 2015 for the following in particular:

Economic dimension
- Primary sector
- Structurally weak regions

Socio-cultural dimension
- National languages and dialects
- Sense of community and local level
- Associations and traditions

The losers

The situation in Switzerland in 2030 has deteriorated compared to the situation in 2015 for the following in particular:

Political dimension
- Geneva as an international centre

Economic dimension
- Exporting companies
- Metropolitan regions

Socio-cultural dimension
- Women, because of difficulties of reconciling family and paid work
- Families, because of greater financial pressures and a shrinking welfare state
- Low-income population groups

Silk Road

In the *Silk Road* scenario, the world is dominated politically, economically and scientifically by Asia. The ASEAN states[3] along with Australia, China, India, Japan, South Korea and New Zealand, form a very close-linked network. Following the collapse of the Trans Pacific Partnership (TPP), the USA loses its influence in the region. Cohesion in the EU crumbles and the Union becomes weaker politically and economically. Both Europe and the USA lose their growth potential and innovative strength.

Switzerland has good economic relations with its neighbouring states, with South and East Asia and with Africa, and is able to build on these. Thanks to these close relations, the level of migration in both directions is high. Although cohesion with the EU is declining, there is healthy economic cooperation between Switzerland and its neighbouring regions, and together they form a dynamic economic area. Many technology companies and research institutes from North America and Europe have relocated to Asia. Green technologies are no longer developed at such a fast rate and global economic growth is slow, so greenhouse gases are being produced in greater volume. Climate-related extreme weather events occur more frequently.

Main influencing factors:

Globalisation of the world economy: The RCEP[4] free-trade agreement brings together the whole of South and East Asia plus Oceania into a dynamic economic zone in which global economic growth is primarily concentrated. At the same time, Africa's economic importance increases thanks to its raw material reserves and young population.

Geopolitical power structures: The economically prosperous states in South and East Asia also cooperate on foreign policy and security policy. Whilst Russia, Central Asia and the Middle East foster close relations, the USA and the EU become less significant players both in the region and at a global level.

Switzerland's economic competitiveness: Switzerland fosters good economic relations with the South and East Asian states, and the Swiss economy can benefit from growth in this region. Switzerland also maintains close relations with its European neighbours, and a dynamic economic region develops in the Alpine states. Switzerland remains an important trade, finance and innovation hub.

Climate change: Rapid economic growth and the sluggish development and spread of climate-friendly technologies lead to an increase in greenhouse gas emissions. Although emissions have been rising rapidly since 2015, their effect is not felt until after 2050. Global greenhouse gas emissions in the previous century now cause more frequent extreme weather events.

Immigration in Switzerland: Thanks to the close economic links with South and East Asian countries, the level of migration between Switzerland and this region is high. Switzerland remains an attractive place to work for Europeans.

Social cohesion: The population rises as a result of economic links and immigration, and society ages less rapidly. The pressure on the social security system therefore becomes less intense.

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3 The ASEAN states are Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand and Vietnam.
4 The RCEP member states are the ASEAN states plus China, Japan, South Korea, India, Australia and New Zealand.

Threat situation in and outside of Switzerland: The cyber threat grows. In Switzerland, innovative small businesses and small research institutions are particularly at risk.

The winners

The situation in Switzerland in 2030 has improved compared to the situation in 2015 for the following in particular:

Economic dimension
- Import and export companies with links in South and East Asia
- Commodities sector

Socio-cultural dimension
- People with a knowledge of Asian languages and with intercultural skills

The losers

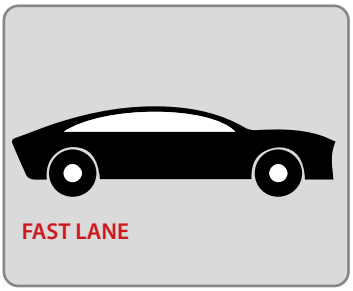
The situation in Switzerland in 2030 has deteriorated compared to the situation in 2015 for the following in particular:

Economic dimension
- Export-oriented businesses with a focus on the US market

Socio-cultural dimension
- Employees in highly competitive occupational groups
- Society, as cohesion declines

Ecological dimension
- People affected by extreme events

Detailed scenarios



Fast lane

In 2030

The world is organised by a system of powerful international organisations and norms, and the global economy is expanding. At global level, free trade leads to both stronger economic networks and interdependency. The EU single market has grown and is highly integrated. Political cohesion among EU member states is also becoming stronger. Globalisation creates both winners and losers. Countries running a large democratic deficit, in particular in Asia or in Africa, are at risk of greater inequality. Differences in wealth levels between states are also increasing. Employment relationships are increasingly precarious worldwide, including in Switzerland. The changes put low-skilled workers in particular under increasing pressure. There is a decrease in the proportion of women in the world population, notably in China and in India. From 2025 onwards, this leads to a demographic imbalance, with approximately 200 million fewer women in the world than men. In addition, China faces the challenge a rapidly ageing population.

Global economic growth has led to high global consumption of resources. The prices for resources and energy create incentives for efficiency-enhancing technologies, and it becomes profitable to implement these technologies. Global economic growth generates the necessary resources for further research, innovation and the spread of technology. This opens the way for making great strides in technology.

Switzerland is highly networked throughout the world. Switzerland and the EU have signed a customised agreement. World trade has been liberalised at multilateral level within the framework of the World Trade Organization (WTO). By dismantling trade barriers, Switzerland has intensified economic cooperation with countries in the European area and worldwide. The growth of the Swiss economy increases the demand for labour, and competition for skilled workers is increasing everywhere in the world. Furthermore, increasing numbers of Swiss people are emigrating abroad for work or training purposes, and then returning with new experience and knowledge. Switzerland benefits from a brain gain. Switzerland's multilingualism is an advantage in this context. In a competitive international environment, Switzerland is an attractive place to live and work, and it remains an attractive location for headquarters of global companies. Due to the high demand for labour, immigration of skilled workers to Switzerland remains high, especially from the EU area. Immigration alone cannot meet the increased demands for skilled workers and managers. For this reason, the proportion of women on the labour market and in leadership positions is increasing.

The increase in the standard of living causes high incomes to rise faster than low incomes. This leads to growing disparities in wealth in Switzerland. Social cohesion breaks down, while individualisation becomes more prevalent. There is increasing resentment among the people left behind by globalisation. The welfare state uses the tax revenue generated by economic growth to ease the pressures that are created. In a bid to counter scepticism about cultural diversity, more time is devoted in schools to teaching the national languages and the languages of the major immigrant groups. Providing easy access to culture and language classes is the best way of ensuring the integration of the migrant population in Switzerland. The increasing pressure of population growth on settlements and infrastructure is also felt in Switzerland.

The reforms of the Health Strategy 2020 have been implemented in the health system, and universal access to primary care is guaranteed in 2030. Great progress has been made in personalised medicine, and advances in technology have led to a highly efficient provision of healthcare, including e-Health. Health awareness has increased, and prevention has become a cornerstone of the health system. There is an established system of care for the chronically ill or those in need of care abroad. International standards have helped improve the management of pandemics and health in general.

2015–2020

The geopolitical balance of power shifted. A network of international organisations representing the interests of various states grew in importance, and this led the economic and political heavyweights of the international community to abandon power politics and confrontation, and so the situation became more stable. In addition to the USA, other countries gained in global and regional significance. At the same time, the BRICS[5] countries evidently experienced internal political problems. In Brazil and South Africa the glaring wealth gap led to repeated and large-scale outbursts of unrest. In China unchecked economic growth, urbanisation and the bursting of a housing bubble left their mark on the environment and on living standards. Femicide and the one-child policy led to a smaller proportion of women in the Chinese and Indian populations, thus accelerating the already existing process of an ageing society.

The demographic gender imbalance and rapidly ageing population caused China to lose its economic momentum, as it lost its edge as a production location. In addition, wealth disparities worsened the already restricted access for lower income groups to health and education. China's political system, restrictive information policy and media control came under growing criticism. The public increasingly voiced its wish for political participation. New developments in the field of ICT improved access to information. The Chinese economic and development model was questioned by a population increasingly connected through social media, and resistance to the system grew. Because of the extent of these domestic political challenges, China's foreign policy was thrust into the background.

The geopolitical balance of power fostered a multilateral world order from which a regulatory system of global governance arose, allowing international organisations and norms to gain in importance. In compliance with the "one country – one vote" principle, the position of small and medium-sized countries was strengthened. This gave Switzerland a good head-start to position itself in the changing international environment. Switzerland's adherence to traditional foreign policy principles, such as the rule of law, universality and neutrality, allowed it to expand its influence in the multilateral context.

The world economy recovered from the crises at the beginning of the 21st century and was able to prosper. This climate favoured the removal of trade barriers at multilateral level under the WTO. Switzerland continued to be actively involved in negotiating new and more stringent standards in the financial sector. Agreement on strict international financial standards led to regulations in compliance with international requirements, which provided stability, credibility and transparency for Switzerland as a financial centre. However, more stringent rules meant higher costs and a loss of competitiveness compared with other financial centres.

Globalisation led to an increase in the level of prosperity worldwide, especially in developing and emerging countries, but did not benefit all segments of the population equally. The prosperity of those with lower levels of education stagnated, wealth was increasingly concentrated in the hands of the few, and inequality within society became more widespread. Different countries also experienced different degrees of rising prosperity.

5 BRICS = Brazil, Russia, India, China and South Africa.

Democratic deficits hindered the growth of prosperity in some countries, primarily in Africa and increasingly in Asia. Income disparities also increased in OECD member states, as the wages of top earners rose faster than those of other income categories.[6] The long-term low interest rate policy of the central banks of western economies also increased the risk of inflation.

As a global system of governance became established, a consensus was reached on some key issues, which found expression in the UN sustainability agenda (Sustainable Development Goals). Sustainability and economic goals converged as multilateral free trade became more widespread. Efforts were intensified to surmount extreme poverty and to lessen inequality within and among societies.

Following the debt crisis in the EU member states, institutional reforms were introduced and successfully implemented through to 2020. At the same time, EU economies benefited from the global recovery. Growth in the individual EU member states led to an increase in economic integration within the EU single market, and public spending ratios decreased. The availability of financial resources and political will paved the way for institutional reforms. The foundations for institutionalising a fiscal equalisation mechanism between the EU member states were laid. Since the needs of the Swiss economy were highly weighted, the immigration quota did not affect Switzerland's level of economic integration. Clarity was brought to relations between Switzerland and a changing EU in a stable arrangement. Growth in the European single market increased its appeal as an export market and partner for the Swiss economy. Conversely, Switzerland's expertise in key industries made it highly attractive to the EU. In particular, highly innovative and value adding sectors in Switzerland such as the machine, financial, pharmaceutical and luxury goods industry or commodity trading, fuelled the growing global market and helped the country continue to reap above-average benefits from globalisation.

Switzerland's economy grew, and the high demand for labour kept the unemployment rate down. The economy was dependent on greater numbers of women and older workers, so it was necessary to make it easier to reconcile work and family life and extend the time spent in employment. Workers from abroad also continued to be recruited, from both industrialised and developing and emerging countries. The removal of restrictions on living and working in Switzerland for young foreign nationals increased immigration, which somewhat mitigated the impact of the ageing population. The strong domestic economy drew an increasing number of young Swiss citizens from abroad back to Switzerland, a further factor in slowing down the ageing of society.

Technological advances also triggered a range of changes, which further accelerated existing globalisation trends. The worldwide spread of ICT gave previously unreached parts of the world's population access to information and facilitated social and political mobilisation. At the same time, the new technologies created new forms of production, distribution and consumption of cultural content. In addition, open-source software was highly developed and widespread, and established in major international companies and public institutions. The positive achievements of technological development were slow to trickle down to the world's poorest. Different generations adapted to the rapid technological change to different degrees, and the digital divide further deepened.

In some countries, the expansion of infrastructure was barely able to keep pace with the rapid diffusion of ICT. The increasing amount of data placed an increasingly heavy burden on ICT infrastructure and made it more vulnerable. The digitisation of society raised questions regarding the alienation between users and non-users of communication tools, the weakening of data protection, problematic ICT use, copyright protection or and the way in which real-life social interaction was replaced by virtual communities. The increased importance of the internet in many areas of life led to a growing number of cyber events. For this reason, international regulations on data protection and copyright protection were agreed.

6 ISS-EU 2012 = Institute for Security Studies, European Union (2012): European Strategy and Policy Analysis System (ESPAS) Global Trends 2030 – Citizens in an Interconnected and Polycentric World. Paris. http://www.iss.europa.eu (Stand: 24.11.2014), S. 75.

Switzerland took a leading position in the development of the latest technologies. As a result, it became an attractive target for economic espionage. To counteract the espionage, public and private stakeholders formed public-private partnerships and knowledge pools to share and combine knowledge with the aim of ensuring protection against cyber risks. Parallel to the positive aspects of the technology revolution, there was a sharp increase worldwide in the development and dissemination of new, potentially dangerous technologies. Developments in unmanned weapon systems led to new forms of warfare. Clarifying the technological risks became increasingly challenging, and it was essential to critically reassess Switzerland's threat situation. Cutting-edge military technology was available but costly, and so Switzerland had to set priorities in defence procurement.

International climate policy succeeded in producing an agreement on binding climate objectives for 2020. The establishment of efficiency-boosting and CO_2-neutral production and consumption technologies helped Switzerland achieve its national climate and emission-reduction targets, and by 2030 to reduce domestic greenhouse gas emissions by more than 30 per cent compared to 1990. At global level, the institutionalised trade in emission certificates created an incentive for large companies to invest in research and development of energy-efficient technologies. Nonetheless, the increase in the global consumption and production of goods also meant an increase in the consumption of raw materials. The depletion of natural resources spurred competition for resource access and the related rights of use. The increase of direct foreign investment was high, particularly in Africa and to a lesser extent in the resource-rich countries in Latin America. This led to a steady increase in energy and food prices, which was felt particularly by the lower income groups in Switzerland. The pressure on prices also disproportionally affected resource and energy-intensive sectors, shifting economic growth to branches of trade and industry which were less dependent on raw materials and whose production methods were less energy-intensive.

2021-2030

Economies became increasingly dependent on foreign trade, and the economic interconnections among countries increased. As the process of globalisation accelerated, not only was there greater integration between national economies, but states became more interdependent, thereby increasing the destabilising effect of global crises and risks. Individual events could therefore cause uncertainty, produce chain reactions and generate severe losses in the markets. This increased the vulnerability of states to terrorist attacks and corporate insolvency. The dissemination of ICT made it easier for non-state actors to organise, become actively engaged and have a strong influence on public opinion.

This weakened public power in certain countries and sub-regions, and disrupted the order between states. The inequalities existing in countries with democratic deficits, especially in Africa and increasingly also in Asia, led to an increase in armed conflicts, which in turn obstructed the economic development of these countries to a large extent.

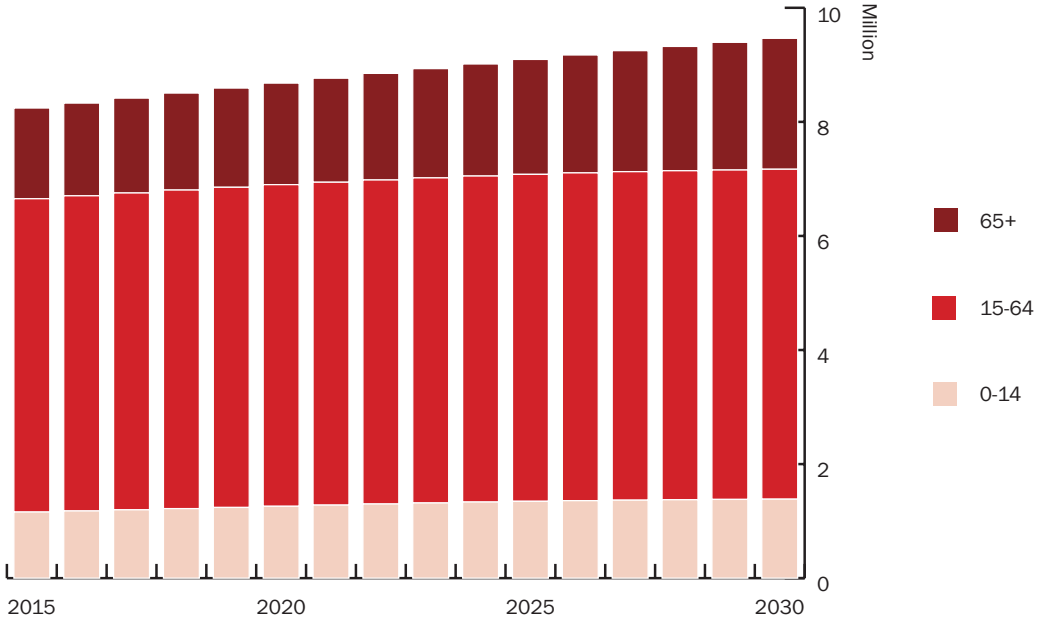
The second source of conflict stemmed from competition for raw materials, which took place mainly in countries in Africa, but also in Latin America and Central Asia. As a result of historical tensions and territorial disputes, armed conflict also flared up in Europe in important transit countries for oil and natural gas.

Switzerland also experienced change. Technological development created the need for uniform statutory regulations. As a result, the federal government took on new tasks in the legislative sphere, including data protection and copyright. The new centralisation dampened the political momentum to create and ensure optimal economic conditions. In addition, progressive economic integration and the increasing mobility of the population also had an impact within Switzerland, increasing the influence of metropolitan regions as economic centres, and reducing the importance of national and administrative borders. Switzerland was required to adapt rapidly to this changing situation when implementing free-trade agreements at multilateral level and participating in binding international standards.

Competition for business locations increased among countries, regions and urban centres as free trade and globalisation led to greater numbers of commercial and financial centres. Switzerland's main selling points, such as economic and political security, the attractive fiscal system, stable social security system and sophisticated infrastructure – e.g. railways, roads, nurseries, etc. – increased the country's appeal up to 2030. Thanks to healthy public finances, investments could be made to develop public infrastructure. Switzerland was able to maintain and even strengthen its locational advantage in international tax competition in line with global standards. As more global companies set up in Switzerland, tax revenues continued to grow.

Switzerland became an increasingly attractive place to live and work for qualified and also less qualified workers from abroad. The share of workers in the labour force rose to nearly one third.[7] The Swiss population rose by nearly 1 per cent a year as a result of immigration and births, and reached around 9.5 million in 2030. The proportion of people over 65 grew more rapidly than the proportion of other age groups (see Fig. 1.1).

Figure 1.1: Population development in Switzerland by age group and working population (2015–2030)



Source: FSO 2010 = Federal Statistical Office (ed.) (2010): Szenarien zur Bevölkerungsentwicklung der Schweiz 2010–2060 (high scenario, B-00-2010) (publication not available in English)

The increase in population and economic growth led to more frequent and serious infrastructure bottlenecks. Thanks to new traffic control technology, the stress placed on infrastructure could be spread out more efficiently. These same growth factors also led to an overheated real estate market. Agglomerations continued to grow, and economically dynamic metropolitan areas established themselves as hubs of the global economy. In spatial planning, the challenge remained of reducing the spread of land use while taking into account environmental interests, food security, homeland security and the preservation of monuments. This created political and economic incentives for more efficient use of the available land area. Spatial planning measures also helped to stem urban sprawl in Switzerland towards the end of the 2020s.

7 FSO 2010 = Federal Statistical Office (ed.) (2010): Szenarien zur Bevölkerungsentwicklung der Schweiz 2010–2060 (high scenario, B-00-2010) (publication not available in English).

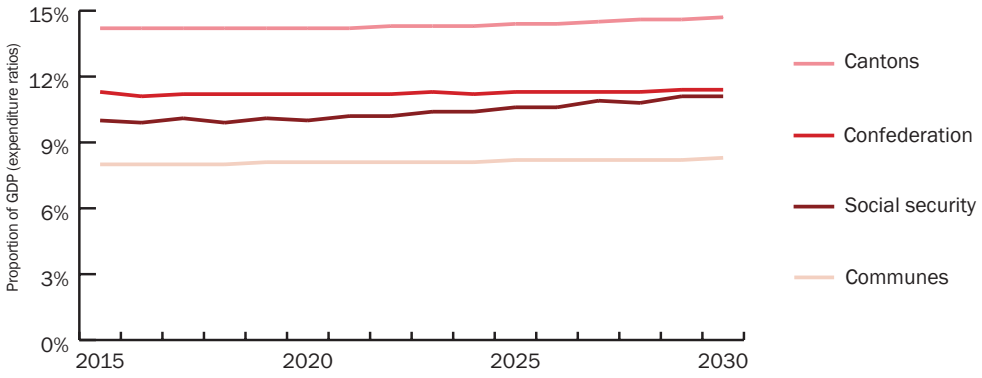
The ecologically sustainable intensification of agricultural production in the country has been successful, partly because of technological progress. In addition, Switzerland also adopted a strategy of increasing imports to meet the increasing demand for food. This led to greater awareness of the outstanding production conditions and the phenomenon of land grabbing in Switzerland.

The proportion of academic baccalaureate holders increased in response to population growth and to the growing importance of education in a knowledge society. This led to high concentration of universities. The downside of this development was that vocational education and training was no longer able to meet the demand for skilled workers at upper secondary level and at non-university tertiary level. At the same time, there was a growing number of educational programmes offering intercultural skills and foreign languages. Switzerland cashed in on its centuries-old multiculturalism and linguistic diversity.

In view of the rapid progress of technology, high investments in research and development and newly created jobs, the STEM and cleantech sectors gained in importance. This increased the appeal of training in this area. The prestigious higher education institutions in Switzerland with strong links to industry attracted students, researchers and professionals from abroad and made Switzerland an attractive location for research and innovation. Thanks to the diffusion of ICT, more people overall have had access to education and were able to acquire foreign language skills.

Technical progress and automation, and an increase in competition and relocation of production abroad have reduced the need for labour in various sectors and regions in Switzerland. The widely established automatic exchange of information between machines or vehicles, aka machine-to-machine communication from the beginning of the 2020s, which will replace the human factor as the supervisory body of workflow, will also significantly contribute to this development. This puts pressure on wages and working conditions, in particular for low-skilled workers not involved in the industries and professions which benefit from globalisation. Employment is terminated increasingly rapidly by both parties. Temporary and seasonal employment contracts increasingly become the norm. By the mid-2020s, just over half the working population work more than three years for the same employer, and in 2030 this proportion falls to one fourth. Overall, greater flexibility and deregulation of the workplace have led to both a rise in wage inequality and a drop in the security and duration of employment. Employment contracts are generally only concluded as temporary employment and through sub-contractors. In these circumstances, it is increasingly difficult for unions to reach and contact workers. A growing proportion of the population has become marginalised by the technological and economic changes, and this exacerbates social inequality. Efforts are made to counter this social exclusion, including the creation of additional training opportunities and forums for cultural exchange.

Figure 1.2: Development in demographic-dependent public expenditure in Switzerland 2015–2030 (as a percentage of GDP)



Source: FDF 2012 = Federal Department of Finance (ed.) (2012): Long-Term Sustainability of Public Finances in Switzerland (High-migration scenario, A-17-2010)

The baby boomer generation reached retirement age in 2020–2030, highlighting the issue of funding of the social security system (see Fig. 1.2).

Increases in incomes at the top end of the scale widened the income gap, sparking a debate on the 'middle class crisis'. As a result, the social security system had to introduce compensation measures for low and average income groups. This created social tension and jeopardised social cohesion. From 2020 onwards family law was revised and adapted to take account of alternative forms of cohabitation. In response to demand and thanks to co-financing from the private sector in Switzerland, external child care options for families in need greatly improved, and become more affordable for parents. A modern family organisation with a dual-earner, dual-carer approach determines the division of labour between the sexes.

Society had become multicultural. The economic and social changes along with the increasing cultural diversity in Switzerland strengthened the national identity or "identity reflex" of those left behind by globalisation. This fuelled tensions between the domestic and foreign national population, and the developments led to the increasing political polarisation of the progressive/conservative axis and weakened the centre parties. In order to deal with the social tension created by cultural diversity, cultural institutions in Switzerland focused on teaching the languages and providing information about the traditions and culture of Switzerland and of the larger immigrant groups. Multilingualism in Switzerland proved to be an advantage in these circumstances and was encouraged by promoting cultural exchanges and placing an emphasis on language teaching in schools.

Global average life expectancy increased. Sophisticated methods of diagnosis made it possible to extend the lives of chronically ill patients and to detect and treat more diseases at an early stage. The risk of pandemics rose as the world's population become more mobile. Technological progress and international cooperation on health helped prevent the outbreak and spread of pandemic disease, with Switzerland contributing its expertise.

The impact of technology on everyday life, however, created new and complex disease patterns. While the section of society which benefited from this dynamic era led a healthy lifestyle, lower income groups experienced an opposite tendency. In Switzerland, an ageing population, high incomes and global networking led to the outsourcing of care and nursing of well-to-do elderly people abroad. Effective vocational education and training for health professionals produced sufficient skilled personnel to meet the needs of the population. Because strategic measures were introduced at an early stage in response to these developments, in 2030 the Swiss health system still ranked as one of the best in the world. However, the increase in the prevalence of non-communicable diseases and the ageing social infrastructure created a significant financial challenge for the system. Several healthcare options grew up parallel to the public system. In Switzerland, the technologisation of the health system led to an increase in high-tech and cutting-edge medicine.

Congestion

In 2030

Due to the rivalry between the USA and China, the world is divided into two spheres of influence. The bipolar conflict leads to competition over raw materials, innovation and prestige. As a result, a great deal of money is spent on research and development, leading to rapid progress in technology, with dramatic repercussions. Cyber events become more frequent. When taken with the increase in global instability and armed conflicts, this leads to a threat situation for Switzerland. The transatlantic ties between the USA and the EU find expression in a bilateral free-trade agreement. After successfully making structural reforms, the EU experiences an economic boom, strengthening the cohesion among its member states. Relations between Switzerland and the EU deteriorate. Because Switzerland's economic networks with other countries are weak, its export industry is placed under enormous pressure.

Society in Switzerland continues to age. An attempt is made to relieve the financial pressure on the social security system by raising the age of retirement, and alternative labour models adapted to the needs of older workers are developed. There is an increase in the numbers of people working full-time and of women in paid employment. Women are able to reach senior positions in politics, business and civil society more quickly and more often. On the other hand, due to the low numbers of immigrant workers, the large number of families in financial difficulties and the lack of options, it is difficult to organise childcare outside the family and care for the elderly and for those with care needs. As the population ages, more staff are needed to care for the elderly. As women often fulfil the role of carer in families, a conflict arises between professional work and care work, and women often have to shoulder a double burden. One consequence of this is a further decline in Switzerland's birthrate.

Rising energy and food prices and Switzerland's lack of economic networks provide an incentive to reduce energy consumption and to increase domestic food production. Thanks to technological expertise and strict regulations, energy efficiency increases dramatically, for example in the areas of mobility and housing.

2015–2020

Both China and the USA continued to invest large amounts in technology. Competition for raw materials and military armament resulted in a "technology race". The long-term gas supply deal (Shanghai Agreement) between China and Russia entered into effect at the end of the 2010s and provided the basis for closer ties between the two countries. Whilst China felt threatened by the USA in the Pacific over Taiwan, Russia felt increasingly intimidated by the perceived spread of NATO in Europe. The East-West divide in Europe became more marked.

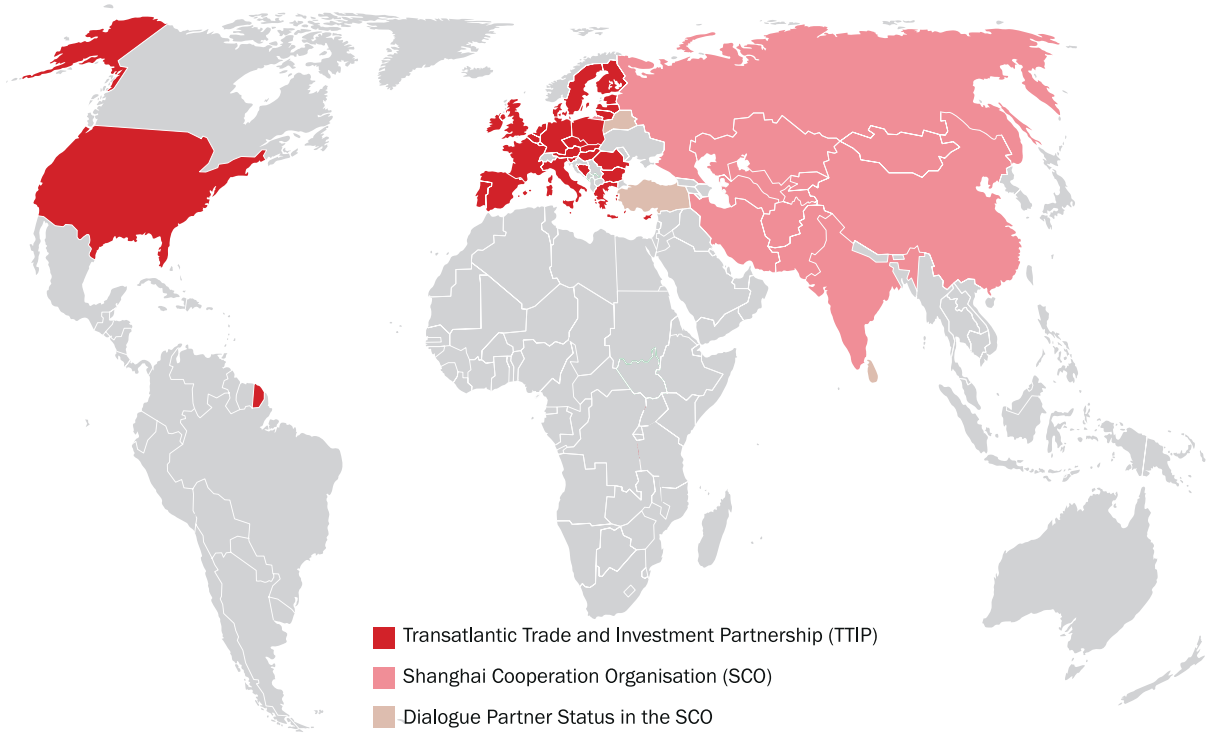
In the arms race, the USA and China invested in ambitious research programmes. Technological advances were not only financed by the state, however; private investors increased their expenditure on research and development in order to be able to maintain their position in the competition for scarce raw materials and market share.

The threat situation in information and communications technologies (ICT) became more acute; rapid developments in this area led to critical infrastructure becoming more vulnerable, and weak international cooperation in cyber security made it difficult to exchange expertise and develop security technologies. Frequent breaches in cyber security led to the rapid development and establishment of advanced cryptographic technologies. More and more private individuals and companies were able to encrypt their communications. In response, states invested more in developing computer capacity to decode such messages. This led to rapid advances in the development of quantum computers.

New information and communications technologies were mainly designed for infrastructure either in the western or in the eastern hemisphere. On the internet in particular, the different languages and internet standards prevented the spread of information between West and East. Interstate conflicts were waged in the digital sphere, and the occurrence of cyber events, data theft, data manipulation and sabotage grew.

The Chinese economy continued to grow thanks to the country's good manufacturing conditions. China enjoyed a positive foreign trade balance with most countries. It used the opportunity to extend its economic influence in the Asia-Pacific Basin and to consolidate this position in a free-trade agreement. At the same time the country's cultural influence grew, with the Chinese diaspora playing a major role in the economies of the Philippines, Myanmar, Indonesia, Thailand, Malaysia and Singapore. There was an escalation in China's conflicts with the Pacific states of Malaysia, Vietnam, Japan, the Philippines and South Korea, and the USA increased its presence by setting up additional marine bases and aircraft carriers. The USA continued to be a major world power, both militarily and in the field of research and innovation, in which American universities played a leading role. It also maintained its cultural influence by exporting popular culture. The USA and Europe further intensified their economic relations in the Transatlantic Trade and Investment Partnership (TTIP), which came into effect at the end of the 2010s (see Fig. 2.1).

Figure 2.1: Free trade agreements and areas of application



Members of the SCO in 2015 were: China, Kazakhstan, Kyrgyzstan, Russia, Tajikistan and Uzbekistan.
The following states joined the SCO up to 2030: Afghanistan, India, Iran, Mongolia, Pakistan, Turkmenistan

In the first two decades of the 2000s, the EU successfully surmounted a large number of economic challenges by introducing structural reforms. At the same time, the EU internal market benefited from a free-trade agreement with the USA. Besides the structural measures, the economic upturn helped to create greater cohesion among the EU member states. Politically, the EU concentrated more on overcoming internal challenges than on taking on a leading role at multilateral level or on geographical expansion. Relations between the EU and Switzerland deteriorated. This made it harder for Swiss citizens to find work on the European labour market. As a result, the distribution of Swiss living abroad shifted, and Europe, which traditionally had the largest community of Swiss both temporary and long-term, was no longer such a popular place to live. Switzerland suffered considerable economic disadvantages as the EU had managed to sign a free-trade agreement with the USA before Switzerland. Negotiations on a deal between Switzerland and the USA progressed only slowly, and by 2020 no agreement had been reached. Swiss exporting companies came under increasing pressure due to weak economic networks, and restrictions on immigration resulted in a dearth of well-trained workers. Switzerland's poor networks were also a problem for the country's finance industry, whose position in the global finance system was weakened. Business in Switzerland relied on the country's political stability and monetary stability. The Swiss economy grew more sluggishly, resulting in lower tax revenue and financial constraints on the social security system.

2021–2030

The Pacific Basin was dominated by two major powers that were economically dependent on each other but nonetheless stood in competition to each other. This was manifest in their efforts to secure access to raw materials, as they wrestled to gain influence in African, Arab and Central Asian states with ample mineral reserves.

Both sides supported coups d'état and civil wars, either openly or covertly. With its eye on the country's commodity resources, China intensified relations with Iran, and the two states signed a range of economic cooperation agreements. Tensions between the USA and China also rose, just as the East-West conflict in Europe was reawakened and became more acute. Transatlantic ties between the USA and Europe were fostered more intensively, and Russia's isolation increased. The military and security situation between the EU and Russia deteriorated. In response to its perceived expansion of NATO in Europe, Russia extended its strategic partnership with China. On a regional level, the member states of the Shanghai Cooperation Organisation (SCO) – Russia, China and other Central Asian states (see Fig. 2.1) – worked together more closely on economic and political matters. Russia held interest for China thanks to its reserves of natural gas, coal and uranium, and so further commodity trade agreements were signed between the two countries. Prices for raw materials continued to rise on the world markets, for two reasons: firstly, instability in the geopolitical situation and the threat of disruption made the supply of energy more uncertain; secondly, the global population had risen, and so the demand for raw materials continued to grow.

Food prices also rose sharply. States with well-functioning agricultural structures benefited primarily from this development, as they were able to invest in their own production and processing capacities. Poverty and inequality in these countries could therefore be reduced. In contrast, in countries with an acute democratic deficit, levels of inequality were exacerbated by the rise in food prices. This led to more unrest and rioting. Owing to the policies of the major powers, multinational institutions were less able to act to meet the shortfall in food supplies. Climate change accentuated the problem, and the number of refugees therefore rose throughout the world. Switzerland remained an important destination for refugees.

In resource-rich countries in which inequality and instability were rife, discontent was felt both about the corrupt governments and foreign commodities and infrastructure companies. States did not strictly implement human rights and social and environmental standards in economic activities in order not to drive away large corporations and so endanger economic growth. In western civil society, criticism of the commodities sector grew louder. The presence in Switzerland of prosperous business persons from resource-rich countries with authoritarian regimes posed a risk for the country.

Geopolitical instability and the competition for raw materials created fertile ground for organised crime. Resource scarcity made illegal mining, harvesting and smuggling a lucrative business. More frequent pirate attacks on oil and freight ships on the oceans threatened the security of international trade routes. Rivalry between the major powers made it difficult to launch a concerted international effort against criminal organisations. Switzerland was increasingly used as a haven and logistic base for criminal activities, and misuse of the country's finance industry for illegal transactions became more common. Criminal organisations also tried to penetrate sectors of the Swiss economy.

As the world became more digitalised, an ever-increasing amount of data had to be stored and processed. The problem of data storage and access created new issues in terms of data protection and information security. Because of the lack of international cooperation, it was difficult to impose internationally valid data processing standards on individuals and authorities. Thanks to its data protection laws, geographical position and the stability of the political and legal system, Switzerland was able to set itself up as a datacentre. Dependence on datacentres is comparable with dependence on water and power, and so critical infrastructure became more vulnerable.

Geopolitical instability also increased the threat situation for Switzerland because of the danger of terrorism, piracy and the threat to assets held by Swiss citizens both in Switzerland and abroad. In weapons and armaments technology, there was an uncontrolled spread of modern precision weapons. Because Switzerland's access to the European armaments market was restricted, for a while it became more difficult to secure national defence, and defence procurement became more diversified. As a result of the deteriorating security situation in Europe, changes to security policy instruments became necessary, but were introduced hesitatingly at a very late stage.

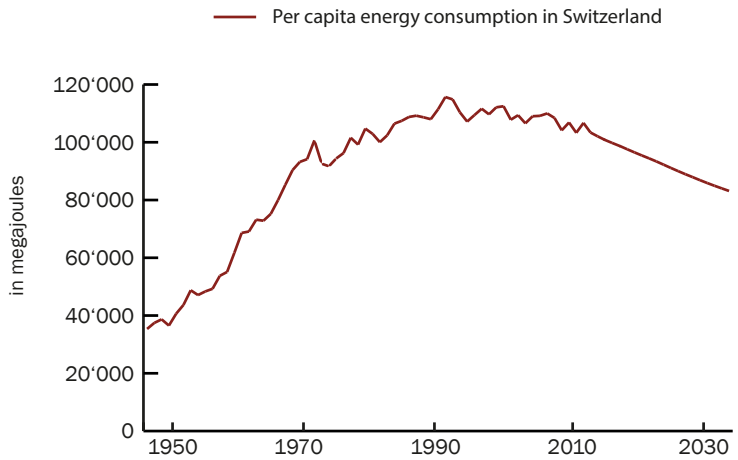
The technology race was not confined to the armaments industry or space programmes. It also affected some parts of the energy sector, ICT and bio- and nanotechnology. Companies in these sectors made considerable technological advances. Efficiency in the use of renewable energies and renewable raw materials improved continuously; energy consumption per capita in Switzerland fell continuously from the end of the 1990s (see Fig. 2.2). However, it was not yet known to what extent these new technologies and substances could result in damage to the environment. Poor economic networks made it difficult for SMEs to engage in research and development, as there were more barriers to participation in cross-border research programmes. As international mobility became more restricted, an academic education became a less attractive proposition. Vocational training, on the other hand, had an advantage thanks to the flexible nature of the training courses and the job opportunities it offered.

Developments in technology changed the nature of work. More was required of employees and it became more difficult to achieve a work-life balance. Work became less location-dependent and thus more flexible. In people's private lives, informal contacts became more common, whilst involvement in clubs, for example, declined. However, tensions in the economic situation in Switzerland led to a greater need for security and community, and a return to traditional values. Alternative forms of communal living became more widespread: more people lived in households spanning generations or involving several families, or in rainbow families.

The birthrate in Switzerland continued to fall between 2015 and 2030. Also between 2015 and 2025, the largest age group, the baby boomers, retired from paid employment. There was less immigration from EU countries, but Switzerland remained an attractive destination for migrants from countries in Africa, Asia and Latin America. Migration, however, only succeeded in postponing the problems caused by an ageing society. Attempts were made to reduce the pressure on the social security system by introducing further reforms to the pension system and extending the retirement age; employers developed alternative employment forms; full-time or part-time employment was adapted to the needs of older employees. More women also worked, and in full-time rather than part-time employment. This initially led to a considerable burden on women, as child-care services and care for the elderly in particular were not yet well established.

An ageing society and low numbers of skilled workers coming to work in Switzerland affected the health sector in particular. It was therefore necessary to improve training and further education opportunities in this area. As life expectancy rose, the demand increased for a care and nursing system which met the public's needs. More and more people received care and nursing abroad. In order to compensate for the shortage of staff, modern technology was used to increase the efficiency and effectiveness of medical services. Patient files were now only kept electronically; contact between patients and medical specialists increasingly took place virtually, via telemedicine. Highly specialised and personalised medicine also became more widespread.

Figure 2.2: Per capita energy consumption in Switzerland 1950–2030

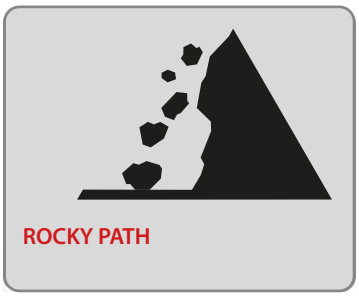


Source: Prognos, 2012, in: SFOE 2013 = Swiss Federal Office of Energy (publ.) (2013): Energy Outlook 2050, summary ('Political measures' scenario, not including international air traffic, without statistical difference).

Relatively low immigration levels led to a drop in demand for accommodation in Switzerland, and so the price of land also fell. However, this in turn meant there was less pressure to reduce the amount of land used for building. The exodus from the city to the agglomerations continued, and small technology businesses also increasingly set up in more rural areas.

Poor economic networks and the increase in the price of raw materials resulted in a drop in demand for energy in Switzerland. Expanding renewables helped to increase domestic inland power generation. Small power stations and intelligent networks optimised energy use; power generation and consumption were decentralised. Energy efficiency in domestic consumption also improved, in particular in buildings and transport.

In agriculture, technological advances successfully led to intensification which was nonetheless ecologically compatible. There was also greater investment in food production in areas away from traditional agricultural land, referred to in cities as urban farming. High commodity prices also led to greater efforts to close material cycles; for example, phosphorus was recaptured from waste water and used to produce biogas and fertiliser.



Rocky Path

In 2030

The world is divided into separate regions each dominated by a regional power. For example, Brazil enjoys hegemony in Latin America, Russia in Central Asia, China in the Asia-Pacific Basin, India on the Sub-continent and South Africa in central and southern Africa. The European Economic Area is losing its cohesion and power. The USA is also struggling with economic and domestic challenges. The individual regional powers form rapidly changing alliances and wage trade wars with each other. The geopolitical power balance is therefore very unstable. Access to resources (water, land etc.) and commodities is used to exert pressure. This and global population growth are driving energy prices up throughout the world. The global economy is dominated by isolated national and sub-regional markets, and is stagnating at a low level, so economic growth in Switzerland is also stifled. Because the economic situation is so poor, confidence in large economic entities is declining and nationalism is on the rise.

Because free trade is restricted, Switzerland is strongly focused on the domestic market. Economic networks in this environment are weak, as many free-trade agreements could not be concluded or renewed. Existing agreements lose in significance. The unemployment rate rises as a result of the difficult economic situation, and so Switzerland becomes less attractive to immigrants and the birthrate continues to fall. As fewer young people come to Switzerland to work, the population ages and pressure on the welfare state increases. As a result, social services are increasingly provided on a voluntary basis, thereby reawakening community spirit at local level.

As a result of the continuing economic crisis, the technology and research sector in countries that were previously leaders in this field now suffers from a lack of funding. Technological progress and innovation throughout the world are being throttled by weakened international ties and the high risk of espionage. The lack of highly qualified researchers from abroad feeds this situation also in Switzerland.

2015–2020

Towards the end of the first decade of the century, there was a multi-polar world order with changing international coalitions. The national interests of the regional leading powers carried more weight than international rules. The regional powers competed with each other and demarcated their sphere of influence. Politicians referred to nationalist sentiments in order to establish their position on the domestic political stage. The regional powers were keen to influence and control public opinion, although they were hindered in this by the internet and social media. As a result, some states or regions blocked the public from using the internet. Instead, they developed local networks in their field of influence and only made available content which could be controlled by the states themselves and by commercial providers.[8]

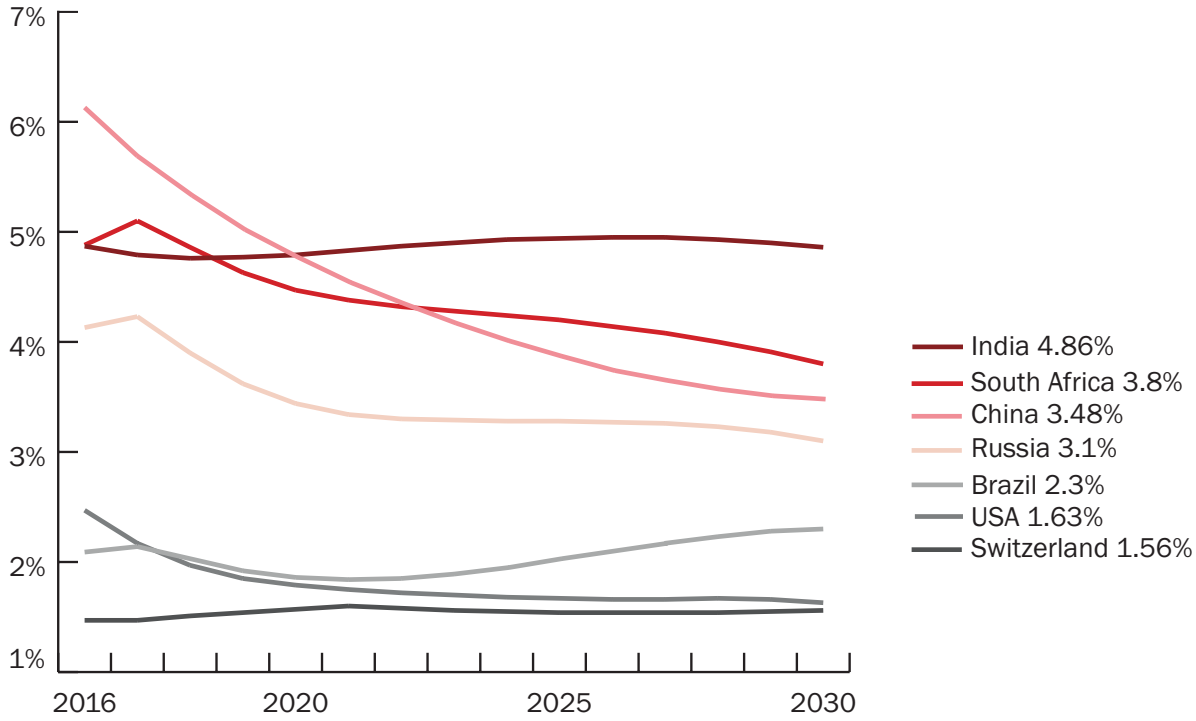
8 ISS-EU 2012 = Institute for Security Studies, European Union (2012): European Strategy and Policy Analysis System (ESPAS) Global Trends 2030 – Citizens in an Interconnected and Polycentric World. Paris. http://www.iss.europa.eu (Status: 24.11.2014), p. 37.

Wherever the regional powers' spheres of influence overlapped, regionally contained political or military conflicts flared up, for example in the South China Sea, the Black Sea area, the Horn of Africa or in the Near and Middle East. The control of resources, the spread of the 'right' faith, access to export markets and the expansion of regional supremacy stood at the centre of these conflicts. Access to commodities and transport routes was used to exert pressure, for example in the energy sector, and this was the cause of considerable shocks for the markets and the global economy. The conflict between the regional powers Saudi Arabia and Iran led to radicalisation in the Sunni and Shiite communities in Mesopotamia, the Mediterranean and on the Arabian peninsula. As a result, political Islam gained in influence.

Islamist circles around the world tried to change social and legal norms to make them compatible with their own world view. These norms contradicted both existing Swiss law and also a modern understanding of human rights. Continuing instability in Iraq and Syria led to waves of war refugees from Arabic states seeking asylum in Europe. Regional conflicts in northern and sub-Saharan Africa contributed to these global refugee movements.

Rapid population growth in developing countries led to greater energy consumption and higher energy prices on the world market. Net exporters of energy were able to benefit from this situation. Meanwhile, high energy prices stifled economic growth in energy-importing countries. For example, economic growth slowed in the EU and USA, both importers of considerable amounts of uranium. In contrast, uranium-exporting countries such as Brazil, China, India, Russia and South Africa, and also states in their sphere of influence such as Kazakhstan and Namibia, could profit from this situation. High commodity prices led to rising consumer prices in purchasing countries and increased the risk of inflation in the energy-importing states. The high prices generated a current account surplus in the energy-exporting countries; this drove exchange rates up and undermined the competitiveness of the rest of the (export) economy on the global market.

Figure 3.1: Development in annual GDP growth in per cent – Comparison between Switzerland, the USA and the BRICS countries (2016-2030)



Source: OECD 2013 = Organisation for Economic Cooperation and Development (2014): Economic Outlook No 95 - May 2014 - Long-term baseline projections (GDP at purchasing power parity in USD 2005).

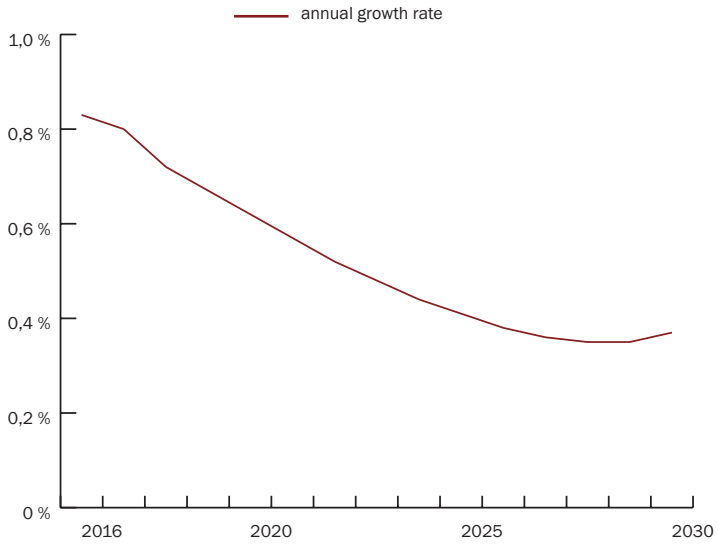
As a result of the financial crisis and the ensuing economic crises, the economic situation in the western world deteriorated at the beginning of the 21st century. Low interest rates imposed by the central banks in these countries destabilised currencies further, resulting in inflation. In the USA and many countries with the euro, low tax receipts resulted in growing public debt; structural growth problems were a further problem. The financial flexibility and economic power of these countries therefore diminished. Concurrently, regional economic powers such as the BRICS states gained in significance. Compared with the economies of the West, gross domestic product (GDP) in the regional economic powers grew at a faster rate (see Fig. 3.1). Growth in these countries was, however, limited by difficulties in exporting on the world market. Thanks to a growing population, in particular among the middle class, production and consumption increased. Protectionist policies in these states also created favourable framework conditions for the domestic economy or provided them with direct financial aid.

The regional powers controlled the raw materials and energy sources necessary for production, because they were readily available within their own state borders or on territory within their field of influence. Export products from developing countries competed fiercely with western products. For example, China had a positive trade balance with the USA and Europe, and so could accumulate foreign currency, which it could then offer to lend to the indebted western states. New hubs arose in the global economy, thereby increasing competition for Switzerland as a global financial centre.

Commodities-rich countries such as Russia and Iran increased their influence on the EU by controlling resources and as creditors. Worsening economic conditions in the EU resulted in higher unemployment. The confidence of its citizens in the European project waned. The EU became increasingly less important as an institution and as a trade partner for Switzerland. Economic growth in some countries which had previously experienced emigration and the tense economic situation in western countries changed the pattern of labour migration. As new centres in the global economy, the regional powers increasingly attracted more migrants, including highly qualified workers.

The Swiss economy suffered greatly as a result of crumbling networks, and growth in GDP slowed from 2015 onwards (see Fig. 3.2). Unemployment in Switzerland was high due to the weakness of the economy, with the result that it became much less able to attract workers from abroad. Nonetheless, Switzerland remained a popular destination for refugees fleeing areas of conflict. Furthermore, greater numbers of Swiss, the highly qualified in particular, chose to emigrate, making the lack of qualified workers more acute.

Figure 3.2: Development in GDP growth rate in per cent in Switzerland (2016–2030)



Source: FDF 2012 = Federal Department of Finance (publ.) (2012): Long-term Sustainability of Public Finances in Switzerland
(Baseline scenario, A-00-2010, low productivity assumed)

Stalled negotiations on international environmental standards in commodities extraction meant that it was not possible to prevent considerable environmental damage in the extracting countries. In the extraction of raw materials, habitats were destroyed due to the use of damaging pollutants. Labour conditions were often precarious. Furthermore, urbanisation grew rapidly in the new global economic centres, resulting in increased pressure on the environment. Overall greenhouse gas emissions rose as the result of global economic growth.

2021–2030

Growing economic power at regional level went hand-in-hand with greater political influence for the regional powers. As their local influence grew, the new regional powers demanded more influence in international organisations and a reform of the United Nations Security Council. However, the western developed nations were not prepared to relinquish their influence in international organisations, and so the call for reform went unheeded and international organisations became incapable of action. The values that they stood for, such as democracy and human rights, were increasingly seen as an attempt by the West to exert influence and were thus rejected.

Existing international agreements and the development of new economic and political standards became blocked. Consensus only existed over maintaining minimum humanitarian standards. As a result of these developments, Geneva became less significant on the global stage, as the regional powers successfully persuaded the large international organisations to relocate their headquarters. Switzerland's position in the international context worsened, and it had less opportunity to exert influence.

Since the EU and also NATO no longer had the financial means to maintain their leading position in the security environment, Central Europe became more unstable. As Russia grew in strength, the potential for conflict rose on the border between East and West, with the Kremlin underlining its claim to greater influence in Eastern Europe by military means. As larger numbers of people fled from the conflict areas, it became harder to determine responsibility for immigrants under the Dublin Convention. At the same time, the BRICS nations became more attractive destination for migrants as their economic strength increased.

The risk of conflict between states increased at the borders – often overlapping – between the regional powers' geopolitical spheres of influence. Greater segmentation in the world meant that states cooperated less on pursuing criminals. Autocratic governments and weak democracies threatened the rule of law. This created an environment in which organised crime could flourish. Weakened international cooperation in security and police issues threatened Switzerland's security position. There was a greater risk of illegal activities and the Swiss financial centre being used for illegal transactions to finance terrorist groups. However, a slowdown in technological progress altered the technological dimension of the security situation only slightly. Terrorist activities involved mainly conventional and low-technology threat scenarios. Trade disputes and violations of international standards, for example of international law or WTO rules, encouraged both blocs to impose sanctions. This led to the formation of isolated national and sub-regional markets.

The unstable supply situation, legal uncertainties resulting from trade disputes, trade barriers and power politics were detrimental to the economies of the old major powers in particular. The global economy stagnated, and this affected the Swiss economy (see Fig. 3.2). As a result, Switzerland's domestic orientation increased.

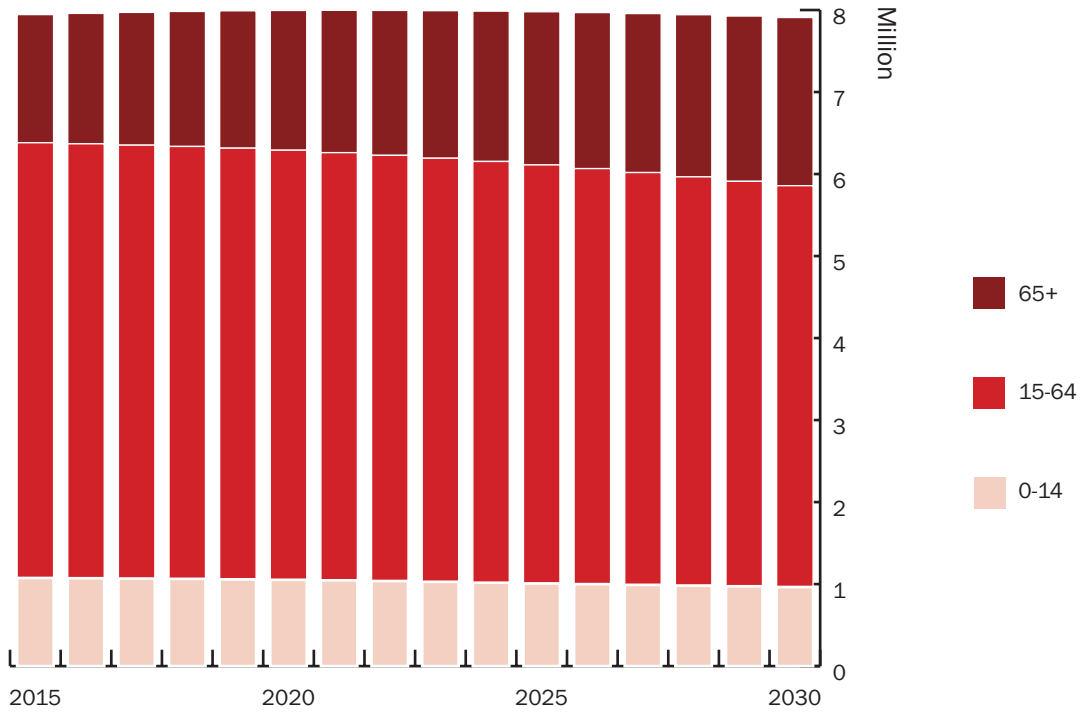
In Switzerland, as fewer funds were available to the state, previously centralised tasks were transferred to lower levels. Public services were provided to a greater extent at cantonal and intercantonal level. The policy of merging communes was continued. As more people moved away, the peripheral areas in particular were no longer able to be self-supporting. Under these circumstances, transfer payments and the role of the cantons in the Swiss system of fiscal equalisation gained in importance. Tax competition also became more intense. Coupled with lower taxes, revenue also fell as a result of sluggish economic growth, placing state finances under pressure and making budgetary reform increasingly necessary.

The regional powers drew up their own intellectual property laws. Economic espionage was seen as a legitimate option for obtaining top-level technology, which no longer remained exclusively in the hands of the western nations. Global developments in information and communication technologies, in particular the spread of espionage via the internet, boosted this trend even more. Economic espionage and weaker protection of intellectual property increased the costs of research and development and reduced earnings, as innovation no longer provided a competitive advantage. Private research companies and public institutions therefore had fewer incentives to engage in research and development, and so technological progress suffered everywhere in the world. Switzerland became less attractive as a centre of research opportunities for international mobility became fewer. This hampered research activities and had a negative impact on innovation in Switzerland.

Greater prosperity among consumers in developing countries led to a further increase in the global demand for high quality food; this pushed up prices and made food imports into Switzerland more expensive. This and the fact that Switzerland's economic networks were now weak meant that inland production needed to be increased. As technological developments were limited, this occurred mainly by conserving land and reclassifying areas as agricultural land, as well as increasing food production in some places outside of agricultural areas and in summer grazing areas.

In terms of energy, only a marginal increase in the level of self-sufficiency could be achieved. As a result of rising energy prices, end-users paid more attention to energy efficiency and ways of saving energy. In parallel to conflicts over the use of land on the Swiss Plateau, a general exodus from the countryside to the city took place. However, a shrinking population meant that the pressure on the transport system was reduced, and the latter became difficult to fund as a result of a drop in users, especially in the peripheral regions. High maintenance costs became a pressing issue. The consequences of lower investments in infrastructure maintenance could already be felt from 2030.

Figure 3.3: Population development in Switzerland by age group and working population (2015–2030)



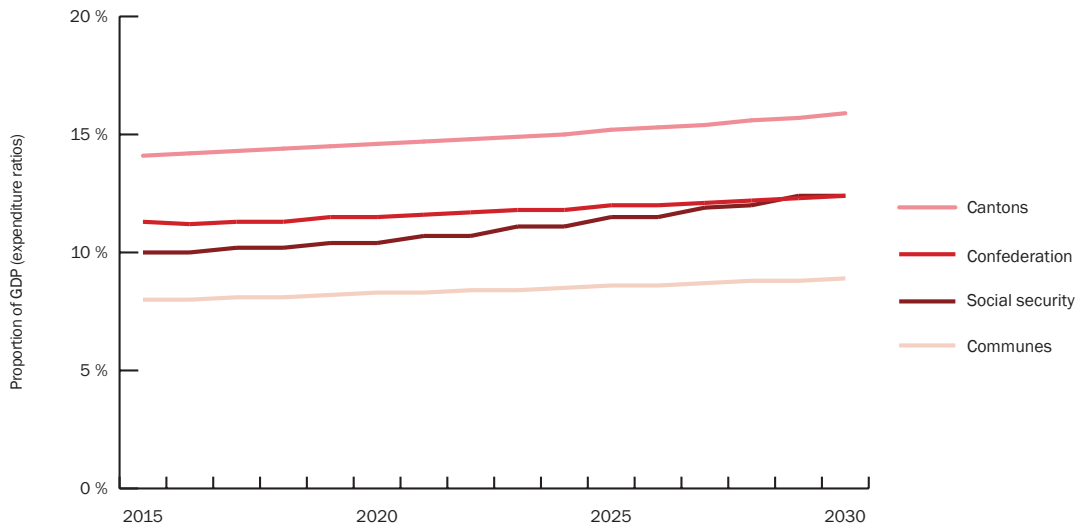
Source: FSO 2010 = Federal Statistical Office (publ.) (2010): Szenarien zur Bevölkerungsentwicklung der Schweiz 2010–2060 (low scenario, C-00-2010) (publication not available in English)

Social cohesion suffered because of economic pressures. Because of the sluggish economy and high unemployment, low population growth and an ageing society, public finances came under increasing pressure (see Fig. 3.4). Switzerland's permanent resident population stagnated from 2015 onwards and in 2030 only stood at about 7.9 million (see Fig. 3.3). The number of under-65s fell and the number of over-65s rose. It became difficult to fund the social security system; benefits were cut and the system of supplementary benefits was put at risk. The number of families with only one income increased, as did the number of those in part-time employment or working several poorly paid jobs.

Care work and a social net now had to be provided by the family, which meant that young parents were severely restricted in their choices regarding work, childcare or caring for elderly family members. The birthrate was low and the proportion of the population in employment (see Fig. 3.3) and of women in employment decreased. This created a downward spiral, creating tensions between the generations.

Material uncertainty, however, generated greater solidarity in the private sphere. The Swiss people became more prepared to take on social duties in a voluntary capacity. Traditional family life became more important and there was a return to traditional values and cultural mores. The rediscovered sense of community strengthened the status of the country's languages and dialects, so a vast linguistic variety and wealth could be preserved. The uncertain international environment and the tense economic situation increased the people's desire for security and stability. The political parties advocating traditional values attracted new members in large numbers.

Figure 3.4: Development in demographic-dependent public expenditure in Switzerland 2015–2030 (as percentage of GDP)



Source: FDF 2012 = Federal Department of Finance (publ.) (2012): Long-term Sustainability of Public Finances in Switzerland (Baseline scenario, A-00-2010)

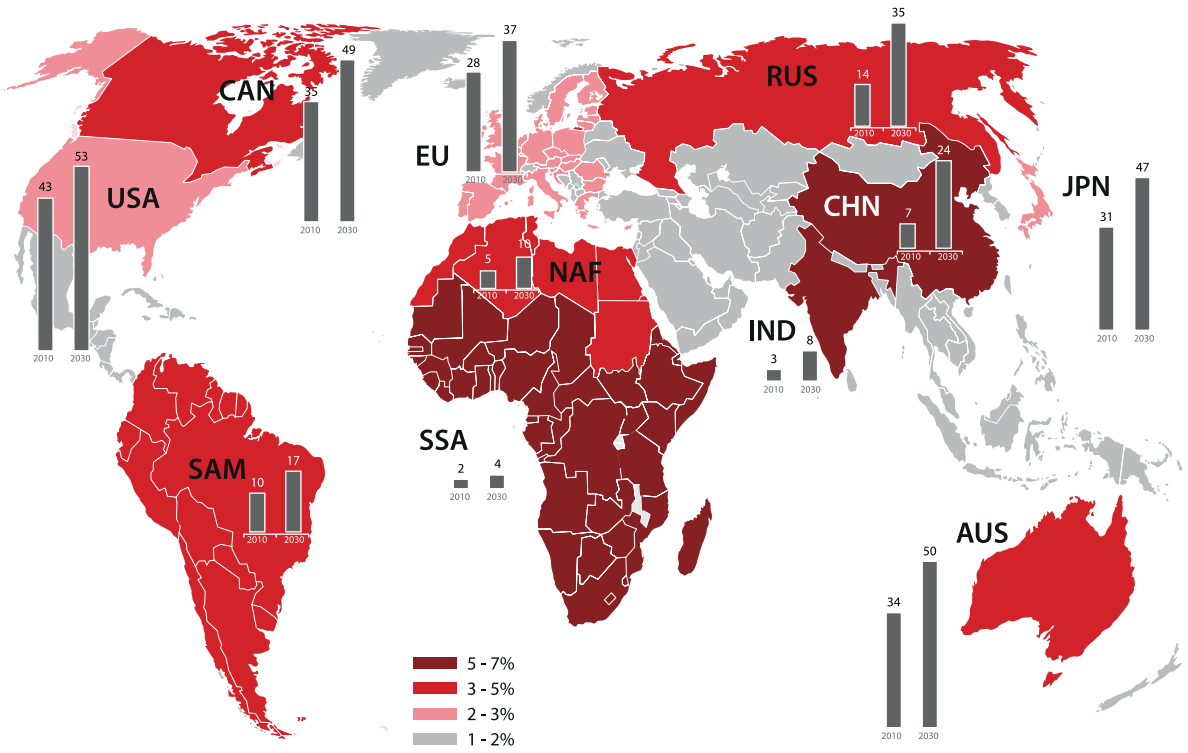
As a result of demographic developments, the country did not have enough workers or funds to care for the needs of the "baby boomer" generation, which became increasingly acute from 2020 onwards (see Fig. 3.4). As a result, medical services were increasingly provided on an age-basis. Nor could the need for healthcare workers be met by recruiting from abroad. The focus was placed on providing primary healthcare services; however, financial cutbacks in the health system were felt in the reduced quality of patient care. This situation was compounded by funding reductions in healthcare staff training. As healthcare costs for Swiss households rose as a proportion of total income, individuals paid greater attention to their own health and disease-prevention.

Silk Road

In 2030

At the international level, the economic rise of countries in the Asian region continues. In 2030, China is the largest economy in the world, ahead of the USA and the EU. In China, GDP per capita has increased and overtaken that of Russia and Brazil.[9] India is the most populous country in the world (see Fig. 4.1). However, global economic growth and population growth are having a negative external impact on the environment and climate.

Figure 4.1: Regional comparison of growth in GDP in per cent (coloured area) and GDP/capita in thousand USD (columns) 2010-2030



Source: CEPS EU 2013 = Centre for European Policy Studies (CEPS) (2013): European Strategy and Policy Analysis System (ESPAS) The Global Economy in 2030: Trends and Strategies for Europe. Paris: 2012 http://europa.eu/espas (Status: 24.11.2014), p. 60

9 Maddison 2008 = Maddison A. 2008, Shares of the Rich and the Rest in the World Economy: Income Divergence between Nations, 1820-2030, in: Asian Economic Policy Review 2008, H. 3/1, p. 67–82.

With its positive foreign trade balance, China can provide backing for the state finances of the USA and EU. The USA is increasingly faced with domestic problems of a financial nature and can no longer afford to maintain its position as a global military and technological leader. The EU and USA are unable to develop a joint strategy to involve China in a world order. Research activity and innovation in the USA are suffering from budget cuts. Research centres in developing economies are becoming more prominent, but cannot compensate for the shortcomings in global innovation. Technological progress slackens overall as a result.

Structural reform planned in the EU cannot be successfully carried through. Whilst central EU states continue to expand their infrastructural advantages, the economic situation in the peripheral member states deteriorates. A struggling economy generates higher unemployment and discontent among the public.

Trust in the EU institutions wanes as a result. Cohesion in the EU diminishes, more and more decision-making structures are renationalised, and this increases the power of individual states. Switzerland can thus build up relations with its neighbours without forming closer links with the EU as an institution.

Switzerland maintains close economic relations with numerous Asian countries; many Swiss are persuaded to emigrate and immigration from Asia also increases. On the Swiss labour market there is a need for a knowledge of Asian languages. The western and Asian cultures mix and influence each other.

2015–2020

Not only China but also other economies in the Asia-Pacific Basin grew rapidly; the Regional Comprehensive Economic Partnership (RCEP), a free-trade agreement between the ASEAN states and Australia, China, India, Japan, South Korea and New Zealand, created a major economic area with large and dynamic economies. The agreement came into force towards the end of the 2010s. As a result, the West and in particular the USA lost influence to China in the ASEAN states. Along with the failure of negotiations on a Trans Pacific Partnership (TPP), this meant that the USA suffered a noticeable loss in economic and political power. The Asia-Pacific Basin gained in importance as a trade and financial hub, and the political weight of this region increased accordingly.

In countries with a very high level of technological development, in particular the USA, clusters of skill and talent grew up, with the result that considerably more patents were issued in these industrialised countries than in emerging and developing economies. However, as state finances in the USA were poor, investment in research and innovation fell sharply. Long-term research programmes were interrupted and existing partnerships with other countries were scaled back. Because research programmes require considerable preparation, the resulting global innovation gap could not immediately be filled by countries in the process of developing their innovation activities. Global technological progress therefore slowed down.

More and more goods were produced in Asia for the global market, and Asian domestic markets also benefited from growing populations and a rise in consumer power. The low-interest policy of central banks in the USA and EU states led to greater state debt and growing inflation. Tax reductions by a US business-friendly government and a rise in public spending, coupled with a struggling economy, created further imbalances in public finances. This meant less spending on education and research and innovation, so the West lost its leading position in the high-tech sector and thereby its competitive advantage. The financial markets in Asia gained in importance as those in the USA and EU weakened.

Switzerland had a good economic network in the Asia-Pacific Basin thanks to a series of free-trade agreements. Negotiations on free-trade agreements between the EFTA states[10] and India, Indonesia and Vietnam were concluded in 2015-2020 and improved Switzerland's access to growth markets in South and East Asia. Further free-trade agreements with Malaysia and Thailand were signed in 2020. Despite fierce competition, high quality Swiss products remained competitive and sold well on the Asian market. Switzerland also built up economic relations with countries in southern Africa. These were expanded on the basis of a series of bilateral investment protection agreements and the free-trade agreement with the Southern African Customs Union (SACU).[11]

Switzerland experienced a need for specialist workers and managers with a knowledge of Asian languages. Intercultural skills, for example business etiquette, were also of importance. In order to achieve this, Swiss and Asian higher education institutions worked closely together, and as a knock-on effect the number of Swiss tourists in Asia and Asian tourists in Switzerland rose. There was also a rapid increase in job exchanges, in particular between China and Switzerland. The concentration of Swiss living abroad thus shifted from Europe and the USA to Asia. The Swiss system of dual vocational education and training served as a model for a similarly designed system in Asia, with Swiss experts often engaged to provide advisory services.

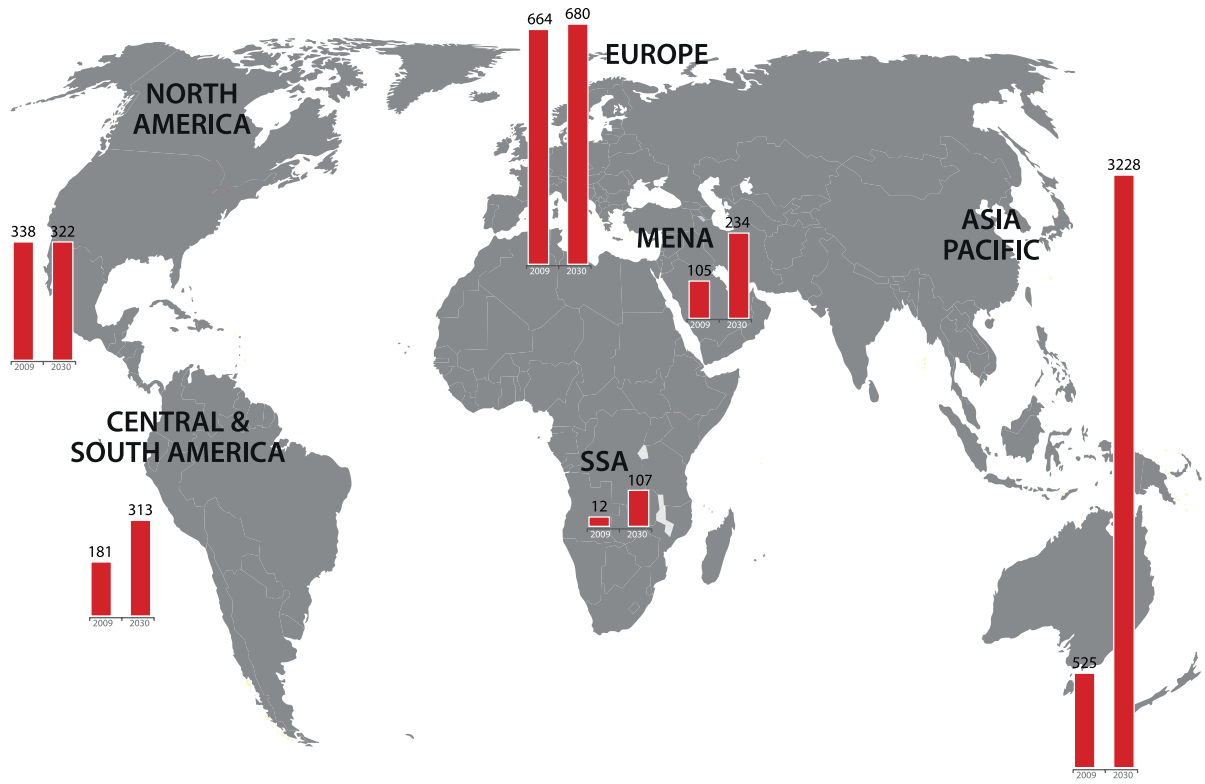
In order to produce goods for export, China required raw materials including energy and rare earths, but also food. To secure access to agricultural land, natural resources and fossil fuels, it made investments, launched joint ventures and purchased land throughout the world. Other Asian countries followed suit and invested in African countries, with their rich reserves of commodities. China was on the way to becoming the largest importer of crude oil in the world, and India imported the most coal.[12] In order to meet the higher demand for energy, China also invested in renewable energies. The Asia-Pacific Basin thus became increasingly important in terms of the global trade in raw materials, and transatlantic trade routes and trading centres diminished in significance. Thanks to its strong links with Asia, the commodities trading business in Switzerland was able to benefit from these changes.

Technological innovation and development in China expanded towards the end of the 2020s, and the country was keen to protect its own intellectual property. The USA had to cede its position to China as the world's leading operating software developer, and this led to new standards and dependencies. China also became a new target of industrial espionage, which brought added risks for Switzerland, with its close links with the Asian economies. Particularly innovative small businesses and smaller research institutions were unable to protect themselves adequately against this phenomenon because of the high costs of security. The number of incidences of industrial espionage and cyber espionage increased dramatically.

A further major driver of economic development in Asia was the growth of the middle class in China as a proportion of the global middle class.[13] In China alone, the number of people in middle-class households rose from 157 million in 2010 to 670 million in 2030,[14] about three quarters of the Chinese population (see Fig. 4.2). Nevertheless, economic and social inequality increased because in this context, the middle class formed the largest part of the working population in China. At some levels of society and in certain geographical areas, there was very limited access to education and health services, accentuating the divergence in levels of wealth. The difference in numbers between the sexes and the dearth of women in society became increasingly marked as a result of China's long-implemented one-child policy.

10 The EFTA (European Free Trade Association) states are Switzerland, Liechtenstein, Iceland and Norway.
11 SACU members are South Africa, Botswana, Lesotho, Namibia and Swaziland.
12 IEA 2013 = International Energy Agency, World Energy Outlook 2013: Executive Summary, http://www.iea.org (Status: 24.11.2014), p.1
13 Definition of global middle class: households with daily per capita expenditure of between USD 10 and USD 100 (in terms of purchasing power parity). Found in: Kharas/Gertz 2010 = Kharas, Homi/Gertz, Geoffrey, 2010, The New Global Middle Class: A Cross-Over from West to East, in: Cheng Li (publ.), China's Emerging Middle Class: Beyond Economic Transformation, Washington, DC: Brookings Institution Press, 2010. http://www.brookings.edu (Status: 24.11.2014), p. 3.
14 Kharas/Gertz 2010 = Kharas, Homi/Gertz, Geoffrey, 2010, The New Global Middle Class: A Cross-Over from West to East, in: Cheng Li (Publ.), China's Emerging Middle Class: Beyond Economic Transformation, Washington, DC: Brookings Institution Press, 2010. http://www.brookings.edu (Status: 24.11.2014), p. 2.

Figure 4.2: Growth in middle class by region - comparison 2009 – 2030
(number of members of the middle class, in millions)



Source: Kharas/Gertz 2010 = Kharas, Homi/Gertz, Geoffrey, 2010, The New Global Middle Class: A Cross-Over from West to East, p. 2. in: CEPS EU 2013 = Centre for European Policy Studies (CEPS) (2013): European Strategy and Policy Analysis System (ESPAS) The Global Economy in 2030: Trends and Strategies for Europe. Paris: 2012 http://europa.eu/espas (Status: 24.11.2014), p. 71

For an expanding proportion of the world population, an overall increase in the standard of living went hand in hand with improvements in education, and thereby the ability to assess political issues critically – a global trend which had a huge impact in particular on the domestic situation in China. Demands for greater political participation and democratic rights grew louder. There was also a growing awareness of environmental issues; information and communication technologies played an important role in this process. The Asian middle class began to voice more clearly their support for values such as freedom and democracy.[15] Exponents of Asian civil society criticised manufacturing and environmental conditions and the attitude towards human rights and minorities in various states in South and East Asia. The Swiss public added its voice to these criticisms.

2021–2030

On world markets many goods from the USA and the EU became less competitive than products from Asian countries, the quality of which improved. For example, China's foreign exchange surplus rose steadily thanks to foreign trade and this gave the country the leverage to buy up state bonds from indebted Western states. The country thus became the world's biggest money-lender, putting the trade and financial systems in the western hemisphere under severe pressure. South-East Asia gained in importance, with Hong Kong, Singapore and Kuala Lumpur as major trade and finance hubs, and the competition facing Switzerland's financial centre increased.

15 ISS-EU 2012 = Institute for Security Studies, European Union (2012): European Strategy and Policy Analysis System (ESPAS) Global Trends 2030 - Citizens in an Interconnected and Polycentric World. Paris. http://www.iss.europa.eu (Status: 24.11.2014), p. 39.

The economies of the EU member states suffered greatly in the finance and economic crises at the beginning of the 21st century. In particular, export-oriented economies such as Germany came under considerable pressure as a result of Chinese competition. Cohesion payments and structural funds initially set up to promote integration in the EU could no longer be financed. Economic problems led to rising unemployment and uncertainty among EU citizens. Euro-scepticism became increasingly widespread in many member states.

A sense of individualism grew among the EU states, and as a result Switzerland dealt less with a united EU and more with individual EU members. Switzerland was able to extend its political and economic networks with its neighbouring countries in particular. Relations between cities and between federal entities such as the cantons in Switzerland and the Länder in Germany and Austria or regions in Italy and France were also strengthened. Particularly dynamic were economically successful regions such as the border area around Basel (France-Germany-Switzerland), the Lake Constance region with Baden-Wurttemberg and Bavaria (Germany) and Vorarlberg (Austria), the Lake Geneva region and Lombardy. Switzerland's regional economic networks grew rapidly.

Levels of migration increased throughout the world. Thanks to the internet and improved education, more and more people had access to information about opportunities in other countries. Members of the growing middle class also had the financial means to be mobile. In 2030, 3.5 per cent of the world's population,[16] or 300 million people,[17] were migrants. Migration became increasingly 'circular', that is to say migrants maintained ties with their countries of origin and often returned. The cultural mix in Switzerland therefore became more varied, also as a result of migrants from the Asia-Pacific Basin. Many Swiss people also maintained close ties with relatives who had emigrated to Asia. Switzerland continued to be an important destination, both for the well-educated and for less well-educated. A growing proportion of the population did not have Swiss nationality, and so there was greater political pressure from this group to make it easier to gain citizenship and to introduce political rights for foreigners with permanent residence. The labour market became more competitive. Some parts of the Swiss public found it difficult to adapt to this situation, and protests against greater immigration and multiculturalism grew. This led to social tension.

Stronger economic ties with other countries meant greater numbers of foreigners – many of them young – coming to work in Switzerland, and this in turn curbed the ageing of society. Labour shortages in the health system could also be reduced, and those that existed were met by running training programmes. The financial pressure on the social security system grew rapidly. Economic links and increasing mobility created a greater risk of pandemics occurring. For example, the lack of technological progress in medical research had an impact on the development of new medicines. The Swiss pharmaceutical industry suffered as a result of generic medicines produced in the Asia-Pacific Basin, although new markets were found in Asia. The chronically ill or those unable to live independently were more frequently cared for abroad.

Economic growth led to a considerable rise in the consumption of resources and energy. Industrialisation, urban growth and more intensive agriculture created higher levels of greenhouse gases and environmental pollution throughout the world. Technologies which may have been able to offset the negative consequences of economic and population growth on the environment spread only slowly. Climate change resulting from emissions produced during global economic growth in the previous century continued to have a global impact. Desertification and more frequent flooding occurred in particular in China, South Asia and the Sahel region. This resulted in humanitarian crises, and millions of people became climate refugees. No area of the world was spared the consequences of climate change. Food became scarcer and so prices on the world markets rose.

16 According to the WPP World Population Prospects "medium fertility" scenario, in which the world's population will be 8.425 billion in 2030. Found in: ESA-UN 2012 = United Nations, Department of Economic and Social Affairs, Population Division Population Estimates and Projections Section, 2012, World Population Prospects: The 2012 Revision, http://esa.un.org/wpp/ (Status: 24.11.2014).

17 ISS-EU 2012 = Institute for Security Studies, European Union (2012): European Strategy and Policy Analysis System (ESPAS) Global Trends 2030 – Citizens in an Interconnected and Polycentric World. Paris. http://www.iss.europa.eu (Status: 24.11.2014), p. 45.

As a result of these changes, the Swiss public became more sensitive to environmental issues. In Switzerland climate change caused a rise in temperature of one to two degrees Celsius compared with 1984–2002, and led to more frequent extreme weather events such as heatwaves in summer and torrential rain.[18] Various strategies were adopted in an attempt to adapt to changes in the climate. Technological solutions suitable for adapting to the results of climate change were not readily available. As the cost of importing food rose, food supply in Switzerland was increasingly met domestically, for example by turning more land over to agricultural use.

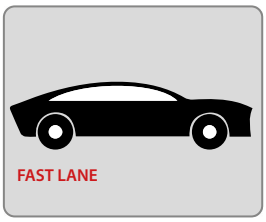
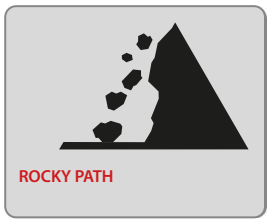
Energy consumption per capita in Switzerland decreased as the result of more energy-efficient technologies in domestic power production and more energy efficient technologies for consumer appliances, some of which were already available before 2020. In Switzerland energy supply was mainly met by importing nuclear power and shale gas. Natural gas was a rapidly available substitute for nuclear power, which was gradually phased out. As new production technologies for natural gas were permitted in the EU, it became increasingly viable to produce electricity from gas-fired combined cycle power plants, and this energy source made up a growing part of the Swiss energy mix. In terms of energy, Switzerland thus became less self-sufficient.

In 2023 the population of Switzerland was over 8.7 million.[19] As the number of people rose, pressure on land increased. This was felt particularly in urban areas, while in rural areas the situation became more stable. Growing land shortages meant that the land available had to be used more efficiently; urban sprawl became less of a phenomenon. Population growth and closer links with large economic centres in the Alpine region created considerable pressure on the transport system; despite ongoing investment and high quality infrastructure, maximum capacity was reached. Because technical development stagnated and investment in maintenance and expansion was neglected, transport infrastructure became more susceptible to disruptions.

18 OcCC and ProClim 2007: Beratendes Organ für Fragen der Klimaveränderung and Forum for Climate and Global Change: Klimaänderung und die Schweiz 2050; Erwartete Auswirkungen auf Umwelt, Gesellschaft und Wirtschaft. Bern. http://www.scnat.ch/ (Status: 24.11.2014), p. 98. (publication not available in English).

19 FSO 2010 = Federal Statistical Office (publ.) (2010): Szenarien zur Bevölkerungsentwicklung der Schweiz 2010–2060 (middle scenario, A-00-2010) (publication not available in English).

Overview of the four scenarios

	 FAST LANE	 CONGESTION	 ROCKY PATH	 SILK ROAD
Parameter: Economic integration of Switzerland	Strong economic integration of Switzerland	Weak economic integration of Switzerland	Weak economic integration of Switzerland	Strong economic integration of Switzerland
Parameter: Global techno-logisation	Strong impact of technological change	Strong impact of technological change	Weak impact of technological change	Weak impact of technological change
Political dimension	- Multilateral global order; no state can afford to exert dominance - International and multinational organisations play major role - EU strong and relations between the EU and Switzerland good - Switzerland able to have greater influence at international level	- Rivalry between the USA and China - Strategic partnership between China and Russia - Territorial conflicts in the Pacific - Rivalry over raw materials leads proxy wars in countries rich in commodities - EU strong; poor relations between the EU and Switzerland - Intensification of East-West conflict in Europe	- Regionalisation and unstable geopolitical power structures - Emerging economies seek to achieve hegemony in their respective regions - Conflicts over access and usage rights lead to proxy wars - EU weak and cohesion crumbling - Failed reform of the UN and other international organisations reduces acceptance of universal values	- USA retreats from the Pacific - Geopolitical balance of power shifts to South and East Asia - EU weak and cohesion crumbling - Relations between Switzerland and neighbouring states good
Economic dimension	- Global economic dynamism with good free-trade links and states increasingly interdependent - Switzerland has good economic links with numerous countries thanks to WTO liberalisation of trade; attractive centre of research and business - High numbers of skilled workers coming to Switzerland; strong economic growth - Economic inequality increases - More women join the labour market; easier to combine working with having a family and conditions created to encourage older workers to remain in employment.	- Switzerland has weak economic networks and poor growth - Immigration levels low; lack of skilled workers - Automation and technologisation partially compensates manpower requirements - SCO strengthens China's economic influence in Central Asia	- Global economy marked by barriers to trade and dominated by national and sub-regional markets (China, India, Russia, Brazil, South Africa) - Stagnation in the USA and EU states - Switzerland's domestic orientation increases as result of global instability and weak economic networks - Swiss economy stagnates - Drop in living standards	- The RCEP, the free-trade agreement between the ASEAN states, India, China and other countries in Pacific Basin, creates large economically dynamic region and strengthens China - Negotiations to create TPP fail; USA weakened - Switzerland and neighbouring countries form a successful economic region - Migration levels high; exchange of skilled workers between Switzerland and Asia

Socio-cultural dimension	- High levels of immigration of skilled workers - Increase in economic inequality - Short-term and flexible employment contracts - Cultural diversity and many different forms of cohabitation - Greater individualisation and weaker social cohesion - High levels of immigration and tax receipts reduce pressure on welfare state	- Immigration decreases; emigration from Switzerland high - Double burden for women due to higher levels of employment and lack of care services - Birthrate falls and society ages rapidly as immigration decreases. - Social security system under increasing pressure - Quality of medical care under threat	- Low immigration and growing unemployment increase pressure on social security system - Greater civic participation and return to traditional values - The family gains in importance as a social institution - Women severely restricted in choices regarding work and family	- High levels of immigration and cultural exchange between Europe and South and East Asia - Immigration creates adjustment stress and competition on labour market; presence of highly qualified creates social tension
Technological dimension	- Economic growth and strong networks lead to rapid and sudden technological advances - Cooperation between states on research and development and control and spread of key technologies	- Competition for raw materials encourages development of more efficient technologies - Major powers engage in technological arms race: sudden technological advances - Difficult to regulate new technologies. Risk of dangerous technologies and increase in cyber events	- Rapid technological innovation, but less sudden advances - High risk of economic espionage	- Continuous technological innovation, but less sudden advances - High risk of economic espionage
Ecological dimension	- Rapid increase in raw material use leads to shortages - Agreement on binding reduction targets at international climate conferences - Less environmental pollution thanks to efficient technologies - New technologies may pose unpredictable environmental threats	- Rate of climate change reduced thanks to slow economic growth and technologies to increase efficiency - High commodity prices encourage Switzerland to improve energy efficiency - Renewables developed to increase domestic power production - Power production and use decentralised	- Access to raw materials gives crucial competitive advantage and leverage - Lack of international standards in raw material production, economic growth and rapid urbanisation in emerging economies leads to greater environmental destruction - Difficulties in adapting to climate change	- Rapid increase in raw material use leads to shortages - Environmental pollution high as new efficient technologies cannot offset the external effects of rapid economic growth - Rapid rise in amount of CO_2 in the atmosphere - Difficulties in adapting to climate change
Legal dimension	- Global economic standards - More legislative tasks for the centralised state; individual cantons have less weight as closer forms of cooperation develop - Reforms in system of political rights	- At global level, two economic zones (east/west) exist with different standards - Little global/multilateral regulation of new technologies	- Wide range of norms and legal systems - No global governance, rule of law weakened in many regions - International law is only at minimal level applied	- Demands for relaxation of naturalisation process and for permanently resident foreigners to be given political rights - China advances protection of intellectual property

Opportunities and risks for 2030

Opportunities and risks: description

Political dimension

Improvements in the system of global governance in the *Fast Lane* scenario present an opportunity for Switzerland; the country can defend its international interests and security levels are high, and it can contribute its expertise to the development of international law. However, in this scenario, Switzerland is closely embedded in the global system and so increasingly loses its independence in a range of areas. In the scenarios under which the system of global governance is weak – *Congestion* and *Rocky Path* – this puts Switzerland in a dangerous position, and it is more difficult for the country to protect its interests.

Congestion and *Rocky Path* are scenarios involving conflict, and the threat situation for Switzerland is high. However, the country is able to position itself as a recognised mediator and bridge-builder, and in the *Silk Road* scenario its role is particularly strong in Asia. In the *Rocky Path* scenario, which is marked by a process of regionalisation, Switzerland's experiences as a federal state are much sought after.

As a result of rising levels of economic inequality in the *Fast Lane* scenario, public trust in the political system diminishes. National cohesion is weakened. In the *Congestion* and *Silk Road* scenarios, public trust in political institutions is also shaken because of tensions in society, and the decision-making mechanisms in the system of direct democracy are undermined. Whereas in *Fast Lane* and *Silk Road* political disagreement is rife, in *Congestion* and *Rocky Path* the primary source of conflict is resource distribution.

Economic dimension

Switzerland has strong economic networks in the *Fast Lane* and *Silk Road* scenarios, and this presents opportunities. In *Fast Lane*, the private sector and the public purse benefit from the international division of labour, access to markets and exports. However, the high degree of interdependence and use of new technologies increases dependence and vulnerability, and the high demand for commodities throughout the world makes imports more expensive. Close economic networks with Asia in the *Silk Road* scenario create new markets for Swiss companies, but also lead to greater levels of competition.

In the *Congestion* and *Rocky Path* scenarios, weak economic integration results in problems in financing national security. Cool relations with the EU are a central feature of the *Congestion* scenario. Switzerland's innovative power is weakened and the country becomes a less attractive location for companies and skilled workers. In both scenarios, Switzerland is threatened with a loss of talent and knowledge, or brain-drain.

In the *Congestion* and *Silk Road* scenarios, the Swiss education system is able to adjust to the shifting challenges in the labour market.

In the *Fast Lane* and *Silk Road* scenarios, immigration and population growth are high, and the pressure on housing and infrastructure rises. In the *Congestion* scenario, infrastructure problems arise from a lack of funding and rapidly changing technologies.

Socio-cultural dimension

In the *Fast Lane* scenario, social cohesion is under great strain, although public funds available for social welfare help to mitigate the situation. The high rate of immigration slows down the ageing process in society. Mental health problems and lifestyle diseases are increasingly widespread in this performance-oriented culture. In the *Congestion* scenario, society ages more rapidly and intergenerational solidarity is threatened as a result. In contrast, in the *Rocky Path* scenario a sense of community becomes stronger and family structures more important. However, public finances are poor, and so there is less fiscal solidarity between the cantons. The *Silk Road* scenario is marked by a widening income gap and declining social cohesion as a result of pressure to adapt to rapid economic and social changes and high immigration levels. In the Fa*st Lane* and *Silk Road* scenarios, some levels of society find it difficult to find employment, the pressure to perform increases, as do expectations in terms of language, intercultural and technological skills.

In the *Fast Lane* scenario, advances have been made in gender equality in the workplace; external care facilities are more widespread. By contrast, in the *Congestion* and *Rocky Path* scenarios it is more difficult to achieve a healthy work-life balance.

In the *Fast Lane* and *Congestion* scenarios, technological developments lead to further improvements in the quality of the health system, although in *Congestion* the latter suffers a lack of skilled staff. Financial pressures on the health system and on all social security institutions are felt in the *Rocky Path* scenario in particular.

Technological dimension

The development of new technologies poses both an opportunity and danger in the *Fast Lane* and *Congestion* scenarios. Whereas in *Fast Lane* cyber security is improved thanks to closer international cooperation, in the *Congestion* and *Silk Road* scenarios it becomes more difficult to provide this security. In the *Fast Lane* and *Congestion* scenarios, other areas benefit from resource-efficient technologies, for example agriculture, in which they can be used to achieve greater sustainability in the use and care of rural areas.

In the *Fast Lane* scenario, Switzerland becomes more attractive as a centre of education and research and its businesses become more innovative. In the *Silk Road* scenario, Switzerland is also strong on innovation thanks to research partnerships with Asia. In contrast, in the *Rocky Path* scenario international networks are tangibly weak and there is a lack of highly skilled workers, and Switzerland becomes a less influential centre of education and research.

Ecological dimension

In the *Fast Lane* scenario, the international community manages to agree on climate targets, and Switzerland is regarded as a pioneer in climate issues. However, the environment comes under huge pressure in the *Fast Lane* and *Silk Road* scenarios as a result of rapid economic growth and population growth. Whilst in the *Fast Lane* scenario the financial and technological means are available to (partly) offset the negative effects of economic growth, the environment suffers greatly in the *Rocky Path* and *Silk Road* scenarios, as the financial and technological resources for protecting the environment are lacking.

In the *Congestion* scenario, Switzerland manages to greatly increase efficiency in resource and commodity consumption thanks to technological developments and the need for budgetary restraints. In this scenario the pressure from the built environment declines.

Legal dimension

In the *Fast Lane* scenario, international cooperation improves on security and legal issues, but Switzerland experiences a loss of sovereignty as it comes under pressure to adopt international law. In the *Congestion* and *Rocky Path* scenarios, widespread legal uncertainty is due to the lack of international agreement. In the *Silk Road* scenario there is the risk that Switzerland's relationship with its Asian partners will suffer as a result of different attitudes towards human and minority rights and divergent value systems.

Opportunities and risks at federal level

	Opportunities	Risks
Fast Lane		
Political dimension	- Switzerland is able to protect its interests as in the strengthened system of global governance it is a well-positioned and attractive partner for political cooperation and its experience as a federal state is sought after for developing international law - International and national security levels are improved as international organisations play a stronger role	- Switzerland's influence at international level declines as it is in less demand as a mediator - Because it is closely embedded in the system of global governance, Switzerland becomes less autonomous in a range of areas - National cohesion and federalist principles are weakened as decision-making shifts to a supra-national level - Confidence in the political system dwindles and the public becomes more divorced from politics and industry as distrust of elites and economic inequality grow
Economic dimension	- Switzerland's prosperity increases and public finances are balanced thanks to international division of labour and dynamic exports - Swiss economy benefits from the growth of its financial centre, which thrives with increasing international regulation and strong economic networks - Tourist sector grows thanks to high degree of mobility and Switzerland's strong links - Switzerland's innovation potential can be fully exploited as it is an attractive location for multinational firms, SMEs, internationally linked top researchers and highly qualified workers - Switzerland is a popular destination for qualified labour thanks to strong links and agreements in place - Expertise of older workers is preserved as improved levels of health allow them to remain in work longer - The state can cover increasing expenditure on basic services thanks to rises in revenue - Reduced rate of urban sprawl as population becomes more dense in urban centres	- Risk of an economic downturn grows fuelled by an overheating economy and high degree of independence - Higher costs for Switzerland as natural resources become more scarce - Job market insecure as result of rapid structural transformations brought about by technological change - Swiss employees with vocational qualifications come under increasing pressure as more people with academic qualifications come to Switzerland - Increased competition for qualified workers makes recruitment process more expensive and pushes up salaries - Infrastructure costs rise as a result of rapid technological change and high economic growth and population growth - Residential property becomes more expensive as land is in huge demand and international elites in particular settle in Switzerland - Sufficient financial means available to defer structural problems such as social security funding and potential speculation bubble - Swiss agriculture exposed to stiff international competition as system of free trade expands
Socio-cultural dimension	- Higher transfer payments between regional authorities and social security help to reduce social tension: rapid economic growth and population growth means public money is available and can be readily distributed - Linguistic, religious, socio-economic and socio-cultural diversity in Switzerland strengthens social cohesion - The population ages less rapidly as a result of high rate of immigration - Structural changes make it easier to combine having a family with work - Health services are good thanks to research and developments in medical technology	- Social cohesion is endangered and violence spreads as a result of increasing individualisation, growing economic inequality, and cultural and religious heterogeneity - Civic engagement declines as work pressures increase - The digital divide in society becomes wider because of different abilities among population groups and difficulties in keeping up with the rapid rate of technological development - The income gap increases as workers are required to be more flexible and have greater linguistic, intercultural and technological skills; only a few can meet these requirements and employment become increasingly insecure - Lifestyle diseases such as obesity and diabetes become more prevalent, in particular among lower-income groups - Higher rates of stress-related psychological illnesses such as burn-out; it becomes more difficult for sufferers to re-enter the labour market as ever-increasing performance demands are made
Technological dimension	- Education and research centres in Switzerland attract more people as the country is competitive in research and innovation and has the available funds - Technological developments, closer international cooperation and improved global standards lead to strengthening of data protection and cyber security - Agriculture and the use and care of the landscape is more sustainable thanks to resource-efficient technologies and methods	- Economy becomes increasingly vulnerable as the result of close networks and growing dependence on ICT systems - Rapid technological developments lead to potentially huge technological risks

Ecological dimension	- Switzerland is seen as a pioneer on climate issues thanks to expertise in clean-tech and environmental research - Technological advances lead to greater energy efficiency and efficiency in natural resource use - Awareness of environmental issues increases as does willingness to invest in the environment, as financial means are available	- Economic growth and population growth, greater resource use and the use of potentially dangerous technologies in energy production result in high pollution levels and shrinking biodiversity - Switzerland is affected by increasingly frequent global climate-related events caused by increased harvesting and use of natural resources
Legal dimension	- Stricter regulation at global level leads to greater legal security and influence for Switzerland - Greater international cooperation in criminal prosecutions means improvements in tackling crime globally	- Loss of sovereignty due to increasing pressure to adopt international legal framework and adapt the legal system - Rising costs due to increasing regulatory density - Increase in international crime due to increasing density of economic networks

Congestion

Political dimension	- Switzerland is able to position itself as a mediator as its neutrality and long tradition of good services recommend it to conflict parties - Switzerland can occupy niches and build bridges in diplomacy as it has no alliances and can react flexibly to crises	- Switzerland is increasingly unable to protect its interests at international level as a result of its economic and political isolation - External pressure on Switzerland increases and threat situation intensifies because of weaker global legal system and changed global power structures - Conflict between eastern and western economic areas endangers Switzerland's neutrality and increases pressure to take sides - Security system worsens as less money is available for security spending - Public trust in and support for policies pursued by the authorities declines as society is marked by disputes over distribution, radicalisation and increasing isolation
Economic dimension	- Switzerland can focus its economic regulatory activity on increasing its competitiveness without having to align it to that of its main export markets - Thanks to rise in demand on the labour market there are higher employment rates among qualified women and older workers, including at management level. - The education system – in particular vocational education and training – is able to react rapidly to the challenges of the labour market and technological change	- Switzerland experiences economic losses, increased costs and bottlenecks in supply as a result of reduced access to the EU export market and to raw materials - Switzerland's industry experiences disadvantages in international tax competition and legal uncertainty as a result of weak regulation at global level - Switzerland's financial centre weakened by damaged relations to the EU, its most important client - Swiss innovation suffers and higher education in Switzerland becomes less prominent as the country experiences a net loss of highly qualified persons (brain drain) and fewer research agreements are concluded with other nations - Loss of innovation potential, jobs and tax receipts as multinational companies leave - Swiss job market becomes less attractive as wages fall - Gaps in social security funding and difficulties with public finances as tax receipts rise only slowly and more is spent on basic services - More frequent infrastructure bottlenecks and bad investments as new technologies rapidly become obsolete and funds are scarce
Socio-cultural dimension	- Health services are good thanks to research and developments in medical technology	- Social cohesion is under threat as a result of the weak economic situation and the resulting struggle over the distribution of wealth - Tension between the generations due to rapid ageing of society, increased risk of age-related poverty and rising youth unemployment - Parts of society become ostracised as not all can keep up with technological advances - It becomes more difficult to balance work and family life because of lack of external care facilities - Local population becomes more isolated, leading to tensions with non-Swiss groups - The level of care of the sick and needy is poor as there are not enough qualified carers or suitable infrastructure: immigration levels are low and there is too little money - Health costs rise considerably as technological advances are made, society ages rapidly and the economic situation declines

Technological dimension	- Switzerland becomes established as a location for datacentres and the IT industry thanks to favourable geographical, political and legal conditions - Agriculture and the use and care of the landscape is more sustainable thanks to resource-efficient technologies and methods	- Cyber threat increases and Switzerland becomes attractive hub of cybercrime as international cooperation on cyber issues is poor - Rapid technological developments create huge potential risks
Ecological dimension	- Technological advances and resource scarcity encourage greater efficiency in resource use and closed material cycles - Less pressure on the environment and built-up area in Switzerland as rate of economic growth and population growth slows	- Lack of financial resources has negative impact on the environment
Legal dimension		- Lack of legal certainty and coordination due to poor international cooperation in legal affairs - Spread of juridification at global level creates conflict between direct democracy in Switzerland and international principles and agreements - Crime becomes more widespread as living standards fall and money for public security is unavailable
Rocky Path		
Political dimension	- Switzerland is able to position itself as a mediator as its neutrality and long tradition of good services are accepted by conflict parties and its experience as federal state is in demand - Trust in political institutions grows and it becomes easier to find consensus as society returns to traditional values	- Increasingly difficult to protect Swiss interests at global level and major powers exert growing pressure as a result of regionalisation and weak system of international governance - International Geneva loses influence as failure to reform weakens international organisations - International pressure (e.g. in finance and tax matters) on Switzerland increases, as it has no real partners - Uncertainty and huge planning difficulty resulting from regionalisation, power politics and weak international system of governance - Switzerland is under increasing external threat because of poor international cooperation in security matters
Economic dimension	- Switzerland can focus on increasing competitiveness in its economic regulation without aligning it to that of the main export markets - SMEs' flexibility and adaptability means innovation for the domestic market	- Economy stagnates as links with the EU are weak and access to markets and raw materials is poor - Switzerland becomes an even more expensive country as domestic market is increasingly protected, the level of competition declines and competitiveness on international markets suffers long-term - Switzerland becomes less attractive to international companies as economic networks are poor due to rising taxes and lack of skilled workers. - Switzerland's financial centre weakened by damaged relations to the EU, its most important client, and Switzerland's poor economic links - Swiss innovation suffers as the country experiences a net loss of highly qualified persons (brain drain), less is invested in education and research and access to the global market becomes more difficult - Gaps in funding social security system; public finances come under pressure as expenditure rises and revenue stagnates - Increasing difficulties to maintain and expand infrastructure as financial means lacking

Socio-cultural dimension	- Family structures become more important and sense of community strengthened with a return to traditional values - Stability and equal opportunities created by Switzerland's dual education system, as people with practical vocational skills are required - Greater awareness of health issues and improved prevention as costs of treatment rise and it becomes more difficult to finance the health system	- Overall decline in quality of life and social cohesion as standard of living falls - Tense financial situation threatens solidarity between urban and rural areas, language regions, confederation and cantons - Lack of secure funding and blocked reform of social services increases gap between rich and poor and threatens social harmony - Tension between the generations due to rapid ageing of society, increased risk of age-related poverty and rising youth unemployment - Erosion of equal opportunities and families' freedom of choice between work and care of family members as employment situation becomes more unstable, paid care services are unavailable or inaccessible and traditional values are reinforced - Religious tension rises and pressure on resident foreign population to integrate increases due to weak economic situation - Financial pressure on health system and reduced access due to lack of qualified staff and demographic development
Technological dimension		- Switzerland's position in technological developments weakened as a result of lack of finances and infrastructure and economic espionage - Technological risks result from extended use of existing, potentially dangerous power generation technologies in order to overcome supply bottlenecks
Ecological dimension	- Pressure on biodiversity and land in Switzerland declines as a result of economic slowdown and slower population growth	- Efficiency improvements in use of resources and raw materials reduced as rate of technological development slows - Ecosystems (water, air) threatened as less money is available for environmental protection - More difficult to prevent and mitigate large-scale climate damage as technological and financial means are lacking
Legal dimension		- Switzerland suffers a disadvantage as international law gradually undermined in conflicts - Lack of legal certainty and coordination due to poor international cooperation in legal affairs - Crime becomes more widespread as living standards fall and money for public security is unavailable

Silk Road

Political dimension	- Switzerland's influence abroad increases and it is able to protect its interests thanks to good relations with Asia, a positive image and its role as mediator - Switzerland is able to extend its bilateral agreements with individual EU countries as it already has established economic networks and cohesion within the EU is weak - Switzerland has an advantage in concluding new agreements with Asian countries as several agreements are already in place	- Close economic networks mean Switzerland is heavily dependent on Asia - Public trust and support for political course adopted by the authorities declines as opinions in society diverge - More difficult to find a consensus and direct democratic decision-making processes blocked as groups in society become more radicalised - Acceptance of democratic decisions declines as share of foreigners without political rights in the population grows - Major developments underestimated as availability of finances reduces pressure to adapt
Economic dimension	- Public finances balanced thanks to intensive trade with Asia stimulating the economy - Switzerland can focus on increasing competitiveness in its economic regulation without aligning it to that of its main export markets - Switzerland can enter new markets and occupy niches as agreements with Asian and African countries already exist and the quality of Swiss export products is valued - Competitive sectors in the Swiss economy are able to occupy niches thanks to strong networks and open access to global markets - Innovation in specific niches is possible as new markets must be found - Thanks to its strong economic networks and existing agreements, Switzerland is an attractive destination for qualified workers - Reduced rate of urban sprawl as population becomes more dense in urban centres	- Reduced exports as purchasing power in USA declines - More rapid structural change and greater competition in Switzerland as production increasingly transferred to Asia and free trade with Asian countries becomes more widespread - Switzerland becomes less important as a centre of international finance as economic focus shifts to Asia - Switzerland's innovative strength threatened as patent protection regulations eased by free-trade agreements Bottlenecks in infrastructure result from growing yet unpredictable demand

Socio-cultural dimension	- Rich cultural diversity thanks to high level of exchange with Asia - Society ages less rapidly thanks to high levels of immigration - Social security system can be funded thanks to high economic growth and population growth - Good health services thanks to education and specialists	- Social tensions due to high levels of immigration - Social cohesion threatened as a result of increasing individualisation in society and rising economic inequality - The income gap increases as workers are required to be more flexible and have greater linguistic and intercultural skills; only a few can meet these requirements - Society unstable as unemployment rises especially for young people, who find it increasingly difficult to enter and remain in the job market as new jobs require either very high qualifications or no specific qualifications, and are also open to large immigrant population - Women's position on the job market worsens because of strong competition from foreign workers - Growing global mobility leads to more frequent and more intense pandemics
Technological dimension	- Easier to develop system of vocational education and training according to the needs of the job market as Switzerland has a solid foundation with its dual education and training system - Switzerland is able to export the dual VET system to Asia and so strengthen economic networks with this region - Switzerland is well positioned thanks to its knowledge and innovation base and research partners in Asia	- Research and innovation in Switzerland loses its advantage as other countries catch up - Switzerland becomes a setting for international cyber espionage and cybercrime thanks to interesting information and insufficient global networking
Ecological dimension	- Increased environmental awareness and willingness to invest in the environment, as financial means are available	- Less efficiency in use of resources and raw materials as rate of technological advance slows - More difficult to prevent and mitigate large-scale climate damage as technological means are lacking - Economic growth and population growth, greater resource use and the use of potentially dangerous technologies in energy production result in high pollution levels and shrinking biodiversity
Legal dimension		- Switzerland's intensive trade relations with Asia threaten its credibility in implementation of international law - Diverging systems and understanding of values leads to disagreement and troubled relations with Asian partners regarding human rights and minority rights

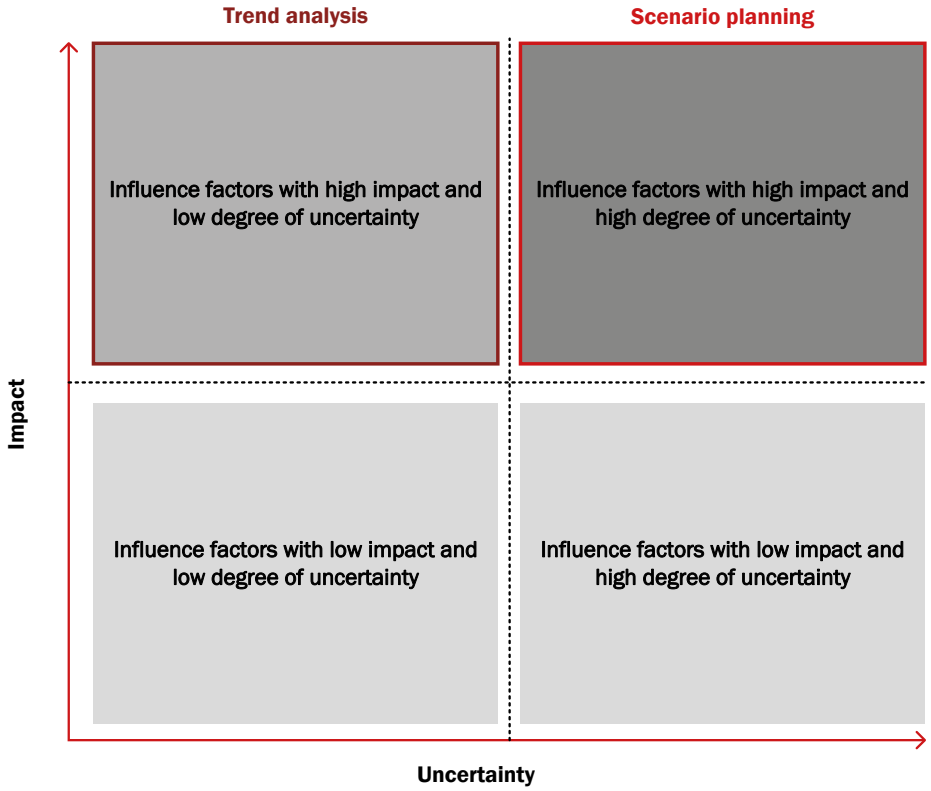
Procedure and methodology

The process of preparing the Outlook 2030 report is based on a method which combines trend analysis and scenario planning.

Trend research involves identifying and analysing major economic, environmental, technological, social and cultural developments. In this process, a trend is understood to be a significant, mostly linear development which is constant over a period of time. Trends have a wide coverage and often affect a range of fields. They are also often interlinked. Since trends are generally stable, it is relatively easy to say how they will develop. The central, forward-looking question is: "What would happen if an existing development were to continue in more or less the same way?"

Scenario planning is one of the most comprehensive methods used in future studies, and is particularly suitable when seeking to describe the future in a complex environment characterised by uncertain developments. Research into the future assumes that the future from today's perspective only exists in the form of several distinct scenarios, and that the long-term future involves considerable uncertainty and is therefore not predictable. The aim of future studies is therefore not to make any forecasts, but rather to consider any trend reversals, discontinuities and possible external disruptions. The central question is: "What might projections of the future look like, and what would need to happen in the near future for a future scenario to become reality?"

Figure 1: Trend analysis and scenario planning



As illustrated in Figure 1, trend analysis focuses on influence factors which will require a strong reaction from Switzerland's decision-making system ('high impact'), but whose short- and medium-term development is relatively predictable ('low degree of uncertainty'). In contrast, the scenario technique focuses on impact factors, which will also require a strong reaction from Switzerland's decision-making system ('high impact'), but whose development and associated opportunities and risks are as yet relatively uncertain ('high degree of uncertainty'). In a stable world, a trend extrapolation within a specific time horizon would be sufficient, since no uncertainty factors need to be taken into account. The environment in which we live is, however, becoming increasingly complex, and uncertainties are increasing. A combination of methods (trend analysis and scenario planning) is therefore appropriate.

At the same time, the limits of such a process should also be mentioned, in particular the unpredictable occurrence of 'black swan events', i.e. events which are rare and largely unforeseeable, but which can have serious consequences (e.g. 11. September 2001, the volcano eruption in Iceland in March 2010, Fukushima in March 2011). Outlining plausible future developments in addition to a trend analysis, however, can raise awareness of newly emerging developments and improve strategic thinking.

The overall process for preparing the Outlook 2030 report was structured into five project phases and took around 12 months.

The Outlook 2030 report was drawn up in a participatory and interactive process involving secretaries general, members of the Forward Planning Staff, experts from within and outside the Federal Administration and foreign think tanks (see annex).

The Forward Planning Staff and experts from within the Federal Administration (departmental focus groups) were involved across all five phases of the project. This was to ensure that the extensive knowledge available in the Administration could be fully tapped. The secretaries general, external experts and foreign think tanks were involved only in Phase 1, Preparing the groundwork. The Federal Chancellery oversaw the process of compiling the Outlook 2030 report throughout.

Figure 2: Overview of the five-phase approach

	Aim	Result	Participants	Instrument
Phase 1	Preparing the groundwork: Identification of trends and critical factors that could be decisive for Switzerland over the next 15 years	Development trends and influence factors weighted according to uncertainty and impact Identification of 'blind spots' and 'weak signals'	Secretaries General Forward Planning Staff [20] Departmental focus groups[21] External experts[22] Foreign think tanks[23]	Online survey; survey instrument with open and closed questions
Phase 2	Key influence factors, grouped by impact and uncertainty; scenario parameters set so scenarios can be developed and prepared	Scenario parameters with two widely diverging constellations	Departmental focus groups: Discussion of the influence factors weighted according to uncertainty and impact Forward Planning Staff: Validation of the influence factors weighted according to uncertainty and impact and selection of scenario parameters	Focus discussions
Phase 3	Development and validation of influence diagram/scenario preparation	Validated influence diagram/scenario preparation as basis for describing the scenario	Secretariat of the Forward Planning Staff: Draft preparation Departmental focus groups: Improvement of the influence diagram and influence factor characteristics Forward Planning Staff: Validation of the influence diagram and influence factor characteristics	Focus discussions
Phase 4	Scenario description	Four plausible, coherent and clearly distinct scenarios for the future	Secretariat of the Forward Planning Staff: Draft preparation of scenario description Departmental focus groups: Written feedback session Secretariat of the Forward Planning Staff: Revision and finalisation of scenario descriptions based on feedback session	Written preparation and feedback session based on the validated influence diagram
Phase 5	Identification of the opportunities and risks at federal level and individual department level	Synthesis: Description of the opportunities and risks at federal level and individual department level	Forward Planning Staff: Identification of the opportunities and risks at federal level Departmental focus groups: Identification of the opportunities and risks at federal level and individual department level	Focus discussions

20 See Annex A1.
21 See Annex A2.
22 See Annex A3.
23 See Annex A4.

Phase 1: Identifying and weighting development trends and influencing factors

The aim of the first phase was to identify and evaluate the most important factors and trends that will shape and influence Switzerland and its context over the next 15 years.

The first step involved collecting development trends and influence factors in an online survey. The survey contained the following open question: "What (political, legal, social, economic, technological, environmental or other) trends and factors will shape and influence Switzerland and its context over the next 15 years?" The collected trends and factors were subsequently collated into 52 factors by the Federal Chancellery.

In a second step, the experts taking part rated the thematically collated trends and factors from 1 (low impact/low uncertainty) to 10 (high impact/high uncertainty). Based on these assessments, the high uncertainty or high impact factors could be identified and plotted on a coordinate grid (impact and uncertainty diagram) (see Fig. 3). The diagram illustrates which factors could require action to be taken by the Swiss decision-making system in the next 10–15 years.

Figure 3: Simplified impact and uncertainty diagram

Once the first phase was completed, a perception analysis was conducted; this brought to light the different assessments made by the departments, and also allowed the views of the administration's internal experts to be compared with the views of external experts. Potentially relevant developments which had not yet been recognised ('blind spots')[24] and weak signals[25] could thus be recorded and discussed.

24 Blind spots are potentially relevant developments that have not yet been recognised.
25 Weak signals' refers to the factors mentioned by just a few people in the first phase of the online survey (Identification of trends and factors), but which are rated as having a high impact and a high degree of uncertainty in the second phase of the survey (Rating of trends and factors). Weak signals may indicate important changes long before they actually take place.

Figure 4: List of the 52 factors grouped according to impact and uncertainty

	Influence factors	Uncer-tainty (X)	Impact (Y)
Political factors	— Importance of multilateral institutions	4.5	6.6
	— Developments in geopolitical power structures	6.1	7.2
	— Switzerland's standing and opportunities to exert influence in the international arena	4.9	5.4
	— Development of the EU	5.8	7.8
	— Development of relations between the EU and Switzerland	5.6	8.4
	— Development of the threat level within and outside Switzerland	5.9	6.0
	— Development of political institutions in Switzerland	3.3	6.1
	— Future of Swiss federalism	3.3	6.1
	— Development of the balance of power between the political parties and of consensus in Switzerland	4.7	6.9
	— Importance of popular initiatives and referendums	4.2	6.5
	— Development of political participation in Switzerland	3.7	5.2
	— Importance of the system of part-time public service (militia system) in Switzerland	3.8	5.6
Economic factors	— Development of international competition and globalisation of the economy	5.1	8.3
	— Stability of the global economy	7.1	8.4
	— Global regulation of the economy	5.8	7.2
	— Economic developments in the EU	6.5	8.3
	— Importance of Switzerland as a trading centre for commodities	5.4	5.8
	— Development and importance of Switzerland's financial centre in the global financial system	5.7	7.2
	— Competitiveness of the Swiss economy	4.5	8.6
	— Development of public tasks and finances in Switzerland	3.8	6.9
	— Trends in the migration of workers to Switzerland	4.7	7.5
	— Dynamics of the Swiss labour market	4.6	7.5
	— Structural change in Swiss economic sectors	4.6	6.6
Social factors	— Growing global middle class	3.9	6.0
	— Trends in youth unemployment in Switzerland	3.8	6.1
	— Development of social cohesion in Switzerland	4.9	7.1
	— Trends in immigration in Switzerland	4.7	6.9
	— Trends in xenophobia and nationalism in Switzerland	4.7	6.4
	— Changes in values in Switzerland	4.9	5.9
	— Development of intergenerational solidarity in Switzerland (ageing population)	4.0	7.1
	— Financing social insurance in Switzerland	4.5	7.6
	— Development of healthcare provision in Switzerland	4.0	6.8
	— Development of the education system in Switzerland	3.7	7.9
Technological factors	— Global trends in information and communication technologies	5.3	7.8
	— Global trends in life sciences and biotechnology	5.5	7.3
	— Development of new technologies in the energy sector	5.8	7.8
	— Global trends in the social acceptance of new technologies	4.7	5.9
	— Digitalisation and automation of working processes globally	4.1	6.8
	— Attraction of Switzerland as a location for research and innovation	4.4	8.4
Environmental factors	— Developments in global biodiversity	4.7	5.8
	— Development of global resources and food supply	5.2	7.4
	— Developments of global climate change	4.9	7.2
	— Developments in international negotiations on climate and environmental protection	5.8	5.5
	— Importance of sustainability and environmental awareness in Switzerland	3.9	6.0
	— Future development of the energy market and energy supply in Switzerland	5.4	7.7
	— Spatial, transport and settlement development in Switzerland	4.5	7.5
Legal factors	— Global development of data protection and intellectual property	5.1	6.2
	— Implementation by Switzerland of legally-binding social and environmental standards for business activities	4.5	5.9
	— Dealing with the adoption of European and international law	4.7	7.3
	— Compatibility of domestic law with international law	4.1	5.8
	— Development of the rule of law in Switzerland	3.4	6.5
	— Developments in regulatory density in Switzerland	3.7	6.2

Core uncertainties = highlighted in red
Trends = white
Secondary elements = no secondary elements were identified

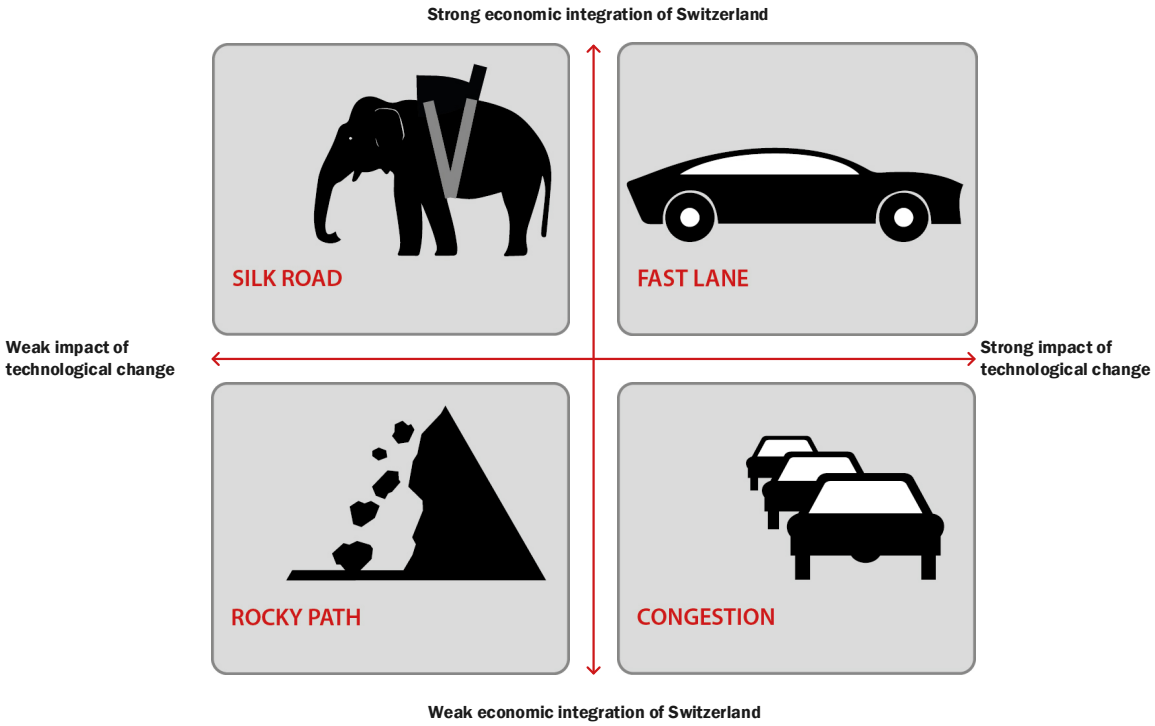
Phase 2: Determining scenario parameters

The aim of the second phase was to validate the factor weighting in Phase 1 and use this as a basis to determine the scenario parameters.

The first step involved each department discussing the weighting of the factors in Phase 1. The aim of these discussions was to create a common understanding of what will be important in the future – i.e. come to an agreement on how the factors are weighted in terms of 'impact' and 'uncertainty'. In addition, discussion of the different perceptions and views encouraged participants to consider new perspectives. This step was important for further work.

In a second step, the Forward Planning Staff discussed and validated the findings and defined the scenario parameters.

Figure 5: Scenario matrix



The scenario parameters have the following characteristics:

'Economic integration of Switzerland': the economic integration of Switzerland is determined, among other things, by the share of foreign trade in GDP. Integration can be established with neighbouring countries, regionally within the EU area or globally. It involves economic cooperation between states and between private companies in Switzerland and abroad. The economic integration of Switzerland has an impact on market links, the flow of capital and goods, the free movement of people, transport and communication. This parameter can be strong or weak.

Strong economic integration of Switzerland is characterised by numerous free-trade agreements with other states or supranational organisations and by a high share of foreign trade in GDP, and results from a system of free trade. Strong economic integration is determined by market links, the flow of capital and goods, the movement of persons, transport and communication. *Weak economic integration* of Switzerland is characterised by few free-trade agreements with other states and by a low share of foreign trade of GDP, and results from a system of protectionism.

'Global technologisation': global technologisation is the development of new technologies at global level. Global technologisation is achieved by introducing new technologies in the state, public or private sector. Technologies can be introduced at different rates and may have a disruptive effect on existing systems and balances. Disruptive technological developments are sudden technological developments on a global scale that over the next few years will fundamentally change our world, or have the potential to do so. In contrast, in the event of slow and linear progress, technology develops more consistently and without causing fundamental changes in the world. The distinctive characteristics of this parameter are 'strong impact of technological change' and 'weak impact of technological change'.

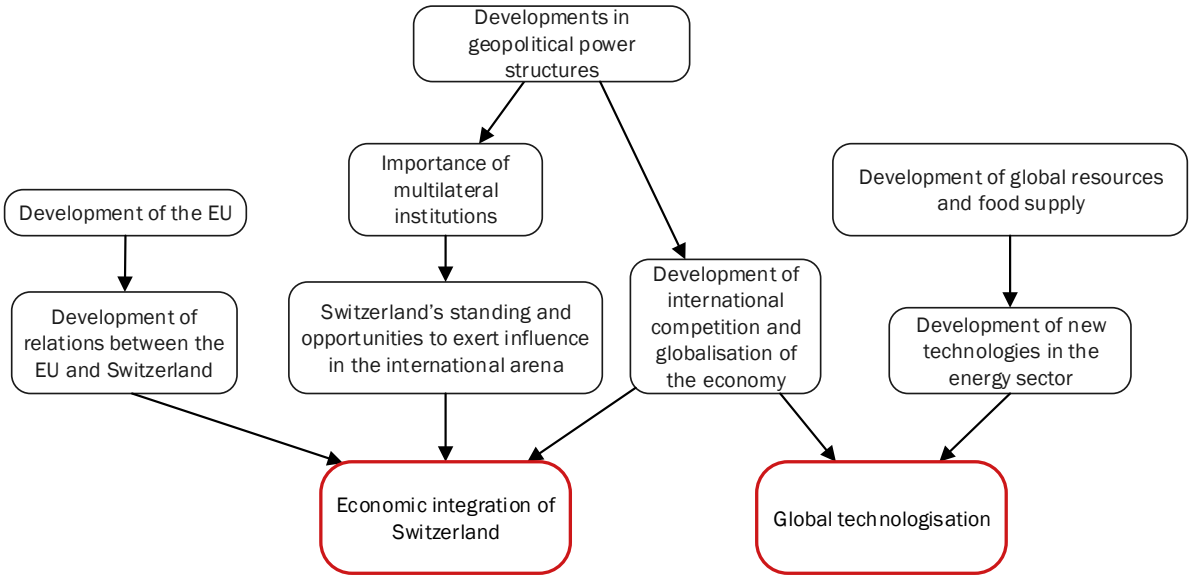
A *strong impact of technological change* is characterised by rapid and disruptive technological change that radically changes people's daily lives. A *weak impact of technological change* is characterised by slow and continuous technological development that has only a minimal impact on daily life.

The specified scenario parameters span the defined period, and so four scenarios can be created by combining the parameter characteristics.

Phase 3: Developing an influence diagram and preparing the scenarios

The aim of the third phase was to identify the relationships and causal links between the trends and uncertainties, and to provide a basis for describing the scenarios. The influence diagram shows the logical links between the individual trends and uncertainties. The trends, factors and uncertainties identified and weighted in the previous phases provided the basis for the influence diagram. The basis for a coherent description of the scenarios was formed by systematically describing why a certain development occurs and how this influences further developments. All relevant factors were taken into account.

Figure 6: Simplified influence diagram



The influence diagram was used to draft the first short descriptions of scenarios, which answer the following questions: "What will the world look like in 2030?" and "What happened on the way to 2030?" The short descriptions of the scenarios were discussed and refined by the departmental focus groups. The short descriptions formed the basis for the detailed description of the scenarios.

Phase 4: Scenario description

The aim of the fourth phase was to describe four clearly distinct future scenarios for Switzerland. Each scenario description was given a title. The short descriptions summarise the features of each scenario and a more extensive description, divided into time segments, sets out the developments leading to the situation in 2030.

Phase 5: Identification of opportunities and risks

The aim of the fifth phase was to identify opportunities and risks arising from the different scenarios. A distinction should be made between opportunities and risks that apply to federal policy across the board and those that affect specific policy areas.

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