SWITZERLAND GLOBAL ENTERPRISE

KEY FIGURES

13,803
companies

322,100
employees

66.7
CHF billion
Exports within the MEM industry

7.3
percent
MEM share of Swiss GDP

30
percent MEM share of the total Swiss exports

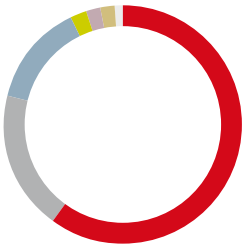
Sources: Swissmem; EZV, 2018

THE SWISS MACHINERY, ELECTRICAL AND METAL INDUSTRY

AT A GLANCE

Employing around 320,000 people, the Swiss mechanical, electrical and metal industry (MEM) is Switzerland's biggest industrial employer. Due to its high standards regarding quality, precision, safety and reliability, this sector maintains its international competitiveness, despite the strong Swiss franc. Almost 80% of its products are exported, with 60% of them making their way to the EU. Switzerland ranks second in a comparison with other countries for per capita machinery exports. The reasons for this industry's success include an exceedingly high level of innovation: The companies are accustomed to having their products, technology and processes being continuously improved via means of significant investments in research and development.

Exports MEM industry 2017
Share of economic areas



EU28	60 %
Asia	19 %
North America	14 %
Latin America	2 %
Africa	2 %
Rest of Europe	2 %
Oceania	1 %

Source: Federal Customs Administration; "Swissmem Panorama 2018"

Companies from the Mechanical, Electrical and Metal Industries
Selection of companies active in Switzerland

ABB	Schindler
Autoneum	Schmolz+Bickenbach
Bucher	Siemens
Endress+Hauser	Stadler
Georg Fischer	Sulzer
Liebherr	

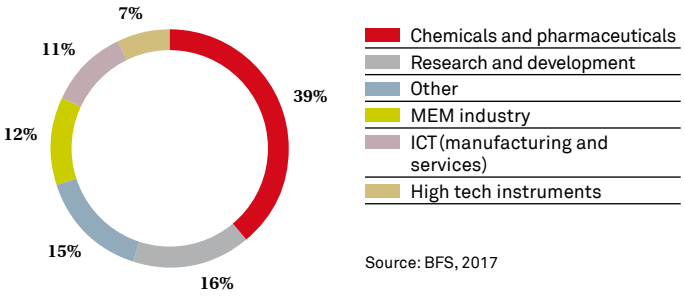
OFFICIAL PROGRAM
Switzerland. Trade & Investment Promotion

RESEARCH AND DEVELOPMENT (R+D)

- The mechanical, electrical and metal industry (MEM) provides almost 20,000 full-time positions in the field of research and development (R+D). The industry invested more than 2 billion Swiss francs into R+D in 2015, representing almost 12% of the entire R+D expenditure of the Swiss private sector.

R+D Expenses by Industry

Total CHF 15,660 million at current prices, 2015



Source: BFS, 2017

- Companies have **excellent access to qualified skilled workers** in Switzerland, thanks to the presence of top universities. Over 7,000 people studied Engineering at the world-renowned ETH Zurich in 2017, with more than half of them studying Mechanical Engineering, followed by Electrical Engineering, Information Technology and Computer Science. In 2017, over 3,000 people were studying engineering at EPFL Lausanne, with most of them enrolled in the specialisms of mechanical engineering and microtechnology.

- The MEM industry is currently training about 20,000 people and is thus one of the largest training facilitators in Switzerland.

Vocational Apprentices

Apprentices in training in 2017

Vocational training	Apprentices
Mechanical engineering: Polymechanics, production engineers, practical mechanics	2,774
Automation engineers, automation mechanics	1,349
Design engineers	1,293
Electronics technicians	691
System and equipment builders	292
MEM merchants	1,398
Total	**7,797**

Source: Swissmem, Panorama 2018

- In a five-year comparison from 2011-2016, the number of admissions to engineering departments at universities of applied sciences rose by 13%. The courses of study with the highest attendance were computer science (+43%), industrial engineering (+31%) and mechanical engineering (+15%).

- The significant innovation potential of the MEM industry is also evident in the field of intellectual property. In 2017, the European Patent Office (EPO) granted 3,929 technology patents in Switzerland. In terms of the number of applications per million inhabitants, Switzerland is one of the top countries in Europe for the number of registered patents in fields relating to the MEM industry.

- The Swiss MEM industry is highly advanced in terms of its integration of innovation and production processes. This includes, in particular, the implementation of technology developed by the ICT sector. Computer science and electronic applications are crucial factors for 55% of all production processes within the precision goods industry, which has grown significantly over the last few years. Switzerland has excellent specialists in these sectors.

- Switzerland's eleven **National Thematic Networks (NTN)** offer a platform for the transfer of knowledge and technology between companies and public research institutes in fields particularly relevant to the MEM industry. This includes several important networks, including Carbon Composites Schweiz, Innovative Surfaces, Swiss Photonics, the Swiss Alliance for Data-Intensive Services, the Additive Manufacturing Network and the Logistics Network Association.

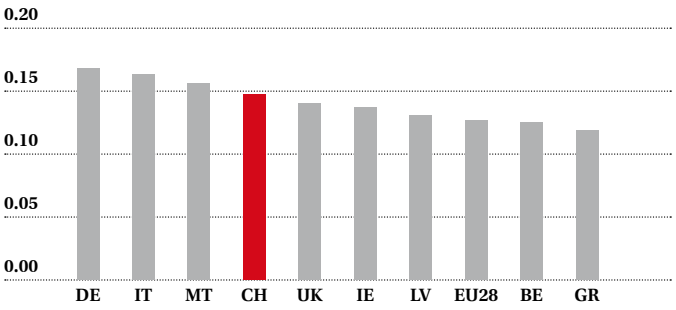
COSTS AND FINANCING

- The Swiss Innovation Agency (Innosuisse) specifically promotes cooperation between science and the market with innovation projects, networking, training and coaching. Innosuisse has an annual funding budget of around 200 million Swiss francs. The lion's share of this goes to the promotion of innovation projects. In 2017, 18.4 million Swiss francs of federal funding went to the areas of machine, mechanical and electrical engineering.

- The **Eurostars Programme** supports European companies investing more than 10% of their turnover in research and development. The budget provided until 2020 amounts to EUR 1.14 billion. Swiss companies are eligible to receive research contributions of up to EUR 500,000.

- Switzerland's industrial electricity prices are moderate by international standards at 14.8 centimes per kWh (2017).

European Industrial Electricity Prices in 2017
in CHF/kWh, medium voltage



Source: Swissmem «Panorama 2018», BFS, Eurostat

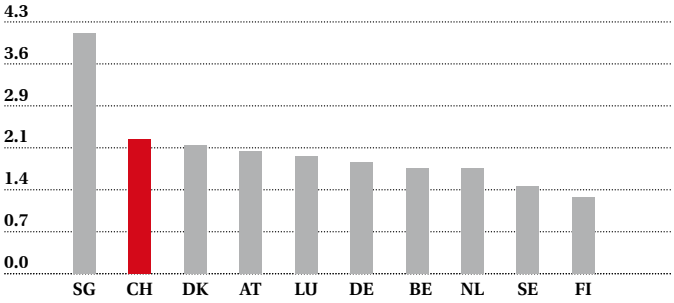
- The **Swiss Made** label stands for quality, precision, safety and reliability – attributes which contribute to buyers abroad being willing to pay higher prices for Swiss products. The price differences compared to rival foreign products are partly a result of the strong Swiss franc and the high price and wage levels in the country.

- The **Industry 2025** initiative is pursuing an Industry 4.0 vision, promoting the digitization and networking of value creation networks in Swiss industry. As part of the initiative, various measures are being implemented with the aim of securing and furthering the competitiveness of Swiss companies and informing the relevant stakeholders about Industry 4.0.

FRAMEWORK CONDITIONS AND MARKET ENTRY

- One of the world's most comprehensive networks of **free trade agreements** provides Swiss companies with access to the most important export markets including the EU and China. With an export share of 60 %, the EU is by far the most important sales market for the MEM industry, followed by Asia (19%) and the USA (13%).

Machinery Exports per Capita in 2016
in thousands of EUR



Source: Swissmem, Panorama 2018, VDMA

- Switzerland ranks second in a comparison with other countries for per capita machinery exports.

- **Mutual recognition agreements** (mutual recognition of conformity and quality controls) between Switzerland and the EU, the EEA, the EFTA, Canada and Turkey reduce the additional import/export costs associated with various product regulations. The corresponding agreement with the EU encompasses 20 product types, including machinery, vehicles, electronic devices and construction equipment.

- Switzerland has the third most concentrated network of bilateral **investment protection agreements** after Germany and China.

- **Swiss Export Risk Insurance (SERV)**, an independent institution governed by public law, guarantees protection for high-risk export transactions. In 2017, insurance policies and basic insurance commitments of around 2.5 billion Swiss francs were issued for the mechanical engineering, rail vehicles, railway technology and electronics sectors.

TESTIMONIAL

"Vocational training has proven extremely important for ABB Switzerland for 120 years now. With 6,000 employees, we currently train around 400 trainees. The advantage being that we are able to familiarize apprentices with our corporate culture at an early stage. ABB Switzerland does not practice vocational training simply to meet its own requirements, it also contributed to the creation of the training provider libs (Industrielle Berufslehren Schweiz). This institution now covers around 100 additional companies and is currently the largest training provider in the Swiss MEM sector."

VOLKER STEPHAN
Head of HR at ABB Switzerland
www.abb.ch

CURRENT DEVELOPMENTS

- The free trade agreement with China, which came into effect in 2014, is of particular importance for the MEM industry: Within ten years, 92% of all products of the MEM industry will be free of all customs duties, which should have a positive influence on the growth of companies exporting to China.

- Switzerland is currently in the process of modernizing its corporate tax system. The goal is to provide an attractive tax environment for companies and to ensure that taxation arrangements are in line with internationally established tax practices. The Swiss Federal Department of Finance (FDF) has already prepared a new proposal with tax proposal 17 (SV17). The reform is expected to come into effect no earlier than 2020. Until then, the current attractive tax regime will remain valid at national level.

CONTACTS AND FURTHER INFORMATION

Authorities and regulators
State Secretariat for Education, Research and Innovation
www.sbfi.admin.ch

Swiss National Science Foundation
www.snf.ch

Swiss Innovation Agency Innosuisse
www.innosuisse.ch

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More factsheets on Switzerland as a business location:
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www.s-ge.com/value-chain-analysis

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