



KEY FIGURES



Sources: Swissmem, 2015
EZV, 2015 and Swiss Federal Customs
Administration, 2015

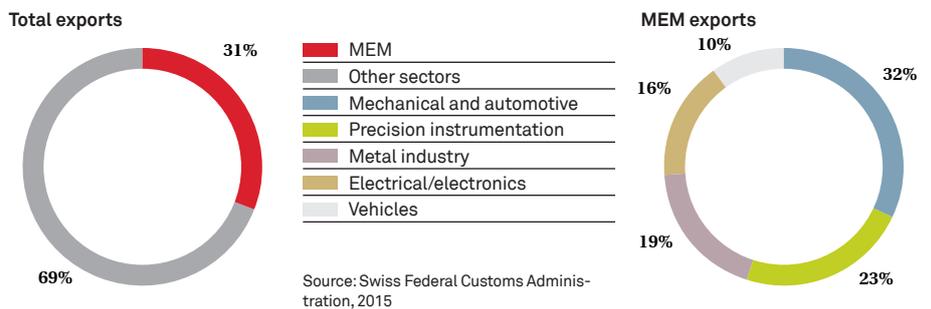
SWISS MECHANICAL, ELECTRICAL AND METAL INDUSTRY

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 close to 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 in the mechanical, electrical and metal industry in 2015

Total Swiss exports (CHF 208 billion; left) and share of exports in the mechanical, electrical and metal industry MEM (right)



10 companies from the mechanical, electrical and metal industry

Selection of the companies active in Switzerland

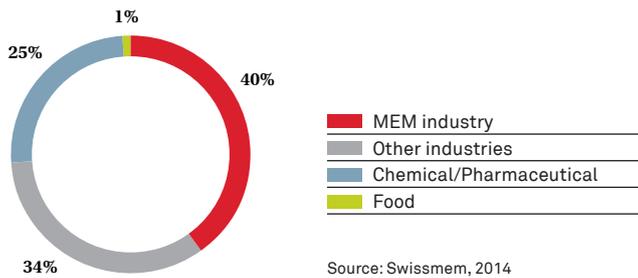
ABB	Sulzer
Liebherr	Autoneum
Schindler	Bucher
Schmolz+Bickenbach	Stadler
Georg Fischer	Siemens

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 CHF 4 billion in R&D in 2012, representing almost a third of the entire R&D expenditure of the Swiss private sector.

R&D personnel according to economic sector

Number of researchers by economic sector in Switzerland in 2012



- Companies have excellent access to qualified **skilled workers** in Switzerland, thanks to the presence of **top universities**. Over 6,000 people studied Engineering at the world-renowned ETH Zurich in 2014, with more than half of them studying Mechanical Engineering, followed by Electrical Engineering, Information Technology and Computer Science. In 2014 around 2,800 people studied Engineering at EPF Lausanne, with most of them enrolled in the faculties of Mechanical Engineering and Micro-technology.
- The MEM industry took on over **30,000 apprentices** in various professional sectors in 2014, most of whom chose the field of Business Management, followed by Polymechanics and Computer Science.

Vocational apprentices

Total number of vocational apprentices in the MEM industry, 2014

Vocational training	Apprentices
Mechanical engineering: Polymechanics, production engineers, practical mechanics	7,337
Automation engineers, automation mechanics	3,280
Builders	2,014
Electronics technicians	1,942
System and equipment builders	868
MEM marketing	11,236
IT technicians	2,014
Total	28,691

Source: BFS, 2014

- In recent years the number of **students studying Mechanical and Construction Engineering and Computer Science at universities of applied sciences has stabilized at a high level**. The most popular course was Computer Science, which welcomed over 700 new students in 2014, an increase of around 20% compared with 2010. This is followed by Mechanical Engineering and Industrial Engineering, with an average of around 500 new students each year.

- The significant innovation potential of the MEM industry is also evident in the field of intellectual property. In 2014 the European Patent Office (EPO) granted 2,795 technology patents in Switzerland. Taking into account the number of patent applications per million inhabitants, Switzerland occupies second place 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 prides itself on having outstanding qualified personnel in these sectors.

- Switzerland's eight **National Thematic Networks (NTN)** offer a platform for the transfer of knowledge and technology between companies and public research institutes in those fields which are particularly relevant to the MEM industry. These include, most importantly, the "Carbon Composites", "Innovative Surfaces" and "Swiss Photonics" networks, as well as the "Logistics Network Association".

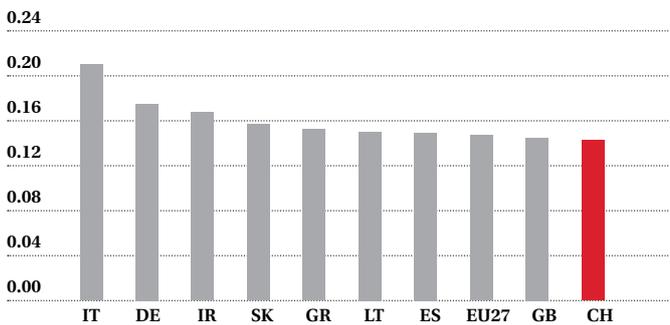
COSTS AND FINANCING

- The Swiss Federal Commission for Technology and Innovation (CTI) promotes **the transfer of technology** by funding up to 50% of the expenditure of collaborative R&D projects between industry and the universities. Around 1,000 research posts are funded in this way each year. The companies are entitled to the IP rights.

- The **Eurostars program** 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.
- The **industrial electricity prices** in Switzerland are considered **moderate** compared to other countries – at 14.5 centimes per kWh they fall below the EU average.

European industrial electricity prices in 2013

in CHF/kWh, medium voltage



Source: Swissmem, 2014

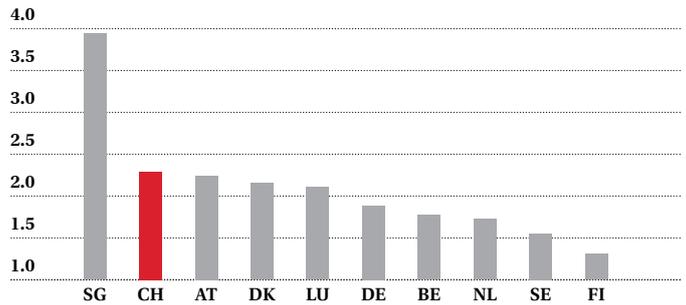
- The **Swiss Made** label stands for quality, precision, safety and reliability – attributes which contribute to buyers abroad being willing to pay higher prices for Swiss products. The price differences compared to rival foreign products are partly a result of the strong Swiss Franc and the high price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

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. As a result the MEM industry saves EUR 246 million each year solely via trade with Germany.
- Switzerland ranks second in a comparison with other countries for per capita machine exports.

Machinery exports per capita in 2014

in thousands of EUR



Source: Swissmem, 2015

- **Mutual recognition agreements** (mutual recognition of conformity and quality controls) between Switzerland and 31 partner countries reduce the additional import/export costs associated with different 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.
- The **Swiss Export Risk Insurance (SERV)**, an independent institution governed by public law, guarantees protection for high-risk export transactions. Insurance policies and general insurance commitments of more than CHF 2 billion were issued for the mechanical engineering, rail vehicle, railway technology and electronics industries in 2014.

TESTIMONIAL



“Vocational training has proven extremely important for ABB Switzerland for 120 years now. We have 6,850 employees and are currently training 457 apprentices. 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 over 80 additional companies and is currently the largest apprentice trainer in the Swiss MEM industry.”

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

CURRENT DEVELOPMENTS

- The free trade agreement, which came into effect with China 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.
- The bill for a reform of the Taxation of Corporate Taxpayers was rejected by the Swiss people on 12 February 2017. This means that the current attractive regulations in the area of taxation remain valid. Switzerland, which has one of the lowest debt ratios by European standards (35% as measured by GDP), has the financial strength to offer a low level of taxation in the long term. It can be assumed that a new business-friendly proposal will soon be developed by the Swiss Federal Finance Administration, which will then be discussed and decided upon by the Swiss parliament. This process is expected to last until 2019.

CONTACTS AND FURTHER INFORMATION

Authorities and regulators

State Secretariat for Education,
Research and Innovation
www.sbf.admin.ch

Swiss National Science Foundation
www.snf.ch

Swiss Federal Commission for Tech-
nology and Innovation
www.kti.admin.ch

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Property
www.ige.ch

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Publications

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> News > Publications

Precision goods industry and
digitization
www.greaterzuricharea.com
> Publications > The precision
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the region of Zurich (Prognos 2014)

Collective bargaining agreement of
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www.swissmem.ch
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Employment Agreement (CEA)

Young Engineers Switzerland
www.ruetter-soceco.ch Topics >
Education + Work + Society > Young
Engineers Switzerland

Associations and networks

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www.micronarc.ch
www.tt-novatech.ch
www.switzerland-innovation.com

Financing

www.seca.ch
www.cti-invest.ch
www.six-swiss-exchange.ch

S-GE-Resources

Handbook for Investors
www.s-ge.com/handbookforinvestors

Additional factsheets on
Switzerland as a business location:
www.s-ge.com/invest-businessenvironment

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