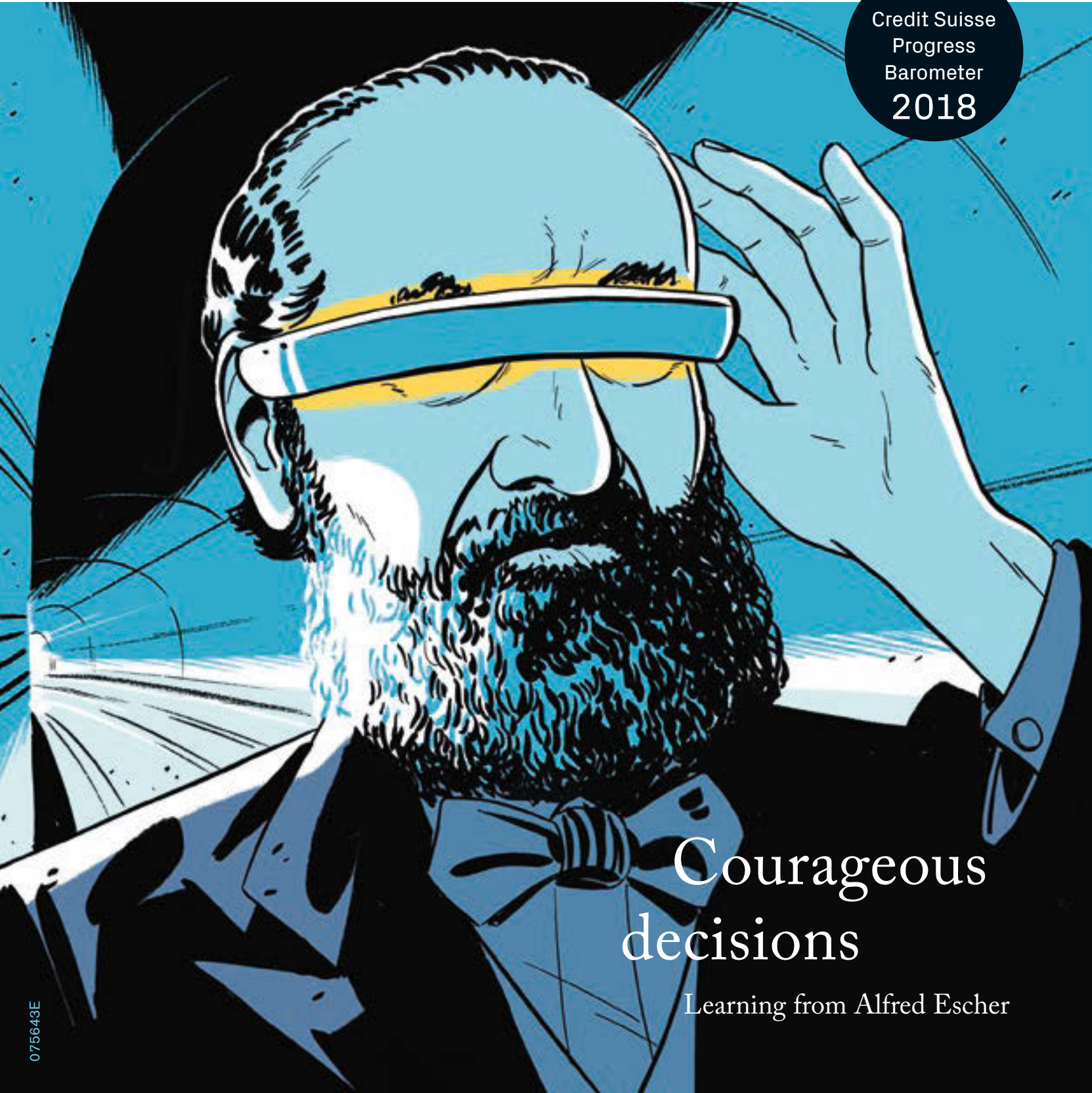


Bulletin

special issue

with the
Credit Suisse
Progress
Barometer
2018



Courageous
decisions

Learning from Alfred Escher



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Railways, education, banks and businesses



2 4 3 1

Contributors to this issue include:

¹ **Joseph Jung** No one knows Alfred Escher better. As a historian, Jung has devoted his professional life to Escher. His biography of the visionary entrepreneur and railway pioneer became a bestseller. In his essay, Jung shows how important Escher was in ushering Switzerland into the modern age. **Page 4**

² **Helene Laube** Living in San Francisco, journalist Helene Laube is continually surprised at how male-dominated the start-up scene is in supposedly progressive California. For once, she is profiling only women. For our portfolio of young female entrepreneurs from all over the world, she traveled the Americas in search of interesting subjects. **Page 10**

³ **Lars Jensen** Journalist Lars Jensen has long been fascinated by infrastructure projects and their impact on society and the economy. In this issue he reports on the New Silk Road, a monumental Chinese initiative that seeks to bring the world together in the digital age. The accompanying photographs are by ⁴ **Davide Monteleone**. Monteleone, an Italian photographer who holds a degree in engineering, traveled from southeast China to the Caspian Sea for this assignment. He is a three-time recipient of the World Press Photo Award. **Page 26**

Cover: Jack Richardson

It may be hard to believe nowadays, but Switzerland was a poor country in 1819.

Indeed, there were famines in some regions. In the course of the 19th century, hundreds of thousands of people emigrated from Switzerland in search of a better life.

Today, 200 years later, Switzerland is among the world's wealthiest, most innovative and most competitive nations, and one of the most attractive countries for top talent.

Who, or what, was responsible for this spectacular progress? Alfred Escher, who would have celebrated his 200th birthday on February 20, 2019, was without doubt a key figure. He was instrumental in the creation of Switzerland's railway network and the university now known as the Swiss Federal Institute of Technology Zurich (ETHZ), and he founded the *Schweizerische Kreditanstalt*, today's Credit Suisse. As historian Joseph Jung points out, Escher's support for railways, education and banks made Switzerland an attractive location for international businesses (p. 4).

Escher ranks among the greatest business leaders in history. But this Bulletin special issue, which marks the 200th anniversary of Escher's birth, is not limited to a discussion of the past. It also takes a look into the future. Escher's formula for success is as relevant today as it was in his day. A country needs infrastructure to achieve prosperity and progress. It needs education and research. It needs banks to provide loans and facilitate growth. And it needs entrepreneurs with the courage and vision to create new things.

Focusing on these four areas, this issue profiles people and projects that are shaping our future. They include 21 young female entrepreneurs from five continents who are moving the world forward (p. 10), as well as the New Silk Road, a monumental project designed to forge closer economic ties between Asia and Europe (p. 26).


This Bulletin special issue also contains something new: the first Credit Suisse Progress Barometer (p. 55), which reveals how the Swiss view social and economic progress. One thing is clear: There is still widespread popular support for visionary projects like those undertaken by Escher.

I hope you will find this issue both interesting and informative.

Urs Rohner

Chairman of the Board of Directors
of Credit Suisse Group





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“Geothermal
can reduce homeowners’
energy costs by 60 percent.”

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70 percent of the global population.

Credit Suisse Progress Barometer 2018 starting page 55

Credit Suisse is launching the Progress Barometer to coincide with the 200th birthday of Alfred Escher. The representative survey shows which projects and issues Swiss voters want to push and which ones they want to slow down. There are also interviews with experts Burkhard Varnholt (Credit Suisse), Sylvie Durrer (Federal Equal Opportunities Office) and Monika Bütler (University of St. Gallen).



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Escher's

It was thanks in large part to his courageous decisions that an underdeveloped agrarian country came to be one of the world's wealthiest nations: Alfred Escher, whose 200th birthday will be celebrated in 2019, made the development of Switzerland's railways, education system and banks possible – and the country an attractive location for international companies.

Text Joseph Jung Illustration Andrea Ventura

Strolling along Zurich's Limmatquai, tourists pass by a colorful row of buildings dating from the 19th century. Each structure is different: at one end of the street they might see a red, half-timbered building, and a few houses down a castle-like building with stepped gables and topped by the figure of a deer. It's a clear reflection of the city's openness to individualism. But that alone did not lead to prosperity in Zurich, or in Switzerland.

Hidden behind a picturesque facade is the infrastructure of a planned city. Modern Zurich was built on the railway system, the Swiss Federal Institute of Technology Zurich (ETHZ), Credit Suisse, Swiss Life and Swiss Re. Thanks to the vision, courage and drive of Alfred Escher, those elements, established in the 19th century, combined to form a carefully thought-out network. And that network helped to make Zurich an internationally significant city and Switzerland a wealthy country.

Alfred Escher was born on February 20, 1819, into a world marked by stark contrasts. His family, living first on a street called Hirschengraben and later in a country house known as Belvoir, lacked for nothing. At the same time, even the bare necessities were scarce in many parts of Zurich and Switzerland.

recipe for success



Politician, railway pioneer, visionary:
Alfred Escher (1819–1882).

Two hundred years ago, the Alpine republic of Switzerland was an odd place – a foreign body in a Europe of kings and princes. An agrarian country, it was backward in many respects, consisting of 22 cantons with different currencies, weights and measures. A Swiss economic area did not yet exist, nor had the Swiss franc been introduced. Most workers were employed in agriculture, but productivity was so low that even the country's need for grain went unmet. Some regions endured famines.

SWITZERLAND: STRUGGLING TO KEEP UP It made no difference that Switzerland was already world famous for its watches, nor that it had a highly regarded textile industry and an up-and-coming machine-building sector. These industries were focusing on producing goods for the international markets. They meant little to poverty-stricken Switzerland. Serious infrastructural weaknesses prevented the domestic market from flourishing.

Switzerland was traditionally a country of emigration, and in many ways it had failed to keep up with the modern world. This was already evident to Alfred Escher when he

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3

was still a young politician. He had the vision to understand that transport would shape his country's future. Early on, he warned of the danger of isolation. From all directions, railways were coming nearer – with plans already being made to bypass Switzerland. And Escher understood that a lack of railway connections was not the only cause for concern.

In the mid-19th century, Switzerland's development was failing to keep pace with that of other countries. Whether in research, education, banking or the insurance industry, it was at risk of being left behind. Everywhere one turned, the structures of a modern economy were lacking. Switzerland was a sorry sight – a developing country in the heart of Europe. The future looked dim. But virtually overnight, as Europe was rocked by the revolutions of 1848, a new Switzerland was emerging – as a modern federal state with the world's most progressive constitution. That laid the



groundwork for a scientific and technological boom, nation-wide infrastructures and the creation of the Swiss economic area. And it was only then that Switzerland's spectacular rise was able to begin.

Friedrich Engels understood what was happening. In 1848 – the “Communist Manifesto” had just been published – Engels wrote that Switzerland, which had long been widely ridiculed, would soon become a role model. It was Alfred Escher, an upper-middle-class politician, railway pioneer and visionary entrepreneur, who seized the initiative. With supreme confidence, he took charge, developing ambitious plans.

PROGRESS, THANKS TO THE RAILWAYS Escher understood that keeping pace with the modern world meant quickly and prudently expanding the rail network. It was transport that determined what was central and what was relegated to the periphery. When deciding where to locate their operations, companies chose sites that were accessible by rail, and it was there that social life flourished. Switzerland was no different from other countries in that regard. But in the mid-19th century, Switzerland's railroads measured a mere 23 kilometers. That was all! Britain, Germany and France, in contrast, had railways extending for 10,000, 6,000 and 3,000 kilometers, respectively.

A crucial step, with unforeseeable consequences, was taken in 1852. The decision was made to have private industry, rather than the government, build and operate the railways. That decision – one of the most consequential of the entire century – was due in large part to Escher. It was the only way for Switzerland to build up its rail network to a level comparable to that of other countries. The decision had scarcely been reached before railway companies were being formed, track was being laid and train stations were being built all over the country.

Rivalries developed between different regions of the country as they fought over rail lines and networks. The railways caused a furor in Swiss society. The market took off. Soon the Mittelland region was opened up to rail traffic, and Switzerland had the densest rail network of any country in Europe.

The railways became a symbol of progress, and they played a major role in the development of Switzerland's national identity. They brought modern life to previously isolated areas – a change that made some people uneasy. Many found their lives changing. There were new jobs in

construction and in the rail companies' control centers, while traditional businesses located along the new rail lines, such as transport companies, fell victim to progress.

Markets were created and consolidated. The railway project allowed Switzerland's regional economies to come together to form the Swiss economic area. Society as a whole was transformed. Without the railways, Switzerland as a research center, financial center, industrial center and tourist destination would not exist. All of these sectors played an essential role in Switzerland's success in the 19th century – and that holds true even today. In each case, the development of the railways was critical. And without Alfred Escher, that development would not have begun as quickly as it did.

TAKING THE LEAD, THANKS TO EDUCATION AND RESEARCH The 1852 decision about the railways marked the beginning of Switzerland's modern age, in terms of technology and industry. But the early days were difficult. Crucial resources – expertise and money – were in short supply. Escher found a way to solve both problems. He quickly recognized the need for a national Swiss university, and he demanded new kinds of training. Building the railways required accurate measurement of the terrain, and structures such as bridges posed enormous engineering challenges. So engineers, surveyors, mathematicians and physicists were suddenly in great demand. However, training in those fields was not yet available in Switzerland. Project managers, too, faced new demands. The new construction sites were larger than any that had preceded them.

The situation called for a policymaker of Escher's stature, someone with the authority to overcome opposition to a Swiss center of higher education. A university, now known as the Swiss Federal Institute of Technology Zurich, opened in 1855. Zurich became the focus of scientific activity in Switzerland, and the country developed into a research center that could eventually compete on the world stage.

That was possible only because – thanks to the ETH – Zurich quickly became an attractive place for foreign scholars and students. This “brain gain,” too, is one of the factors in Switzerland's success. Even today, our country is much too small to compete at the top levels of science and business by relying only on homegrown talent. Many of the international companies in Switzerland were founded by foreigners – including Nestlé, Maggi, Wander, Ciba, Brown Boveri, Bally and Hero.

1 Zurich main station today:
With the railways came progress.

2 ETHZ: An internationally
recognized research center.

3 Credit Suisse at Zurich's Paradeplatz:
The bank as a driver of progress.

The opening of the Gotthard tunnel meant a huge leap forward for Switzerland.

BANKS LEAD TO ECONOMIC DEVELOPMENT Building the railways was extremely expensive. Without commercial banks, today called investment banks, it would have been impossible to raise the necessary money. But there were no such banks in Switzerland. Escher was forced to find funding abroad. He worried, however, that the Swiss railway companies might become dependent on foreign capital. To prevent that from happening, he decided to create a domestic financial infrastructure: The “Schweizerische Kreditanstalt” – now known as Credit Suisse – was established in 1856, with Escher as chairman of the Board of Directors.

It was a brilliant move – Credit Suisse became the house bank for Escher’s railway company. That turned out to be a boon for other segments of the economy as well. New companies and projects all over Switzerland were able to obtain funding from Zurich. The bank became the engine driving economic development.

Building the railways involved enormous financial risks, and here, too, Escher introduced new ideas. When the “Rentenanstalt” (now Swiss Life) was established in 1857, he guaranteed its stability through Credit Suisse. As a result, clients were willing to trust the insurer. And it was also through Credit Suisse that transport and accident insurers were able to obtain initial capital. The reinsurance company Swiss Re, for one, received administrative and logistic support from Escher’s bank in 1863.

But all of this touches on only one part of Alfred Escher’s monumental legacy. We have not yet mentioned his enormous contributions as a cantonal and federal politician – or his greatest achievement of all: the Gotthard railway, which extends through the Alps from northern Switzerland to the canton of Ticino. Work began in 1872, at what was then the largest construction site in Europe. Escher was chairman of the Gotthard Railway Company. Before long it seemed that financial and technical problems might spell the end of this “project of the century.” What’s more, Escher had to fight against the populism that had taken hold in Switzerland’s political arena, where sympathy for a towering upper-middle-class figure like Escher had dwindled. Nevertheless, the project was ultimately successful.

THE GOTTHARD RAILWAY CONNECTS THE WORLD The Gotthard railway connected central Europe with the ports of northern Europe, where steamships departed for America. It also made it possible to travel to Genoa, which had been the gateway to the Far East ever since the opening of the Suez Canal in 1869. The Gotthard railway connected the world. Travelers during the Belle Époque called it one of the world’s wonders and “the world’s most picturesque route.”

For Switzerland, the opening of the tunnel marked a huge leap forward. It was no longer a disadvantage, but rather an advantage, to be situated near the Gotthard, in the shadow of the main barrier to transport in Europe. What had formerly been a cul-de-sac was now a transport hub. The monumental structures in Egypt and Switzerland that opened up a direct route from Europe to India and Southeast Asia were often mentioned in the same breath. Both were completed despite massive political, technical and financial difficulties.

When the Panama Canal finally opened in 1914, it meant that the link between northern Europe and Asia, leading through the Gotthard and the Suez Canal, was now part of the first direct route around the globe. But even today, these monumental projects are inevitably the site of bottlenecks. A Chinese consortium is already planning to build a new, wider canal through Nicaragua. Whether or not that actually happens, it is clear that China, with its Belt and Road Initiative, is working hard to expand the existing route leading around the world (see article on page 26). Part of that project, the Maritime Silk Road, leads from southern China through the Bab al-Mandab Strait to the Red Sea, on through the Suez Canal and the Adriatic Sea to Venice – and from there to the Gotthard.

This Chinese “project of the century,” too, is building on Escher’s boldest vision: the railway link through the Saint-Gotthard Massif. However, it will no longer follow along the mountain route and lead through the 15-kilometer-long tunnel that was built under Escher’s leadership. Instead, it will go through a new, 57-kilometer-long base tunnel – the longest in the world. ■

Prof. Joseph Jung is an independent historian who writes about business and cultural history. He served as Credit Suisse’s chief historian for many years and was the first chairman of the Alfred Escher Foundation. He is currently working on a history of Switzerland in the 19th century. The German edition of his biography of Alfred Escher was a bestseller. It was published in English as “Switzerland’s Success Story: The Life and Work of Alfred Escher (1819–1882).” Neue Zürcher Zeitung Publishing, Verlag NZZ, 6th edition, 2015.

INVESTING IN EDUCATION

In Latin America, Africa, and Asia, more than 2 million children can now access a quality education thanks to Credit Suisse's support of Opportunity's EduFinance initiatives. Our partnership plays a formative role in empowering parents to send their children to school and enabling teachers to develop low-cost, high-quality learning environments. By supporting access to critical financial services and training, Credit Suisse helps school owners like Regina Githinji (pictured below) give children a chance to break the cycle of poverty by obtaining a good education.

Regina founded the Revelation Ushindi School in the slums of Kenya with just three students. Over the last eleven years, she has used a series of Opportunity loans and training to install clean running water, purchase textbooks and food for the children, pay teacher's salaries and maintain her rent payments on the now-large school property that serves 80 students. Regina is one of millions of Opportunity clients who are working their way out of poverty and, in doing so, are transforming their lives and the communities around them.

Discover more at [opportunity.org](https://www.opportunity.org).




21 women for the 21st century

1. — ENTREPRENEURSHIP

These young women from around the globe are moving the world forward. With courage and creativity, and with curiosity, discipline and a pioneering spirit.

Selected by Simon Brunner (Europe), Lea Deuber (Asia),
Helene Laube (the Americas) and Mfonobong Nsehe (Africa)

A portrait of Kathy Hannun, a woman with dark, wavy hair, smiling and looking slightly to the side. She is wearing a white short-sleeved top and has her right hand raised to her forehead. The background is a solid green color.

Kathy Hannun

US / Dandelion Energy / 31

Millions of homeowners still use oil to heat and cool their homes. Kathy Hannun wants to change that. A scientist with a master's degree in information technology, Hannun co-developed a geothermal energy system at X, Google's research and development lab, and has made it ready for the market. In 2017, she founded Dandelion Energy. She became CEO of Dandelion and secured 6.5 million dollars in venture capital. "We want to bring geothermal into the mainstream," says Hannun. A Dandelion system costs half as much as a conventional geothermal installation and, according to Hannun, reduces energy costs by more than 60 percent.

As an online instructor for companies in the United States, Sally Buberman realized early on how students can benefit from online learning. Buberman teaches languages and also studied electromechanical engineering. She was frustrated that technologies like



webcasts and distance learning platforms were either inaccessible or prohibitively expensive in her home country of Argentina and other emerging markets. So, in 2008, Buberman raised half a million dollars in seed funding and launched the start-up

Wormhole. She developed a live-learning platform that makes it possible for students and teachers to communicate directly, in real time on computers and mobile devices. Today, Wormhole's customers include thousands of companies, schools and professional associations in more than ten countries. And that number is growing fast thanks to the booming market for e-learning.

Sally Buberman

Deepanjali Kanoria



India / Heyday Care / 26

Few women in India can afford to buy feminine hygiene products and those products that are available are often of poor quality. That fact has serious consequences that extend beyond hygiene. According to a study by the NGO Plan International, 20 percent of girls drop out of school as soon as they get their first period. To change that, Deepanjali Kanoria quit her well paid consulting job in Manhattan to develop inexpensive, sustainable sanitary pads made of bamboo fibers. Soon Heyday Care will be selling 448 million pads per year. At a price of 15 cents per pad, annual sales would total up to 67 million euros. Interest in the revolutionary pads is also high in Russia and African countries.

Chang Le

China / SoundAI / 29

Chang Le isn't afraid to compete with giants. In 2016, she founded SoundAI in Beijing. SoundAI develops software for smart speakers – China's answer to the likes of Amazon Echo and Google Home. Her technology is used in smart speakers produced by China's search engine operator Baidu and retail giant Alibaba. The 29-year-old, who studied electronics engineering and information technology, sees voice-controlled applications based on learning algorithms as "the next big thing." SoundAI is working on developing a system that can also be used in cars. "Driving is a challenging



scenario for voice recognition because of the background noises coming from the tires and engine," says Chang Le. Investors believe in her. Last year, Chang Le raised 15 million dollars in a single financing round.

Tanzania / OBRI / 31

Brigitha Faustin is on a mission. She wants to increase food safety and the standard of living in Africa by enabling low-income families to buy healthy, high-quality cooking oil. To that end, she founded OBRI in the eastern African country of Tanzania in 2015. The company, which operates as a cooperative, offers more than 230 local sunflower growers a sales channel and is involved in the entire value chain, from production to marketing and sales. Faustin says, "I am a firm believer in the private sector as the best possible option for sustainable social and economic change in Africa." OBRI aims to generate annual revenue of one million dollars by 2020.



Brigitha Faustin

A portrait of Alisée de Tonnac, a woman with long, wavy brown hair, wearing a black leather jacket and dark jeans. She is sitting and resting her chin on her hand, looking directly at the camera. The background is a solid red color.

Alisée de Tonnac

Switzerland / Seedstars World / 30

Born in France, Alisée de Tonnac was well on her way to establishing a storybook career at L'Oréal when she gave it all up to co-found the Geneva-based international start-up competition for the developing world. "I was obsessed with having the best CV, making the most money." And then she met her future business partner, who suggested that they team up to establish Seedstars World. The start-up competition is now held in more than 65 countries, and its ecosystem includes investors from industrialized countries who can support start-ups, a talent pool, and lots of infrastructure such as the global network of start-up hubs in emerging markets (Seedspace). "Entrepreneurship and technology are essential for development," says de Tonnac.

Ivory Coast, South Africa / Yswara / 40

Friends had advised her not to give up her successful career at General Electric to start up a luxury brand in South Africa. But Swaady Martin-Leke believed in her idea. “I wanted to build a luxury brand that is truly African.” Her company, Yswara, began trading in gourmet teas in 2012 and is now one of the continent’s leading luxury brands, with a broad portfolio of products ranging from scented candles to jewelry. “All our products are sourced from Africa and crafted by local craftspeople and artisans, combining traditional techniques with modern designs.” Born in Ivory Coast, she studied economics and other subjects in Lausanne and lived and worked in eleven countries in Africa, Europe, North America and Asia. When asked about where she calls home, she responds: “I am an Afropolitan.”

Swaady Martin-Leke



Photo: Jonathan Kope

The headlines sum up Delia Fischer's story pretty well, although some sources draw her geographic reach a bit wider than others. Munich's La Monachia award for business has called her "one of Germany's most well-known and successful female entrepreneurs." The Neue Zürcher Zeitung calls her "Europe's interior queen." And the Bild newspaper says, "This woman is decorating the world." In 2011, the journalist founded Westwing, an online shopping club for design, furniture and home accessories. The company operates in 14 countries, employs 1,400 people, and has more than 20 million customers worldwide (400,000 in Switzerland). The shopping portal is the market leader in Europe, went public in October and achieved a market capitalization of over 550 million Swiss francs.



Delia Fischer

Estonia / Jobbatical / 35

Estonia has five start-ups for every 100,000 inhabitants – six times the European average. "Here, there's no excuse for *not* becoming an entrepreneur," says Karoli Hindriks. She found-



Karoli Hindriks

ed Jobbatical in ten minutes over coffee in 2014. One very encouraging factor is the fact that, in Estonia, businesses pay no corporate income tax on profits if they are reinvested. The recruitment platform Jobbatical – a play on the words "job" and "sabbatical" – helps match tech professionals with employers around the world. The business model serves people like a programmer from Birmingham who wants to spend a couple of years in Vietnam or a social media expert from New York who wants to go to Nigeria. Jobbatical and its 25 regular employees make it relatively simple for them to do so. The platform currently lists jobs in 49 countries.

Rachel Haurwitz

US / Caribou Biosciences / 33

Rachel Haurwitz, who holds a Ph.D. in molecular and cell biology, was 26 when she co-founded Caribou Biosciences in Berkeley, California, in 2011 with Jennifer Doudna.



Together, the pair had made a breakthrough discovery known as the CRISPR-Cas9 method. This method makes editing DNA strands easier, less costly, and more precise than ever before. Caribou is one of the leading start-ups working to commercialize the new gene-editing technology, which promises to become a billion-dollar industry worldwide. "Any market with bio-based products will be transformed by genetic engineering, including therapeutics treatments, agriculture, basic research and industrial biotechnology," says Haurwitz. Capital providers like Novartis have invested 75 million dollars in her start-up since its inception.

Swaziland, South Africa / AfroBotanics / 31



Ntombenhle Khathwane

Many entrepreneurs are successful because they develop new products that solve a problem, large or small. That is true of Ntombenhle Khathwane of Swaziland. She was frustrated because she wanted to wear her curly hair down but couldn't find any hair care products from the major international brands that were suited for African hair. So, in 2010 she quit her well-paid government job and used her retirement fund to establish AfroBotanics, a company that produces hair care products from African plant oils. The products are popular among thousands of young South African women. The company generates annual sales of more than 750,000 dollars.

Philippines / SALt / 34

Aisa Mijeno got her idea on a visit to a Philippine mountain village. “The people there had no electricity and had to walk 12 hours to get kerosene for their lamps,” explains Mijeno, a professor of engineering. With her start-up, SALt, she has been developing lamps since 2014 that run on salt water instead of expensive, environmentally harmful oil. A single glass of water from the ocean is enough to light a room for eight hours. SALt has just begun mass producing the lamps and plans to manufacture 200,000 lamps this year.



Aisa Mijeno

Mexico / Aliada / 31

In Mexico, more than two million domestic workers earn less than 9 dollars a day. Most of them work under the table and have no access to health insurance or social security. Economist Ana Isabel Orvañanos wants to resolve this deplorable state of affairs with Aliada, the start-up she founded in 2014. The online platform connects independent cleaners with customers and pays their social insurance contributions. Hundreds of “aliadas” (allies) are already registered on the platform. All registrants must have a bank account and pay taxes. The start-up grants microloans to its best “aliadas.” “With Aliada, women can triple their incomes,” says Orvañanos, who was able to raise nearly 1 million dollars in venture capital.



Ana Isabel Orvañanos

Sierra Leone / Easy Solar / 29

Lack of electricity is a major problem for developing countries. In the West African country of Sierra Leone, barely one percent of the rural population has access to electricity. That is why Nthabiseng Mosia, born in Ghana and raised in South Africa, left a career as a management consultant to study Energy Finance and Policy at Columbia University in New York. In 2016, she founded Easy Solar in Sierra Leone. The company finances and leases inexpensive solar installations on a pay-as-you-go basis. Easy Solar has raised 2 million dollars in venture capital and has already supplied more than 75,000 people in Sierra Leone with electricity.



Nthabiseng Mosia

US / GoTenna / 33

Daniela Perdomo co-founded GoTenna in 2012 after the devastation of hurricane Sandy. While volunteering in the relief efforts in New York after the storm, she noted that even emergency responders were having trouble communicating. Her start-up develops compact antennas that are about the size of a USB stick. They enable mobile phone users to send encrypted text messages and share a map of their exact location for emergencies when there is no cell service or WiFi. The start-up has nearly 17 million dollars in venture capital and its technology is even used by the United Nations.



Daniela Perdomo

With no technical training, Olga Peters co-founded a high-tech start-up. While working towards her master's degree in banking and finance in Zurich, she attended an event sponsored by the start-up competition Venture*. A short time after that, she teamed up with two others to co-found QualySense. The company developed a robot that analyzes and sorts grains, seeds and beans. It is able to sort grains or kernels by biochemical and visual characteristics and detect whether they have been infected with a fungus or whether they are gluten free. With 21.9 million dollars in venture capital, QualySense is one of the better funded start-ups in Switzerland and employs 40 people. "My husband has put his own career on hold to support mine," says Peters. "He's got my back and takes care of our two children."

Olga Peters



*Credit Suisse is a Venture sponsor (venture.ch).

From the sea to the plates of Tokyo's luxury restaurants in eight hours. The Japanese start-up Ghibli brings the catch of the day 1,000 kilometers from the small island of Oshima to Japan's metropolis at record speed. Founder Chika Tsubouchi has been making it possible for fishermen to become independent of wholesalers and sell directly to restaurants since 2014. By cutting out the middleman, the fishermen earn more and customers in the restaurant pay less. Sales are conducted by way of messenger services like Line, Japan's version of WhatsApp. The company has become a model for revitalizing Japan's entire fishing industry.



Chika Tsubouchi

Singapore, Malaysia / GrabTaxi / 34

With her ride-hailing app Grab, Hooi Ling Tan has transformed mobility in Southeast Asia. Her green taxis are now making their way through traffic in dozens of cities throughout Asia. Like Uber, Grab also enables users to book rides with drivers of private cars and motor scooters. Since 2011, more than two billion rides have been logged through the app, which started as MyTeksi in



Kuala Lumpur. Tan, a mechanical engineer, and her team are now based in Singapore. Valued at 6 billion dollars, the young company is targeting a billion dollars in revenue by the end of 2018.

Hooi Ling Tan

Canada / Ranomics / 22

Cathy Tie wrote her first research paper when she was 16 years old. In 2015, she founded Ra-



nomics in Toronto at age 18. The biotech start-up has built an enormous genomics database of rare genetic variants with which researchers can investigate genetic variants and their role in disease development at the level of basic biological research as well as drug/target discovery. Ranomics has so far analyzed 2,000 patients with

breast, colon and prostate cancer for global genome sequencing centers like Veritas Genetics and the Beijing Genomics Institute. Tie, who is now on the company's board, has so far raised more than 2 million dollars in capital for Ranomics. The 22-year-old is also the youngest partner in the California-based venture capital firm Cervin Ventures.

Cathy Tie

China / Mobike / 35

Hu Weiwei has brought bikes back to China's automobile-clogged roads. Few start-ups have changed the country as much in recent years as Mobike, which was founded in 2016. Each day, 23 million shared bikes roll along China's streets and roads. Registered users total



400 million nationwide. China now has more than 70 bike sharing companies which generate 35 billion dollars in revenue each year and have created 390,000 new jobs. Hu had worked as an automotive

journalist for 10 years before launching her idea, which China's state media is calling "one of the four great inventions of the 21st century." Mobike is currently estimated to be worth 3.7 billion dollars.

Hu Weiwei

Switzerland, US /
Ava / 28



Lea von Bidder

At age 22, she founded a chocolate company in India, and she joined Ava* in Zurich two years later. The single-product company makes a sensor bracelet that monitors and tracks a woman's menstrual cycle by measuring physiological parameters. The bracelet uses a sophisticated algorithm to give its wearer precise information about when she is able to conceive. That means women can now plan their pregnancies. And the entrepreneur hopes it also means that women will be able to better plan contraception in the future. Venture capitalists have put 42.3 million dollars into Ava, which has 85 employees. Switzerland's Handelszeitung newspaper calls von Bidder the "most famous of female Swiss entrepreneurs." In 2017, Forbes magazine listed her among the top "30 under 30" in the healthcare segment.

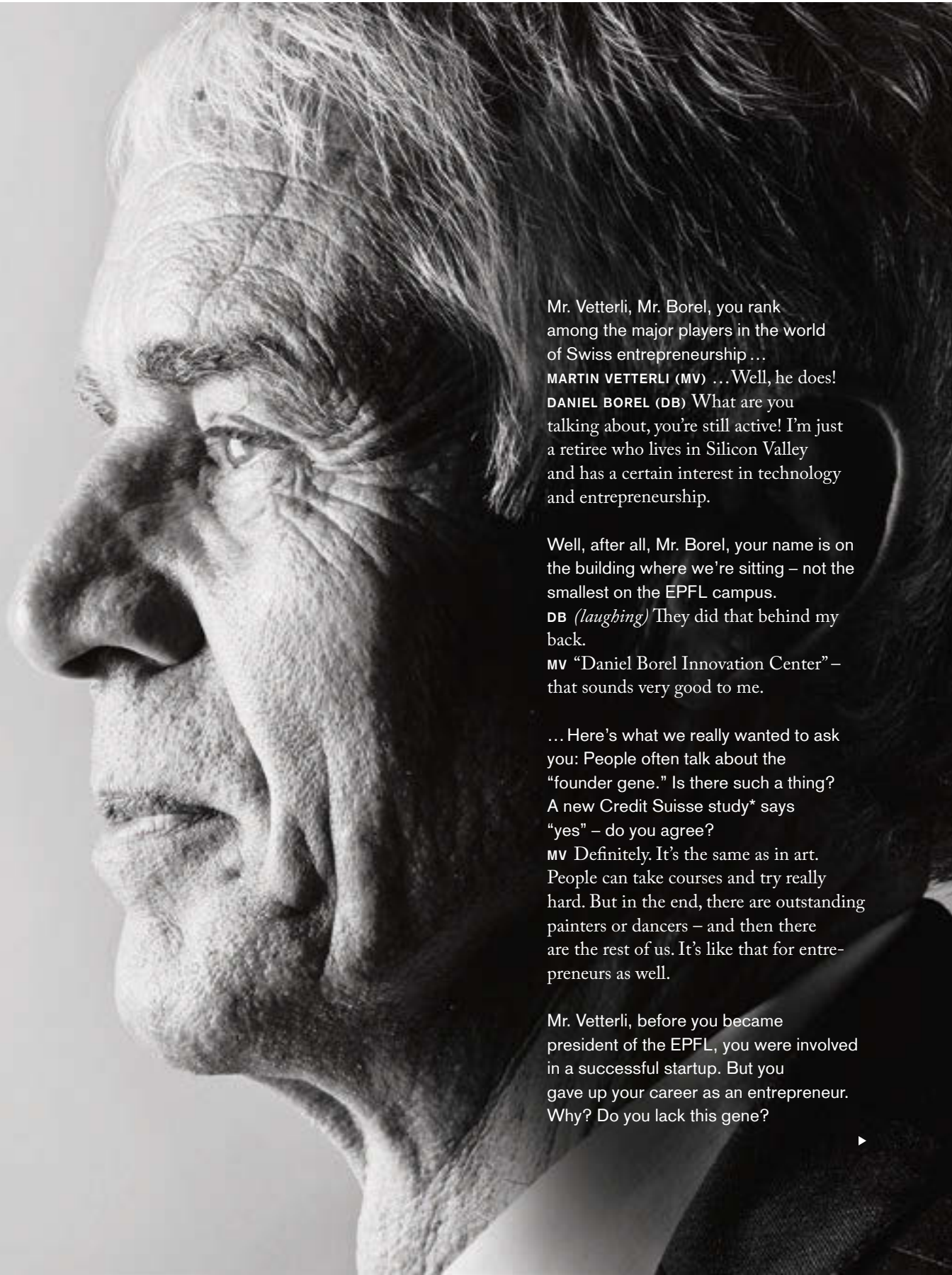
*Ava is part of the investment portfolio of SVC AG, a corporate venturing firm established by Credit Suisse.

“When you invest
in the training of engineers,
you can’t go wrong”

Practice meets theory:
Logitech founder Daniel Borel
and Martin Vetterli, president
of the École polytechnique
fédérale de Lausanne (EPFL),
talk about entrepreneurship
in Switzerland, the founder
gene, and the changes Alfred
Escher would probably
want to make in Switzerland
today.

Interview Simon Brunner Photos Anoush Abrar

“Even now, we find it difficult to develop a discovery into a business model”



Mr. Vetterli, Mr. Borel, you rank among the major players in the world of Swiss entrepreneurship ...

MARTIN VETTERLI (MV) ... Well, he does!

DANIEL BOREL (DB) What are you talking about, you're still active! I'm just a retiree who lives in Silicon Valley and has a certain interest in technology and entrepreneurship.

Well, after all, Mr. Borel, your name is on the building where we're sitting – not the smallest on the EPFL campus.

DB (*laughing*) They did that behind my back.

MV “Daniel Borel Innovation Center” – that sounds very good to me.

... Here's what we really wanted to ask you: People often talk about the “founder gene.” Is there such a thing? A new Credit Suisse study* says “yes” – do you agree?

MV Definitely. It's the same as in art. People can take courses and try really hard. But in the end, there are outstanding painters or dancers – and then there are the rest of us. It's like that for entrepreneurs as well.

Mr. Vetterli, before you became president of the EPFL, you were involved in a successful startup. But you gave up your career as an entrepreneur. Why? Do you lack this gene?

Building a startup is not an individual sport; it has to be a team effort.

MV My father was an entrepreneur, so my DNA surely contains some of that trait. At some point you recognize where you can have the greatest impact. I believe that for me, this is in academia, not in a startup. But I feel a strong connection to entrepreneurship. Many of my students have chosen this path, and I strongly support them and pay close attention to what they do. But for myself? No, thank you.

Mr. Borel, what was it like for you? Was your path always clearly marked?

DB No. I believe that everyone looks for something in life that sparks their passion. When I was 27, thanks to a grant from the Swiss National Science Foundation, I went to the United States, where I met many people who were excited about computer science. It was in the late 1970s, and the IT revolution was taking off. I plunged into an environment that wanted to reinvent the future. It would have been hard not to become passionate about it. But if I had stayed in Switzerland, things might have turned out quite differently.

MV Does entrepreneurship run in your family?

DB My paternal grandfather, who brought me up, built two factories and filed 70 patents. My maternal grandfather was Parisian and a director at Saint-Gobain, a large corporation.

Aside from the founder gene, what else does it take to become an entrepreneur?

MV Building a startup is not an individual sport; it has to be a team effort.

In successful young companies, I often observe this magical combination: The brilliant engineer solves every problem, is super creative and has an IQ of 180 – but he or she lacks the flair for marketing, communication and corporate develop-

ment. Then there is a business person who knows that you don't need to solve every problem to the last decimal point; first, you must find a market. I just read the story of Elon Musk and Peter Thiel at PayPal, where it was also this complementarity that led to success.

DB It was the same for Bill Gates and Paul Allen at Microsoft, or for Steve Jobs, first with Steve Wozniak and later with John Sculley – who gets far too little attention, although he was the crucial business guy at Apple. The life of a company founder is hard; there are many setbacks, a lot of frustration. If you're also all on your own, the project turns into mission impossible.

If you meet a young person who wants to become an entrepreneur, can you size up the likelihood of success right away?

DB In my opinion, the most important exclusion criterion is immediately obvious: Is the person arrogant? If so, there is no chance of success. The same goes for someone whose head is in the clouds. Then there are people who just like the idea of founding a startup – but in practice, they are fairly clueless. And worst of all are the ones who simply want to get rich.

Why is money a poor motivator?

DB It has to be only an outcome of success, not the driver – otherwise, the company will never survive a relatively long dry spell. After Facebook went public, suddenly there were a handful of billionaires in the company. What did they do the next day? They went to the office as usual. Look at Mark Zuckerberg, Steve Jobs or Tim Cook: What really motivates them is the effort to reach the next stage in inventing the future. It is far more about influence or even about power than about money.

Alfred Escher was one of Switzerland's greatest entrepreneurs. Next year is the 200th anniversary of his birth. What makes him so important for Switzerland?

MV Escher accomplished three incredible things, each one alone would have been enough to earn him a statue in front of the main railway station in Zurich. He made crucial improvements to Switzerland's infrastructure by championing the construction of railroads and the Gotthard Tunnel. He introduced risk capital to Switzerland by founding the Schweizerische Kreditanstalt [*editor's note: now Credit Suisse*] to finance the new infrastructure. Railroads were something like the startups of that time. And then came the true stroke of genius. He said that we needed a new training facility for the emerging issues: science and technology. He founded the Federal Institute of Technology (Eidgenössische Technische Hochschule, ETH) in Zurich.

When you look at Switzerland now – what would Escher probably do?

DB He would step up support for the technical universities. When you as a society invest in the training of engineers, you can't go wrong. Too many engineers? There's no such thing.

MV In the ambitious 19th century, there was a real danger that Switzerland would fall behind and remain stuck in agriculture. This scenario is a threat again now. We are about to miss the boat for the key technologies of the 21st century. Perhaps Escher would found an entirely new institute of technology focused on the promising technologies and business models, or at least completely transform the ETH and the EPFL.

Are you talking about information technology?

MV We call it information technology, and that says it all! In the US, this field is called computer science – which has a totally different status. In Stanford and Berkeley, where I studied and worked, the most sought-after fields are electrical engineering and computer science. That's where you find the most students, the toughest selection process and the most money. In our academic environment, by contrast, people tend to turn up their noses at students and professors in these fields. Daniel is a physicist – I would never say anything against them. But computer science is now the most relevant field in the 21st century.

Most of the companies in the Swiss Market Index (SMI) are more than 100 years old. Is that a danger, or perhaps even an opportunity?

DB The industrial landscape in Switzerland is in urgent need of renewal. Look at how fast the world is turning today. The GAFAM [*editor's note: Google, Apple, Facebook, Amazon, Microsoft*] aren't even 40 years old. Not one company from Europe is involved! As a result, we have missed the opportunity for many new jobs. And our traditional companies are increasingly under pressure.

MV More than half of Swiss men and women work in the service sector. This is where the greatest digital disruption is taking place. Escher would warn our insurance companies and banks: "Pay close attention!"

The World Wide Web was created just around the corner from here. What went wrong?

MV Yes, about 40 kilometers from here as the crow flies, at the European Organization for Nuclear Research (CERN) near Geneva ...

DB But then along came Marc Andreessen, a 22-year-old at the University of Chicago. He developed Netscape, the first real web browser, which made the Internet widely accessible. He facilitated the breakthrough of Tim Berners-Lee's invention, the World Wide Web. But this meant that the Internet had left Switzerland.

MV Here we must be quite clear: We are very strong in basic research. Nobody does particle physics better than CERN. But even now, we find it difficult to develop a discovery into a business model.

DB Switzerland has more patents per capita than anywhere else, but we are really bad at innovation output. A patent that doesn't result in something practical doesn't count, in my opinion – it's a dead letter.

You're both very critical. Do you currently also see opportunities for Switzerland?

DB You have to look at history, understand who we are, and then invest heavily in the right things. Information technology is not embedded in the Swiss DNA.

We are good at slow things, but the computer world spins very quickly. We are good at things where you really have to dig deep, such as biotechnology or medical technology. These are fields that suit our DNA.

MV Right now, an era is beginning that could become the golden age for us: Pure information technology is reaching its limits. Much has been fully explored. Now we need to combine it with other fields, with engineering, computer science and physics, as well as with products from the consumer sector. This is known as the Internet of Things. There, we could beat the Americans. But I stand by what I said: The prerequisite is a broad layer of computer scientists. If we only cultivate



Daniel Borel: I plunged into an environment that wanted to reinvent the future.

(68, on the left in the photo) and two colleagues founded Logitech in 1981. The company's keyboards and mice became famous worldwide. Having served as its CEO and board chairman, Borel is now chairman emeritus. In 2017, Logitech generated more than 2.5 billion dollars in sales. Born in Neuchâtel, Borel studied physics (EPFL) and computer science (Stanford). Married and the father of three, he now calls California home.

Martin Vetterli (61) has been president of EPFL since January of 2017. An electrical engineer, he has studied, worked and conducted research at the EPFL and ETH as well as in the United States at Columbia University, Stanford University and UC Berkeley. His research yielded approximately 50 patents that were of benefit to high-tech companies and startups. He was a co-founder of Ares (later Dartfish), a video analysis firm. From 2013 to 2016, he was the president of the National Research Council of the Swiss National Science Foundation. A native of Solothurn, he is married and the father of two adult children.

the traditional disciplines, we will fall by the wayside.

DB Because of its small size, Switzerland has an enormous opportunity. This is particularly true for the EPFL, which is much smaller than its counterparts in the US. The individual departments are supportive of each other and work together. This closeness is unparalleled and amazing. Precisely there, in the transition from one field to another, huge potential lies fallow – for example, between robotics and nanotechnology. Likewise, we survived at Logitech because we brought different things together, without being the best in any one discipline. In Stanford,

which I otherwise praise so highly, they live in silos. Each department has its stars, but there is little interaction.

Mr. Vetterli, you don't consider Silicon Valley a role model for Switzerland.

Why not?

mv Don't misunderstand me. Silicon Valley is great. Entrepreneurs are respected, the best engineers in the world are there. It's very easy to start a company and find talent. It is – at least so far – very international. But as a social model, it can only go so far. Broad sections of the population do not have access to education. I was recently in San Francisco – the social



divide is alarmingly wide. In Switzerland, every man and woman has access to an education of very high quality. We must pay heed to this, because here too a demographic divide is beginning to open.

DB My enthusiasm for Silicon Valley is strongly related to the fact that I find things there that don't exist here, though I would very much like to see them here. In any society, there are only a handful of people who can actually create jobs. They should be treated very carefully. America can do this. At the same time, it's important that the general level of education is sufficiently high – even department store employees need to know something about digital products, or they'll be out of a job. When it comes to education for all, Switzerland certainly does it better.

Mr. Borel, is Logitech still really a Swiss company?

DB “All in one in Switzerland” was never an option for us. Logitech survived only because we looked worldwide for resources. In 1988, I found that competition for us was arising in Taiwan. And so we formed a team in Taiwan. In turn, the 50 engineers who had been doing this work in Switzerland had to develop something of greater value. And in fact, they discovered wireless technology for us and created a new added value.

Despite your global orientation, Swiss flags hang in your factories in China. Why is that?

DB Switzerland has an excellent reputation in China. We were among the very first to extend diplomatic recognition to that country [*editor's note: 1950*] after Mao came to power, and Schindler was the first Western industrial corporation to enter into a joint venture with a Chinese state-owned enterprise [*editor's note: 1980*].

Daniel Borel:

Send young people abroad for two years – that would dramatically enhance their competitiveness.

The Swiss flag is considered a symbol of technology and quality in China, and all our products there are labeled “Think Swiss.”

Speaking of internationality, many successful startup founders come from immigrant families. Steve Jobs (Syria), Elon Musk (South Africa) or Jeff Bezos (Cuba) are just a few examples. What's your explanation for that?

DB They have to fight harder to succeed. That's Darwinism. We see this here as well, at the EPFL: Foreigners win 60 percent of the prizes for the best graduation results.

MV Also, the startups formed here are often founded by foreign students. By the way, when Escher founded the ETH, he started with 60 or 70 percent German professors, and that didn't bother anyone. It's part of Swiss tradition to be open to the outside world.

DB I personally think it's a pity that Swiss politicians, for example, often lack international experience. Few of them have lived abroad for very long. How do they intend to position Switzerland in the EU or in America, or manage our foreign relations? I think, send our young people abroad for two years instead of military service – that would dramatically enhance their competitiveness.

Mr. Borel, Mr. Vetterli, what do you see as “the next big thing”?

DB Artificial intelligence. It will be used everywhere. To be honest, though, I don't know as much about this as Martin does. Do you agree?

MV Yes, that's true, but artificial intelligence is already in use. However, I prefer to call it data science. That term is broader, and ultimately it covers everything that we can do with data – much that is good, but also some that is dangerous. We will be facing many ethical questions, and they will become major societal challenges in this century.

However, you asked about the next big thing. I would say: quantum computing [*Editor's note: computers that function according to the laws of quantum mechanics and are intended to solve certain information technology problems very efficiently*].

This is going to shake up the world, change everything – but I'm not going to tell you just when this will happen (*laughs*). ■

*The Credit Suisse study “Connecting. Entrepreneurial Minds” explores the nature of successful entrepreneurs and concludes that “there is such a thing as an entrepreneurial mind.” Five characteristics are central: an intense passion, a relentless curiosity, a keen understanding of risk, no fear of failure and a drive to question the status quo and bring about change. The conclusion of the study on what motivates company founders: “They care about more than the accumulation of wealth. Rather, they are driven by a restless desire to do better.” [credit-suisse.com/microsites/making-progress-happen/en/the-mindset.html](https://www.credit-suisse.com/microsites/making-progress-happen/en/the-mindset.html)

2. — INFRASTRUCTURE

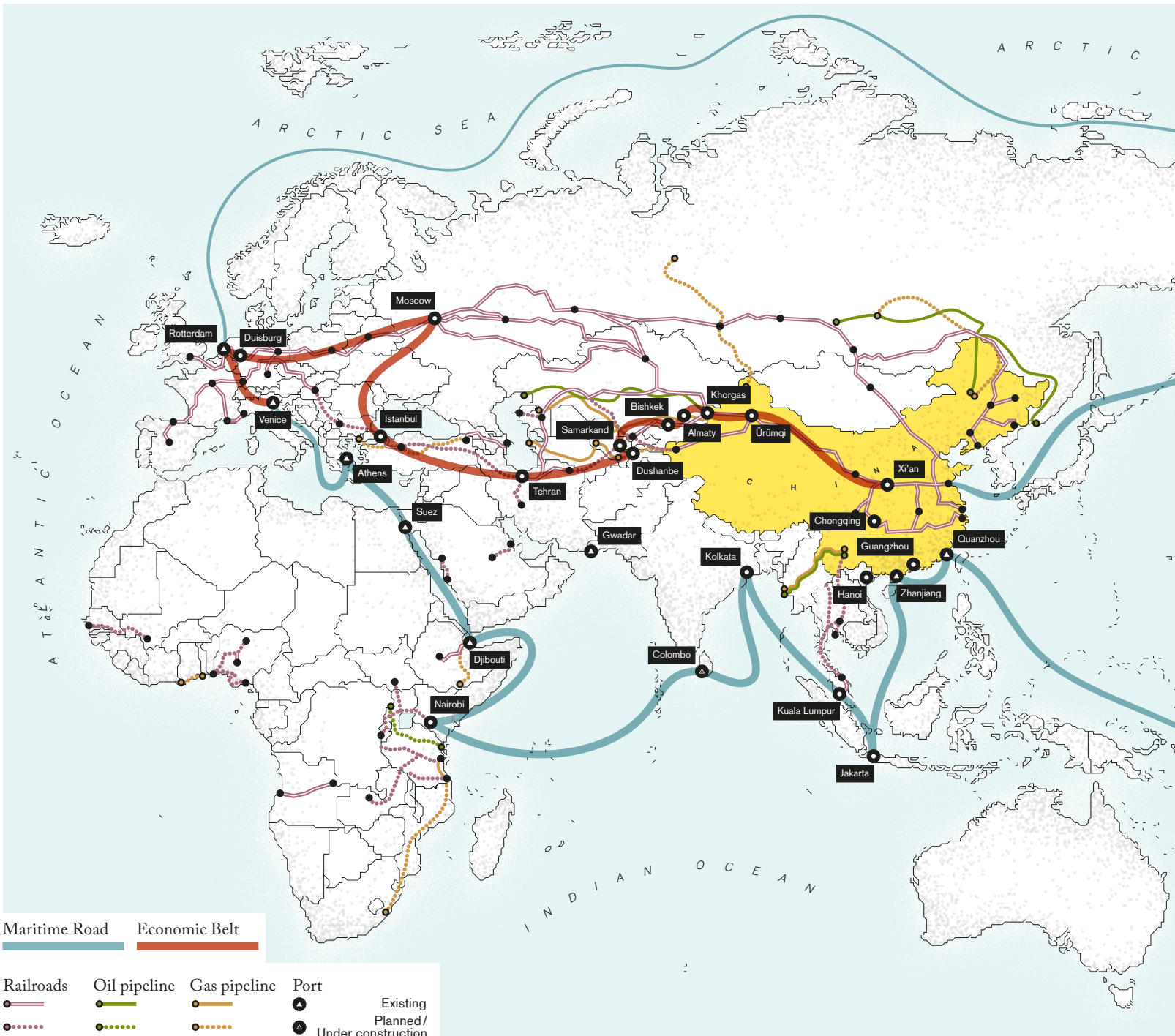
Lanzhou in China, Gansu Province: The new high-speed train is a central part of the New Silk Road.
A park featuring a Parthenon and Sphinx is under construction in the background.



Big hopes,
big fears



The new Middle Kingdom Railways, pipelines, roads and ports will connect China with 70 countries by land and water.



China is bringing the economies of Europe, Africa and Asia closer together with the century's largest infrastructure project. The New Silk Road may bring a surge in growth – and it's inspiring hopes and fears alike.

Text Lars Jensen Photos Davide Monteleone Map La Tigre



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When a country invests four or six or eight trillion dollars to build a network of railways, roads, pipelines and ports connecting half the world, you get places like Khorgas, on the border between Kazakhstan and China. Humans are ill-suited for this treacherous environment between desert and mountains, with temperatures ranging from up to 40° C in the summer to –40° C in the winter.

But the project, which the Chinese government romantically calls the New Silk Road, foresees a gigantic logistics and trade hub in Khorgas, where hundreds of thousands of containers will be loaded from Chinese trains onto Kazakh trains, and vice versa, each year. This transfer is necessary because of the different gauges of the tracks. The trade routes of Central Asia are planned to converge here, in the world's largest dry port (dubbed the “Dubai of the Gobi Desert” by the South China Morning Post), making it possible to travel by rail from Shanghai in China to Duisburg in Germany in the not-too-distant future.

The world is watching the progress of the century's largest infrastructure project – officially titled the Belt and Road Initiative (BRI) – with hope, envy, admiration and fear. It is a visionary undertaking that will connect the national economies of dozens of

countries between China and Western Europe, and it can be viewed as both an economic and political project.

It was only five years ago, in the fall of 2013, that President Xi Jinping first proposed reviving the ancient Silk Road during a state visit to Astana, the capital of Kazakhstan. Already in the second century BCE, China used this network of trade routes to conduct business with the Roman Empire across more than 6,000 kilometers. “We want to unite the world with common values and ideas,” Xi said. China would build modern infrastructure in the underdeveloped states of Central Asia in order to connect western Europe with the eastern coast of China and to provide new opportunities for people who live between the two Eurasian centers of power.

SHIFTS IN ECONOMIC POWER Since then, the BRI authority in Beijing has expanded its sphere of influence so widely that even experts can hardly determine where the initiative begins and where it ends. Take the overland Economic Belt. This new group of modern railway corridors, stretching for tens of thousands of kilometers across Eurasia, has the potential to shift economic and geopolitical power relations





fundamentally over the next 50 years. One example: Today, a computer traveling by ship from Chongqing, a southwestern Chinese city of 30 million residents and a point of departure on the New Silk Road, takes around 45 days to reach Hamburg, Germany. A train could make the journey in ten days. The German economic research institute Ifo projects that the costs of transporting high-end goods from China to Europe could be cut in half, and trade between the regions could increase by 200 billion dollars annually.

And then there is the Maritime Road, which is supposed to expand international sea trade. A chain of ports will connect the Chinese coast with Athens and Venice, by way of Hanoi, Singapore and the Kenyan city of Mombasa. The ten largest container ports in the world are located along this route. There are even plans for an Ice Road, a corridor for ships through the Arctic Sea.

The project's dimensions are gigantic. Germany's Mercator Institute for China Studies has counted the various undertakings with budgets over 25 million

dollars, identifying one thousand different construction projects in 71 countries: railway lines in Belarus, Bangladesh, Ethiopia and Iran; highways in Afghanistan, Vietnam and Indonesia; pipelines in Mongolia, Russia and Mozambique; ports in Djibouti, Azerbaijan and the Ivory Coast; a nuclear power plant in the United Kingdom and around 150 coal-fired and hydroelectric power plants in dozens of countries; investments in financial infrastructure, telecommunications and fiber-optic networks from Georgia to the Philippines.

SEVENTY PERCENT OF THE WORLD'S POPULATION Around 70 percent of the world's population live in countries where the BRI is already active. They generate roughly 30 percent of global gross domestic product (GDP). So far, China has kick-started 900 billion dollars' worth of projects through the China Development Bank and the Silk Road Fund. Credit Suisse Research estimates that in the coming five years it will invest another 300 to 500 billion dollars in

By sea: The new port of Aktau on the Caspian Sea, center of the Kazakh oil industry, is supposed to become a logistics hub.

62 countries. It's impossible to estimate how much China will ultimately spend on the BRI – one trillion dollars, or eight? Several years ago, Xi Jinping spoke of five trillion.

Sympathetic observers, like the state media in the former Soviet republics, rave that China is selflessly bringing progress and prosperity to underdeveloped countries. Critics – including US secretary of state Mike Pompeo and French president Emmanuel Macron – see the BRI as a broad assault on Western values that aims to disrupt geopolitical power relations, transform as many nations as possible into Chinese satellite states and establish the renminbi as a key currency.

Both interpretations probably hold a kernel of truth. But in order to understand China's motives for the belt initiative, we must first look within the country itself. Xi Jinping has brought China's development goals forward by 50 years. By 2021, no Chinese citizens are supposed to be living in poverty. At the moment, 40 million still do. By 2035, all Chinese are supposed to enjoy the same living standard as Western Europeans and live in one of the world's most innovative nations.

GROWTH THROUGH INFRASTRUCTURE Five years ago, the Chinese recognized that they could reach these goals only by finding new markets for the industrial surpluses of their coastal cities. The idea of connecting impoverished regions of western China with neighboring countries to the west was a logical next step.

Over the past thirty years, China has learned that nothing promotes economic and social development more enduringly than effective, modern infrastructure. The economists from Credit Suisse Research also presume that the initiative will unleash a surge of growth. Over the next five years, they estimate that the infrastructure project will boost the GDP of involved countries by an additional 4 percent – or around 240 billion dollars.

The importance of good infrastructure for economic development is demonstrated, not least, by the history of Alfred Escher in Switzerland (see p. 4). Infrastructure can attract foreign investment, create jobs and prosperity, facilitate international trade and spur economic growth. In a sense, bold projects like the construction of the railroad network and Gotthard tunnel catapulted Switzerland into the modern age in the second half of the 19th century.

Pakistan has planned more BRI projects than any other country – bridges, roads, power plants, ports and railways totaling 62 billion dollars. The belt initiative's critics and supporters both point to Pakistan's development as supporting evidence for their position. Ten years ago, the country did not have functional north-south transportation routes, a modern container port or enough power plants to provide reliable electricity.

Seventy percent of the world's population live along the New Silk Road.

THE RISK OF DEBT Thanks to the Chinese, Pakistan is experiencing a powerful leap in development and economic growth that will reach 6 percent this year. But at the same time, government debt has risen by one-third, to 70 percent of gross national product (GNP). According to the Center for Global Development in Washington DC, Pakistan is one of eight nations now on the brink of insolvency because of costly BRI credits – alongside Mongolia, Sri Lanka, Tajikistan, Kyrgyzstan, Montenegro, Laos and the Maldives. Fearful of taking on too much debt, Malaysia recently suspended projects for two gas pipelines and a railroad, which would have connected the country's eastern and western coasts.

Christine Lagarde, Managing Director of the International Monetary Fund (IMF), recently warned China against financing unnecessary and unsustainable projects in countries with a high debt burden. This could lead, she remarked at a conference in Beijing, "to a problematic increase in debt, potentially limiting other spending as debt service rises, and creating balance of payments challenges." She urged the Chinese to ensure "that the Belt and Road Initiative only travels where it is needed."

But the selection of projects has often been difficult to comprehend – including a highway to nowhere, which has plunged Montenegro into a debt crisis, and bridges on the Maldives that will be underwater within a few decades. So far the BRI authority has not published any cost-benefit calculations, and there are also no official tendering procedures. The European Union and United Nations regularly complain that the criteria for lending are not transparent. And, as always with billion-dollar projects, corruption is a fundamental risk.

The example of Myanmar, criticized in the West over accusations of serious human rights violations against the Rohingya people, shows how strongly human rights – and also environmental – concerns are intertwined with international lending.



POLITICAL DISPUTES In the end, the success of the Belt and Road Initiative will also depend on how well China manages the political disputes that the initiative has created.

India has withdrawn from all BRI projects because the new Pakistani corridor runs through a part of Kashmir that India claims for itself. India is likewise skeptical of Bangladesh's participation in the BRI, which began in October. A port and airport complex in Sri Lanka is especially problematic. And not just because of the corruption in setting up the project, which cost the Sri Lankan president his office. Sri Lanka was not able to service its billion-dollar BRI loan, and it signed over the complex in Hambantota to two Chinese state-owned companies. India's fear is that a military base could be built there. In Central Asia, meanwhile, Russia feels threatened by Chinese expansion because the Chinese are now realizing projects that the Russians had been promising for decades.

Ironically, China will be able to acquire greater global influence precisely because of the withdrawal of the United States under Donald Trump from the Trans-Pacific Partnership free trade agreement. In February, 33 Latin American countries announced their intent to join the BRI.

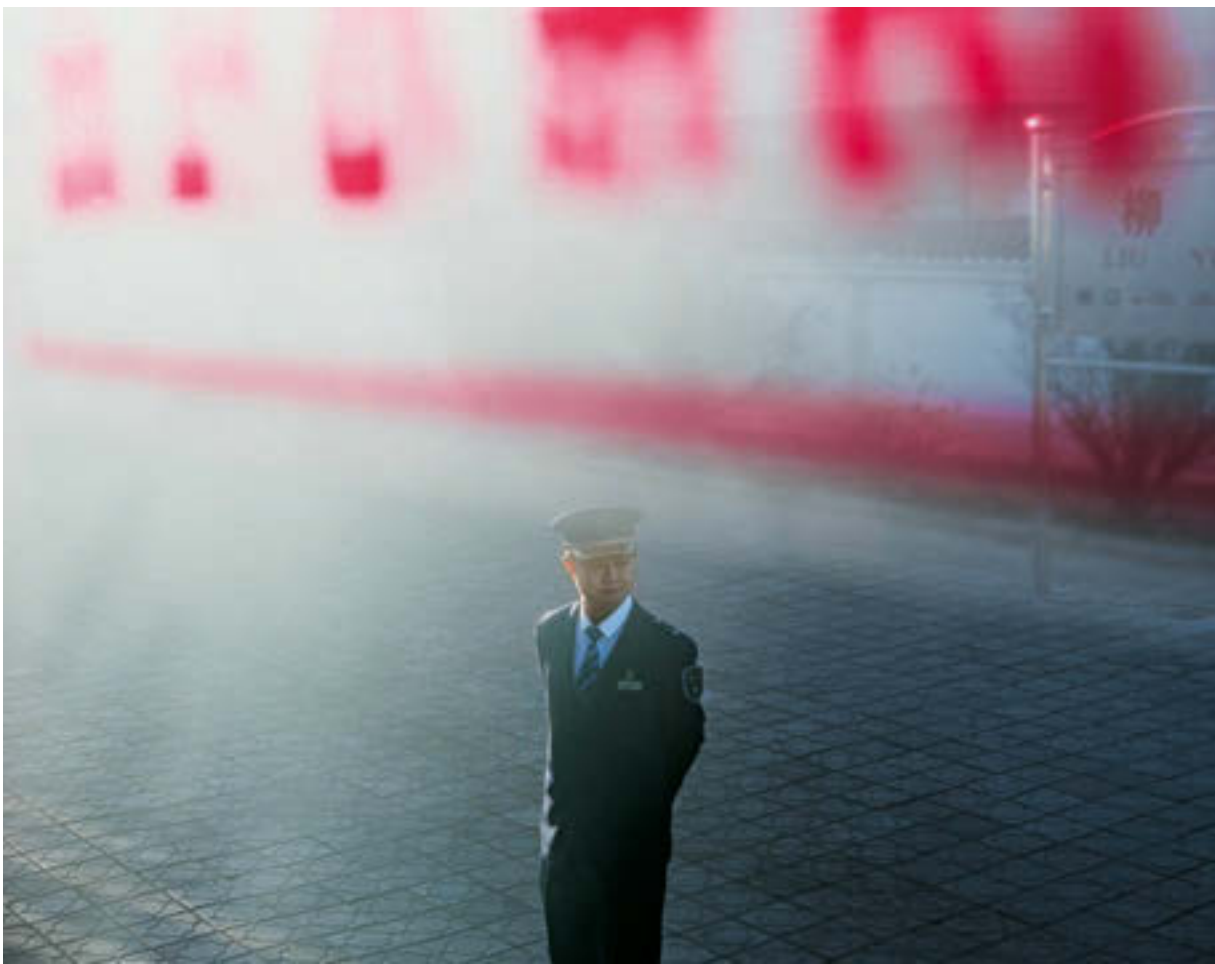
And the Chinese learn quickly. They opened the Belt and Road Initiative to all investors, including Western banks. In the future, they have promised to orient themselves more closely towards Western lend-

ing practices and to award more contracts to local companies. During the construction of a railway line from Nairobi to Mombasa, for example, the Chinese hired 25,000 Kenyans; the Chinese operating company is training dozens of Kenyan locomotive operators – and passenger numbers have exceeded all expectations.

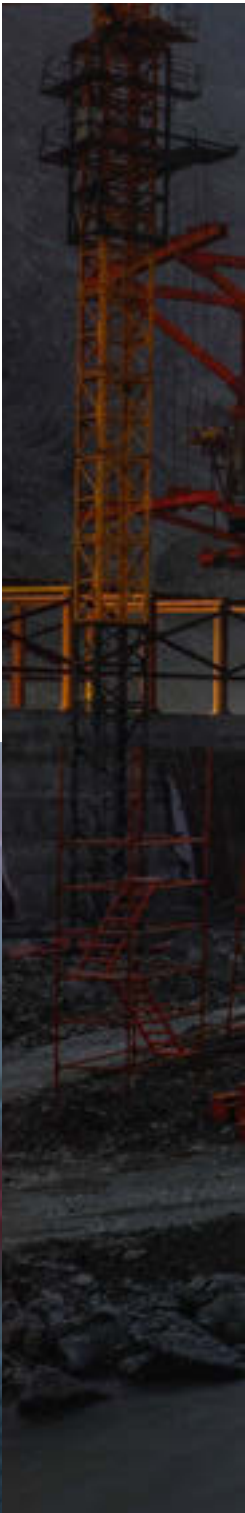
If the Belt and Road Initiative leads to more such projects, it could become an international success. ■

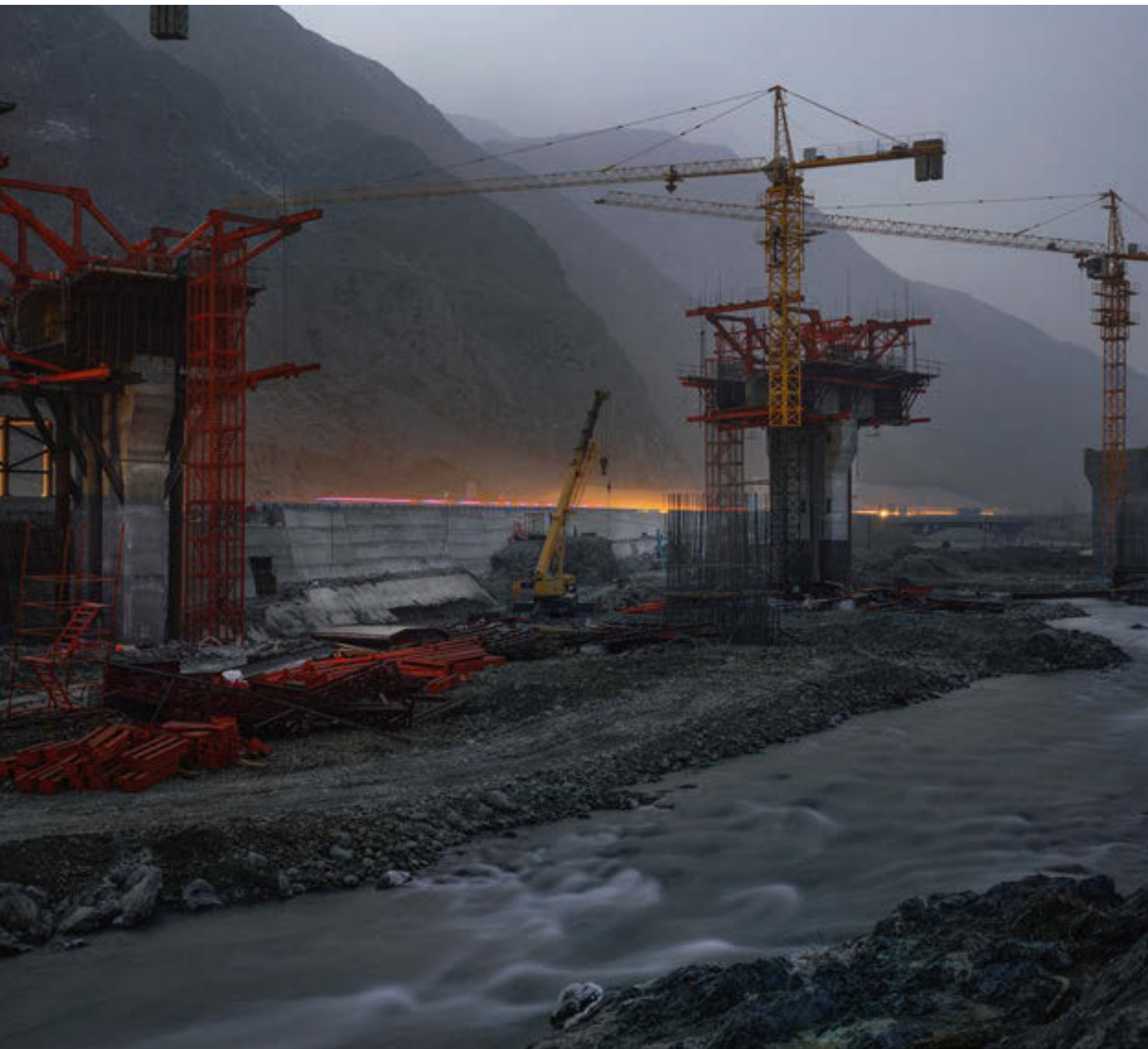
Lars Jensen has long been fascinated by infrastructure. His work has appeared in the Frankfurter Allgemeine Zeitung, brand eins and the Süddeutsche Zeitung.

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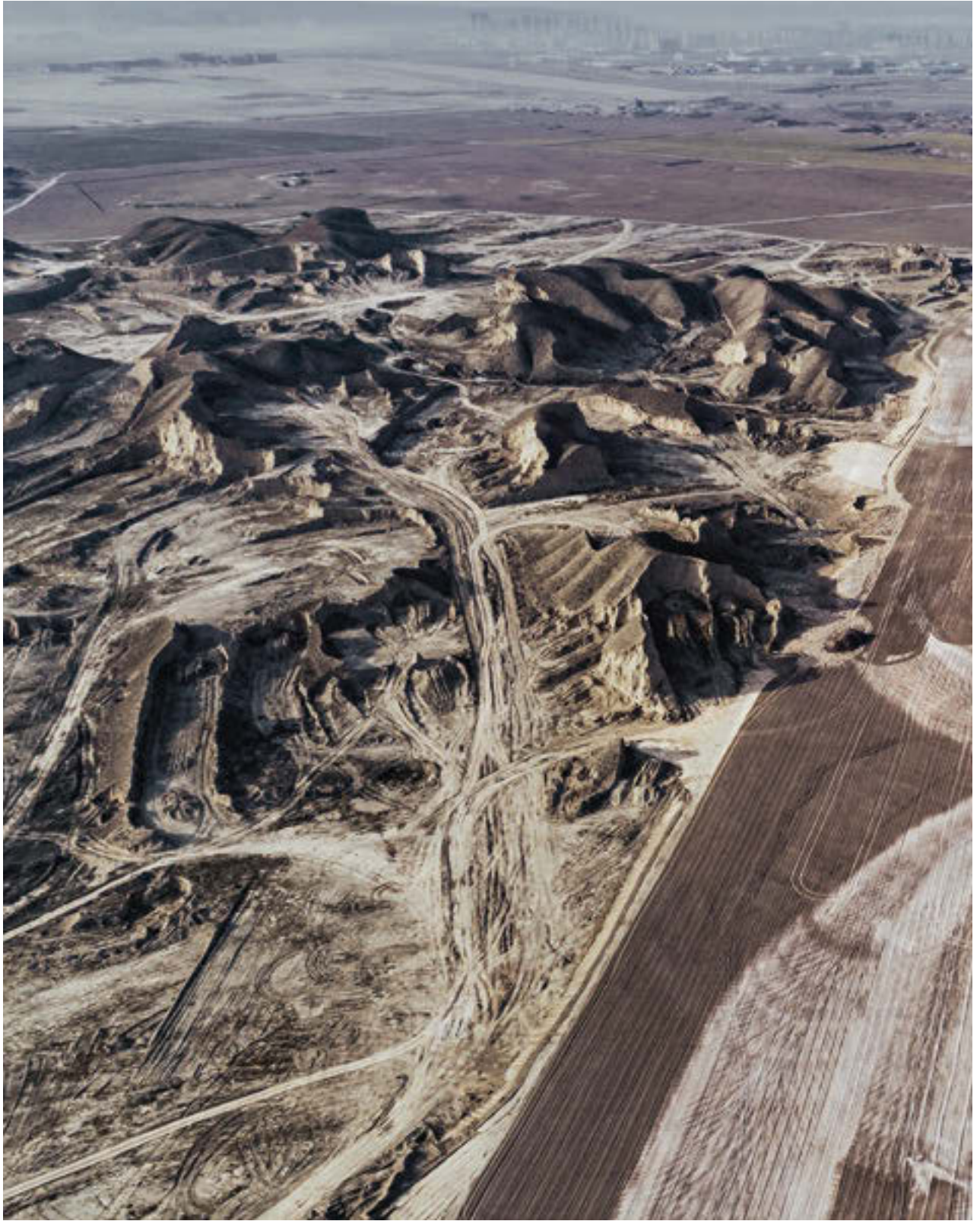
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- 1 On the way from Lanzhou to Ürümqi: view from the train.
- 2 By land: Tens of thousands of kilometers of modern railroad lines are under construction – including here, in the Turpan region in western China.

Lanzhou New Area: By 2030, the new special economic zone is expected to generate over 40 billion dollars annually.







Where the traffic never jams

A visionary project aims to move freight transport to a place it can roll with no delays: underground.

By Helene Laube Illustration Alex Walker

Geneva Lausanne

In 2017, 25,853 hours were spent in traffic jams on Switzerland's national highways. As in years past, the Swiss Federal Roads Authority has named traffic congestion as the main cause of the chaos. The national highways carry 70 percent of heavy freight transport, and the trend is climbing. One of the consequences of this gridlock: More and more goods are arriving later and later at their destinations.

In order to address the increasing transportation of goods, the plan is to move it to a place where it will have a much smaller impact on people, the environment and traffic – namely, underground. Equal parts innovation and ambition, a logistics system called Cargo sous terrain (CST) has been in the works since 2010 and is designed to transport and temporarily store freight below the earth's surface.

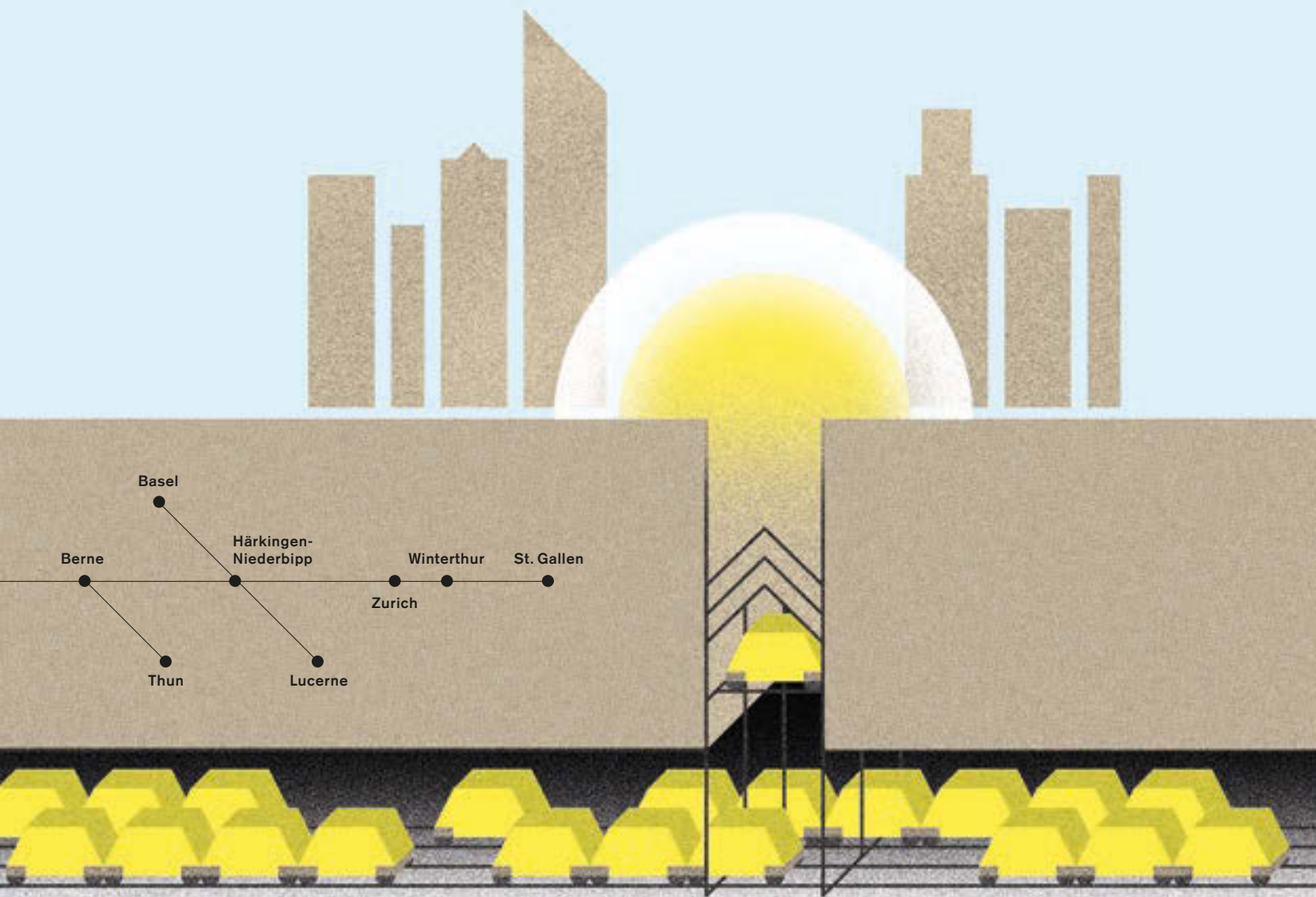
Almost 500 kilometers long, completely automated and operated using renewable energy, the tunnel network will extend along the routes most plagued by traffic jams, stretching from Geneva to St. Gallen and from Basel to Lucerne, with an offshoot from Berne to Thun. Packages, cargo and bulk materials will be transported 20 to 40 meters below ground, around the clock. CST will also become Switzerland's largest warehouse, with one million square meters of space underground.

The vision looks like this: Goods will be transported on pallets or in containers on unmanned and climate-controlled,

computerized transport vehicles. The vehicles travel along a six-meter wide, three-lane tunnel at a constant speed of 30 kilometers per hour. They are able to navigate freely within the lanes, connect to trains, and enter and exit the traffic flow. Installation of a suspended monorail is planned beneath the tunnel's roof where smaller freight units can be transported at 60 kilometers per hour.

HUBS ON THE EDGE OF TOWN Over 80 transfer points will be built along the route for loading and unloading industrial and trade goods. These hubs will be constructed on the outskirts of cities, preferably near existing logistics centers. Pallets and containers can be picked up or transferred to the underground transportation system using elevators. Distribution over the final kilometers can be taken over by zero-emission electric vehicles like bicycles, small delivery trucks, scooters or someday even drones or self-driving cars using sophisticated software to follow an optimized route. This city logistics concept and the IT platform behind it will already be available for short-range distribution within the cities even before the first section of the CST tunnel system is finished, says CST spokesperson Patrik Aellig.

The project was initiated by Swiss companies Migros and Manor. Like many other businesses, these companies



depend on timely and efficient deliveries. A project group including partners like Coop and Manor was established in 2011, and 20 businesses in Basel founded the CST Foundation in 2013. This foundation was later converted into a joint-stock company in March 2017 in order to attract investors. By doing so, CST was also complying with a Federal Council guideline that required it to convert to a joint-stock company as one of several conditions for initiating the necessary legislation to regulate underground freight transport. The government aims to support the project with this special law, and work on drafting it will begin soon.

PRIVATE-SECTOR PROJECT Its transformation to a joint-stock company also allows CST to take on investors who will provide the private funds to realize the project, the cost of which is estimated at a total of 33 billion Swiss francs. Along with Migros and Coop, the 16 major shareholders holding a seat on the board of directors include SBB Cargo, Post, Mobiliar, the German software group SAP and the Californian start-up Virgin Hyperloop One. Together with Swiss and international investors such as Credit Suisse, European infrastructure developer Meridiam and Dagong Global Investment Holding from China, the company has secured investments of 100 million Swiss francs. The massive project will be realized in sev-

eral stages, and construction is set to begin in 2025. A first, 67-kilometer long section of tunnel will connect the logistics hub of Härkingen-Niederbipp to Zurich by 2030. Price tag: 3 billion Swiss francs.

If everything goes according to plan, the entire network may become operational in 2045 when it will be accessible to all companies. Switzerland will then have access to an automated, digitized comprehensive logistics center which, according to CST, “will promote the competitiveness of its economy and quality of life over the long term.”

The number of heavy-duty trucks will drop by 40 percent by moving freight transport underground. Freight traffic could be 30 percent lower in cities. This off-ramp from traffic jams would boost the security of supply, because punctuality is more important to logistics than speed. “Goods have to move dependably and therefore predictably; it doesn’t matter if they move slowly,” says Aellig.

Voters seem to support the visionary project. In the Credit Suisse Progress Barometer (starting on page 55), the call for Switzerland to move traffic (not only freight) underground enjoys the broadest support. ■



The castles of Bellinzona have witnessed considerably more day-trippers.

Growth at the end of the tunnel

Trains have been traveling through the Gotthard Base Tunnel for two years now. The initial results show that the anticipated boost in growth is likely to become reality.

By Sara Carnazzi Weber

On December 11, 2016, the first scheduled trains rolled through the new Gotthard Base Tunnel, the world's longest tunnel. The 57-kilometer long project has cut up to 40 minutes off of the travel time between German-speaking Switzerland and the Ticino region. After the Ceneri Base Tunnel opens in 2020, it will only take around an hour and fifty minutes to travel from Zurich to Lugano, and just under three hours to Milan.

Thanks to this enormous investment, Ticino has inched closer to the economic centers of German-speaking Switzerland and northern Italy, promising a potential growth boom. New customers, investors and more tourists could usher in a new era as economic drivers for the region, along with the further solidification of its role as a logistics hub situated at a critical trans-European transportation corridor.

The first indications of this trend can, in fact, already be identified. Passenger volume has climbed by 30 percent. Every day, 11,000 people already travel on the north-south axis, and SBB Swiss Federal Railways expects that number to grow to around 15,000 passengers by 2025. Last

year, Ticino's tourism industry profited greatly from these higher flows of passengers. The canton south of the Alps saw a tangible increase in overnight stays (+7.7 percent), particularly among Swiss guests (+9.3 percent). The two previous decades had seen a loss of around a quarter of overnight stays. Even though the positive trend did not continue in the first six months of 2018, the number of overnight stays is still higher than in 2016.

THE GATEWAY TO TICINO Bellinzona is rebranding itself as the gateway to Ticino – or the “Porta del Ticino,” as its newly renovated train station is named. A growing number of day-trippers already pass through here every day, and it is positioned to become an inter-modal mobility hub, serving as the starting point for tourists to discover the whole canton.

In recent years, this city and the entire region have been experiencing stronger economic growth than in the past. The real estate sector, in particular, has experienced a genuine boom. For some time now, residential housing has been added at a rate above the Swiss average and the figures seen in other areas of Ticino. Real estate prices have increased by around 70 percent in the new millennium.

Still, it is not easy to say just how many of these changes can be attributed solely to the new transportation axis through the Gotthard. Thanks to lower prices and ample land for new construction, the Bellinzona region has benefited significantly as demand has shifted away from the relatively expensive metropolitan areas of Lugano and Locarno. Especially the prospects of improved mobility within the canton after the opening of the Ceneri Base Tunnel are likely to have been the deciding factor for some in choosing to relocate to the Bellinzona region. ■

Sara Carnazzi Weber is Head of Swiss Sector and Regional Analysis at Credit Suisse.

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“Our wealth
depends on
access to foreign
markets”

3. ————— BANKS

Credit Suisse Chairman Urs Rohner explains what the Swiss financial center needs to maintain its leading position, how he sees the future of globalization and what he finds particularly fascinating about Alfred Escher.

Interview Manuel Rybach

A professional portrait of Urs Rohner, a middle-aged man with grey hair and glasses, smiling. He is wearing a dark blue pinstripe suit jacket over a white shirt and a patterned tie. The background is a dark, textured grey.

Urs Rohner (58) is Chairman of the Board of Directors of Credit Suisse Group. Prior to his roles as the bank's Chief Operating Officer and General Counsel with a seat on the Executive Board, he was CEO of German media company ProSiebenSat.1 and, before that, partner in a large Zurich law firm.

T

This Bulletin special issue is also a call for people to make courageous decisions. What was the most important decision of your career? There was no single decision that was more important than all the rest. That said, I did make a number of decisions that had a big influence on my career. Back in 1999, it took a certain amount of courage to leave the leading Swiss law firm where I was a partner in order to become CEO of one of Germany's largest media companies.

And what has been your most important decision in your current role as Chairman of Credit Suisse Group? The change of strategy in 2015 was definitely a key decision that had far-reaching consequences. I had previously already outlined the basis for it. With a new CEO and the right team on board, we were then able to start implementing it in 2015.

You have been at Credit Suisse since 2004 – first as a member of the Executive Board, then on the Board of Directors and, since 2011, as Chairman. How has banking changed during that time? Banking has changed fundamentally over that period. At Credit Suisse, we don't run

any of our businesses today in the same way as we did in the past – for a variety of reasons. The volume of regulations has increased enormously in the wake of the global financial crisis. Financial regulators around the world have taken measures – partly under huge public pressure – to ensure that a crisis of that kind cannot reoccur. However, the most fundamental change has, of course, been driven by digitalization. It is transforming the expectations and behavior of our clients – and that has a direct impact on our business model.

In what respect?

There has been a marked acceleration of digitalization in recent years. We can see this in the client interface, but it is especially visible in the case of internal processes, which run faster and are less prone to errors. This all leads to enhanced capital efficiency.

Digitalization has prompted a fintech boom, but over the years the finance industry has not experienced the kind of disruption seen in the taxi industry with the arrival of Uber. Why is that? I think there are two main reasons. First, there is a tendency to underestimate the level of expertise needed to provide clients with a comprehensive and compliant offering. After all, banking is not only about having financial market experience; industry players must also have the ability to implement complex national and international regulatory frameworks. That also has an impact on scalability, which is a key driver of most digital business models. Second, the protection of client data is an absolutely core aspect of successful banking and goes hand in hand with trust and security. Many people don't believe that internet companies, whose business models are ultimately based on the use of client data, can guarantee that client information is protected.

It's a decade since the start of the financial crisis. Where does the Swiss financial center stand today? From a Swiss perspective, the introduction of the global standard for the automatic exchange of information (AEI) in tax matters was, of course, a milestone. It transformed the wealth management

business here in Switzerland. The Swiss financial center has had a challenging time. The global financial crisis, the euro crisis, the low interest rate environment, the transition to tax transparency and stricter regulations are just some of the topics that have shaped the last decade. The financial center has faced up to these challenges and overcome numerous structural changes: Banks have reduced the size of their balance sheets and strengthened their capital base. An international standard – the AEI – was introduced to regulate tax matters, investor protection was strengthened and further regulations were adopted. Swiss banks were very disciplined in their implementation of these new rules, despite the considerable cost and effort involved. They are now in a position to actively develop their business further and to concentrate on their expertise in wealth management – which is what they are doing.

What do you see as the main challenges for the Swiss financial center?

It is critical for the Swiss financial center to defend its position as a leading hub for the global management of private assets. On the one hand, it needs to maintain this position vis-à-vis clients in Europe, where the level of wealth remains high and should continue to grow, according to our forecasts. On the other hand, Swiss institutions have long been active in the Asian growth market and are therefore well positioned to profit from its expansion. The Swiss financial center can also capitalize on its position in the area of sustainable finance – i.e. sustainable investing that takes account of environmental, social and governance criteria.

Global free trade has come under pressure recently due to protectionist tendencies. Geopolitical risks have increased. How should the financial center address those risks?

Growing protectionist tendencies ultimately lead to isolation. This has become most evident in the case of the UK's Brexit vote. A similar trend has also recently become visible in the US, where a protectionist attitude has manifested itself in the country's trade policy. At the same time, we are seeing international efforts to establish global standards – the finance industry is a good example of that.

At Credit Suisse, we don't run any of our businesses today in the same way as we did in the past.

But globalization will not necessarily continue to develop in the way it has in the past. Both politically and in the area of trade, regional centers are emerging that will have a major influence on developments in the respective regions in future. It will be crucial both for Switzerland and for Credit Suisse to rapidly find their bearings and to adopt a smart position in this new landscape.

If Switzerland can't achieve that, what would be the worst-case scenario? As a small country with a major export economy, Switzerland is reliant on free, rules-based global trade. Our wealth depends largely on access to foreign markets, meaning that if global trade were to be severely hampered, it would have a significant impact on Switzerland. Similar tendencies are also visible in the banking sector. Although – or indeed because – digitalization simplifies the provision of cross-border services, many jurisdictions are placing new barriers in the way of those services. Some measures are designed to protect clients and are therefore justified. In the case of others, you have to ask whether they are not primarily aimed at isolating markets – ultimately harming all parties.

The relationship between the EU and Switzerland is very tense at present. It appears likely that a framework agreement will not be concluded in the near future*. What would be the best outcome for the Swiss economy and the Swiss financial center?

Having access to foreign markets is a core factor determining Switzerland's success as a business location, with access to the EU's internal market being of particular importance. We need stable and cordial relations with our most important trading partners. The bilateral agreement

framework that is currently in place with the EU has proved effective. The bilateral approach should therefore be pursued and, where necessary, adapted and expanded.

We talked before about the change of strategy at Credit Suisse: When will the restructuring process be completed? We are now in the third and final year of our restructuring program. At first, the media in particular doubted that we would achieve our goals, but it is now clear that our strategy is working, and we are performing well across all areas of our business. We can therefore be very satisfied with what we've achieved so far – although that is no reason to rest on our laurels. We're only at the beginning of the future development of our Group.

How long will there continue to be two big banks in Switzerland? As far as Credit Suisse is concerned, I am convinced that we are well positioned with our strong Swiss roots to continue operating successfully in our home market and also globally.

Credit Suisse does a lot of business with traditional family-owned companies and also with young firms and a new generation of entrepreneurs. What is your experience of working with millennial entrepreneurs? Do they have a different mentality to the older generation?

Are they more willing to take risks, for example?

I don't think you can describe millennials as generally having a bigger risk appetite. However, they are well qualified, have a tech-savvy lifestyle and have grown up with the internet and mobile communications. This makes it easier for them to be globally connected and to develop

*This interview was conducted on September 24, 2018.

other business models. If you think about the most successful companies of recent years – Amazon, Google, Facebook and Alibaba – you see that they are based on classic entrepreneurial spirit combined with a business model that would have been inconceivable without digitalization.

What are Switzerland's strengths when it comes to founding companies that belong to the new economy? Dynamic, growth-oriented entrepreneurship requires specific know-how, a well-qualified workforce and political stability. Switzerland has a successful system of professional training, where universities, companies and the state cooperate effectively. This public/private partnership has already given rise to many successful companies. It's up to us to ensure that this continues.

It is 162 years since Credit Suisse was founded. In which areas of business does the bank's age place it at a specific advantage?

With its long tradition in wealth management, Credit Suisse enjoys a high level of trust in Asia in particular – but also in other regions. We are especially proud of our heritage as the Bank for Entrepreneurs, which is inspired by our founder Alfred Escher, a true visionary who made things happen. This still shapes our business today.

What fascinates you most about Escher? He was a visionary who had entrepreneurship in his blood. He spurred on the development of the Swiss rail network and, with the construction

of the Gotthard railway, took on projects in the face of resistance that many people thought impossible. Credit Suisse was heavily involved both financially and logistically in connecting the north-south axis. The bank has been inextricably linked to Escher's landmark construction ever since. The Gotthard railway made a major contribution to Switzerland's prosperity at the time, as did Credit Suisse – which has continuously shown that it assumes its responsibilities beyond banking and still does so today. A properly functioning infrastructure remains a core factor and an important economic driver – especially for trade. ■

Alfred Escher was a
visionary who had
entrepreneurship in his blood.





DRIVING TRANSFORMATIONAL CHANGE IN EDUCATION

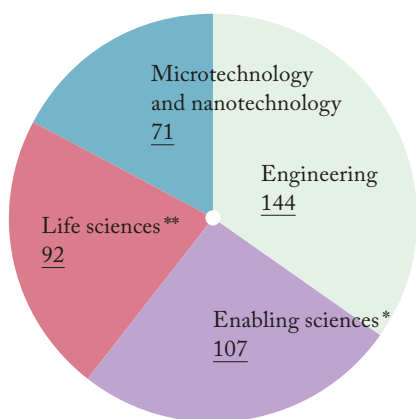
Since 2005, Credit Suisse and Room to Read
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generational change through education across Asia and Africa.



We envision a world in which all children can pursue a quality education that enables them to reach their full potential and contribute to their communities and the world. We are creating long-term and lasting change through Room to Read's programs. **LEARN MORE AT WWW.ROOMTOREAD.ORG**

The best of both worlds

How can the government encourage innovations without distorting competition? By creating a stronger link between business and research, writes André Kudelski, entrepreneur and president of Innosuisse, who is no stranger to either.



Approved requests by funding area, 2017
in absolute figures

*Enabling sciences: e.g. IT, economics / **Life sciences:
From medical technology to agriculture Source: 2017
Annual Report of the Swiss Commission for Technology
and Innovation CTI (Kommission für Technologie
und Innovation KTI (currently: Innosuisse)).

We live in a globalized and highly networked world. When the topic is innovation, thinking only in terms of regional categories is no longer enough. The key question for countries is not only whether individual businesses can be innovative, but also what return on investment can be generated at a national level from the funds that are directly or indirectly spent on promoting innovation.

For all intents and purposes, what we are seeing right now is an innovation arms war. For many countries, this is among their top priorities. The rapid growth of private or public-sector investments made in some countries is, in turn, forcing competitors to increase their own spending on innovations in order to maintain a balance.

But such a massive infusion of capital does not solve all of the problems. Every government intervention distorts competition, at the product level as well as in terms of the ability of companies to attract talent. Therefore, it is critical that government involvement respects the overall well-being of the country and its economy and does not arbitrarily distort competition.

FLEXIBLE SMES, TOP-NOTCH RESEARCH In Switzerland, there are two essential aspects to innovation policy that have to be taken into account.

The first is the country's economic structure, which is based primarily on small and medium-sized companies. SMEs represent a significant part of our gross domestic product, they

are our most important employer and, for the most part, they are able to adapt quickly to economic developments.

The second aspect is Switzerland's de facto status as an academic superpower. Not so much due to the absolute size but because of the quality of its universities and research institutes, which are among the best in the world. Sharing these research findings with companies – SMEs most of all – represents a genuine opportunity for our country.

And yet we have to be more pragmatic when it comes to our ability to transfer this research and to do so more quickly than the rest. In fact, if you look at the innovations achieved on the other side of the Atlantic over the last few decades, these are often based on research findings developed in Europe. Therefore, it is critical that our country and its businesses benefit from the research taking place here in our colleges and universities.

INNOSUISSE AS A CATALYST This is the thinking behind Innosuisse, the Swiss Innovation Agency. One of our main responsibilities is helping businesses, most of all SMEs, to get innovative projects up and running by giving them access to the research taking place at the universities.

Innosuisse facilitates this cooperation and contributes to the financing of such projects (see chart on page 46), assuming up to 50 percent of the costs. However, its involvement is limited to project costs incurred at the research institutes at the universities. There are those who lament the lawmakers' decision limiting our involvement to universities and public research facilities. Yet, it is not the task of Innosuisse to subsidize private-sector businesses. Rather, we aim to create an incentive for academic research institutes so that they have a reason to factor in the needs and requirements of the SMEs in the work that they do.

In this regard, Innosuisse sees itself as a catalyst to stimulate the university sector, providing additional funding and kindling its interest for the economic impact of the research. Without a doubt, Innosuisse's intervention model – aimed at stimulating collaboration between business and university research – is more efficient than giving the money only to businesses. That doesn't mean that complementary models aimed only at benefiting businesses cannot be conducive as well.

For instance, the government plays a key role in funding risky but promising innovations. The private sector is not always able to finance projects like these, as it is frequently focused on short-term returns on investment. And yet these

kinds of innovations are critical for our country's future. The government can and must play an important role here, one that extends into an area beyond the framework that the lawmakers have foreseen to date.

CALCULATED RISK MANAGEMENT Another aspect to be considered in innovation policy is calculated risk management. People are willing to accept a relatively modest return on a low-risk project. However, there are investments that have an extraordinary potential for returns should they succeed. Precisely such projects also tend to be especially risky, whether that risk is related to technology or the many uncertainties associated with the development of the market. Funding

Those not willing to take on risk will be passed by.

projects like these is essential because it is the only way to help such ambitious projects succeed rather than regretting the ones that failed.

Sooner or later, those unwilling to take on risk in order to succeed will be passed by and will have to admit to taking a risk that they just couldn't afford. This principle applies to both individuals and businesses – and to countries as well. ■



André Kudelski (58) is the president of Innosuisse, the Swiss Innovation Agency. Innosuisse distributed 203.2 million Swiss francs in grants in 2017. André Kudelski, an engineer, is also the CEO and Chairman of the Board of Directors of the Kudelski Group, a technology company with revenue of one billion francs (2017).

As the bank for entrepreneurs, Credit Suisse is involved in Switzerland's innovative landscape in a number of ways, among them as co-founder of the Swiss Entrepreneurs Foundation (SwissEF). SwissEF, which relies exclusively on private funds, is under the patronage of Federal Councillor Johann Schneider-Ammann. Its aim is to provide support to start-ups and entrepreneurship in Switzerland and to improve the basic conditions for the commercialization of innovative technologies. After completion of the approval process, at least 250 million Swiss francs will be raised for the fund behind this. The first investments in young businesses are planned for the first half of 2019. swissef.ch

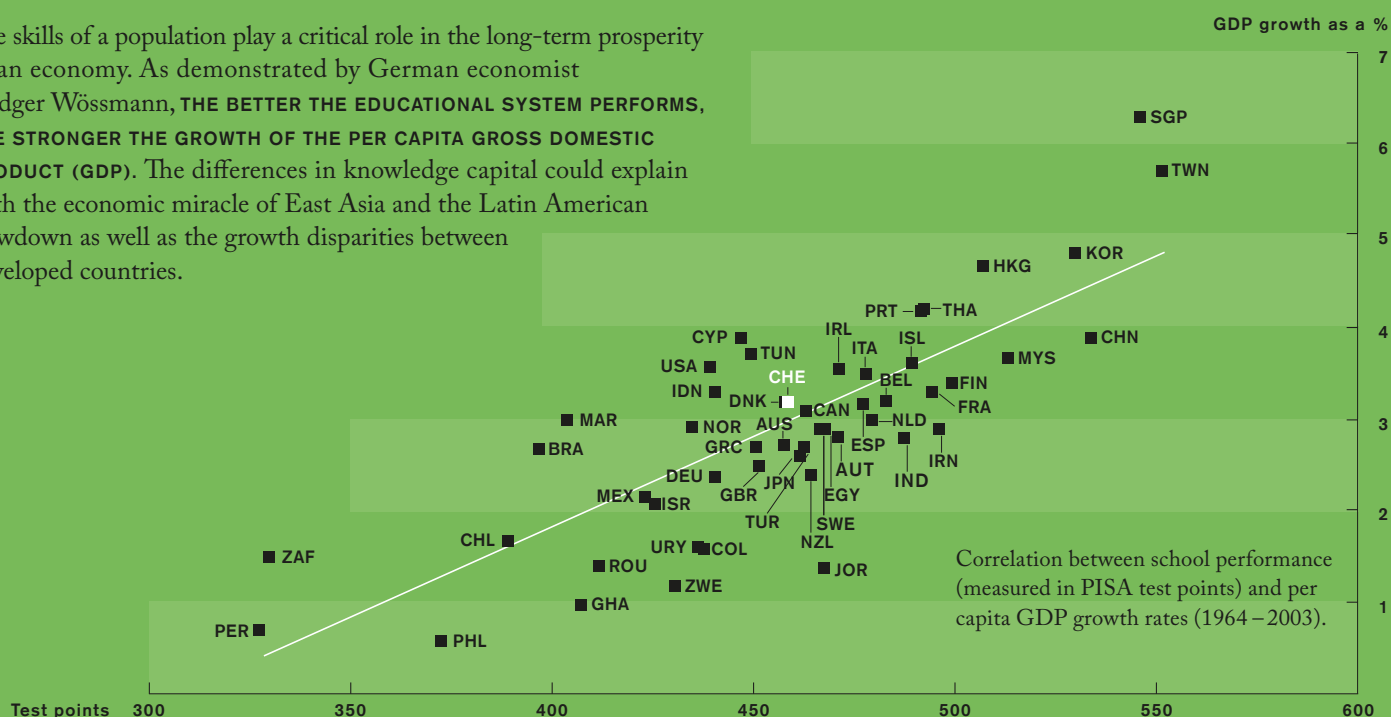
On the value of knowledge

Text Daniel Ammann Illustrations Toni Halonen

4. ————— EDUCATION

Long-term prosperity

The skills of a population play a critical role in the long-term prosperity of an economy. As demonstrated by German economist Ludger Wössmann, **THE BETTER THE EDUCATIONAL SYSTEM PERFORMS, THE STRONGER THE GROWTH OF THE PER CAPITA GROSS DOMESTIC PRODUCT (GDP)**. The differences in knowledge capital could explain both the economic miracle of East Asia and the Latin American slowdown as well as the growth disparities between developed countries.



The “girl effect”

Educated girls are the key to development. Not only does their income increase **BY UP**

TO 25 PERCENT PER YEAR OF SECONDARY SCHOOL COMPLETED, as reported

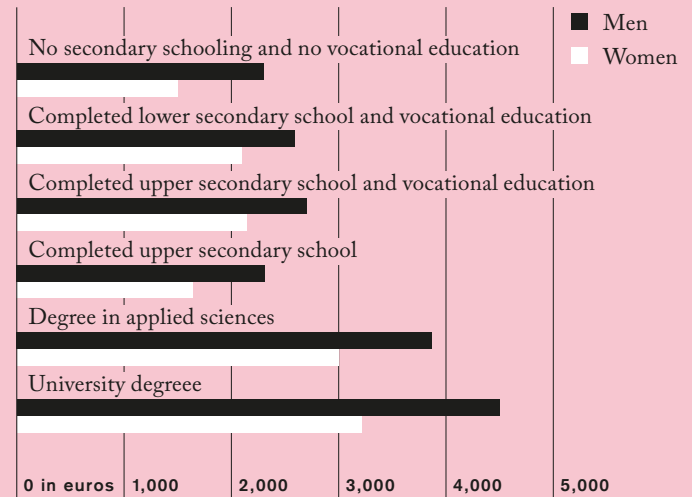
by the World Bank in 2015, they also have fewer children who are, in turn, healthier and

better educated. GDP increases by 0.3 percent for every percentage point rise in schooling rates for girls.



In 2018, Credit Suisse is celebrating 10 years of its Global Education Initiative. credit-suisse.com/responsibility/education

Higher income



Empirical labor market studies have shown **THAT WITH EACH YEAR OF EDUCATION, INCOME LATER IN LIFE** increases by 7 to 10 percent. In Germany, for instance, the average income of college graduates is around twice that of adults who did not finish secondary school and have no vocational education.

Famous autodidacts

Formal training is not the only way to get an education. Some people educate themselves.

CAROLINE HERSCHEL (1750–1848) discovered several comets. Trained as a singer, she was the first woman to be awarded the Royal Astronomical Society’s Gold Medal. **TADAO ANDO**, 77, is a Japanese architect and Pritzker award recipient. Before opening his own architectural design studio, Ando was a professional boxer. He never studied architecture.

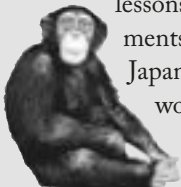
DAVID BOWIE (1947–2016) took a few voice and saxophone

lessons. But he taught himself all other the instruments he played, from piano to the guitar to

Japanese Koto. **JANE GOODALL**, 84, became the world’s most important primatologist without scientific training. She considers her open-minded approach to research to be an advantage (see Bulletin 1/2018).

CHARLES DARWIN (1809–1882): Perhaps the most famous naturalist of all time studied theology not science.

STEVE JOBS (1955–2011) only had a high school diploma. He quit college after only one semester. He founded Apple at age 21.



More democracy

Research published by University of Oxford economist Max Roser in 2017 indicates a **CLEAR CORRELATION** between a country’s **LEVEL OF EDUCATION** and its **DEGREE OF DEMOCRATIZATION**. Countries where the adult population was well educated in the ‘70s tend to have more democratic systems today.



“The lack
of forced learning
was of great
benefit to me”



Angus Deaton (73)
is a professor of
Economics at Princeton
University. He was
awarded the Nobel
Prize in Economic
Sciences in 2015 for
his analyses on
consumption, poverty
and welfare.

Angus Deaton comes from a family of Scottish miners. Here, he tells the story of how he was able to overcome unfavorable circumstances to become an economist and Nobel Prize winner. Education is the strongest driver of progress and prosperity.

Text Angus Deaton

The school in the Yorkshire mining village in which my father grew up in the 1920s and 1930s allowed only a few children to go to high school, and my father was not one of them. In his village, teenagers could go to evening classes to learn basic surveying and measurement techniques that were useful in the mine.

My father worked temporary jobs in the coal mines, and like most of the young men in the village, he dreamed of one day working in open cast mines. He spent much of his time as a young man repairing this educational deprivation, mostly at night school. He was determined that I would have the advantages that he had been denied. Although not well-educated, and less of an advocate for education than my father, my mother was a great story-teller.

I was born in Edinburgh, in Scotland, a few days after the end of the Second World War, and we lived there until I was nine. I didn't care for school much – it was very strict, corporal punishment in the form of the “tawse” was common and unpredictable, and I was often afraid – but I believe that I did well enough.

The educational highlights I remember were not in the classroom. My father spent a lot of time with me when he could. He taught me how to take square roots, a skill I have retained, but do not use often, except to check that I still remember. At weekends, he took me to Edinburgh's great zoo, to museums, to the botanical garden (with a giant hothouse) and to the harbor at Granton.

THE IMPOSSIBLE DREAM OF COLLEGE Looming in the distance over the eastern end of the botanical gardens was an enormous castle, adorned with hundreds of grotesque gargoyles, which my father wistfully explained was Fettes College, “The most expensive and exclusive university in Scotland” – Fettes College, Edinburgh.

Scotland's most exclusive (and expensive) school where he had (impossible) dreams of sending me – the tuition cost more than what he earned in a year.

I was lonely when my father had to go on long civil-engineering assignments away from home, and I remember being even more lonely, and desperately bored, when I caught scarlet fever, and had to spend seven weeks in a darkened room, with no books and only an infinitely dull radio for entertainment. Boredom and loneliness have been familiar visitors throughout my life, though I have come to (reluctantly) accept that the turning inwards that they bring is linked to creativity, at least for me.





"I won one of the two scholarships." The library at Fettes College in the 1960s.

The children's library on George IV Bridge had both delights and dangers; my parents did not read and could not guide me. I read much that terrified a seven-year-old, Edgar Allan Poe's "Pit and the Pendulum" and Dickens' "A Christmas Carol," as well as the much more reliably enjoyable Stevenson.


During this time, my father went to technical school in the evening, caught up on high school, and after many years and much difficulty, qualified as a civil engineer. In 1955, we moved from Edinburgh to the village of Bowden in the Borders region between England and Scotland. I loved the escape from the city, and a plumber who worked for my father and who was a member of Scotland's international fly-fishing team, took me fishing.

THE VALUE OF BOREDOM Like nearly all other fly-fisherman I have ever met, he was far too busy fishing to teach me. Fly-fishing, like boredom, which it frequently resembles, has provided me with thousands of hours of dreamtime, where the inchoate muddle in my head is given a chance to sort itself into something that might resemble an idea. Fly-fishing in Scotland, at least for trout, was inexpensive, though not free, and I recall that the cost of the license was an occasional source of conflict at home. There never was much money and my father worried about it often.

My sister Mairi and I went to the local school in Newtown St. Boswells. I passed the dreaded exam at 11 plus, and went to high school in Hawick, a knitwear manufacturing town about 15 miles away. Those who did not pass the exam were doomed to three years of gardening, cooking or car repair depending on sex.

At Hawick I learned Latin, and its precision greatly impressed me. The powerful idea that precision and beauty could be combined came from my Latin classes, though algebra and the King James Bible played a part too, even if the Bible was less strong on the precision.

It turned out that Fettes College admitted two Foundation Scholars a year (out of a class of about 90), and several teachers at Hawick High School donated their time to train me for the competitive examination. They must have done this out of dedication to teaching; certainly, my father had no money to pay them.



I worked very hard over many months, becoming quite sick at the time of the exams, but won one of the scholarships. Even then, the incidental expenses were a strain for my family, and there was some difficulty as I tried to keep up with much richer boys. I remember being the only boy with a Scottish accent and the social life was not always easy, especially at first.

THE ADVANTAGES OF BEING AN OUTSIDER Fettes strengthened an older feeling that ordinary Scots like me were not full citizens in our own country, compared with a landholding English elite who spoke with a different accent, and who set boundaries that I could not cross (though perhaps I was too much influenced by the access rules for trout fishing). In any case, the feeling of being an outsider is one that still comes more easily to me than it should. And it is not without advantages; it helps me not back down when I am trying to argue a position that only I believe.

The teaching at Fettes opened up new landscapes in many directions. I specialized in mathematics and physics after two years, but that only opened up time for other activities. I continued to play the piano (with some ability), the pipe organ (not so well) and the double bass (not well at all, but it got me into the orchestra). I played rugby seriously for a while, which helped get me into Fitzwilliam College at Cambridge, but I probably spent most time in (entirely optional) English classes. This lack of forced learning was of great benefit to me; I learned to browse, working only on things that seemed interesting, guided only by my (sometimes temporary) enthusiasms and by always willing and talented teachers.

When I later became an economist in Britain, I had the same freedom; in the United States, newly minted economists must first find a field and a peer group, and then stick to them relentlessly in order to get a job, and to keep it. In Britain, I never had a field, I took no courses in economics, and escaped going to graduate school, so I could continue to work as I had done at Fettes, browsing across areas, learning new things that often seemed irrelevant, but were always interesting, new, and which with (perhaps not so) surprising frequency, would eventually come together to open up new insights. ►

Courage for progress

Angus Deaton describes human history as a “great escape” from poverty and servitude.

Text Daniel Ammann

We’re living much longer, and we’re healthier and wealthier than our ancestors. It’s hard to find a better definition of progress than this. “Things are getting better, and hugely so,” the Nobel prizewinner summarizes his thesis.

Deaton locates the beginnings of this historical process in the 18th-century Enlightenment and Immanuel Kant’s famous philosophical dictum, “*Sapere aude!*” Frequently translated as “dare to know,” Kant understood these words to mean “Have the courage to use your own understanding.” As Deaton writes in “The Great Escape,” “during the Enlightenment, people risked defying accepted dogma and were more willing to experiment with new techniques and ways of doing things.”

This way of thinking enabled the Industrial Revolution, capitalism, democracy, as well as achievements like vaccines, antibiotics and clean drinking water. On the basis of statistical data, he concludes that rising education (not rising income) is the primary reason for dramatic gains in life expectancy. Typical residents of India today are only half as wealthy as typical Britons in 1860.

But their life expectancy is the same as that of Europeans in the mid-20th century. Deaton attributes the discrepancy to contemporary knowledge about nutrition, hygiene, public health and medicine.

The history of progress, according to Deaton, has always also been a history of inequality. Progress necessarily begets inequality. Not everyone can, or wants to, seize the opportunities that arise through progress. Deaton sees this unideologically. Inequality can be useful because it creates incentives for working harder, in order to catch up. But it can also be harmful, if those who have successfully “escaped” seek to protect their position by blocking the same path for others. Knowledge must be shared in order to increase.

Angus Deaton. “The Great Escape: Health, Wealth, and the Origins of Inequality.” Princeton University Press, 2013.

For many years, I regretted my lack of formal training, envying my peers who had taken tough courses, and who understood things that I did not know existed, but feel now that those regrets were misplaced. When I learn something that I want to learn, and do it my own way, I often make mistakes and it is usually slow, but when it is done, it tends to stick (like taking square roots), and there is always the chance that I find something that is not so well known after all.

Fettes also taught me that people like to share what they know, and that they love to be asked. Being willing to confess ignorance and to listen is a fast and joyful way to learn; I sometimes worry that our competitive American graduate schools make such confessions difficult for many students.

LAST RESORT FOR NE'ER-DO-WELLS This happy story fell apart when I got to Cambridge. Mathematics, it turned out, was not what I wanted to do if I had to do it fulltime, especially in a teaching program that was appallingly badly organized, and with fellow students who were better and much more dedicated mathematicians than I. Shopping around among other areas was fine if you were doing well in the subject that counted, but I was not. Rugby collapsed too in the face of the wanton and sometimes sadistic violence of those who took rugby seriously in my college.

I requested a transfer to history of science, but was denied by a risk-averse advisor; I still think that it would have been a good choice for me, even though I would not be writing this particular biography.

Eventually, in desperation, my tutors told me that I had to stop doing mathematics and take up what they clearly thought of as a last resort for ne'er-do-wells, a previously unconsidered option called economics. I did so, with no expectation of anything other than a degree, and the lights came back on. ■

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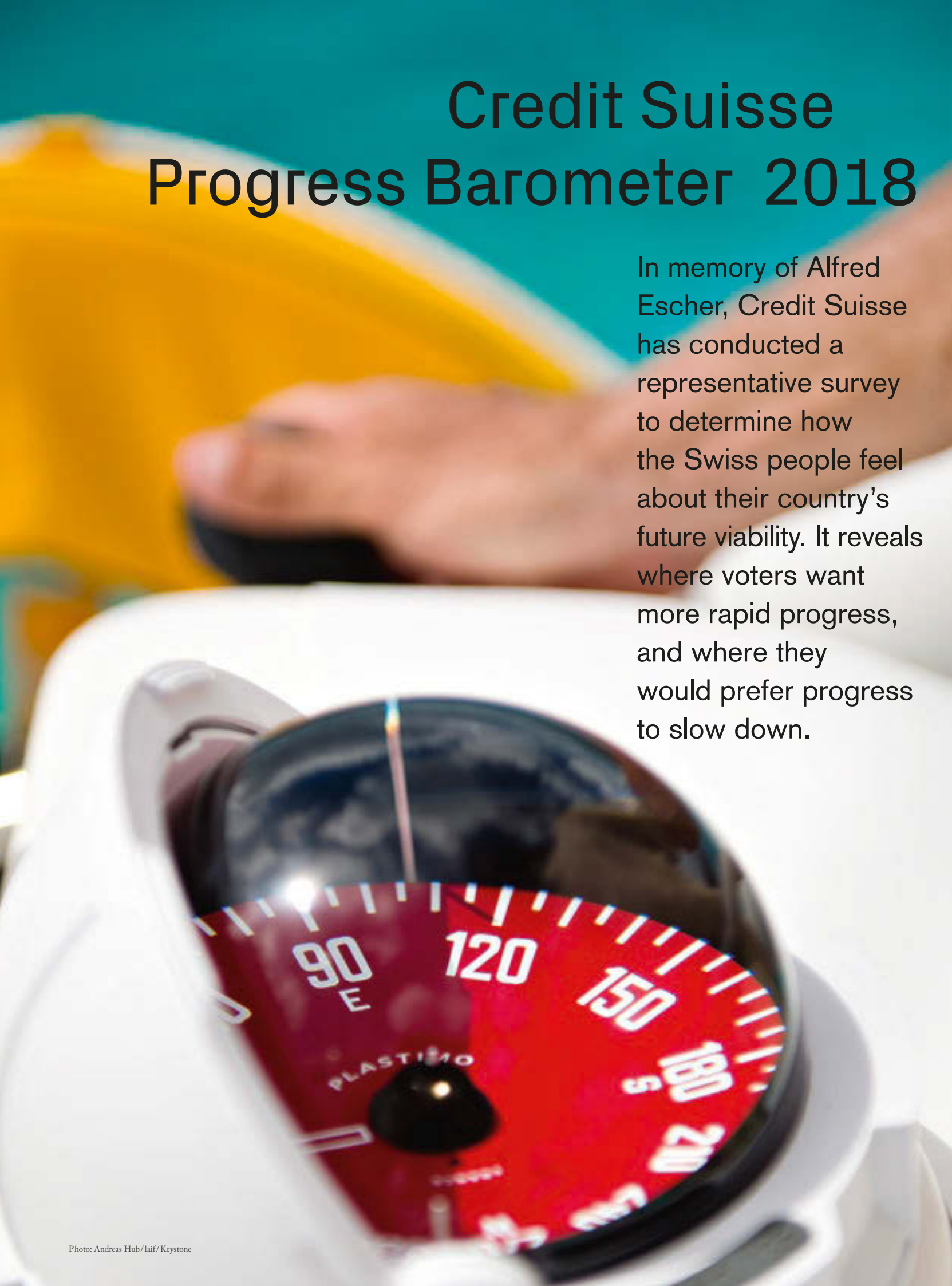
Published by: Credit Suisse AG • project management: Steven Althaus, Mandana Razavi • contributors: Jessica Cunti, Katrin Schaad, Yanik Schubiger • content design, editing: Ammann, Brunner & Krobath AG (abk.ch) • design concept, layout, production: Crafft Kommunikation AG (crafft.ch) • photo editing: Studio Andreas Wellnitz • pre-press: n c ag (ncag.ch) • translations: Credit Suisse Language & Translation Services • printer: Stämpfli AG • circulation: 94,000

Editorial committee: Oliver Adler, Felix Baumgartner, Gabriela Cotti Musio, Marzio Grassi, Anja Hochberg, Thomas Hürlimann, Antonia König Zuppiger, Carsten Luther, Jsabelle Reist, Manuel Rybach, Frank T. Schubert, Daniel Stamm, Robert Wagner



Credit Suisse Progress Barometer 2018

In memory of Alfred Escher, Credit Suisse has conducted a representative survey to determine how the Swiss people feel about their country's future viability. It reveals where voters want more rapid progress, and where they would prefer progress to slow down.



A shared view of progress

At the time of Alfred Escher (1819–1882), the projects he proposed must have seemed positively utopian. A tunnel through the Gotthard massif? A commercial bank? A technical university? But these things came to pass, and they catapulted Switzerland – which was then a less advanced nation – into modern age. It became a dynamic country, well equipped to meet future challenges. With progress came growth and prosperity.

To mark the 200th anniversary of the birth of a true visionary, Credit Suisse has launched its new Progress Barometer. This representative survey details the projects and issues that the electorate most wants to move forward – and the areas in which respondents would prefer progress to slow down. Perceptions of progress are often ambivalent. Overall, the attitudes of the voters are somewhat progressive (+3.5 index points), while opinion leaders are distinctly progressive (+17.5).

The idea of moving traffic underground in densely populated Switzerland seems just as utopian today as Escher's ideas did over a century ago – and perhaps for that very reason, it elicits the most favorable responses in the survey [see chart on opposite page](#). With respect to the economy, politics and society, the survey's results can be summarized as follows:

- **People are in agreement about what constitutes progress**, and they agree on where progress should be more rapid. In most cases, however, opinion leaders are more progressive than the electorate as a whole.
- **Progress needs to be in harmony with Switzerland's core values:** the "militia" model of civic engagement, media diversity, a consensus-oriented political system, value creation at the local level – Switzerland's values rest on a firm foundation.
- People want to see progress in the areas that make Switzerland an **attractive location**: education, infrastructure and technology.
- The respondents are most interested in progress related to **social issues**, particularly inclusion and a work-life balance.

On the basis of real economic indicators, the Swiss Economics team at Credit Suisse has calculated the degree to which Switzerland is, in fact, progressive in the areas that were investigated [see page 70](#). They conclude that Switzerland currently finds itself in a very good position – in stark contrast to the first half of the 19th century. But further progress is required to maintain that position. On the following pages, Swiss people explain exactly where progress is needed.

Your editorial team

-
- 58 **Economy** More education, please / "More progressive than their reputation": Burkhard Varnholt, Credit Suisse
 - 62 **Politics** Going underground / "Others should try out new things": Professor Monika Bütler
 - 66 **Society** For a modern Switzerland / "Real freedom of choice for all": Sylvie Durrer, Director of the Swiss Federal Office for Gender Equality
 - 70 **A reality check**, based on Credit Suisse's Supertrends

The respondents were shown **30 statements**. After each one, they were asked to "indicate whether this **trend** should be **accelerated** or **slowed down**."

The farther to the **right** an item is positioned in the chart, the more convinced the Swiss are that progress should be **accelerated**. The farther to the **left**, the more they want to put on the brakes.



Fewer independent media outlets

Slow down

- | | | |
|--------|-----------------|----------|
| Voters | Opinion leaders | |
| ■ | ■ | Economy |
| ◆ | ◆ | Politics |
| ● | ● | Society |

Necessity

Accelerate

Uncertainty

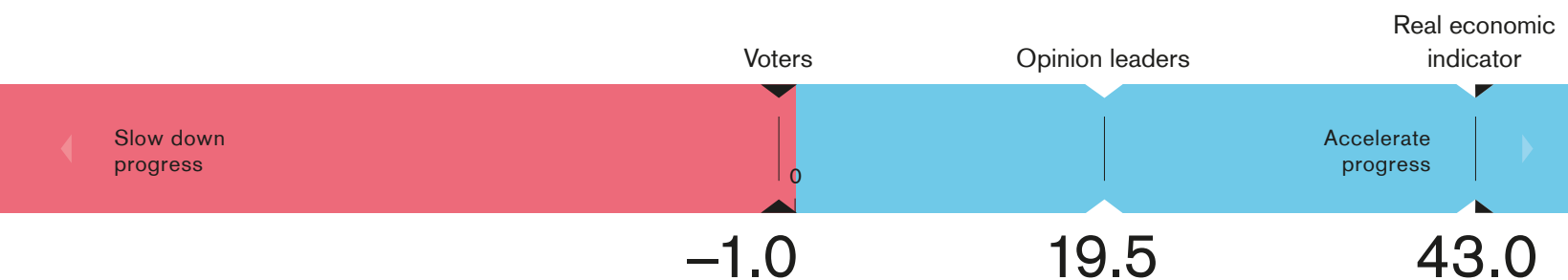


The higher an item is positioned in the chart, the more convinced the Swiss are that it is **necessary**; the lower it is, the more **uncertain** respondents (still) are about the development.



Asked whether they would like “more tax revenues to be devoted to research,” respondents said yes (+35); they also believe that “people need further training if they want to keep up” (+18).

More education, please



Respondents oppose unlimited economic development, but when it comes to investing in Switzerland's primary natural resource, intellectual capital, they feel it's almost impossible to have too much progress.

For our Progress Barometer, respondents were asked to respond to statements concerning trends in the economy, society and politics: "Indicate whether this trend should be accelerated or slowed down."

With respect to the economy, would it be better to push forward or to slow down? The views of voters in general (-1.0) differed somewhat from those of opinion leaders (+19.5). Perhaps this is because

opinion leaders are often part of the economic system, so they support it and want it to advance. As for voters, they may be growing slightly disillusioned with globalization and are perhaps especially skeptical about the increased numbers of foreign workers (more about this later).

The Swiss Economics team at Credit Suisse has examined the current state of Switzerland's economy. Real economic indicators reveal that the structure of the Swiss economy is already very progressive (+43.0), and the country compares very favorably with others. This may be another reason why voters see no great need for further progress.

At the same time, however, the electorate is not fundamentally in favor of slowing down the economy. On the contrary – asked whether "more **tax revenues** should be devoted to **research**," respondents say yes (+35); similarly, they agree that "people need **further training** if they want to keep up" (+18). In these two cases, their responses do not differ significantly from those of opinion leaders (+43 and +35).

Burkhard Varnholt, Chief Investment Officer Switzerland at Credit Suisse, is pleased that education is highly valued by the Swiss. As he points out, “The intellectual capital of the population is Switzerland’s only natural resource” [see page 61](#).

The respondents also recognize the role of low **corporate taxes** (+4) in attracting foreign companies and appreciate the benefits of **free trade** (+3) – but in both cases opinion leaders want to move forward more rapidly (+22 and +17). Interestingly, voters tend to view **digitalization** (+10) as a means of boosting efficiency rather than as a threat to their jobs. They are, at least, not opposed to the use of **robots** (0) – indeed, that trend is welcomed by voters in French-speaking (+16) and Italian-speaking Switzerland (+12), in contrast to people in the country’s German-speaking region (–5). However, they do not want Switzerland to become purely a **service society** (–7).

There is even more skepticism about competition from **foreign skilled workers**. Whether it concerns foreigners working in Switzerland (–9) or the **outsourcing** of Swiss jobs abroad (–31), respondents would like to slow down these trends. However, people in the French- and Italian-speaking regions take a favorable view of foreign skilled workers (+6 and +1, respectively); they also have more contact with these workers than do their counterparts in the German-speaking part of the country (however, they are not in favor of outsourcing).

The respondents are very concerned about the development of **cultivated land** (–33), as they see it as the loss of an important aspect of Switzerland. Opinion leaders (–12), too, would like to slow down this trend.

The respondents see this as the loss of an important aspect of Switzerland.

Respondents are in favor of lower corporate tax rates

Ten statements about the economy, listed according to the level of voter approval (highest to lowest).

▼ Voters ▽ Opinion leaders

“Switzerland is spending more **tax revenues** on **research**.”



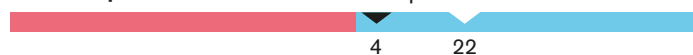
“People need **further training** if they want to keep up.”



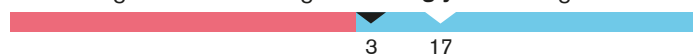
“**Digitalization** makes us more efficient, and it also eliminates traditional occupations.”



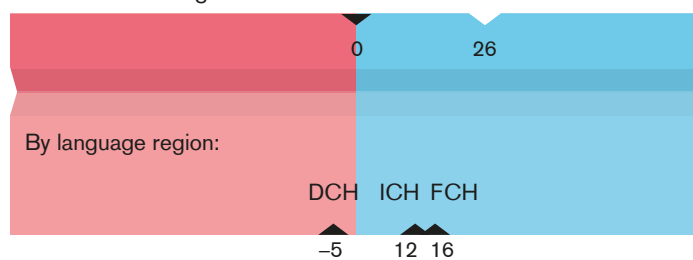
“Low **corporate tax rates** attract companies to Switzerland.”



“**Trade** in goods is becoming **increasingly free** and global.”



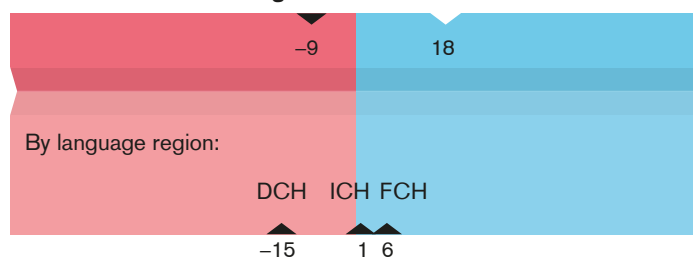
“**Robots** are taking over certain tasks.”



“Switzerland is becoming a **service society**.”



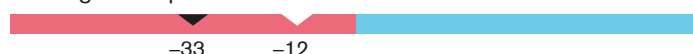
“Switzerland needs **foreign skilled workers**.”



“**Outsourcing**: Many jobs are being outsourced to foreign countries.”



“More and more of Switzerland’s **cultivated land** is being developed.”



“More progressive than their reputation”

Burkhard Varnholt, Chief Investment Officer Switzerland at Credit Suisse, is pleased by the positive responses to questions about education and digitalization.



Burkhard Varnholt (50) is Chief Investment Officer Switzerland at Credit Suisse and Vice-Chairman of the Global Investment Committee.

Mr. Varnholt, how progressive do you consider Switzerland to be?

I think it is very progressive indeed. Our digital infrastructure is state of the art, as are our schools and education system. In the political arena, I see that serious efforts are being made to maintain Switzerland's position of leadership – economically, culturally, technologically, politically and environmentally. This is ultimately reflected in our quality of life, high incomes and strong competitive position.

Attitudes toward digitalization range between neutral and positive, despite a clear awareness that it might threaten people's jobs – are you surprised?

Swiss people are more progressive than their reputation! They know that the future belongs to the bold, and not to the fearful. Ultimately, banning digitalization would endanger more jobs than it might temporarily save. Over the past 100 years, every technological advance has led to more jobs and growth – although obviously any structural change will cause discomfort.

When it comes to education, the respondents were in favor of accelerating progress and devoting more taxes to that purpose. Do you agree?

I'm delighted that people attach such importance to education; after all, the intellectual capital of the population is

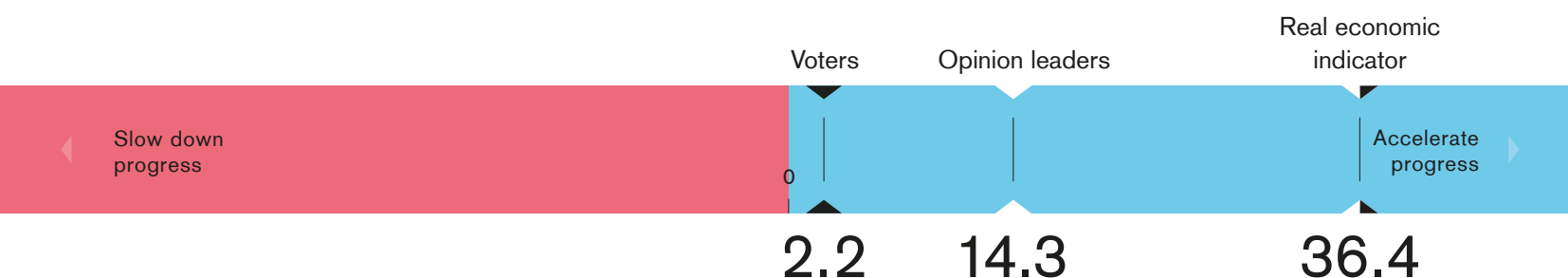
Switzerland's only natural resource. But it is far from certain that spending more money on education will mean progress. We might also pay more attention to synergies in our existing education system. For example, several of our universities offer programs in Slavic languages and literature, and it would probably be more efficient to combine these and other programs that are not in great demand.

Opinion leaders tend to be more progressive than voters in general. Does the gap appear to be widening? It's hard to say. This split is nothing new. It existed in the 1960s, and even before the war. Such tensions can also have a constructive and creative impact. The important thing is to keep the lines of communication open. I am concerned, however, that nowadays opinions are often given more weight than facts. But I'm still an optimist. People will be able to move beyond these tensions and find positive compromises.

If you could either stop or accelerate a particular trend, what would it be? I think it's very important for Switzerland to continue to be open to the EU.

Europe's positive qualities – the common market and the defense of such values as democracy, transparency and universal human rights – are often belittled; its administrative blunders are ridiculed, while its historical contribution to today's prosperity is overlooked. My ideal is a liberal, cosmopolitan, sustainable Switzerland. And I'm proud if I can play a role in achieving it.

Going underground



Respondents are in agreement about a visionary idea: Switzerland should move its traffic underground. The sooner, the better. Additionally, local politics is too polarizing and day-to-day life too regulated.

When it comes to political issues, voters (+2.2) show less interest in driving development forward than the opinion leaders do (+14.3). Real economic indicators also point to a high value for progress in Switzerland (+36.4).

This section highlights a topic that enjoys broad-based support like no other in the entire Progress Barometer: **underground traffic**. There are vehement calls from both groups (voters: +51,

opinion leaders: +63) for a quicker pace with reference to this statement: "In order for Switzerland to maintain its beautiful landscape, the first ideas for routing traffic underground are being launched." Both groups also rank the level of necessity of this project as extremely high [see page 57](#). The vision of a subway across Switzerland aligns well with the first part of the Progress Barometer, which laments the loss of cultivated land to new construction. And it also fits with Switzerland's strengths. We know we can achieve it and that the vision is feasible. The country has leading engineers, particularly in underground construction; the ability to fund, plan and implement major infrastructure projects has been proven time and time again; and public transportation is generally held in high regard by the population.

As in economic and social matters, the electorate views **internet** trends in the political realm positively as well (+25). In this context, it means the opportunity to use the web to organize spontaneous political movements and force politicians to listen more to what people have to say.



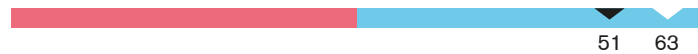
Vehement calls from voters (+51) and opinion leaders (+63) for a quicker pace with reference to this statement: "In order for Switzerland to maintain its beautiful landscape, the first ideas for routing traffic underground are being launched."

Young people want to live according to their own values

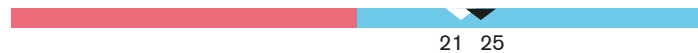
Ten statements about the economy, listed according to the level of voter approval (highest to lowest).

▼ Voters ▽ Opinion leaders

"In order for Switzerland to maintain its beautiful landscape, the first concepts for routing **traffic underground** are being launched."



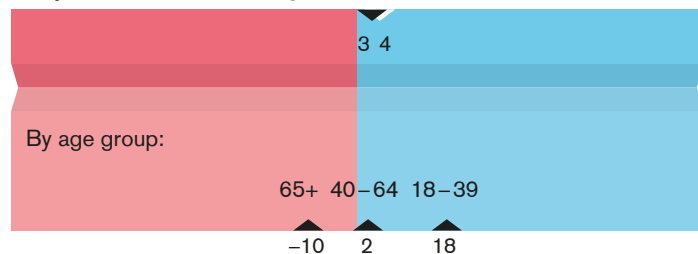
"People can use the **internet** to organize spontaneous political movements and force politicians to listen more to what they have to say."



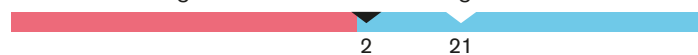
"Payroll deductions for **retirement** provision will rise because people are living longer."



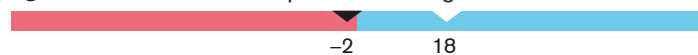
"Greater **individualization** means less societal pressure, and everyone can live according to their own values."



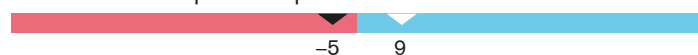
"Switzerland is becoming a **knowledge-based society** and invests less in agriculture but more in colleges and universities."



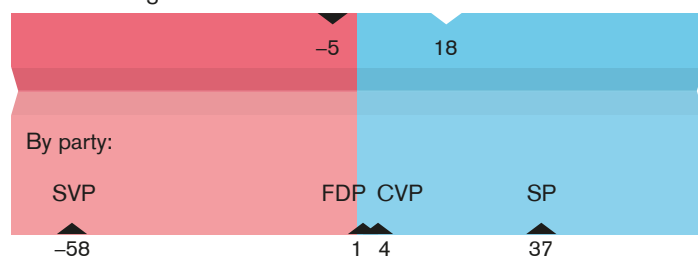
"Switzerland is becoming more dependent upon **international agreements** to secure its position in the global market."



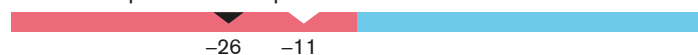
"The **complexity** of voting proposals is making it more and more difficult to form a political opinion."



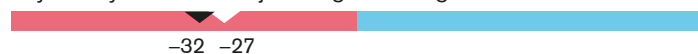
"Swiss contributions for global **development cooperation** are increasing."



"**Politics** is becoming more **polarized**, and it is becoming more difficult for parties to cooperate with one another."



"**Rising regulations:** More and more things that impact our day-to-day lives are subject to greater regulation."



The fact that citizens are preoccupied with **retirement** planning has been repeatedly shown by the Credit Suisse Worry Barometer and the Youth Barometer*. Respondents to the Progress Barometer also want to pursue the idea of raising payroll deductions in order to safeguard pensions (+11).

As society becomes more **individualized** (+3), the overall average tells us less than the results of the various age groups. The youngest group (18–39 years old) agrees that everyone can live according to their own values, and they would like to see this trend continue. This emphasis on individual values is also reflected in the Credit Suisse Youth Barometer*. The over-65 generation, on the other hand, would like to slow the pace (–10). This raises the question of whether young people will still have the same attitude when they turn 65 themselves.

Voters tend to have a neutral view of the transition to a **knowledge-based society** (+2), although opinion leaders consider it to be the right direction and believe in investing more in education and less in agriculture (+21). The dependence upon **international agreements** (–2), growing **complexity in politics** (–5) and expanding Swiss **development aid** (–5) are all viewed slightly negatively, though breaking down the results of this last category by party allegiance provides further information. Respondents supporting the Swiss People's Party (SVP) do not want any further increase in funding for development aid (–58). Respondents supporting the Social Democratic Party (SP) hold the opposite view (+37). This topic showed the most drastic split between party allegiances among the 30 included in the survey.

Will young people still have this attitude when they turn 65?

The idea to put a stop to the many **rules** increasingly controlling day-to-day life enjoys widespread support (–32).

Last, but not least, one result shows that humans are not always rational beings. All respondents agree that **politics** has become too **polarizing**, hampering cooperation between parties (–26) – but it is precisely the supporters of those parties widely held to be responsible for this polarization that agree with this statement.

*See: credit-suisse.com/worrybarometer and credit-suisse.com/youthbarometer

“Others should try out new things”

Switzerland is “about average” in terms of progress according to Monika Bütler. She would like to see a more open attitude towards new ideas and scientific findings.



Monika Bütler (57) is an economics professor at the University of St. Gallen. Her research focuses on social security and the labor market. The newspaper *Neue Zürcher Zeitung* ranked her fourth in its list of Switzerland's most influential economists. Bütler is a member of the Bank Council of the Swiss National Bank and a member of the Board of Directors of Schindler Holding Ltd., Suva and Huber+Suhner AG.

Professor Bütler, just how progressive do you consider Switzerland to be? I would say we are “about average” in terms of progress. Though there are not many who advocate returning to the “good old days,” true progress is not very popular either. Switzerland has always been known for its relative openness; however, its stance is that others should try out new things.

Respondents showed the greatest willingness to speed up progress when it comes to potential underground traffic routes. What's your take on that? The fact that recent infrastructure projects like the Gotthard Base Tunnel and the cross-city transit station in Zurich have been so successful is likely to have contributed to the positive response. It would be interesting to see what the results would have shown if the subway line had come with a price tag.

When it comes to retirement, there is a positive response to the statement that payroll deductions will increase because people are living longer. Is this the answer to the debate on the topic of the Federal Old Age and Survivors' Insurance?

Well, the response is not exactly enthusiastic [*voters +11, opinion leaders +27, editor's note*]. The respondents are mostly aware that the state pension system can only be reformed by increasing contributions. In order to assess the proposal, you have to first ask whether the additional deductions would go towards the AHV – in which case I think it would make more sense to increase VAT – or to employee benefits insurance – where it would certainly make sense.

And would this solution actually be capable of gaining majority support if put to the vote? Probably yes. But I always find the tendency of politicians to judge beforehand whether an issue will be supported by the majority to be somewhat amusing. It's ultimately the voters who determine what the majority will support.

The respondents want to stop progress when it comes to the polarization of politics and the growing regulation of day-to-day life. How do you rank these results?

Neither of these is surprising, yet they are somewhat strange. When it comes to casting their votes, the population voluntarily sides time and time again with greater regulation and polarizing politicians. It's as if they're saying, yes, regulation is a problem, but this specific proposal makes sense, whether the issue is about “ruining the environment” or the health of our children.

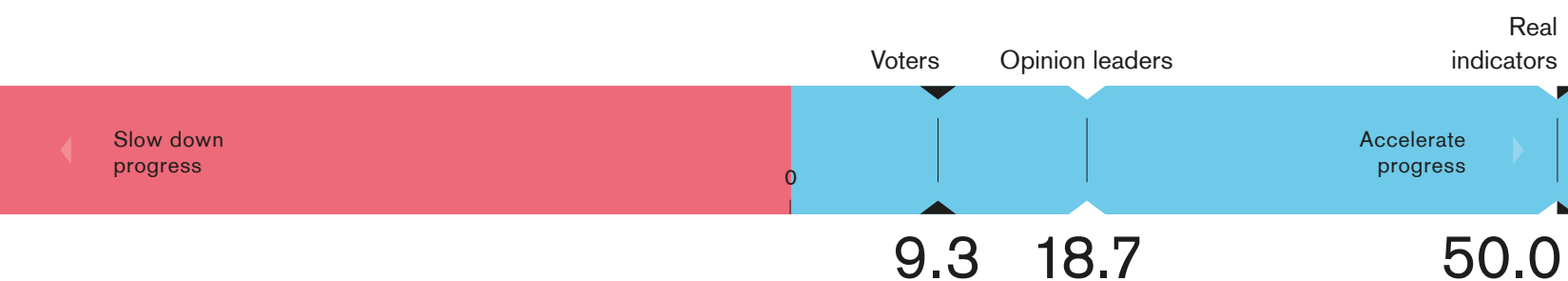
If you were able to stop or accelerate something in Switzerland, what would that be?

Nothing specific. I would like to see a more open attitude towards new ideas and scientific evidence, for instance in the vaccine debate and mobility pricing.



Gender equality (+46), expanded childcare (+34) and gay rights (+32) are topics where the Swiss would like to see progress.

For a modern Switzerland



Equal rights, childcare, greater equality and less free media: There is much to be done when it comes to social issues.

Voters view social issues as a top priority. They want to see faster progress on these topics. As a whole, social issues scored highest (+9.3) in the survey and three out of four survey responses called for accelerated progress on issues in this area [see chart on page 57](#). Opinion leaders hold somewhat more progressive attitudes than the voting public (18.7). The nation's youngest voters (18–39 years old) are another major driving force in social issues. They want to see change happen faster (+16.3). By contrast, voters aged 65 and older are more neutral (+2.2). The real indicators also show a very high level of progressiveness on social issues (+50) for Switzerland.

When we look at the details, **gender equality** (+46), expanded **childcare** (+34) and **gay rights** (+32) came out on top in the survey. Respondents want to accelerate progress on these topics and consider them to be of crucial importance. Sylvie Durrer, Director of the Swiss Federal Office for Gender Equality, says, "I think people have come to understand that the notion of equality will not

move ahead fast enough without specific measures and without public pressure.” see page 69

Respondents attached a great deal of importance to **work-life balance** (+24) – a trend that is particularly strong (+37) among the youngest age group (18–39 years old). The trend is also positive but with less urgency among 40- to-64-year-olds (+25) and people over 65 (+11).

Likewise, respondents would like to see the **demographic trend** towards longer life expectancy (+16) accelerate, with the caveat that living longer should not mean working longer.

Respondents would like to slow the growth of the **urban-rural divide** (–5). The same respondents would like to slow even more (–14) the decline of Switzerland’s tradition of **civic engagement**, for instance participation in clubs and civic organizations. But they see the most urgent need for a trend reversal in the **media landscape** (–42). They find the dwindling number of independent publications problematic.

As in the first section of this report, here, too, the effects of **migration** are viewed critically (–18). Respondents would like to slow the rate at which immigration is changing the structure of societies.

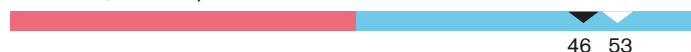
The dwindling number of independent media outlets is viewed as problematic.

Regretting the decline in civic engagement

Ten statements about society, in descending order of voters’ views on their progress.

▼ Voters ▽ Opinion leaders

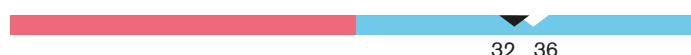
“**Equal rights** are promoted in all areas of life.”



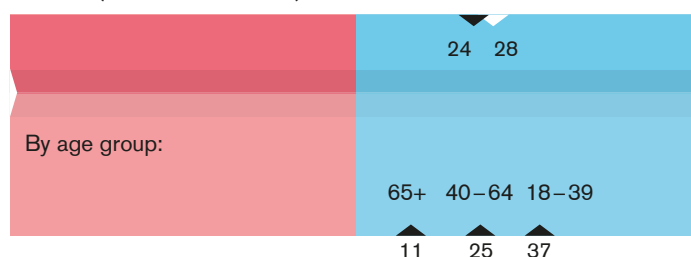
“Public and private **childcare** offerings are being expanded.”



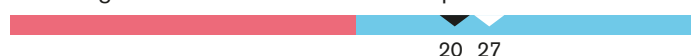
“**Same-sex couples** are increasingly **treated equally** in all areas of life.”



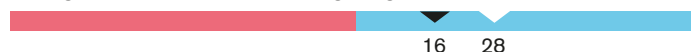
“People are increasingly looking for meaning outside of work (**work-life balance**).”



“Because of the **internet**, society as a whole has more knowledge than individual inventors or experts.”



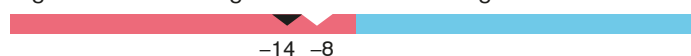
“Medical developments enable us to stay healthier into very old age, but we are not working longer (**demographics**).”



“People in **cities** and people in **rural areas** have fewer and fewer common interests.”



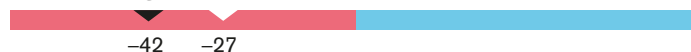
“The number of people who **participate in clubs** and civic organizations on a regular basis is decreasing.”



“**Immigration** is changing the structure of our society.”



“The **number of independent media** outlets in Switzerland is **decreasing**.”



“Real freedom of choice for all”

Survey respondents want to make progress on social issues. Sylvie Durrer, Director of the Swiss Federal Office for Gender Equality, says, “Welcome to the 21st century!”



Sylvie Durrer (58) is Director of the Federal Office for Gender Equality (EBG), Vice-Chair of the Swiss Conference of Gender Equality Delegates (SKG), Board Member of the UN Research Institute for Social Development (UNRISD) and Chair of the Interim Steering Committee of the Equal Pay International Coalition (EPIC).

Study on the representation of women in top management: “The CS Gender 3000: The Reward for Change,” credit-suisse.com/gender3000

Ms. Durrer, in your view, how progressive is Switzerland?

I see a mixed picture. First of all, Switzerland is a young democracy. Women here have had the right to vote for less than 50 years. We have done a lot of catching up in the last few decades, but other countries are still ahead of us. Although women have caught up to men in terms of education, girls’ and boys’ career and educational choices are still very much divided along outdated gender lines. Women’s employment outside the home has risen considerably – but primarily through part-time work. And women’s participation in management has leveled out at about one-third. The big challenge of combining career and family commitments and the gender pay gap force many young families to stick to traditional gender roles, even if they would prefer to divide these roles more equally. Persistent stereotypes also play an important role here. But as Einstein once said, it’s harder to crack prejudice than an atom.

Survey respondents want to accelerate progress on gender equality, childcare and gay rights. Do you agree? Welcome to the 21st century! Diversity and inclusion have gained traction. Gender equality in particular has become a high priority around the world and

here in Switzerland. I think people have come to understand that the notion of equality will not move ahead fast enough without specific measures and without public pressure. Equality is a matter of justice as well as of individual freedom and economic performance. A number of studies, including some from Switzerland, show that companies that have more women in management are more profitable and therefore more successful.

Work-life balance has been rated as a trend that should be strongly supported. Why is that? Women and men alike want more time for themselves and their loved ones and some are choosing to leave the labor market entirely or to work only part-time. Oftentimes, they need this time to take care of children or elderly family members because the support structures simply aren’t there. But they have to be careful. Our pension system has an excellent memory. Part-time work has a huge impact on pensions later in life. Women who mostly work part time receive 37 percent less in pensions than men. Low-wage jobs don’t pay enough to allow people the choice of working part time and some careers just do not make it easy to work part time.

If you could either stop or accelerate a particular trend, what would it be? If I had that power, I would give a big boost to measures that bring about equal pay and better options for reconciling work and family – so that everyone would finally have real freedom of choice.

SOCIETY

Millennials' values

Generations Y (ages 20–35) and Z (under 25) are having a growing impact on consumer behavior and on investments and businesses. One key factor is the great importance that millennials attach to environmental, social and governance (ESG) criteria.



Angry societies

The middle class in the West is disillusioned – frustrated with politics and growing inequality – and is demanding change. As a result, governments are getting strong mandates to enact policies aimed at strengthening domestic economies and creating jobs at home.



Silver economy

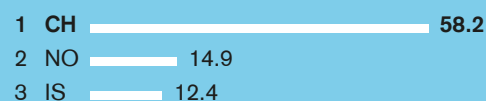
The number of senior citizens worldwide will double from just under a billion today to more than two billion by 2050. Demographic change is well under way.

How progressive are we?

The Swiss Economics team at Credit Suisse examines how progressive Swiss attitudes are with respect to Supertrends, the major themes of our time.

Technology

Technology is sometimes perceived as a threat that could replace human workers in the long term. However, it also offers people great benefits.



POLITICS

THE SUPERTRENDS DEFINED BY CREDIT SUISSE

In 2017, Credit Suisse defined five global Supertrends to capture the major economic, social and political trends of our time. The five topics are “Angry societies – Multipolar world,” “Infrastructure,” “Technology,” “Silver economy” and “Millennials’ values” (see the chart on the left for details on the individual topics).

The relevance of the five Supertrends has been confirmed time and again over the last 12 months. For example, it has become very apparent that our world is becoming increasingly multipolar, news outlets are reporting on new technological developments daily and infrastructure occupies a top spot on almost every politician’s agenda.

1 CH	23.9
2 NL	20.7
3 LU	15.9

Infrastructure

The need for infrastructure improvements and investment is undiminished, particularly in the area of telecommunications (5G networks). A new point of focus is Africa, one of the continents with the greatest need for catch-up investment.



METHODOLOGY The study presented here is based on the five Supertrends. The Credit Suisse Swiss Economics team selected five to eight indicators for each Supertrend. In all, the study has 31 indicators. The data used was taken from various international sources and generally relates to 2016. The individual indicators have been standardized on a scale from –100 to +100, with –100 indicating the least progressive and +100 the most progressive values from all of the 36 countries studied. The average value of each indicator was calculated for each of the five Supertrends. The overall index is calculated based on the total of the standardized points allotted to the five Supertrends.

ECONOMY

THE SURVEY

On behalf of and in cooperation with Credit Suisse, the market research firm gfs.bern collected data online for the Progress Barometer from July to August 2018, using a representative survey of 2,828 voting-age respondents and 305 opinion leaders, all of whom reside in Switzerland. The survey respondents were presented with 30 statements about developments in the areas of the economy, society and politics and asked to “Indicate whether this trend should be accelerated or slowed down.” A response of +100 means: “You have to reinvent the wheel in order to move forward.” A response of –100 means: “We need to turn the wheel backward.”

On the chart on page 57, “Necessity” groups together the responses close to zero or cases where no response was given, i.e. those groups that cannot be clearly assigned or are viewed neutrally. The higher an item is positioned in the chart, the stronger the respondents’ conviction that action (accelerating or slowing down the trend) is necessary. Conversely, the lower down an item appears in the chart, the more uncertain respondents (still) are about it. The statistical sampling error is ± 1.9 percentage points. Analysis of the study entitled “*Compatibility and equal rights as the most important aspects of progress: Social advances as the basis for progress in politics and the economy*” (Credit Suisse Progress Barometer 2018) was carried out by a gfs.bern project team.

PRODUCTION CREDITS

Project leads at Credit Suisse are Mandana Razavi and Katrin Schaad. The analysis was prepared by Simon Brunner/Ammann, Brunner & Krobath (editing, copy, interviews), Bill Schulz/Crafft (layout, graphics) and Lauren Crow (illustrations).

The full survey and other articles are available for download at:
credit-suisse.com/progressbarometer



There is often ambivalence about the level of progress here. Across all of the topics, voters' attitudes were slightly positive (+3.5) and those of opinion leaders clearly (+17.5) progressive.



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