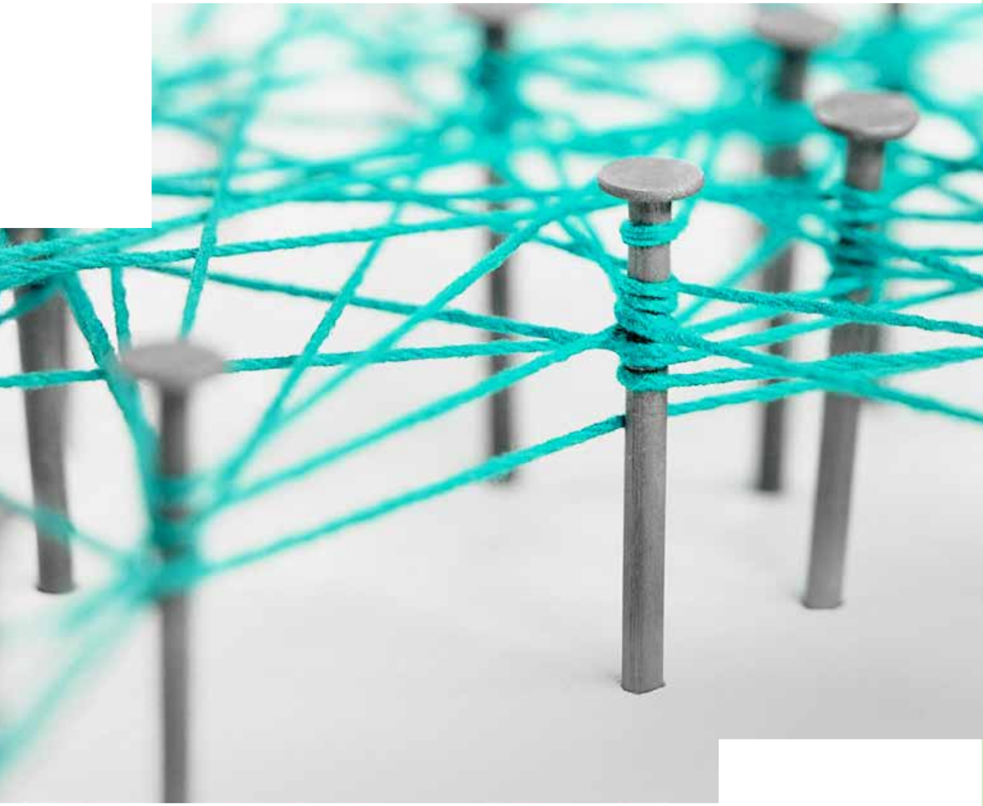
CREDIT SUISSE

Supertrends.
One year on.



The Future. Now
Investing for the long term.

The Future. Now
Investing for the long term.

Supertrends. One year on.

Dear client

We are pleased to present to you the updated version of Supertrends, the five long-term investment themes we established a year ago as part of the Credit Suisse House View.

When we launched our Supertrends, we had three objectives in mind. First, we wanted to develop a set of strong thematic equity investment ideas. After years of relatively weak interest in equity themes, we were convinced that the time was right to propose a new thematic approach to our investors. After all, demanding valuations were calling for more conviction when investing in stocks. Furthermore, we expected monetary authorities' gradual exit from quantitative easing to lead to a return of equity market volatility and put passive equity investments in a more difficult spot. Second, we wanted to link the most significant societal changes with tangible investment opportunities. And third, we wanted to build our Supertrends in a way that would enable us to outperform the broader market in the long run.

One year on, we are very satisfied with the performance of our Supertrends, which form an integral part of the Credit Suisse House View. Furthermore, each individual theme remains highly relevant, as you will read in the pages ahead. We hope you find this update of value for your investment decisions.

Michael Strobaek
Global Chief Investment Officer
Credit Suisse

Nannette Hechler-Fayd'herbe
Head of Investment Strategy & Research
Credit Suisse

Table of contents

Supertrends

Authors

Daniel Rupli
Head of Single Security Research,
Equity & Credit

Daniel is a Swiss-Certified Banking Expert with a Federal Diploma and has over 20 years of experience in the banking industry.

Reto Hess
Head of Single Security Research,
Equity, Industrials

Reto has 13 years of experience in the banking industry and is a CFA and CAIA charterholder.

Jens Zimmermann
Senior Equity Analyst, Energy & Utilities

Jens is a CFA charterholder and has 15 years of equity research experience, working both as a sell-side and buy-side analyst.

Uwe Neumann
Senior Equity Analyst,
Technology & Telecom

Uwe is a CEFA charterholder and has 30 years of experience in the securities and banking business.

Lorenzo Biasio
Senior Equity Analyst, Healthcare

Lorenzo holds a master's degree in Biology from ETH Zurich and has over 5 years of experience in the banking industry. He is a CFA charterholder.

Julie Saussier
Senior Equity Analyst, Consumer Goods

Julie has 15 years of experience as a consumer analyst and is a CFA charterholder.

One year on.

In 2017, we launched a new approach to thematic investing to capture the major societal shifts underway.

Daniel Rupli

Head of Single Security Research, Equity & Credit

The result were our five high-conviction Supertrends **"Angry societies – Multipolar world," "Infrastructure – Closing the gap," "Technology at the service of humans," "Silver economy"** and **"Millennials' values."** The latter two reflect the two most meaningful simultaneous demographic trends: population aging and the gradual generational shift to the Millennials. What we like about these demographic themes is that, whatever else happens in the world, they continue to unfold because they are demographic. They can therefore be regarded as defensive from an investment point of view. As for technology, we are merely at the beginning of a new era, which represents our growth conviction. We continue to believe that a focus on technology that is helpful rather than harmful is the right one given that many areas of technology have been subject to controversy, regulatory scrutiny or even customer rejection. The two remaining themes are rooted in our interpretation of political developments and new economic policies we are seeing around the world.

A look back: In line with the Zeitgeist since inception

We feel that the past twelve months have brought repeated confirmation of how relevant our themes are. The emergence of a multipolar world, for example, could not have been clearer. After years of hyper-globalization, trade tensions since the beginning of 2018 have shown that several poles of similar economic and geostrategic strength have emerged. They are adjusting economic policy and international relations in their own interest far more assertively than in the past. In developed markets, this includes becoming more defensive with regard to granting foreign companies access to domestic markets and companies. In turn, emerging markets are increasingly aware that they have become an important pole themselves, with China and Russia each taking leading roles on the international stage. Given their population size, emerging markets also are the consumer markets of the future. Against this backdrop, we feel that we have composed our "Angry societies – Multipolar world" Supertrend accurately, focusing on national champions and brands as well as emerging market consumers. This Supertrend also focuses on the topic of security, which has been highly relevant over the last 12 months: defense spending is up significantly around the world, homeland security keeps making headlines due to terrorist acts and shootings, and cybersecurity remains highly topical due to repeated hacking attacks and malware incidents.

Our approach to technology has proven equally spot on. Since the Supertrends launch, we have advocated diversifying technology investments to include not only today's tech giants like Google and Apple, but also smaller companies in areas like augmented/virtual reality, leaders in artificial intelligence (AI) and robotics as well as new areas like healthtech. In our view, the recent Facebook scandal and related market volatility corroborated our approach. Indeed, our selection of stocks outperformed significantly during that time. We continue to see a heightened relevance of all our focus areas, with AI, for instance, helping lower energy consumption, improve traffic flows or increase crop yields; robotics contributing to better quality products, higher safety and less expensive elder care; and healthtech contributing to meaningfully lower health costs.

Population aging has become a topic of focus around the world. In a joint study published in The Lancet, the Imperial College London and the World Health Organization estimate that by 2030, life expectancy is set to increase in many developed and emerging countries. In South Korea, children born in 2030 can likely expect to live to over 90 years, an age long considered unattainable. The greater availability of health insurance and better health service coverage, a general focus on civil security, healthier eating and living practices as well as the absence of large-scale armed conflicts have all contributed to increasing life expectancy. At the same time, old age comes with old age diseases, above all cancer, heart failure, arthritis and forms of dementia. Healthcare companies that focus on these conditions can therefore benefit. Smaller biotechnology companies are currently seeing an uptick in merger and acquisition activity, while larger pharmaceutical companies are the true leaders in terms of scale. Beyond healthcare, the elderly will continue to spend their savings on consumption and activities tailored to their needs, while the working population expecting to live longer will require pension fund and asset management solutions to build savings available for consumption once they retire.

Meanwhile, the Millennials tide is just at the beginning. People currently under the age of 30 make up half of the population worldwide and are increasingly influencing businesses and the values of global firms. In recent months, a number of media and marketing initiatives have picked up the theme. The Financial Times, for example, introduced a special section on Millennials in its electronic version, reflecting the growing interest in the characteristics of this particular generation. According to Google Trends, web searches on news related to Millennials have doubled over the past twelve months, underpinning the increased visibility of this generation. We pride ourselves in having had a finger on the pulse with our Supertrend "Millennials' values," which has already created value for investors.

Of all our Supertrends, infrastructure has been the slowest to take off. In 2016, this theme was one of the most compelling investment propositions, but it subsequently slowed despite its undisputed relevance. It is no coincidence that the 2018 Buenos Aires G20 Summit lists infrastructure among its three top priorities. The G20 infrastructure outlook projects a USD 15 trillion investment gap until 2040, which we feel confirms the importance of this long-term investment theme. Once infrastructure spending returns to the fore in the USA and other countries and in light of rising interest rates, the theme is likely to come back to the spotlight. Thus we retain "Infrastructure – Closing the gap" as one of our five Supertrends.

New features and adjustments

While all five Supertrends remain fully valid, we are introducing a number of new features and adjustments. In "Technology at the service of humans," we introduce blockchain as part of the digitalization sub-theme. In our view, there are a number of beneficial ways to use the blockchain technology. We regard it as an accelerator for digitalization and an opportunity for investors to further diversify into new areas that will benefit from technological developments in future.

In "Infrastructure –Closing the gap," we add telecom infrastructure as a fourth sub-theme, as 5G technology is likely to be a catalyst for large investments in the sector. In terms of regional focus, we see additional potential for infrastructure investments in Africa and Latin America. Accordingly, we add the respective investment opportunities to our picks.

Last but not least, environmental, social and governance (ESG) criteria are set to remain a key topic and investment focus for Millennials. We therefore introduce a full ESG overlay to the "Millennials' values" Supertrend, ensuring that all stocks selected score high in this regard.

Robust performance amid higher volatility

We have generally been very satisfied with the results of our Supertrends. Now that elevated volatility has returned to global equity markets, we remain convinced that active investments and strategies aimed at creating value through specific selection (alpha strategies) are the right proposition for investors. With around 25 to 40 single stocks per Supertrend, our approach offers a good degree of diversification. Furthermore, each Supertrend's clear thematic focus ensures a meaningful difference from broader equity market indices. We have also made sure that each Supertrend includes a sensible combination of cyclical and defensive companies.

Moreover, diversification and risk management are top priorities in the construction of our Supertrends. The aim is to protect investors from idiosyncratic single company events or temporary headwinds in an industry, region or currency. In the indices we built to reflect our five high-conviction themes, each stock has a maximum weighting of only 5%, which differs substantially from weightings based on market capitalization. We further apply a risk-weighted approach based on the historical volatility of individual stocks to allocate specific stock weightings and further reduce the downside risk in the short run.

The more volatile financial markets of the last few months proved that this careful approach pays off – our indices have remained robust. As our Supertrends enter their second year since inception, our aim is unchanged: generating a positive absolute return for investors in the long term.

Angry societies – Multipolar world

When we established our "Angry societies – Multipolar world" Supertrend, we looked at the root causes of sweeping political and economic policy change, among them rising inequality and insecurity. We expected new governments around the world to strengthen their economies through domestic job creation, wage increases and potentially regulation or taxation of certain sectors or industries. Restoring middle class prosperity in Western economies, investing in security and defense and stimulating domestic private consumption through higher labor market participation would be likely priorities. We also expected emerging markets to take greater interest in their own economic strength, their consumers. A number of these expectations have been met, but there is further to go.

Global trade skirmishes have grabbed market and media attention since early 2018 and are far from over. Negotiations over NAFTA and between the USA and China are underway and suggest that areas of agreement are actively being sought, which could eventually be very positive for markets. At the same time, in case of unsuccessful negotiations, threats of tariffs in specific areas could well turn into reality, creating winners and losers along the way.

1.1 National champions and brands

Corporations have been directly affected by these developments. In April, for example, the US Bureau of Industry and Security banned US companies from selling products to ZTE, a Chinese telecom equipment and mobile phone manufacturer, for seven years. The decision was based on ZTE having violated sanctions on Iran and North Korea. The Chinese government itself announced measures including a 25% tariff on US products valued at USD 50 billion after the US threatened to impose tariffs due to unfair Chinese trade practices. These developments are a good example of the tit-for-tat turn trade negotiations can take.

In such an environment, national champions – major domestic companies with a large domestic workforce and strong regional product demand – appear less vulnerable. They often benefit from government support like subsidies for domestic investments or government lobbying, which reduces their vulnerability to protectionist measures such as tariffs. National champions with global, well-respected brands – we call them national brands – are even more protected thanks to a loyal and more diversified customer base.

1.2 Security and defense

Security remains a key concern for the middle class. In Western countries, the number of terrorist attacks strongly increased in 2017 to 204 compared to 96 in the previous year, according to AON 2018 Risk Maps. Terrorism therefore remains a major worry, highlighting the need for physical security measures like ID and access control, man guarding or explosives detection.

Support from smart locks and drones
Furthermore, the industry is increasingly adopting the use of software solutions. In the consumer segment, for instance, the trend goes toward smart locks like Amazon Key. Smart locks use a lock, a camera and an app to provide access. On the corporate and institutional side, the latest surveillance cameras use deep learning to improve pattern analysis and alert an operator when atypical activity is detected. This enables proactive prevention instead of having to analyze evidence after the fact.

Thanks to further progress on drone technology, drones are increasingly used for perimeter protection, for instance at public events like sports gatherings or open air concerts. At the same time, the more frequent use of drones requires better drone detection and protection of restricted air space. Yet the number of near-collisions of civil and military aircraft has increased in recent years. Investments in such technologies are often triggered by tougher safety regulations. For example, according to an EU regulation from 2011, airport baggage screening systems must be upgraded by 2020 to protect from a new generation of threats.

The importance of cyber security
With more and more connected devices, cyber security is becoming pivotal. Equifax, a leading US credit reporting agency, announced last September that hackers had stolen personal information of 143 million US consumers. The company's share price collapsed by one third within a week. ➚ **Ransomware** such as NotPetya or WannaCry caused tremendous damage in 2017. To illustrate just how costly such attacks are for companies – shipping company Maersk reported a negative impact of USD 250-350 million on profit after being hit by NotPetya. While ransomware volumes have increased strongly, according to NTT Security, incidents

➚ **Keywords** see end of chapter.

have actually been falling thanks to better detection and more effective policies. Yet overall, the total cost of responding to cyber-attacks has increased significantly over the last few years, according to Accenture.

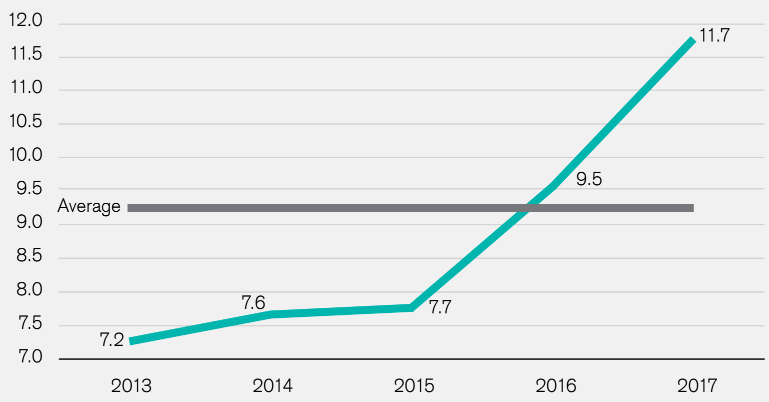
Eyes on geopolitical risks
The geopolitical environment remains fragile and is therefore another area of concern. There are signs of improvement on the Korean peninsula, where a potential meeting between US President Trump and North Korean leader Kim Jong-un has fueled hopes of a peaceful end to nuclear tensions. Yet, the situation in the Middle East, Syria and even the China Seas remains tense. In addition, given rapid technological change and interstate strategic competition – which has overtaken terrorism as the primary concern for US national security – defense spending is set to increase further, for instance in areas such as space, artificial intelligence, cyber or ↗ **hypersonic** technology.

1.3 Emerging market consumers

As the main beneficiaries of globalization, emerging markets (EM) are often assumed to be strongly exposed to international trade. While this is true for some export-oriented countries like South Korea and Argentina, it is not for the majority of EM countries, whose exports only account for a third or less of GDP. More importantly, EMs have a powerful domestic growth driver: their own consumers. A young population and a rise in middle class earners is a sound basis for sustainable consumption growth. The latest Credit Suisse Emerging Consumer Survey showed that consumer sentiment in EM is improving in Asian countries such as China, India and Indonesia, which have the most robust end-consumer markets. Positive trends are also visible in commodity-exporting nations such as Brazil and Russia. In parallel, elements of popular frustration have also emerged in some EM countries, with a possible shift to populist governments. In this context, domestic consumer sectors and national champions may well take on a strategic importance in these markets as well.

The rapidly growing penetration of smartphones opens up a broad range of online activities to EM consumers. Smartphones not only provide access to e-commerce platforms, but also serve as digital/mobile wallets. The highest activity can be observed among younger consumers, but we also see a high share of middle-aged consumers in China and India participate.

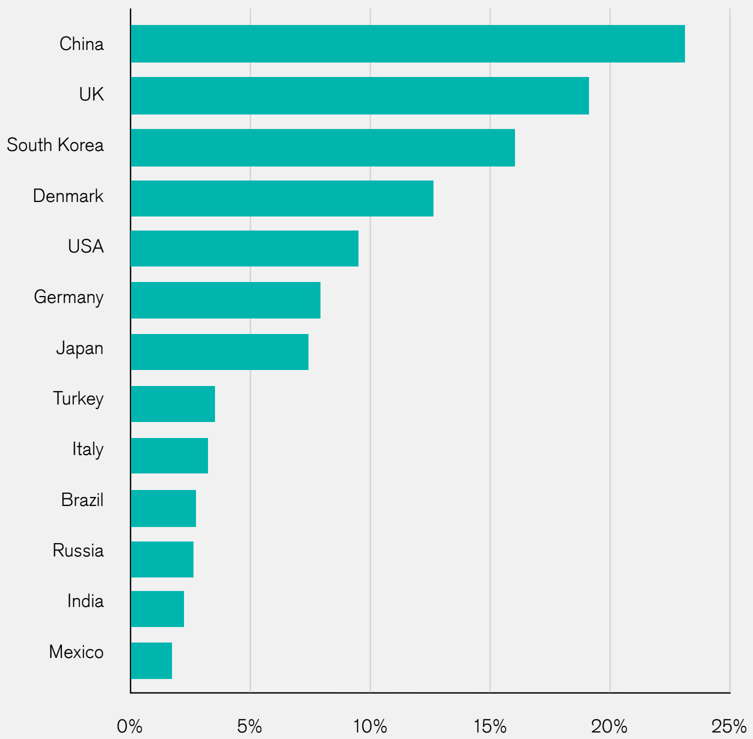
Global average cost of cyber-crime per organization
(in USD million)



The result is based on the answers from 254 organizations. The question was how much they have spent to deal with cyber-crimes over four consecutive weeks. The answers were validated and annualized.

Source
Accenture, Ponemon Institute (2017 Cost of Cyber Crime Study)

Except for China, online retail spending appears to have strong upside everywhere
(% of retail done online)



Source
Credit Suisse Emerging Consumer Survey 2018

Investor takeaways

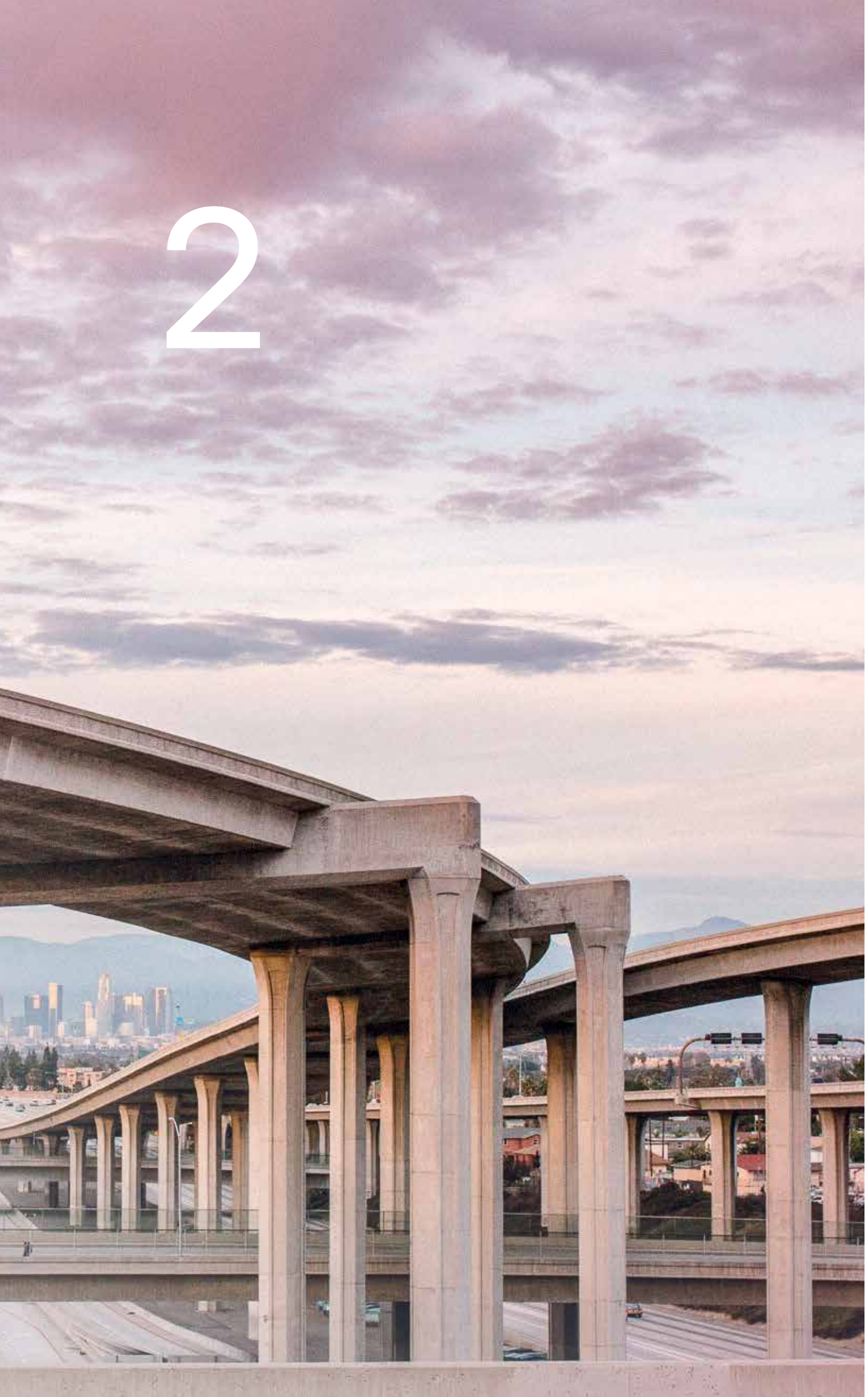
The key beneficiaries of this first Supertrend are, in our view:

- National champions, strategically important companies with a large domestic workforce, should be more protected from trade tensions and mercantilist government measures. National brands are national champions with strong brands. They should be even better insulated against trade worries.
- If trade agreements remain in place, national brands and traditional export-oriented companies such as global industrials or Asian consumer goods manufacturers should do well. Also, emerging market newcomers could continue to gain share in international markets.
- Companies providing physical and cyber security should benefit from higher spending. Companies with strong software capabilities are better positioned to succeed in an environment of tougher competition.
- EM consumer companies, especially those with a strong online offering, are set to benefit from the growing middle class that is increasingly active online.

For more information, please contact your Credit Suisse advisor.

↗ **Ransomware:** A type of malware designed to block access to a computer system, usually by encryption. Before the attackers return access to the victim, a payment is demanded. Typical means of delivery include phishing or security holes.

↗ **Hypersonic:** Hypersonic refers to a speed of Mach 5-10 (or 6,174-12,348 kilometers per hour), which is 5-10 times the speed of sound. The benefits are the level of speed, maneuverability and invisibility.



2

Infrastructure – Closing the gap

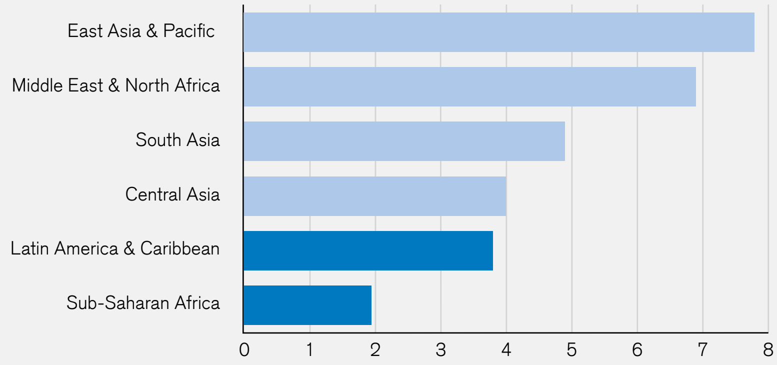
Infrastructure has been somewhat relegated to the back of investors' minds compared to 2016, but the need for infrastructure upgrades and investments remains as pressing as ever. Thus we continue to believe in this theme, but add a new angle with telecom infrastructure, where we expect 5G networks to act as an interesting catalyst. We also introduce a focus on a continent often absent from thematic investments: Africa, one of the most underinvested continents along with Latin America that has, however, been seeing strong investments from China.

Infrastructure remains an undisputable global priority. Reflecting its importance, the G20 Summit in Buenos Aires lists infrastructure as one of its top three priorities. The Global Infrastructure Outlook of the G20 Group estimates that the world needs infrastructure investments of USD 94 trillion by 2040. The ↗ **investment gap** between necessary investments and the projects that will be built could reach USD 15 trillion by then. Based on data from the G20 Group, infrastructure spending slowed during the European debt crisis in 2011 and 2012. Yet it recovered in 2013 and grew during all of 2010-2016 at a compound annual growth rate (CAGR) of 2.9%. Overall, spending has picked up strongly in recent years and reached annual growth rates of 7.3% in 2014, 4.4% in 2015 and 8.6% in 2016. Given the prospect of rising interest rates and funding costs, we expect to see renewed efforts to improve infrastructure pipelines. Tight public finances continue to speak for public private partnerships (PPPs), which offer private investment opportunities.

Investors in infrastructure are well-advised to keep an eye on certain risks, however. To be successful, PPPs require strong institutions, competent agencies, government guarantees and a political willingness to engage the private sector along with multilateral agencies and the public sector. On this basis, a differentiated approach is required in Latin America. In Europe, the UK is generally very advanced with privately owned and operated infrastructure, though controversy around the quality of these services may take on a new dimension in a politically charged environment. Spain also has a long history of infrastructure PPPs, having introduced concessions for its expressways already in the late 1960s. In contrast, Germany still lacks public support for infrastructure PPPs, as many Germans believe that public infrastructure should be solely funded by tax money. Investors can mitigate risks by including ESG criteria in their investment selection and avoid companies exposed to country risk.

↗ **Keywords** see end of chapter.

Public and private infrastructure investment 2017
(% of GDP)



Source
World Bank, Credit Suisse

2.1 Transport

The Global Infrastructure Outlook of the G20 countries forecasts that infrastructure investments in the global transport sector offer the greatest potential by 2040. This is particularly true for road transport. Of the globally projected infrastructure investment needs of USD 94 trillion between 2016 and 2040, a little more than half (53%) will have to go to transport infrastructure. Investments in road infrastructure are expected to absorb 36% of this total. Unsurprisingly, the G20 Infrastructure Outlook also projects the largest investment gap in the transport sector until 2040. Of the total USD 15 trillion funding gap, a little more than two thirds (69%) is expected to occur in the transport infrastructure sector, with road transport accounting for over half (53%) of the total funding gap by 2040.

While much focus has been on the One Belt One Road initiative and thus Asia, we believe Africa and Latin America are interesting regional highlights. The African Development Bank expects annual investment costs for road, ports, railways and air transport of USD 35-47 billion until 2025. Of these investments, 80% is required to preserve existing infrastructure and 20% to develop new projects. In Latin America, more than 60% of roads are unpaved compared to 46% in emerging Asian economies and 17% in Europe. It often takes longer to move agricultural or other products by rail within one Latin American country than to ship them to Europe.

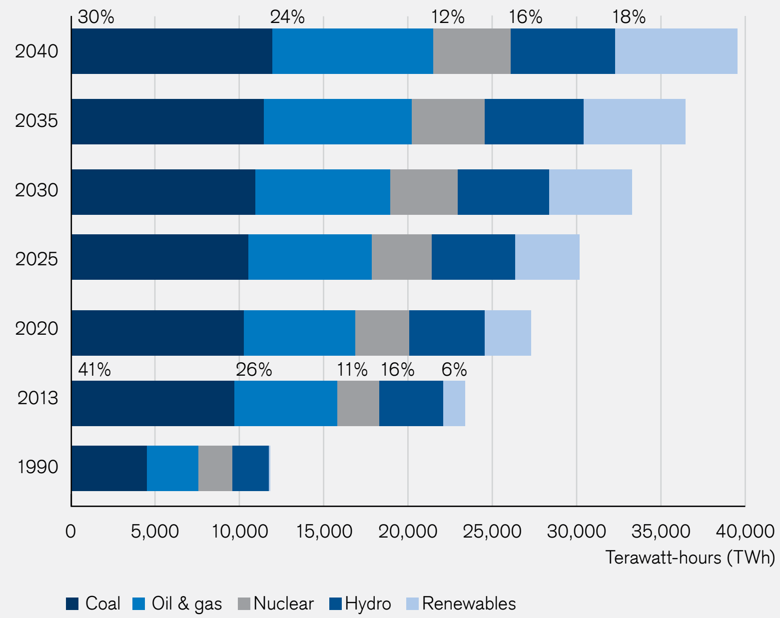
In both regions, China has become a very important partner and catalyst. In Latin America, China's banks invest more than the World Bank and the Inter-American Development Bank combined. In Africa, China, on average, provided 15% of all infrastructure investments over the past five years, while 40% of project financing came from African governments. This high share of Chinese infrastructure project financing comes with large contracts for Chinese construction companies, mostly but not exclusively state-owned and with implicit state guarantees should African governments default on loans.

2.2 Energy and water

The International Energy Agency (IEA) estimates that global electricity demand will increase by almost 70% from 23,318 terawatt hours (TWh) in 2013 to almost 40,000 TWh in 2040. Most of this demand is expected to come from non-OECD countries.

Given the strong electricity demand growth, installed power generation capacity is projected to increase by roughly 80% from 5,884 gigawatt (GW) in 2013 to about 10,500 GW in 2040. Installed capacity will have to more than double in non-OECD countries, led by China and India. The IEA estimates that the global power industry has to invest about USD 19.7 trillion until 2040. Of this total, USD 11.3 trillion are for 6,700 GW of new power plants (62% will be renewable capacity) and USD 8.4 trillion for new transmission and distribution infrastructure to deliver the electricity.

Development of fuel mix
for global electricity generation



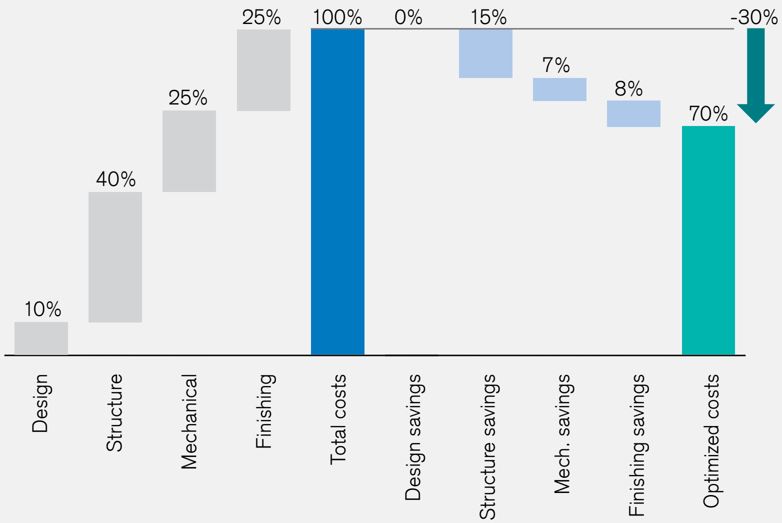
Source
International Energy Agency, Credit Suisse

Governments increasingly try to balance the policy goals of achieving economic growth and meeting stricter environmental standards. As a consequence, the ↗ **fuel mix** for electricity generation is expected to shift from hydrocarbons to a larger share of renewable energy sources. While the share of electricity generated from oil and gas (24%-26%), nuclear energy (11%-12%) and hydro (16%) is seen as remaining fairly stable between 2013 and 2040, the most significant fuel replacement is projected to occur between coal and renewables.

While electricity generation using coal continues to grow at a CAGR of 0.8%, its total share in the fuel mix is forecast to decline from 41% in 2013 to 30% in 2040. In contrast, electricity generated from renewables could see the strongest growth until 2040 (CAGR of 6.5%), with its share in the electricity fuel mix increasing from only 6% in 2013 to 18% in 2040. Nevertheless, more than half (54%) of the electricity will still be produced in thermal power plants using hydrocarbons (primarily coal and gas) in 2040, based on IEA estimates.

Just as electricity infrastructure investments are required to support a country's economy, water infrastructure is critical to a country's population. For example, the USA uses 42 billion gallons of water in homes, factories and offices each day. Drinking water is delivered via one million miles of pipes across the USA, many of which were laid

Cost savings from value engineering and industrial construction



Source
McKinsey, Credit Suisse

in the early to mid-20th century with a lifespan of 75 to 100 years. As utility companies achieve a pipe replacement rate of 0.5% per year on average, it will take an estimated 200 years to replace the entire US drinking water system, which will nearly double the useful life of the existing pipes. Significant new investments in filtration plants, pipes and pumps are needed, as nearly six billion gallons of treated drinking water are lost daily due to leaking pipes.

2.3 Affordable housing

Housing affordability remains topical in many expensive Western capital cities, but also affects housing in other developed and emerging markets. Governments of various countries have lately given this problem more attention. For example, affordability has become one of the central objectives in the coalition statement of the new German government. According to Bloomberg's Global City Housing Affordability Index, which measures affordability as a percentage of average monthly housing costs relative to income, housing is considered most expensive in emerging market cities like Caracas, Kiev and Hanoi.

Governments often try to solve the issue at the housing price level. For example, the German government introduced city-specific rental caps and intends to hand out new subsidies to potential home buyers. Private companies, in turn, can contribute on the housing cost side. In partnership, governments and private developers can develop the often significant share of government-owned undeveloped land in cities that is frequently valued below market prices under revenue sharing schemes. In addition, by changing land-use rules, cities can significantly lower the amount of land used per housing unit, usually by adjusting the permitted floor-area ratio.

Furthermore, there is a lot of room to improve productivity in the construction industry, the only industry to not raise productivity over the past 20 years. Yet better engineering can improve capital productivity and advanced industrial construction techniques can be used to improve labor productivity. McKinsey estimates that productivity improvements can cut production costs by 30% and reduce delivery time by 40-50%.

2.4 Telecom infrastructure.

The new sub-theme we introduce in this Supertrend is telecom infrastructure. The communication network sector is entering the next phase of evolution. Market research firm MarketsandMarkets expects network infrastructure investments in mobile data transmission technology of the ➚ **fifth generation (5G)** to start this year and reach a volume of USD 33 billion by 2026, which implies a CAGR of 50.9% YoY. In addition, tremendous investment programs to foster the roll-out of fast broadband are on their way. For instance, the European Commission is seeking to turn Europe into a Gigabit Society by 2025 and provide access to connectivity of at least 100 Mbps for European households.

The global fixed line communications equipment market is expected to grow at a CAGR of 4.1% between 2017 and 2021, according to Research and Markets. Policy makers around the world have realized that strong connectivity is the basis for progress in digitalization, which offers a competitive advantage to economies. While so far the consensus view is that investments in 5G will not start to be material before 2020, the USA and China already seem to be competing to build out the superfast network the earliest possible, with deployments starting as early as the second half of this year. In line with these investments, we expect continued strong demand for datacenters, which, for security reasons, are likely to become more localized (country-by-country hosting).

Investor takeaways

The key beneficiaries of this second Supertrend are, in our view:

- Engineering and construction companies that build and operate ports, airports and roads as well as materials companies that provide construction materials for infrastructure projects.
- Utility companies with a growing share of renewables in their generation mix. The energy transition also requires smarter transmission lines (smart grids) and energy storage technology to keep electricity supply reliable once more power comes from renewables.
- Companies that help to improve housing affordability by reducing development costs through standardized construction techniques.
- Companies that provide 5G network equipment and datacenter capacity.

For more information, please contact your Credit Suisse advisor.

➚ **Investment gap:** The shortfall between needed infrastructure investments based on economic and demographic growth projections and the projects actually built. McKinsey expects this gap to reach USD 12 trillion globally by 2030. The G20 Group sees it at USD 15 trillion by 2040.

➚ **Fuel mix:** The share of primary energy sources (e.g. oil, hydro) a country or region uses to create electricity. Energy agencies and energy companies have different projections of how much the share of renewable energy in the global fuel mix will rise at the expense of hydrocarbons.

➚ **Fifth generation (5G):** Is set to greatly enhance the speed coverage and responsiveness of wireless networks. It is expected to be roughly 10 to 100x speedier than a typical cellular connection and faster than a fiber-optic cable.

3

Technology at the service of humans

Technology stocks have rallied significantly since we launched our Supertrends. Yet, the sector has recently been the subject of controversy regarding data protection. Both developments have left investors wondering whether technology is still the place to be in equity investments. In our view, a number of factors continue to speak for technology as part of our multi-year conviction themes. We therefore retain our focus on "Technology at the service of humans" and now include blockchain technology, which offers numerous interesting applications, in our digitalization sub-theme.

Despite recent controversy, several factors speak in favor of technology companies. Contrary to the tech bubble at the turn of the century, technology firms have significant cash piles and low financial leverage. This puts them in a good position to uphold the strong growth of recent years.

The world is preparing its first steps into data transmission networks of the fifth generation (5G), which is expected to enable the next level of digitalization with billions of devices (e.g. cars) connected to the internet and generating high volumes of data. Meanwhile, our digital world already gave rise to blockchain, a technology that could help create a new network of trust, with many applications much more interesting than last year’s cryptocurrency hype.

These developments are just two examples of why we retain a focus on our Supertrend "Technology at the service of humans" with all the sub-themes. We are newly introducing blockchain to our digitalization sub-theme. We believe that improving efficiency forms the core principle of technological advances in such areas as artificial intelligence, internet of things and blockchain. According to the McKinsey Global Institute, the advent of these new technologies should boost the global economy at a time of weak productivity growth and population aging. In fact, McKinsey estimates that automation could enhance global productivity growth at a compound annual growth rate (CAGR) of 0.8% to 1.4% between 2015 and 2065.

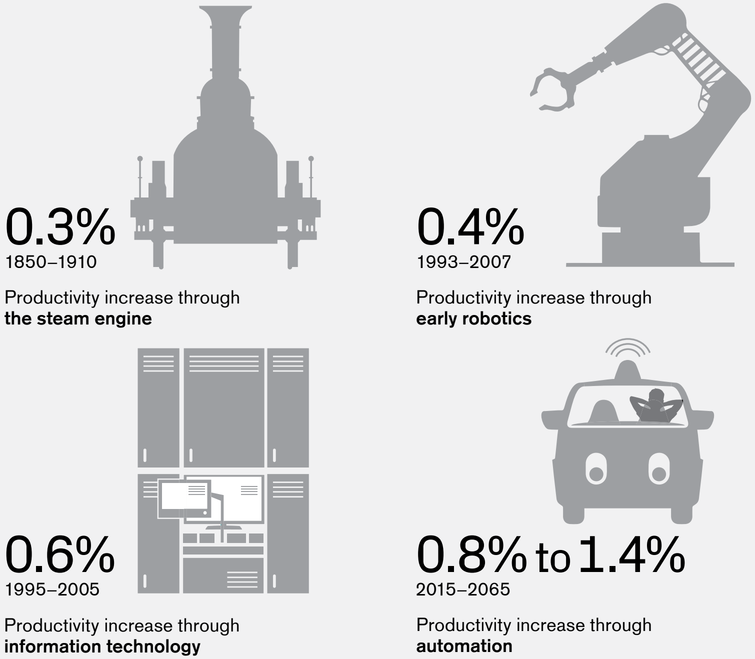
3.1 Digitalization

The adoption and roll-out of 5G data transmission networks is one of the most meaningful new catalysts of the technology theme, in our view. 5G enables the establishment of intelligent ecosystems of connected devices and people, which can be self-operating and autonomous. Given this kind of technological advance, the global digitalized world would become like a digital womb where digital infrastructure/networks connect billions of devices and exchange ever larger amounts of data each day. In our view, this will be the primary reason why organizations will continue to have to fully embed digitalization into their business strategies rather than consider it a mere optimization project.

Regulatory scrutiny warrants diversification

However, tech giants such as Alphabet or Amazon, which might become even stronger in a 5G world, have come under increased regulatory scrutiny in the USA and Europe. Policymakers are criticizing these large firms over privacy issues and increasingly examining tax payments and market dominance to control their size.

Increasing productivity
at the core of technologies



Source
McKinsey, Credit Suisse

In Europe, the new General Data Protection Regulation (GDPR) in place since May 2018 contains material sanctions for firms that do not inform affected parties immediately after a data breach in their networks. It also includes sanctions for companies that use private data without users' consent. After the Facebook data breach, the USA is discussing the introduction of a similar law. While we acknowledge that the big internet firms might remain in the spotlight, we do not believe that their business model is in danger long term. Yet it is prudent to consciously structure a technology equity portfolio and diversify it well so it is not overly exposed to single-company risk.

Eye on blockchain technology
One area that offers diversification potential in our digitalization sub-theme is the ↗ **blockchain technology**. While we at Credit Suisse have stayed away from the cryptocurrency hype, we believe that blockchain could provide a new network of trust. At its core, it enables processes of collaboration with different parties in a more reliable, transparent and secure way. The so-called ↗ **tokenization** of products/services in particular allows the involved parties to verify all necessary information at all steps of a transaction in real time. Consequently, a blockchain-style collaboration in many cases eliminates the middle men.

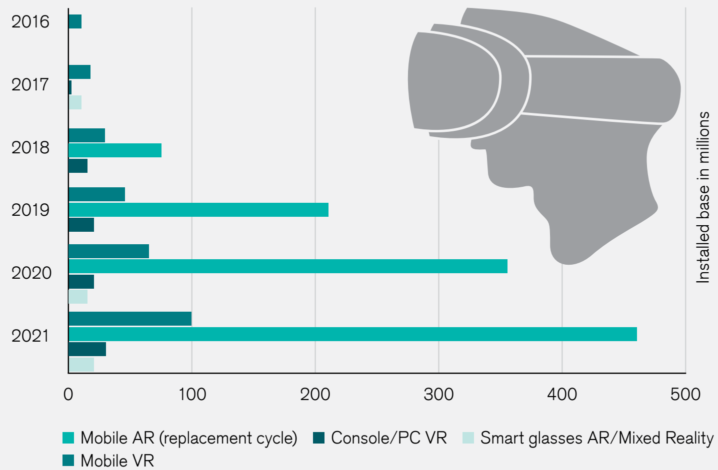
The blockchain technology has numerous merits and, we believe, is here to stay with numerous applications only beginning to have an impact. One very meaningful area of application is logistics. Using smart contracts will enable companies to automate purchasing processes, improve transaction flows, secure supply chains and reduce risks such as cargo theft. Semiconductor as well as software and services firms should benefit from the growing demand for processing power in the blockchain industry and IT services companies. Additionally, companies that act as first movers are likely to gain market share as they use the technology to their competitive advantage.

↗ **Keywords** see end of chapter.

3.2 Virtual reality/Augmented reality

Some investors think of our virtual reality/augmented reality (VR/AR) theme as a niche area concentrated on gaming. However, VR/AR has tremendous growth ahead, with 5G an important next catalyst. New innovations continue to make gaming devices more convenient and further improve user experience. In December 2017, Magic Leap unveiled its AR system, The Magic Leap One. Though its success remains doubtful, investors have poured some USD 2.7 billion into the system to date. We believe that the involvement of highly reliable investors such as Alibaba, Google, Temasek and Fidelity lends further credibility to the capability of VR and AR.

Growing usage of VR and AR devices
to drive the expansion of VR/AR services



Source
Statista, Digi-Capital, Credit Suisse

In fact, VR/AR will soon leap into everybody's home as TV experience is revolutionized thanks to 5G, which will treat sports event viewers, for example, to a near-live experience. In that context, it is interesting to note the acquisition of BamTech by Walt Disney. BamTech, the former spin-off of MLB Advanced Media (digital media arm of Major League Baseball), is seen as the best video streaming service provider from a technology point of view. It aims to provide VR live streams for sports events.

We expect more and more companies to embrace VR/AR and to see continuous improvement in the application of these technologies in the years ahead, ultimately turning VR/AR into a mainstream mass media technology. The market for VR/AR hardware and software could therefore increase to the size of the current smartphone market (USD 600–700 billion) and grow at the same pace that smartphones witnessed in 2001–2015. In 2018, IDC expects worldwide spending on VR/AR to reach USD 17.8 billion, almost twice what was spent in 2017. Moreover, it expects growth to remain at these levels until 2021, with an estimated CAGR 2017E-21E of around 99%.

3.3 Artificial intelligence

We continue to see the ➚ **artificial intelligence (AI)** market as benefiting structurally from the increasing digitalization of our homes, our industries and our cities. After all, digitalization offers solutions to the challenges society faces, for instance energy consumption, traffic flow and healthcare costs, to name but a few. In September 2017, the first AI-based active equity investment exchange traded funds started trading. Concurrently, Tencent launched a medical imaging AI product, Mi Ying, which it claims helps detect deadly diseases at an early stage. Meanwhile, Amazon has continued to disrupt the retail industry with the launch of the Amazon Go store, which uses some of the most advanced technology in the industry. All of these examples confirm our conviction that the use of AI is set to grow materially in the next 3–5 years.

Of course, the breakneck speed at which this "rise of the machines" is taking place has some people worried about the ethical and uncontrolled use of AI. We believe that the discussion about these issues is positive, as it should lead to better products that benefit society. In our view, the positive aspects clearly outweigh the negative ones. And it is not only larger firms such as Amazon, Alphabet and SAP that continue to expand their AI capabilities. Smaller firms and start-ups have also seen increased funding and stronger interest for mergers and acquisitions. One of the most important developments in terms of investment exposure is the rise of Chinese AI capabilities. Investors can benefit from this trend by buying into selected data platform managers, IT services and application software providers, datacenter managers, semiconductor manufacturers, and AI-exposed Chinese companies.

3.4 Industry 4.0

Robotics has been an interesting example of how technology can enter old economy sectors like manufacturing (secondary sector) or even agriculture (primary sector). We continue to believe in the merit of this sub-theme.

Today, with the exception of Japan, there are still just 74 robots for 10,000 workers in the manufacturing sector of developed countries, according to IFR World Robotics. At 15, the ratio of robots to workers is considerably lower in emerging markets. As labor markets tighten and full employment is attained in a number of economies, the gradual adoption of so-called cobots (from collaborative robot) is almost a given. Such cobots make repetitive or hard tasks for workers safer, ensure higher quality and are more productive. For example, Teradyne, a leading manufacturer of cobots, reported 72% sales growth for its robot division in 2017 and continues to expect 50%+ annual growth going forward. In addition to being applied in industry, these robots may someday assist people in their everyday lives or help in areas like elder care. Amazon is a front runner in using robots to automate its fulfillment centers. The number of robots in operation has reached 80,000, which implies a YoY growth acceleration in 2017 to 35,000 from 15,000 p.a. in the three years before.

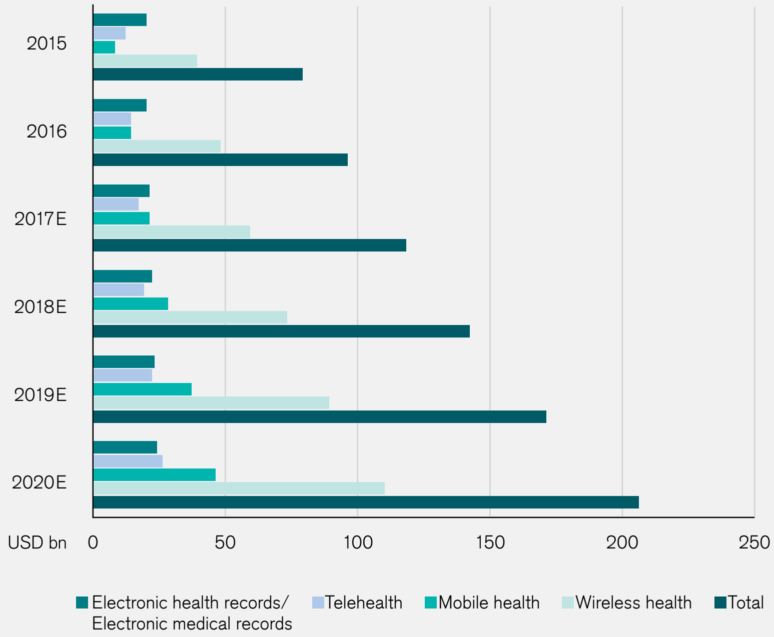
All these examples support our view that the longer-term demand outlook for automation remains attractive, driven by progress in IT that has enabled much smarter and cheaper automation solutions. Automation is also transforming industries (e.g. self-driving cars), impacting business models of companies that have missed the trend, and lowering barriers to entry.

3.5 Healthtech

Health technology (healthtech) has been a sub-theme of our Supertrend since the very beginning. It is a market that has shown strong growth in recent years and is forecast to continue growing. We therefore continue to believe in the potential of this theme and also see this sub-theme as a vital complement to our "Silver economy" Supertrend.

The global digital health market has been valued at USD 118 billion worldwide, according to industry research firm Statista. It is expected to reach a size of USD 206 billion by 2020, driven in particular by the mobile and wireless healthtech market. Managing patient data, applications of telehealth as well as fitness and wellness, and consultation or remote control solutions via smartphones are all driving growth in this area. In short, healthtech technologies help to improve health outcomes, be it through the promotion of healthy living, disease prevention and diagnosis or treatment and rehabilitation. These technologies include classic digitization solutions, the use of biotechnology, big data approaches or the use of artificial intelligence (AI) in healthcare research and development or delivery.

Healthtech market
sales expected to grow materially



Source
Statista, Credit Suisse

Care at a distance

With regard to digital tools, we have highlighted the potential for delivering care at a distance. It has been reassuring to see that Teladoc, a leader in virtual care delivery solutions (i.e. virtual visits through mobile/tablet/PC), remains on a strong growth trajectory. The company now expects close to two million virtual physician visits in 2018 – a doubling in merely two years. As ever more healthcare devices are interconnected, we see vast improvement potential ahead with regard to healthcare insights generated in less time and regardless of the geographical location of the patient or physician.

Great strides have also been made in biotechnology with the development of gene therapies and technologies such as RNA interference. The approval of a gene therapy product for retinal disease from Spark Therapeutics just before the turn of the year was followed by a flurry of gene therapy data presented for products aiming to treat conditions as diverse as spinal muscular atrophy, hemophilia or phenylketonuria.

The value of AI in healthtech

Artificial intelligence (AI) has also made inroads into healthcare. The technology is now used by many companies in drug development (e.g. to mine databases to identify drug candidates) as well as in diagnosis. It comes as little surprise that medical image analysis is particularly important. In fact, research firm Tractica identifies this area as the most important use case in the healthcare AI software, hardware and services market, which it expects to reach USD 19.3 billion by 2025.

Investor takeaways

The key beneficiaries of this third Supertrend are, in our view:

- Internet platform and cloud computing companies that have internet ecosystems to collect, manage, analyze and monetize materially increasing data traffic growth; firms that can benefit from the blockchain technology (e.g. data management and/or network security solutions providers);
- Companies engaged in VR and AR, software services firms that offer AI within their subscription packages, online gaming and online education companies (using AI and VR/AR), IT services companies, vendors of robots, providers of factory automation and maintenance software providers, semiconductor firms involved in blockchain and automotive/industrial end markets, logistics and precision farming specialists;
- Biotechnology firms using big data and AI and specialized on immunotherapy and gene therapy, remote patient monitoring solutions providers, health online education and management portals.

For more information, please contact your Credit Suisse advisor.

➚ **Blockchain:** A blockchain is a distributed, peer-to-peer transaction system that stores information in an immutable, decentralized way, enabling transactions among unknown participants. Blockchain may be used in cryptocurrencies, finance, logistics etc.

➚ **Tokenization:** Tokenization is the process of converting rights to real assets into a digital token on a blockchain, making them easier to trade.

➚ **Artificial Intelligence:** AI is the simulation of human intelligence processes (learning, reasoning, self-correction) by machines. AI applications include expert systems, speech recognition and machine vision.

4

Silver economy – Investing for population aging

At the heart of this theme is the prediction that the world's senior population is in the process of doubling from just short of a billion senior citizens at present to over two billion by 2050. This demographic shift is in full motion and will not change from one year to the next. What is appealing about this Supertrend is that whatever the state of the world economy, politics and other more medium-term drivers, population aging will continue, creating needs that are associated with old age in healthcare, insurance and funding solutions, consumer and property markets.

We continue to believe that healthcare is the sector that is most affected by the current demographic shifts. The incidence of many chronic diseases increases with age, which is why a larger elderly population is tied to a disproportionate rise in healthcare expenditure. Healthcare costs are expected to continue to rise at a rate several hundred basis points above GDP growth. This raises an important debate and calls for solutions to contain healthcare costs in spite of demographic developments. Technology can and will play a critical role in providing such solutions. In this context, we refer to our "Technology at the service of humans" Supertrend, which includes healthtech, and which we believe can be considered in conjunction with "Silver economy" investments, for example.

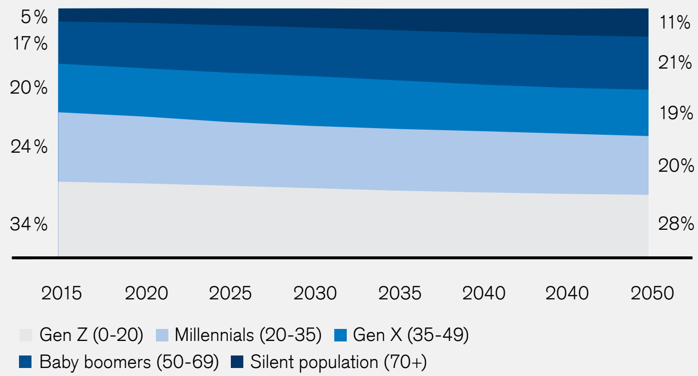
4.1 Old age diseases

Medical progress, too, will look to provide more effective and affordable cures for the diseases or disorders that come with age. Heart disease, for example, is a leading cause of death among the elderly and leads to global costs of USD 500 billion, according to the American Heart Association. Yet heart disease can be treated or avoided if the underlying hypertension or ↗ **dyslipidemia** is addressed. We see a tangible investment case in the area of cardiovascular medical devices, where minimally invasive heart valve replacements, for instance, are associated with a lower interventional burden and better therapeutic outcomes. Cancer, another widespread pathology related to aging, today costs over USD 1.1 trillion annually in physician fees, diagnostics, hospital visits, prescription drugs and other expenses. We are seeing significant amounts of biopharmaceutical companies' research and development budgets allocated to oncology compared to other therapy areas.

Merger and acquisition activity as a catalyst
Global pharmaceutical companies are further strengthening their pipelines and product portfolios across the spectrum. Numerous mergers and acquisitions are proof of such

↗ **Keywords** see end of chapter.

Cohort by age-group
as % of global population



Source
United Nations, Credit Suisse

external growth in this ever-growing market. The largest recent deal in the industry was Takeda offering USD 62 billion to acquire Shire to strengthen its rare diseases portfolio in the area of immunology and hematology. Other large deals in the industry in recent months include Novartis buying AveXis and Gilead buying Kite Pharma, giving the company's oncology products a better market position. We expect the acquisition trend in the industry to continue, which should further strengthen the business profiles of existing companies.

Regardless of indication, therapeutic area or nature of intervention (drugs, disease or other forms of therapy), we believe that the focus on value-creating innovation is paramount, as it alone ensures negotiating leverage for pharmaceutical companies in a world facing increasing healthcare costs. The cost factor has been highlighted in recent discussions about drug pricing. We focus on companies that have demonstrated strength in innovations.

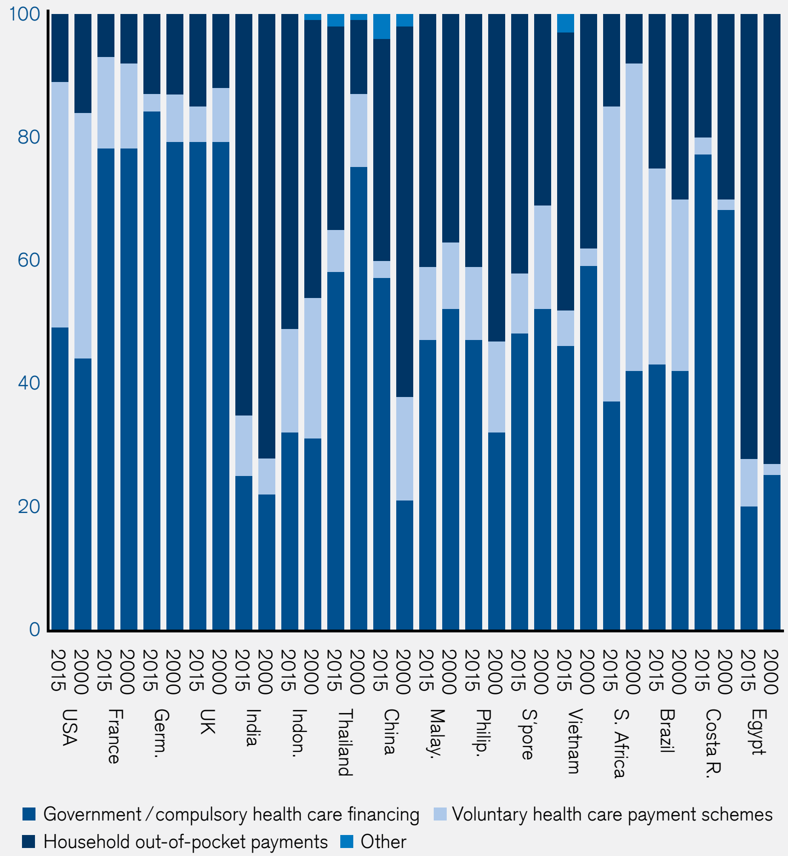
4.2 Health & life insurance and asset management

Despite efforts to lower healthcare costs and increase efficiency, the need for individual funding solutions for higher longevity and rising healthcare costs will continue to increase globally, representing an important driver for the insurance sector in addition to the healthcare sector. This affects not only developed markets, but increasingly emerging markets as well. Health insurance in particular continues to profit from high structural demand in emerging markets as incomes rise. In emerging economies, out-of-pocket (OOP) expenses typically form a large part of overall health expenditures, with government and compulsory health insurance the second main category. Voluntary health insurance makes up a minor share, but offers growth potential as individual wealth increases (OOP expenses could otherwise threaten to increase poverty, according to the World Health Organization) along with health expenses, which underpins both the affordability and need for health insurance coverage.

Population aging and rising longevity are likely to increase the demand for life insurance products as well. We believe that real gross premiums in life and savings should increase more in underpenetrated regions like Asia and, at a later stage, Africa. Growth is likely to be driven by life ↗ **annuities**, which are the only permitted retirement payout option in some regions. In countries where social security benefits are not sufficiently generous, longer life spans could increase demand for precautionary private savings and liquid assets to cover future expenses, not least for health services. Hence, we expect life insurers to increasingly expand toward so-called unit-linked products on the savings side and simultaneously focus more on protection products for the elderly.

In most developed countries, eligible individuals receive public pension benefits after reaching retirement age. These schemes are administered by governments, which bear the associated costs and risks. Most schemes work on a pay-as-you-go basis, whereby employment-related

Healthcare expenditures
by category

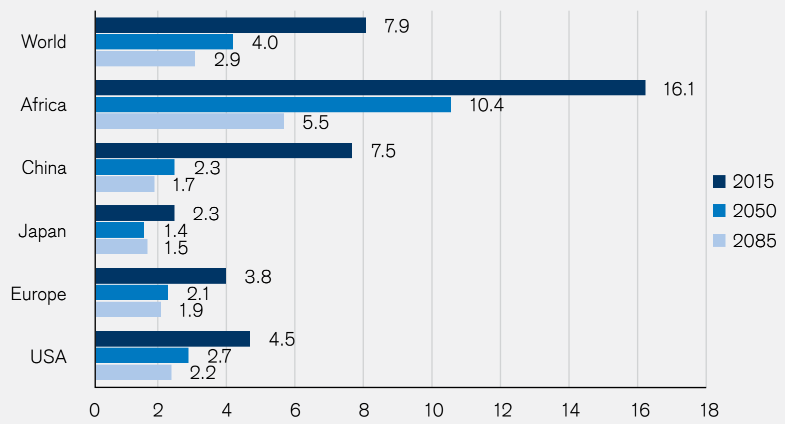


Source
World Health Organization, Global Health Expenditure Database

contributions are used to fund current pensions. The aging population is likely to increase public pension expenditure and, combined with falling support ratios, exert pressure on government budgets. To sustain public pension systems, the retirement age could be raised, which would translate into more savings and increased demand for (capital-protected) financial products. Aging and low interest rates are putting further pressure on retirement benefit levels and corporate pension funds. Hence, the transition from defined benefit (collective risk sharing) to defined contribution (individual risk bearing) plans will continue. This transition is already making rapid progress in the USA and UK, and we expect a growing market for bulk transactions, where specialized insurance companies take on the pension plan assets and management of large corporates.

As people can rely less and less on public and corporate pension plans, we expect households to increasingly save privately for retirement, so that a part of future pension income will stem from accumulated private assets and savings. While some life insurance products offer a tax advantage, increasing private savings will also require more sophisticated investment products to channel and convert those assets over an individual's lifetime. With the shift toward defined contribution plans, there will be opportunities for supplementary advisory services in structuring retirement plans/products and asset-liability management.

Potential support ratio of workers (15–64) to retired (65+)



Source
United Nations/DESA Population Division

4.3 Senior lifestyle

Seniors are the fastest-growing consumer age group in the world. The ↗ **baby boomers** already account for around 50%–60% of consumer spending in developed markets. They have a rising share of income compared with other demographic groups and thus increasingly high spending power, especially in the developed world. Euromonitor has projected that the spending power of consumers aged 60+ will double over ten years to reach USD 15 trillion by 2020. Yet very often this cohort is greatly affected by inflation because many retirees live on a fixed income. In the USA, for instance, the inflation index for the elderly rose at a faster pace over the last three decades than inflation for wage earners. Interestingly, though, the spread has narrowed in the most recent decade as price increases of medical care have slowed materially. Further, in Japan, despite broader stagnation, household consumption by seniors has grown gradually, even during recessionary periods, and has outpaced consumption by younger cohorts. In Europe, according to the European Commission, consumer spending of those aged 60+ grew 50% faster in the past two decades than of those under the age of 30. These data points demonstrate that consumers attempt to maintain their lifetime consumption levels by saving during periods of high income and dissaving after retirement.

Sectors exposed to consumption by seniors should display a similar underlying trend of consistent and stable growth. They include leisure and tourism (the 50+ cohort spends over EUR 100 billion per year on tourism), personal care and beauty products ("aging gracefully"), smart homes (a market expected to reach EUR 56 billion by 2020), eyewear, wellness and casinos. The latter have only begun to gain traction in Asia. For instance Japan, home to the world's oldest population, is now a step closer to awarding casino licenses as early as 2020, rolling out the red carpet to the wealthy elderly. While it will take another few years for the first casino to open its doors in Japan, the industry would most likely see substantial growth by attracting an entirely new clientele in an already gaming-friendly society. Importantly, despite all the focus on developed markets, the aging tidal wave has become a phenomenon in emerging markets too: By 2050, four out of five global seniors are forecast to live in emerging markets. Therefore, we believe that the emerging market angle must be represented appropriately in our "Silver economy" stock selection.

Older people have different needs, priorities and spending patterns than younger cohorts. This can have substantial implications for manufacturers and retailers. What differentiates today's seniors from earlier senior cohorts is that today's elderly are increasingly reaching their retirement age in good health, with a considerable number of active years ahead of them. It is thus not surprising that this consumer group uses their above-average spending power on leisure items, be it material goods such as fitness and outdoor gear, mobile homes and even boats and yachts, or experiences such as excursions, premium travel or spending time at gaming resorts and casinos. Notably, cruise lines today report that about two-thirds of demand is coming from elderly people, while casino companies in the USA say that over half of their revenues stems from seniors.

Personal health as well as appearance are other central topics for today's senior citizens. The aim to age gracefully will likely drive higher spending on personal care and beauty products. In the UK, for instance, women over 60 already account for a quarter of all sales in the beauty category – a number that has more than doubled from a decade ago. Spending intentions are most positive in the skincare category, focused on products with anti-aging labels. In terms of personal health, we expect a stronger emphasis on healthy living to lead to robust demand for vitamins and dietary supplements. Vision impairment, which is highly prevalent among the elderly, should support opportunities among manufacturers of prescription glasses and contact lenses.

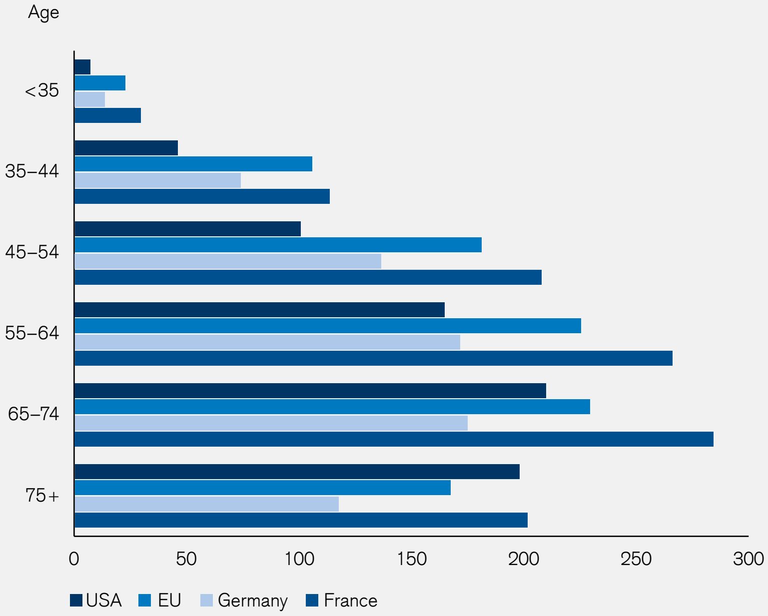
4.4 Senior housing and care facilities

As the elderly remain independent and healthier for longer, demand for customized senior housing – compared to today's solutions, which are often one-size-fits-all – is likely to increase significantly. Senior housing typically starts with barrier-free apartments that are easily accessible by public transport and close to medical care, dining, shopping and recreational facilities. The potential supply of assisted living services (e.g. ambulatory care, household assistance, emergency services) supports a household's independence and delays the often costly relocation to care or nursing homes, thus enabling the oft-cited aging in place. As the next logical step, we expect senior living operators to increasingly run facilities that consist of multiple units specializing in different disciplines. We see this as increasingly important given the observable shifts in disease patterns of the elderly from physical weaknesses to dementia, both of which are strongly tied to old age and require very specific care.

Along with old age, we often see a range of conditions that require specialized care settings, which can be permanent (in case of a dementia unit/home) or transitory, such as episodic care clinics. The latter can be generalized episodic care clinics, i.e. hospitals, or specialized ones such as dialysis clinics. Patients suffering from chronic kidney disease, a condition often related to old age, would in many cases be able to live independently, but need to visit a dialysis clinic several times a week. Clinics dedicated to episodic care of other conditions also provide crucial services to patients.

In Germany, real estate advisor CBRE estimates that around EUR 55 billion of investment will be needed by 2030 to cope with the future demand for senior housing. As less than 15% of healthcare facilities and housing in Germany are privately owned, we see opportunities for the private sector in a very fragmented market. Similar trends are likely to become visible elsewhere in Europe and increasingly in Asia and Latin America.

Wealth of seniors
Exchange rate as of 2013 as EU data taken between 2012–2014 (in USD k)



Source
European Central Bank Household Survey April 2017
US Bureau of Census, 2013 data

Investor takeaways

The key beneficiaries of this fourth Supertrend are, in our view:

- Healthcare companies in the areas of pharmaceuticals, biotechnology or medical devices that address conditions affecting the elderly, such as cancer, dementia, heart disease or arthritis;
- Consumer companies focusing on the basic needs, but also the more luxurious wants of senior consumers, such as providers of smart home devices, leisure and tourism companies, gaming and casino companies, personal care and beauty product providers or prescription glasses and contact lens manufacturers;
- Health and life insurance companies, private wealth advisors and asset managers with strong pricing capabilities;
- Providers of senior care, assisted living services, senior housing, dementia facilities, ambulatory care and physiotherapy, as well as companies selling domestic appliances and assistance focusing on the needs of the elderly.

For more information, please contact your Credit Suisse advisor.

↗ **Baby boomers:** People born between 1946 and 1964 when birth rates spiked globally after the end of World War II.

↗ **Dyslipidemia:** Disorder of the amount of lipids in the blood. Hyperlipidemia (i.e. high levels of cholesterol in the blood) is the most common form of dyslipidemia.

↗ **Annuities** are financial products that convert invested funds into regular payments. At retirement, insurance companies typically use annuities to transform a retiree's pension savings into steady cash flows. If payable until the death of the beneficiary, the insurance company assumes longevity risk (i.e. the risk of outliving one's assets).

Millennials' values

Over the past twelve months, consumer analysts and strategists have observed how consumer companies direct their product developments, marketing and sales initiatives forcefully at the new generation, the Millennials. Generation Y (20-35 years of age) and Z (below 20 years of age) are increasingly shaping future consumption as well as investment and business trends. An early mover, our Supertrend "Millennials' values" has successfully captured these developments since its inception last spring. Given the importance Millennials attribute to environmental, social and governance (ESG) criteria, we now introduce an ESG overlay across our stock selection for this Supertrend.

Much like previous generations, Millennials have distinct characteristics that shape their preferences, concerns and priorities. They are digital, global, environmentally friendly and social, to name but a few. Brands that surf the Millennials wave have outpaced their respective markets in 2017, and we expect this trend to continue. Another distinct feature of the Millennials generation is that, as a result of global demographics, most of them come from the emerging markets (EM). China accounts for a particularly large share of the world's Millennials. Chinese Millennials are leading the way in a rapid shift to online consumption and the development of ↗ **eSports**, which are rapidly gaining popularity. We seek to ensure that our Supertrend "Millennials' values" has sufficient exposure to EM consumer companies geared to the EM Millennial consumers or companies that are well positioned to cater to that consumer cohort.

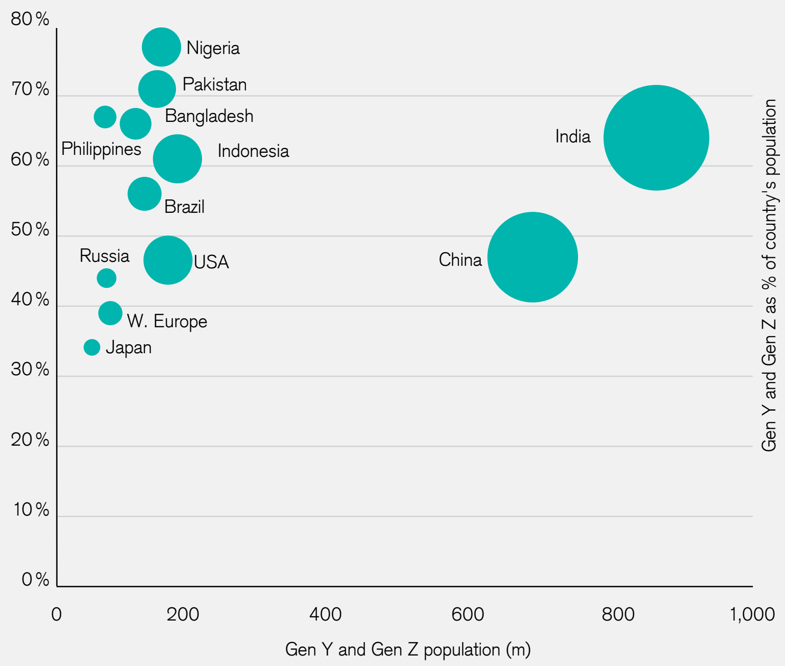
Strong environmental consciousness
Millennials are also highly conscious of the environment. In our view, it is thanks to them that electric cars, clean energy and environmental, social and corporate governance (ESG) investments are becoming more and more mainstream. While ESG-leading companies are already a sub-theme of our "Millennials' values" Supertrend, we are strengthening this focus by applying an ↗ **ESG overlay** to the entire stock selection for this Supertrend. This means that we only retain companies with a top score in the areas we believe are of relevance to our Supertrend.

5.1 Sustainable business and investments

Sustainability is a core value for Millennials, who are becoming more and more demanding in this regard, requiring companies to show how they make a positive contribution to society before buying their products. This is barely surprising, as evidence of climate change is growing, and

↗ **Keywords** see end of chapter.

Emerging markets: Home to the majority of Millennials
Size of bubble represents total Millennial population



Source
United Nations population division (2017 revision), Credit Suisse

pollution and environmental health hazards are becoming increasingly apparent in both developed and emerging markets. From an investment standpoint, applying ESG criteria to stock selection has been shown to improve risk management without lowering returns. Academic literature and case studies published on the subject have shown that companies with higher sustainability scores, on average, have better operational performance, are less risky, have a lower cost of debt and equity, and are better stock market investments. Further, companies whose ESG scores are improving tend to outperform those with static ESG scores. Thus sustainability should be a continuous process for a corporate organization. We believe there is a strong business incentive for companies to implement sustainable management practices with regard to ESG. Once these practices are deeply rooted in an organization's culture and values, they can provide a competitive advantage in the long run. In turn, not focusing on sustainable factors could pose reputational, financial and litigation risks, which could make companies more vulnerable. What is more, any bad press related to ESG factors could meaningfully impact demand from the Millennials cohort. Therefore, ESG not only improves risk-adjusted investment performance, but it is also becoming a prerequisite for a company to operate. Again, this is why we now integrate ESG standards across our stock selection in this Supertrend.

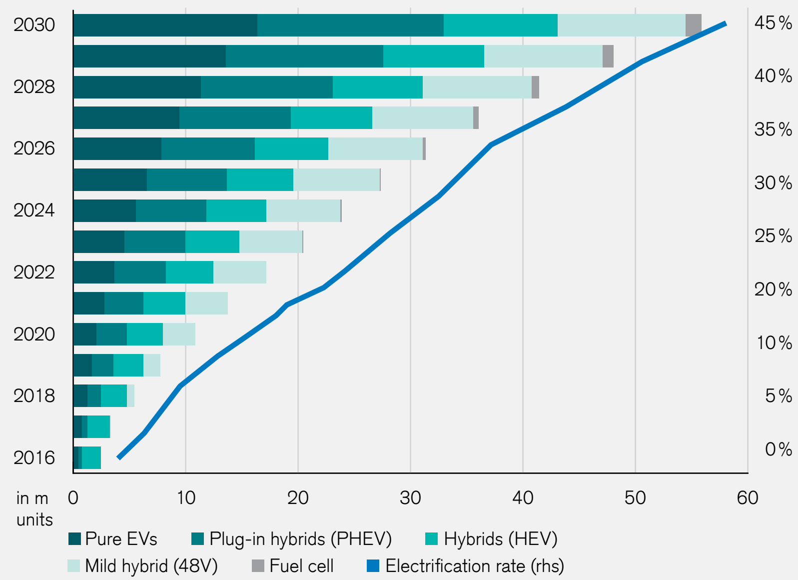
5.2 Clean energy

Clean energy is continuing to develop, with scale and technological innovation driving the costs of solar panels and wind turbines sharply lower and facilitating their development. Although the USA has withdrawn from the Paris climate accord, China, India and key European countries remain committed to the agreement. According to Bloomberg New Energy, the share of renewables (onshore wind and solar, based on capacity installation) in global power generation is expected to increase from less than 15% at present to more than 45% by 2040. Utilities with a large share of renewables should be of particular interest in that context.

Clean vehicles move to the fast lane

Over the past year, the electrification of vehicles has accelerated. Millennial consumers are demanding clean vehicles, which are becoming more spacious and autonomous. Furthermore, tougher emission regulations from 2021 onward and an accelerating decline in the share of diesel engines following the diesel scandal have prompted auto manufacturers to accelerate their shift to ➚ **electric vehicles**. Many manufacturers are already announcing model launches over the next 18 months. The timeline on autonomous vehicles has also been shortened, with fleets of robo-taxis announced from 2019.

Electric cars
forecast to reach 45% of annual car sales



Source
Credit Suisse estimates

We expect the share of battery electric vehicles to rise rapidly in the next decade, and are forecasting electric vehicles to make up 45% of annual car sales by 2030. The whole supply chain for electric vehicles is set to benefit: companies producing the critical raw materials used in the batteries (e.g. cobalt, lithium, graphite, whose prices have risen due to tight supply); battery makers whose capacity plans have yet to match the expected development curve of electric cars; semiconductor or auto suppliers that produce other components for the electrification of vehicles (e.g. sensors), which are forecast to double or triple their content in a car compared to suppliers catering to conventional cars. In this context, car manufacturers that are rapidly changing their strategies to adopt electrification, restructuring legacy operations and considering a leaner organization are likely to emerge as winners. Despite recent controversy, we also expect driverless cars to potentially redefine mobility. We are already witnessing the emergence of big fleet operators of robo-taxis, and ride sharing platforms are keen to increase their profit pool by adding mobility services such as entertainment to optimize passengers' unproductive time on board. Overall many companies can benefit from the trend toward electric and autonomous vehicles, driven by the Millennials generation.

5.3 Digital natives

Millennials are disrupting the way business is done, with digitalization permeating all realms of life. True digital natives, they have grown up with instant access to information and expect the same for goods. Thus, there is much scope to further monetize digitalization in markets such as advertising, retail or media.

In retail, for example, the online channel only represents 10% of global retail spending. Yet in 2017, 50% of holiday shopping in the USA took place online. Categories such as books, which are easy to shop for, have low fulfillment costs, and were the first segment to develop online, are now showing penetration rates above 50% in the most advanced markets. Yet, more categories are being addressed as online retailers find new ways to reduce fulfilment costs. Grocery, whose penetration rate is currently in the low single digits, is one of the latest categories to be targeted, with healthcare likely to be next. There are also regional differences in the penetration of online retail sales: China and the UK are the most advanced markets (penetration levels of around 20%), while other markets lag behind.

Data privacy under scrutiny
Recently, however, internet platforms have come under scrutiny for a lack of data protection. As a result, there is a risk of tighter regulation, particularly in Europe and the USA. We acknowledge that the big internet firms might remain in the spotlight regarding regulation and taxation, but we do not believe that their business model is in danger in the longer term since the behavior of Millennials is unlikely to change. Nevertheless, we would diversify away from companies exposed to regulatory risks into geographical markets that are more supported or protected by their governments (e.g. China) or that are still less developed (e.g. Latin America). We are tweaking our stock selection accordingly.

Brought up in an era driven by technological advances, Millennials are tech savvy. Robotics, artificial intelligence (AI) and blockchain, areas that are developing rapidly, are among their top priorities. The AI market is set to grow significantly in the next 5–10 years, turning the related companies into likely beneficiaries. The expansion of internet to mobile and the internet of things as well as advanced sensing and analytics offer new opportunities for automation and robotics in consumer facing applications. Over the last twelve months, for instance, we have seen voice-activated virtual assistants such as Amazon's Alexa or Google Home enter Millennials' homes. Finally, bitcoin and its underlying technology, blockchain, will be disruptive to payments, with Millennials the main target audience. As investors and consumers, Millennials will favor brands that are driven by constant technological advances.

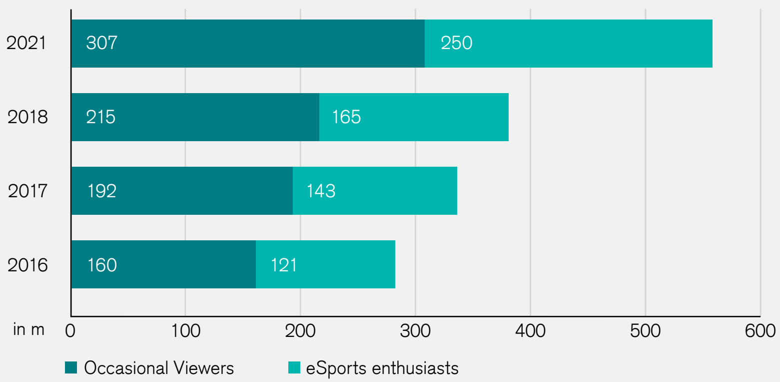
5.4 Fun, health and leisure

In 2017, brands that successfully rode the Millennials wave outpaced their respective markets, be it in the apparel, beverage, cosmetics, food or even luxury goods space. We expect this outperformance to continue. For us, the most interesting development was the addition of luxury goods to the list of areas that benefit from the Millennials' influence. Although this may be linked to the higher share of emerging markets in the global Millennials population and stronger consumption from this group, leading luxury brands already generate more than 50% of their sales with Millennials.
Premiumization, in other words a move toward branded and premium goods, is indeed a characteristic of the emerging market consumer regardless of age. But as emerging

markets claim a dominant share of the Millennials population, their consumption influence is equally strong. A recent Credit Suisse Research Institute survey on emerging market consumers corroborated many of our past observations about Millennials favoring experiences and a lifestyle centered around fun, health and leisure. We see strong potential for sports brands in emerging markets, as the penetration of the category is still significantly lower than in developed markets.

The rapidly gaining popularity of eSports
Chinese Millennials, for their part, are leading the way with regard to the development of video gaming, a theme we highlighted last year, but also eSports, which are rapidly gaining popularity. As concerns have emerged about video gaming and addiction risk, gaming companies have already started adopting countermeasures: Tencent, for instance, has introduced anti-gaming addiction rules such as limiting play time for children and teenage users and improved parental surveillance. eSports, where video gamers compete in global tournaments, has become the second most popular sport after football. The number of eSports fans rose to 335 million in 2017, more than the entire US population, and is expected to climb to 557 million by 2021, according to gaming market researcher Newzoo. This has not gone unnoticed, making eSports users an attractive target for advertisers and consumer brands. Traditional sports are also starting to associate themselves with eSports. In the 2022 Asian Games, eSports will be an official medal sport. In the medium term, therefore, the video game market and eSports continue to offer strong structural growth.

eSports audience projected to grow
at 13.6% between 2018-21E



Source
Newzoo, Credit Suisse

5.5 Millennials' housing

Millennials not only have their own ideas about work-life balance and self-fulfillment; they also have different ideas about housing. Generally they have little interest in the over-sized suburban houses of their parents' generation. Their priorities include access to public transportation, shopping within walking distance and proximity to the workplace. Millennials prefer urban life, not least because the interesting jobs are in the cities. Not opposed to homeownership, many nonetheless find that record-high prices for real estate are often an insurmountable barrier to affordability.

Micro-apartments an attractive market niche
High jobless rates in the wake of the financial crisis as well as lengthy education and training paths have left little opportunity for Millennials to save for a home. As a result, an unusually high number continues to live with their parents. However, Millennials are prepared to economize on floor space to lower housing costs. Innovative real estate developers, recognizing this market niche, offer housing with minimal floor space (micro-apartments, tiny houses, etc.) by keeping the kitchen and bathroom small or eliminating the living room. Modular construction is another interesting option to reduce building costs. Such offers are often combined with communal living arrangements that are part

of the emerging co-living trend. Since Millennials often lack the assets to buy a home, rental properties are enjoying increasing popularity, even in countries where the market for rental apartments was previously underdeveloped.

Investor takeaways

The key beneficiaries of this fifth Supertrend are, in our view:

- Companies exposed to clean energy (renewable energy, electric vehicle supply chain), in digital natives brands (social media sites, e-commerce leaders, technology brands) and companies exposed to fun, health and leisure (video gaming, eSports, Millennials brands in apparel, beverages, cosmetics, food, luxury goods);
- EM consumer companies which are likely to benefit from the dominance of EM Millennials in the cohort;
- Companies that score high in terms of ESG. We apply an ESG overlay to the entire stock selection, retaining only ESG leading companies.

For more information, please contact your Credit Suisse advisor.

➚ **eSports** are competitions where professional video gamers compete in global tournaments. There is an International eSports Federation and an eSports World Championship.

➚ **ESG overlay** or **ESG investing** is concerned with applying the relevant environmental, social and corporate governance considerations to our stock selection process. This is based on the belief that these factors can have a material impact on financial performance.

➚ **Electric vehicles (EVs)** are cars with an electric component in the drivetrain including all classes such as 48 Volt mild hybrids, hybrids (HEV), plug-in hybrids (PHEV), pure EVs (BEV) and fuel cell electric vehicles (FCEVs).

Risk warning
Every investment involves risk, especially with regard to fluctuations in value and return. If an investment is denominated in a currency other than your base currency, changes in the rate of exchange may have an adverse effect on value, price or income.

For a discussion of the risks of investing in the securities mentioned in this report, please refer to the following Internet link: **https://research.credit-suisse.com/riskdisclosure**

This report may include information on investments that involve special risks. You should seek the advice of your independent financial advisor prior to taking any investment decisions based on this report or for any necessary explanation of its contents. Further information is also available in the information brochure "Special Risks in Securities Trading" available from the Swiss Bankers Association.

The price, value of and income from any of the securities or financial instruments mentioned in this report can fall as well as rise. The value of securities and financial instruments is affected by changes in spot or forward interest and exchange rates, economic indicators, the financial standing of any issuer or reference issuer, etc., that may have a positive or adverse effect on the income from or price of such securities or financial instruments. By purchasing securities or financial instruments, you may incur a loss or a loss in excess of the principal as a result of fluctuations in market prices or other financial indices, etc. Investors in securities such as ADRs, the values of which are influenced by currency volatility, effectively assume this risk.

Commission rates for brokerage transactions will be as per the rates agreed between CS and the investor. For transactions conducted on a principal-to-principal basis between CS and the investor, the purchase or sale price will be the total consideration. Transactions conducted on a principal-to-principal basis, including over-the-counter derivative transactions, will be quoted as a purchase/bid price or sell/offer price, in which case a difference or spread may exist. Charges in relation to transactions will be agreed upon prior to transactions, in line with relevant laws and regulations. Please read the pre-contract documentation, etc., carefully for an explanation of risks and commissions, etc., of the relevant securities or financial instruments prior to purchase

Structured securities are complex instruments, typically involve a high degree of risk and are intended for sale only to sophisticated investors who are capable of understanding and assuming the risks involved. The market value of any structured security may be affected by changes in economic, financial and political factors (including, but not limited to, spot and forward interest and exchange rates), time to maturity, market conditions and volatility, and the credit quality of any issuer or reference issuer. Any investor interested in purchasing a structured product should conduct their own investigation and analysis of the product and consult with their own professional advisers as to the risks involved in making such a purchase.

Some investments discussed in this report have a high level of volatility. High volatility investments may experience sudden and large falls in their value causing losses when that investment is realized. Those losses may equal your original investment. Indeed, in the case of some investments the potential losses may exceed the amount of initial investment, in such circumstances you may be required to pay more money to support those losses. Income yields from investments may fluctuate and, in consequence, initial capital paid to make the investment may be used as part of that income yield. Some investments may not be readily realizable and it may be difficult to sell or realize those investments, similarly it may prove difficult for you to obtain reliable information about the value, or risks, to which such an investment is exposed. Please contact your Relationship Manager if you have any questions.

Past performance is not an indicator of future performance. Performance can be affected by commissions, fees or other charges as well as exchange rate fluctuations.

Sensitivities
Sensitivity analysis is understood as the change in the market value (e.g. price) of a financial instrument for a given change in a risk factor and/or model assumption. Specifically, the market value of any financial instrument may be affected by changes in economic, financial and political factors (including, but not limited to, spot and forward interest and exchange rates), time to maturity, market conditions and volatility, and the credit quality of any issuer or reference issuer.

Financial market risks
Historical returns and financial market scenarios are no guarantee of future performance. The price and value of investments mentioned and any income that might accrue could fall or rise or fluctuate. Past performance is not a guide to future performance. If an investment is denominated in a currency other than your base currency, changes in the rate of exchange may have an adverse effect on value, price or income. You should consult with such advisor(s) as you consider necessary to assist you in making these determinations.

Investments may have no public market or only a restricted secondary market. Where a secondary market exists, it is not possible to predict the price at which investments will trade in the market or whether such market will be liquid or illiquid.

Emerging markets
Where this report relates to emerging markets, you should be aware that there are uncertainties and risks associated with investments and transactions in various types of investments of, or related or linked to, issuers and obligors incorporated, based or principally engaged in business in emerging markets countries. Investments related to emerging markets countries may be considered speculative, and their prices will be much more volatile than those in the more developed countries of the world. Investments in emerging markets investments should be made only by sophisticated investors or experienced professionals who have independent knowledge of the relevant markets, are able to consider and weigh the various risks presented by such investments, and have the financial resources necessary to bear the substantial risk of loss of investment in such investments. It is your responsibility to manage the risks which arise as a result of investing in emerging markets investments and the allocation of assets in your portfolio. You should seek advice from your own advisers with regard to the various risks and factors to be considered when investing in an emerging markets investment.

Alternative investments
Hedge funds are not subject to the numerous investor protection regulations that apply to regulated authorized collective investments and hedge fund managers are largely unregulated. Hedge funds are not limited to any particular investment discipline or trading strategy, and seek to profit in all kinds of markets by using leverage, derivatives, and complex speculative investment strategies that may increase the risk of investment loss.

Commodity transactions carry a high degree of risk and may not be suitable for many private investors. The extent of loss due to market movements can be substantial or even result in a total loss. Investors in real estate are exposed to liquidity, foreign currency and other risks, including cyclical risk, rental and local market risk as well as environmental risk, and changes to the legal situation.

Interest rate and credit risks
The retention of value of a bond is dependent on the creditworthiness of the Issuer and/or Guarantor (as applicable), which may change over the term of the bond. In the event of default by the Issuer and/or Guarantor of the bond, the bond or any income derived from it is not guaranteed and you may get back none of, or less than, what was originally invested.

Disclosures
The information and opinions expressed in this report (other than article contributions by Investment Strategists) were produced by the Research department of the International Wealth Management division of CS as of the date of writing and are subject to change without notice.

This material may refer to previously published research recommendations and rating changes (sometimes collated in the form of lists). All Research articles and reports detailing the recommendations and rating changes for companies and/or individual financial instruments are available on the following internet link:
https://investment.credit-suisse.com

For further information, including disclosures with respect to any other issuers, please refer to the Credit Suisse Research Disclosure site at: **https://www.credit-suisse.com/disclosure**

Article contributions by Investment Strategists are not research reports. Investment Strategists are not part of the CS Research department. CS has policies in place designed to ensure the independence of CS Research Department including policies relating to restrictions on trading of relevant securities prior to distribution of research reports. These policies do not apply to Investment Strategists.

CS accepts no liability for loss arising from the use of the material presented in this report, except that this exclusion of liability does not apply to the extent that liability arises under specific statutes or regulations applicable to CS. This report is not to be relied upon in substitution for the exercise of independent judgment. CS may have issued, and may in the future issue, a trading idea regarding this security. Trading ideas are short term trading opportunities based on market events and catalysts, while company recommendations reflect investment recommendations based on expected total return over a 6 to 12-month period as defined in the disclosure section. Because trading ideas and company recommendations reflect different assumptions and analytical methods, trading ideas may differ from the company recommendations. In addition, CS may have issued, and may in the future issue, other reports that are inconsistent with, and reach different conclusions from, the information presented in this report. Those reports reflect the different assumptions, views and analytical methods of the analysts who prepared them and CS is under no obligation to ensure that such other reports are brought to the attention of any recipient of this report.

Analyst certification

The analysts identified in this report hereby certify that views about the companies and their securities discussed in this report accurately reflect their personal views about all of the subject companies and securities. The analysts also certify that no part of their compensation was, is, or will be directly or indirectly related to the specific recommendation(s) or view(s) in this report.

Knowledge Process Outsourcing (KPO) Analysts mentioned in this report are employed by Credit Suisse Business Analytics (India) Private Limited.

Global Disclaimer / Important Information

This report is not directed to, or intended for distribution to or use by, any person or entity who is a citizen or resident of or located in any locality, state, country or other jurisdiction where such distribution, publication, availability or use would be contrary to law or regulation or which would subject CS to any registration or licensing requirement within such jurisdiction.

References in this report to CS include Credit Suisse AG, the Swiss bank, its subsidiaries and affiliates. For more information on our structure, please use the following link: **http://www.credit-suisse.com**

NO DISTRIBUTION, SOLICITATION, OR ADVICE: This report is provided for information and illustrative purposes and is intended for your use only. It is not a solicitation, offer or recommendation to buy or sell any security or other financial instrument. Any information including facts, opinions or quotations, may be condensed or summarized and is expressed as of the date of writing. The information contained in this report has been provided as a general market commentary only and does not constitute any form of regulated financial advice, legal, tax or other regulated service. It does not take into account the financial objectives, situation or needs of any persons, which are necessary considerations before making any investment decision. You should seek the advice of your independent financial advisor prior to taking any investment decisions based on this report or for any necessary explanation of its contents. This report is intended only to provide observations and views of CS at the date of writing, regardless of the date on which you receive or access the information. Observations and views contained in this report may be different from those expressed by other Departments at CS and may change at any time without notice and with no obligation to update. CS is under no obligation to ensure that such updates are brought to your attention. **FORECASTS & ESTIMATES:** Past performance should not be taken as an indication or guarantee of future performance, and no representation or warranty, express or implied, is made regarding future performance. To the extent that this report contains statements about future performance, such statements are forward looking and subject to a number of risks and uncertainties. Unless indicated to the contrary, all figures are unaudited. All valuations mentioned herein are subject to CS valuation policies and procedures. **CONFLICTS:** CS reserves the right to remedy any errors that may be present in this report. Credit Suisse, its affiliates and/or their employees may have a position or holding, or other material interest or effect transactions in any securities mentioned or options thereon, or other investments related thereto and from time to time may add to or dispose of such investments. CS may be providing, or have provided within the previous 12 months, significant advice in relation to the investments listed in this report or a related investment to any company or issuer mentioned. Some investments referred to in this report will be offered by a single entity or an associate of CS or CS may be the only market maker in such investments. CS is involved in many businesses that relate to companies mentioned in this report. These businesses include specialized trading, risk arbitrage, market making, and other proprietary trading. CS is party to an agreement with the issuer relating to provision of services of investment firms. **TAX:** Nothing in this report constitutes investment, legal, accounting or tax advice. CS does not advise on the tax consequences of investments and you are advised to contact an independent tax advisor. The levels and basis of taxation are dependent on individual circumstances and are subject to change. **SOURCES:** Information and opinions presented in this report have been obtained or derived from sources which in the opinion of CS are reliable, but CS makes no representation as to their accuracy or completeness. CS accepts no liability for a loss arising from the use of this report. **WEBSITES:** This report may provide the addresses of, or contain hyperlinks to, websites. Except to the extent to which the report refers to website material of CS, CS has not reviewed the linked site and takes no responsibility for the content contained therein. Such address or hyperlink (including addresses or hyperlinks to CS's own website material) is provided solely for your convenience and information and the content of the linked site does not in any way form part of this report. Accessing such website or following such link through this report or CS's website shall be at your own risk.

Distribution of research reports

Except as otherwise specified herein, this report is prepared and issued by Credit Suisse AG, a Swiss bank, authorized and regulated by the Swiss Financial Market Supervisory Authority. **Australia:** This report is distributed in Australia by Credit Suisse AG, Sydney Branch (CSSB) (ABN 17 061 700 712 AFSL 226896) only to "Wholesale" clients as defined by s761G of the Corporations Act 2001. CSSB does not guarantee the performance of, nor make any assurances with respect to the performance of any financial product referred herein. **Austria:** This report is distributed by CREDIT SUISSE (LUXEMBOURG) S.A. Zweigniederlassung Österreich. The Bank is a branch of CREDIT SUISSE (LUXEMBOURG) S.A., a duly authorized credit institution in the Grand Duchy of Luxembourg with address 5, rue Jean Monnet, L-2180 Luxemburg. It is further subject to the prudential supervision of the Luxembourg supervisory authority, the Commission de Surveillance du Secteur Financier (CSSF), 110, route d'Arlon, L-2991 Luxembourg, Grand Duchy of Luxembourg as well as the Austrian supervisory authority, the Financial Market Authority (FMA), Otto-Wagner Platz 5, A-1090 Vienna. **Bahrain:** This report is distributed by Credit Suisse AG, Bahrain Branch, authorized and regulated by the Central Bank of Bahrain (CBB) as an Investment Business Firm Category 2. Related financial services or products are only made available to professional clients and Accredited Investors, as defined by the CBB, and are not intended for any other persons. Credit Suisse AG, Bahrain Branch is located at Level 21-22, East Tower, Bahrain World Trade Centre, Manama, Kingdom of Bahrain. **DIFC:** This information is being distributed by Credit Suisse AG (DIFC Branch). Credit Suisse AG (DIFC Branch) is licensed and regulated by the Dubai Financial Services Authority ("DFSA"). Related financial services or products are only made available to Professional Clients or Market Counterparties, as defined by the DFSA, and are not intended for any other persons. Credit Suisse AG (DIFC Branch) is located on Level 9 East, The Gate Building, DIFC, Dubai, United Arab Emirates. **France:** This report is distributed by Credit Suisse (Luxembourg) S.A., Succursale en France, authorized by the Autorité de Contrôle Prudentiel et de Résolution (ACPR) as an investment service provider. Credit Suisse (Luxembourg) S.A., Succursale en France, is supervised and regulated by the Autorité de Contrôle Prudentiel et de Résolution and the Autorité des Marchés Financiers. **Germany:** This report is distributed by Credit Suisse (Deutschland) Aktiengesellschaft regulated by the Bundesanstalt für Finanzdienstleistungsaufsicht ("BaFin"). **Guernsey:** This report is distributed by Credit Suisse AG Guernsey Branch, a branch of Credit Suisse AG (incorporated in the Canton of Zurich), with its place of business at Helvetia Court, Les Echelons, South Esplanade, St Peter Port, Guernsey. Credit Suisse AG Guernsey Branch is wholly owned by Credit Suisse AG and is regulated by the Guernsey Financial Services Commission. Copies of the latest audited accounts are available on request. **Hong Kong:** This report is distributed in Hong Kong by Credit Suisse AG, Hong Kong Branch, an Authorized Institution regulated by the Hong Kong Monetary Authority and a Registered Institution regulated by the Securities and Futures Commission, and was prepared in compliance with section 16 of the "Code of Conduct for Persons Licensed by or Registered with the Securities and Futures Commission". The contents of this material have not been reviewed by any regulatory authority in Hong Kong. You are advised to exercise caution in relation to any offer. If you are in any doubt about any of the contents of this material, you should obtain independent professional advice. No one may have issued or had in its possession for the purposes of issue, or issue or have in its possession for the purposes of issue, whether in Hong Kong or elsewhere, any advertisement, invitation or material relating to this product, which is directed at, or the contents of which are likely to be accessed or read by, the public of Hong Kong (except if permitted to do so under the securities laws of Hong Kong) other than where this product is or is intended to be disposed of only to persons outside Hong Kong or only to "professional investors" as defined in the Securities and Futures Ordinance (Cap. 571) of Hong Kong and any rules made thereunder. **India:** This report is distributed by Credit Suisse Securities (India) Private Limited (CIN no. U67120MH1996PTC104392) regulated by the Securities and Exchange Board of India as Research Analyst (registration no. INH 000001030), as Portfolio Manager (registration no. INP000002478) and as Stock Broker (registration no. INB230970637; INF230970637; INB010970631; INF010970631), having registered address at 9th Floor, Ceejay House, Dr.A.B. Road, Worli, Mumbai - 18, India, T- +91-22 6777 3777. **Italy:** This report is distributed in Italy by Credit Suisse (Italy) S.p.A., a bank incorporated and registered under Italian law subject to the supervision and control of Banca d'Italia and CONSOB. **Japan:** This report is solely distributed in Japan by Credit Suisse Securities (Japan) Limited, Financial Instruments Dealer, Director-General of Kanto Local Finance Bureau (Kinsho) No. 66, a member of the Japan Securities Dealers Association, Financial Futures Association of Japan, Japan Investment Advisers Association, and Type II Financial Instruments Firms Association. Credit Suisse Securities (Japan) Limited will not distribute or forward this report outside Japan. **Lebanon:** This report is distributed by Credit Suisse (Lebanon) Finance SAL ("CSLF"), a financial institution incorporated in Lebanon and regulated by the Central Bank of Lebanon ("CBL") with a financial institution license number 42. Credit Suisse (Lebanon) Finance SAL is subject to the CBL's laws and regulations as well as the laws and decisions of the Capital Markets Authority of Lebanon ("CMA"). CSLF is a subsidiary of Credit Suisse AG and part of the Credit Suisse Group (CS). The CMA does not accept any responsibility for the content of the information included in this report, including the accuracy or completeness of such information. The liability for the content of this report lies with the issuer, its directors and other persons, such as experts, whose opinions are included in the report with their consent. The CMA has also not assessed the suitability of the investment for any particular investor or type of investor. Investments in financial markets may involve a high degree of complexity and risk and may not be suitable to all investors. The suitability assessment performed by CSLF with respect to this investment will be undertaken based on information that the investor would have provided to CSLF and in accordance with Credit Suisse internal policies and processes. It is understood that the English language will be used in all communication and documentation provided by CS and/or CSLF. By accepting to invest in the product, the investor confirms that he has no objection to the use of the English language. **Luxembourg:** This report is distributed by Credit Suisse (Luxembourg) S.A., a Luxembourg bank, authorized and regulated by the Commission de Surveillance du Secteur Financier (CSSF). **Qatar:** This information has been distributed by Credit Suisse (Qatar) L.L.C., which is duly authorized and regulated by the Qatar Financial Centre Regulatory Authority (QFCRA) under QFC License No. 00005. All related financial products or services will only be available to Business Customers or Market Counterparties (as defined by the QFCRA), including individuals, who have opted to be classified as a Business Customer, with net assets in excess of QR 4 million, and who have sufficient financial knowledge, experience and understanding to participate in such products and/or services. Therefore this information must not be delivered to, or relied on by, any other type of individual. The QFCRA has no responsibility for reviewing or verifying any Prospectus or other documents in connection with this product/service due to the fact that this product/service is not registered in the QFC or regulated by the QFCRA. Accordingly, the QFCRA has not reviewed or approved this information or any other associated documents nor taken any steps to verify the information set out in this document, and has no responsibility for it. Investors in this product/service may not have the same access to information about the product/service that they would have to information about a product/service registered in the QFC. The product/service to which this information relates may be illiquid and/or subject to restrictions on their resale. Recourse against the product/service, and those involved with it, may be limited or difficult and may have to be pursued in a jurisdiction outside the QFC. Prospective purchasers of the product/service offered should conduct their own due diligence on the product/service. If you do not understand the contents of this brochure you should consult an authorized financial advisor. **Saudi Arabia:** This information is being distributed by Credit Suisse Saudi Arabia (CR Number 1010228645), duly licensed and regulated by the Saudi Arabian Capital Market Authority pursuant to License Number 08104-37 dated 23/03/1429H corresponding to 21/03/2008AD. Credit Suisse Saudi Arabia's principal place of business is at King Fahad Road, Hay Al Mhamadiya, 12361-6858 Riyadh, Saudi Arabia. Website: https://www.credit-suisse.com/sa. **Singapore:** This report has been prepared and issued for distribution in Singapore to institutional investors, accredited investors and expert investors (each as defined under the Financial Advisers Regulations) only, and is also distributed by Credit Suisse AG, Singapore Branch to overseas investors (as defined under the Financial Advisers Regulations). Credit Suisse AG, Singapore Branch may distribute reports produced by its foreign entities or affiliates pursuant to an arrangement under Regulation 32C of the Financial Advisers Regulations. Singapore recipients should contact Credit Suisse AG, Singapore Branch at +65-6212-2000 for matters arising from, or in connection with, this report. By virtue of your status as an institutional investor, accredited investor, expert investor or overseas investor, Credit Suisse AG, Singapore Branch is exempted from complying with certain compliance requirements under the Financial Advisers Act, Chapter 110 of Singapore (the "FAA"), the Financial Advisers Regulations and the relevant Notices and Guidelines issued thereunder, in respect of any financial advisory service which Credit Suisse AG, Singapore branch may provide to you. **Spain:** This report is distributed in Spain by Credit Suisse AG, Sucursal en España, legal entity registered at Comisión Nacional del Mercado de Valores. **Turkey:** The investment information, comments and recommendations contained herein are not within the scope of investment advisory activity. The investment advisory services are provided by the authorized institutions to the persons in a customized manner taking into account the risk and return preferences of the persons. Whereas, the comments and advices included herein are of general nature. Therefore recommendations may not be suitable for your financial status or risk and yield preferences. For this reason, making an investment decision only by relying on the information given herein may not give rise to results that fit your expectations. This report is distributed by Credit Suisse Istanbul Menkul Degerler Anonim Sirketi, regulated by the Capital Markets Board of Turkey, with its registered address at Yildirim Oguz Goker Caddesi, Maya Plaza 10th Floor Akatlar, Besiktas/Istanbul-Turkey. **United Kingdom:** This material is issued by Credit Suisse (UK) Limited. Credit Suisse (UK) Limited, is authorized by the Prudential Regulation Authority and regulated by the Financial Conduct Authority and the Prudential Regulation Authority. The protections made available by the Financial Conduct Authority and/or the Prudential Regulation Authority for retail clients do not apply to investments or services provided by a person outside the UK, nor will the Financial Services Compensation Scheme be available if the issuer of the investment fails to meet its obligations. To the extent communicated in the United Kingdom ("UK") or capable of having an effect in the UK, this document constitutes a financial promotion which has been approved by Credit Suisse (UK) Limited which is authorized by the Prudential Regulation Authority and regulated by the Financial Conduct Authority and the Prudential Regulation Authority for the conduct of investment business in the UK. The registered address of Credit Suisse (UK) Limited is Five Cabot Square, London, E14 4QR. Please note that the rules under the UK's Financial Services and Markets Act 2000 relating to the protection of retail clients will not be applicable to you and that any potential compensation made available to "eligible claimants" under the UK's Financial Services Compensation Scheme will also not be available to you. Tax treatment depends on the individual circumstances of each client and may be subject to changes in future.

UNITED STATES: NEITHER THIS REPORT NOR ANY COPY THEREOF MAY BE SENT, TAKEN INTO OR DISTRIBUTED IN THE UNITED STATES OR TO ANY US PERSON (WITHIN THE MEANING OF REGULATION IS UNDER THE US SECURITIES ACT OF 1933, AS AMENDED).

18C034A_R

Imprint

Editor-in-chief
Dr. Nannette Hechler-Fayd'herbe

Authors
Daniel Rupli
Reto Hess
Jens Zimmermann
Uwe Neumann
Lorenzo Biasio
Julie Saussier
André Schäfferling
Samuel Traub

Editorial support
Christa Jenni
Christine Mumenthaler
Flurina Krähenbühl
Francis Piotrowski

Product management
Camilla Damm Leuzinger

Design concept
© LINE Communications AG

Editorial deadline
6 June 2018

More information
http://credit-suisse.com/supertrends

CREDIT SUISSE AG
P.O. Box
8070 Zurich, Switzerland
credit-suisse.com