In the Paris Agreement of 2015, the international community set itself the goal of limiting the rise in global warming to 2°C by 2100. To reach this target, societies must rethink and transform the way they operate, especially with regard to carbon dioxide emissions. The energy industry, in particular oil, gas, and coal companies, need to adapt quickly. Can finance help the world rise to the challenge?

This Special Issue of the SFI Practitioner Roundups highlights exciting recent developments in Green Finance. Drawing on the expertise of SFI researchers and industry experts, it addresses key questions such as: can price signals from financial markets create incentives for sustainability? How do government policies and green finance complement each other? What pitfalls lie ahead in the transition to a decarbonized economy, and how to manage the pace of this transition? Is the transition already priced in, or are we in a carbon bubble?

We wish you an enjoyable read.

Prof. François Degeorge
Managing Director
Contributors

Sabine Döbeli
Sabine Döbeli is CEO of Swiss Sustainable Finance. Previously, she was Head of Corporate Sustainability Management at Vontobel where she was responsible for coordinating sustainability topics at group level and for preparing sustainable investment services. At Zürcher Kantonalbank she built up the sustainability research unit within the financial analysis department and was involved in the launch of various sustainable investment products.

Prof. Jean-Charles Rochet
Jean-Charles Rochet is SFI Senior Chair and Professor of Banking at the University of Geneva. Before joining the faculty in Geneva, Professor Rochet held a chair at the Toulouse School of Economics and at the University of Zurich. His research interests lie in banking crises and regulation.

Prof. Philipp Krüger
Philipp Krüger is SFI Senior Chair and Associate Professor of Responsible Finance at the University of Geneva. Professor Krüger is a regular speaker at leading finance conferences worldwide and his research has been published in top academic journals. His primary research interests are sustainable and responsible finance, corporate finance, corporate governance, and behavioral finance.

Prof. Steven Ongena
Steven Ongena is SFI Senior Chair and Professor of Banking at the University of Zurich. Professor Ongena’s papers have been published in leading academic journals in finance and economics. He has received numerous awards for his research and serves as a research consultant for several European central banks. His research interests lie in the areas of empirical financial intermediation and applied financial econometrics.

Prof. Norman Schürhoff
Norman Schürhoff is SFI Senior Chair and Professor of Finance at the University of Lausanne. Professor Schürhoff’s work has been published in the top academic journals in finance and he has won several prestigious publication awards. The student teams which he has coached won the CFA Institute Research Challenge in Switzerland six times and were World Champion in 2018. His main research interests lie in financial intermediation, corporation finance, corporate governance, market microstructure, and asset pricing.

Bertrand Gacon
Bertrand Gacon is Co-Founder & Chief Executive Officer of Impaakt. He is a change-maker who prefers to see the world not as it is, but as it could be and a tireless advocate of the “impact economy” who views businesses as a force for positive change.
Climate Change and Green Finance

When and how did the international community decide to tackle carbon dioxide emissions?

**J.-C. Rochet**: The international community began to tackle the issue of carbon dioxide emissions in the early nineties. Two main methods were developed to correct the externalities generated by these emissions. On the one hand, carbon taxation—a price driven mechanism—through which governments tax emissions of carbon dioxide at a rate that presumably covers the damage they cause. On the other hand, emission trading—a quantity driven mechanism—through which governments sell or allocate permits that allow firms to produce a given volume of carbon dioxide emissions during a given time period. Such emission permits can be further sold and bought on the secondary market that connects environmentally efficient and environmentally inefficient firms. Both carbon taxation and emission trading are government driven methods that have shown their own limits. Indeed, data reveals a consistent ongoing upward trend of carbon dioxide emissions during the past 30 years. Furthermore, to remain below the global warming threshold of an additional 2°C rise, total cumulative carbon dioxide emissions during the twenty-first century should not exceed 2,900 gigatons, of which 65 percent was already emitted during the century’s first decade alone…

What are the reasons that the carbon emission is still so high?

**S. Döbeli**: The carbon emission problem is a very complex one as it affects every part of our daily lives as well as the entire economy. As global governance doesn’t exist, it remains difficult to plan and implement coordinated actions at the international level. So even if nationally determined contributions were defined in a global agreement, countries would not have strong incentives to step ahead and introduce stricter regulation or higher carbon prices.

**J.-C. Rochet**: This problem is the ultimate form of what has been called the "tragedy of the commons." Indeed, our environment is shared between many countries who think of their own interest before thinking of the common good. Moreover, future generations, who will be directly hurt by global warming, are not represented in governments. The only way to solve the greenhouse gas emission problem, such as carbon dioxide, is for younger generations, who are more concerned with the future of humanity, to take over both in terms of investment choices of private businesses and in terms of political decisions made by governments.

What is green finance and how does it work?

**J.-C. Rochet**: Green finance has been on the front line of the fight against carbon dioxide emissions in recent years. It is a form of responsible investing that gives weight to investors’ preferences for positive climate initiatives. Such preferences often translate into the acceptance of lower financial returns from investments in which environmental performance criteria are emphasized. Green finance initiatives, largely driven by the private sector on a voluntary basis, have already proved to be an effective and valuable complement to government controlled methods. According to the Climate Bonds Initiative, an international organization that works on mobilizing the bond market to move toward climate change solutions, green bond issuance in 2018 reached USD 166 billion, of which 46 percent was issued by corporations. To truly address climate change and remain in line with the 2°C global warming target of the Paris Climate Agreement, it is estimated that green bond issuance needs to reach USD 1 trillion by 2020—a figure the global bond market can easily absorb. In terms of effectiveness, KfW, a German state-owned development bank, estimates that every USD 1 million invested in green-bond-labeled projects reduces carbon dioxide emissions by close to 1,000 metric tons per year.

How do impact investing and green finance work in the financial market? What can be done to ensure that green funds are invested into green projects?

**B. Gacon**: Impact investing and green finance are complementary ways to invest capital. Their similarities and differences are similar to those which exist between ESG criteria and solely environmental ones. ESG based impact investing is a highly specific form of investment which focuses on how core corporate activities are conducted and not on corporate environmental impact. For example, Repsol—a Spanish energy company—has a very high overall ESG rating, but a very negative impact on the environment in terms of carbon dioxide emissions. In the case of green finance, the certification issue is central to ensure that money invested into the fund goes to an authentic green project. Fund managers have an important role to play here and need to show that their asset selection process is robust and consistent.

**S. Döbeli**: There are different forms of impact investing and green finance. One prominent form of impact investing is the provision of private capital for different purposes through credits to financial institutions in developing countries – also known as microfinance. In terms of volume, this is the most important form of...
impact investments. Another form is the provision of private equity to companies in various sectors through fund of funds. Reality shows that it is a challenge to measure the concrete impact of such investments. The Principles for Impact Management recently launched by the International Finance Corporation—a sister organization of the World Bank which focuses on the private sector in developing countries—provide guidance on how to effectively structure processes to achieve and demonstrate impact. In the case of green projects, different taxonomies are currently being developed to define different green activities. Based on such taxonomies, labels can be developed in a second step. As for green bonds, the Climate Bonds Initiative already provides a useful framework to define activities that really help to mitigate climate change.

**J.-C. Rochet:** In the case of green finance, the certifier of the bond first needs to verify that the amount collected at issuance is indeed invested in green projects. Second, green investors, whether individual or institutional, need to verify that the manager of the fund does indeed invest in green securities. In some countries like the USA, the fund manager also has to disclose the composition of his portfolio to the authorities, but only on a quarterly frequency. Some professionals are in favor of increasing the frequency at which portfolio composition is disclosed.

**Firms are expected to optimize stakeholder value—How can investing in green projects actually increase firm value?**

**J.-C. Rochet:** Research shows that firms that are committed to climate-friendly projects benefit not only from lower interest rates when they issue green bonds, but also from a higher demand for their stocks because of a positive signaling effect. One of the key elements is the certification process—only a credible certification process can allow firms to signal investors that their projects are green. For example, the Climate Bonds Standard and Certification Scheme provides a labeling scheme that allows investors and issuers to prioritize investments that address climate change in a reliable and independent manner. The labeling scheme relies on robust scientific research, technical and industry experts, and approved third-party verifiers. In terms of financial benefits for the issuer, the green bond premium can reach 20 basis points. On the one hand, this is a small absolute reduction. On the other hand, this represents a relative reduction of financial costs of approximately 10 percent.

**Could green finance replace government interventions?**

**J.-C. Rochet:** The objective of green finance is to complement government interventions, as green finance on its own is not sufficient to solve the global warming problem. However, government interventions are severely limited by political constraints and a lack of international coordination. Our research shows that green finance can, for example, amplify the positive effect of a carbon tax, even if the level of this tax is limited due to political constraints. In fact, we believe that green investors can lead the way and convince citizens that something can be done to put our society on a sustainable path.
Are We Stranded on a Carbon Bubble?

What is a carbon bubble and how are carbon intensive firms reacting to it?

S. Ongena: A carbon bubble is the possible overvaluation of firms that are largely dependent on fossil fuels to operate, such as those active in the oil, gas, and coal industry. To remain below the global warming threshold of 2°C additional temperature rise, total worldwide emissions of carbon dioxide between today and the end of the twenty-first century need to remain well below 1’000 gigatons. To put this largely intangible figure into perspective, the combusting of all proven and probable current oil, gas, and coal reserves would lead to pumping 2’900 gigatons of carbon dioxide into the atmosphere, a quantity that is far larger than any we could describe as desirable. Combustion of all remaining oil, gas, and coal resources—the proven, the probable, and the possible—would lead to the emission of 11’000 gigatons of carbon dioxide. Limiting carbon emissions will therefore require keeping vast amounts of fossil fuels underground and considering such resources as "stranded assets". Research indicates that up to 35 percent of proven and probable oil reserves, 50 percent of such reserves of gas, and 90 percent of such reserves of coal are exposed to the risk of becoming "stranded assets" within the next few decades. Such a prospect poses a major challenge for the oil, gas, and coal industry, which has invested billions of dollars in exploring for and discovering these fuel reserves. Nevertheless, the energy industry continues to spend money on exploring for and discovering new fields, despite the ever-increasing risk of seeing such assets remain below the surface of the earth. This calls for a series of questions regarding the likelihood of the "stranded asset" risk as well as the financing of energy firms.

Who could actually decide to strand fossil fuel reserves?

S. Ongena: Stranding assets is a political decision that depends on each and every country’s political ambition and willingness to fight climate change. To assess the impact of such a decision a risk measure—climate policy exposure—has been developed. It is based on the quantity of fossil fuels a firm holds within a specific country and this country’s potential willingness to implement stricter climate policies. For example, Canada and Norway both possess substantial quantities of fossil fuels, but as Norway is more willing to undertake climate policy efforts, an energy firm that possesses oil fields in both countries is exposed to a higher overall risk in Norway due to the fact that the probability of seeing the Norwegian government strand its assets to meet its own carbon dioxide emission target is higher than in Canada. Interestingly, in April of this year the Norwegian parliament decided to withdraw its approval for explorative oil drilling off the islands of Lofoten, situated north of the Arctic Circle, for environmental reasons. Although this is not a direct move to strand proven assets per se, it does show that some politicians are willing to sacrifice financial revenue for environmental reasons—the Lofoten area is believed to hold about 1.3 billion barrels of oil, which represent about USD 90 billion dollars in today’s energy market.

How do banks adequately consider climate policy risk?

S. Ongena: Firms in the energy industry traditionally run highly leveraged balance sheets. If the financial market is efficient, banks should charge firms exposed to climate policy risk a higher loan spread. Matching data on syndicated loans helps determine whether banks price-in climate policy risk adequately. Empirical results, which cover the period 2007 to 2016, show that fossil fuel firms that are more exposed to climate policy risk are on average not charged higher loan spreads than otherwise similar non-fossil fuel firms or comparable fossil fuel firms. Similar results are found when conducting robustness estimates that control for loan type, loan purpose, bank, year, country, and firm effects. Data that focuses on the post-2015 period—when climate issues became more acute and policies more stringent—provide evidence of minor climate policy risk pricing. However, the pricing imposed by banks is no more than a few basis points, which does not cover the potential losses related to the climate policy risk. This mis-pricing of climate policy risk leads to two possibilities: banks disregarding the actual likelihood that environmental policies will lead to assets being stranded, or a carbon bubble due to inexact pricing of climate policy risk by banks. Both are a concern.

How likely is a stranded carbon asset scenario to take place? What would its consequences be for the economy?

S. Ongena: The partial stranding of oil, gas, and coal assets is increasingly likely. There will be, of course, immense pressure on governments to moderate any type of "stranding." Nonetheless, it is to be expected given the already outstanding and newly anticipated international commitments with respect to climate change. Recent research that focuses on six large European oil and gas firms (Shell, BP, Total, Statoil, ENI, and BG) reveals that a "stranded asset" situation combined with a moderate reduction in consumer demand would reduce the market cap of these firms by between 40 and 60 percent. Should the energy firms traded within the S&P 500 Index

lose a similar 50 percent of their market value, the index would—based on 2018 figures—drop by 2 percent and USD 560 billion of equity would evaporate. This reduction in market value would impact the financial players who have loaned funds to energy firms and contagion would likely spread throughout the market and the international economy.

**B. Gacon:** There is no doubt that a significant portion of the oil, gas, and coal which have already been discovered will not be combusted. Despite their imposing size, energy firms operate in a highly regulated environment and a stout limitation on carbon dioxide emissions consequently makes them quite fragile. Because of this, investors may be prone to a panic move away from energy stocks. Such a correction would, on the one hand, strongly impact the financial markets, as well as the real economy, and on the other hand, help accelerate the energy transition away from fossil fuels.

How can governments mitigate the risk of a global economic meltdown caused by a global environmental meltdown?

**S. Ongena:** Deflating the likely carbon bubble relies on several factors. First, the transition needs to be targeted and market compatible—reducing carbon emissions whilst maintaining sufficient quantities of alternative energies at a reasonable price. Second, the action needs to be gradual—energy firms are large and hold significant portions of illiquid and long-term investment. Third, the shift needs to be quick as time is running out. The main issue in implementing such a soft-landing transition is political. Indeed, carbon energy firms contribute substantially to GDP, employment, and government income in many countries.

The US Congress will soon vote on the Green New Deal. What are the specifics of this resolution and how is it different from what has been done?

**S. Ongena:** The Green New Deal stimulus package proposed by the Democrats in the US addresses both environmental and economic inequality issues. It is vastly different from what has been done in the past, in the way that it focuses on economic stimulus and incentives instead of constraints such as carbon taxation and emission trading.
Green Governments Bonds and Green Investments

How active have governments been on the green bond market?

N. Schürhoff: Green finance is still relatively new for local governments, sovereign governments, and government backed entities. Yet surprisingly, local governments and government backed entities are issuing more green bonds than sovereign governments, suggesting that green finance operates easily in mildly regulated environments. According to the Climate Bonds Initiative, the issuance of green government bonds began in Norway in 2010. Since then a dozen more countries have issued such bonds and several more are on the radar for 2019. In terms of market shares, development banks, government backed entities, local governments, and sovereign governments represented more than 25 percent of the overall green bond market in 2018—a significant portion.

How does the bond market function at the local government level?

N. Schürhoff: The US municipal bond market is the most representative local government bond market that exists. It has been in existence for more than 200 years and is the largest capital market for both state and municipal issuers. It plays an essential role in providing capital for local public service and infrastructure initiatives, making it a prime market in which to study the financing of renewable energy projects and water and land conservation initiatives. The primary municipal market in the US is larger than the primary markets of asset-backed securities, private equity, and high-yield corporate bonds, and is more than ten times larger than venture capital and equity IPOs. Despite its extraordinary size, municipal bond trading is still largely arcane, with a decentralized broker-dealer market, low liquidity, and limited pre-trade and post-trade transparency. In short, it is a buyer’s market in which trading costs are substantial.

How is the municipal bond market in the US going to evolve within the next few years?

N. Schürhoff: Although responsible investing is relatively recent it does have the potential to reshape the municipal bond market. Indeed, more than USD 450 billion worth of municipal bonds were issued in 2016 in the US, of which less than USD 10 billion were labeled as green bonds. This low figure shows there is room for substantial growth in the issuance of green municipal bonds. Data shows that green municipal bonds are, all things being equal, issued at a premium in comparison to other municipal bonds, suggesting that investors are willing to sacrifice returns to hold such financial instruments and that municipalities can benefit from lower costs of capital when making responsible investments. The financial benefit of issuing green municipal bonds is larger in the case of externally certified bonds, which shows that the concept of what is green needs to be adequately defined and protected. Also, Fintech developments are likely to improve the functioning of the municipal bond market in terms of liquidity and transparency by allowing small private investors gain access to better information and investment opportunities. The overall combined contributions of green finance and Fintech will be beneficial for both the municipal bond market and the environment.

How far have Swiss governments been successful at issuing green bonds?

N. Schürhoff: Several green bond issuances have taken place in Switzerland recently and investor demand has been very strong; the SIX Swiss Exchange currently lists a little over 20 green bonds, with 10 denominated in Swiss Francs. For example, Helvetia Environnement—a leader in waste collection—was the first firm in Switzerland to issue a corporate green bond back in 2017. Government-backed Emissionszentrale EGW—a foundation that provides funding for public utility buildings—is a natural candidate in the context of financing energy-efficient buildings. As of today, the Cantons of Basel-City and Geneva, as well as the Zurich Cantonal Bank, have issued six green bonds, which are traded on the SIX Swiss Exchange. Aside from the Cantons of Basel-City and Geneva, the Cantons of Basel-Land, Bern, Solothurn, Ticino, and Zurich also raise bonds, so there is scope for more green bond financing and government climate aligned investments in Switzerland.

How can small investors influence the size and relevance of sustainable investments?

N. Schürhoff: The number of investors who are environmentally aware and prefer green and sustainable forms of investment is growing rapidly. The demand for sustainable investments is driven, in part, by millennials who prefer to invest in alignment with their personal values. There are several ways investors can decide to...
make a difference. First, securities from companies that are not sustainable or environmentally friendly can be divested from investment portfolios, which is a form of voting with your feet. Second, most professional asset managers ultimately invest on behalf of small investors. Public sentiment can affect the investment policies and practices of these asset managers both directly and indirectly. Third, banks now propose sustainable and environmentally friendly products accessible to small investors. Finally, there are new investment channels that bridge the sustainable investment gap by enabling investors to co-fund emission reduction projects, bringing together groups of lenders and borrowers that are sometimes overlooked by conventional banks. The green finance platform Bettervest, for instance, allows private investors to put money into energy generation projects and energy efficiency projects, to later participate in the returns from the efficiency measures.

S. Döbeli: Every investor can make a difference—even with small financial amounts. Different sustainable investment solutions can be considered, depending on the portfolio size and risk appetite. It’s important that investors realize they can contribute to change with their personal investments, in a way similar to contributing through their consumer choices.

B. Gacon: Small investors make a significant difference in the green investment industry in two ways: by expressing their desire for change and by their sheer number. Consistently requesting green investment products from banks and pension funds flexes the general demand and generates the creation and supply of such products.
How do pension funds and other institutional investors react to green bonds which are perceived to offer lower financial returns?

**S. Döbeli:** As an overall rule, pension funds and other institutional investors that manage funds on behalf of beneficiaries should not invest in financial instruments that offer below-market returns. Nonetheless, in the case of green bonds, I see appetite from institutional investors, as such investments tend to offer the same return as regular bonds on average.

**B. Gacon:** Green bonds are quite magical in the sense that they typically offer identical risk profiles to traditional bonds. The rationale here is that the issuer of a green bond and a traditional bond are usually the same. Toyota, for example, issued the auto industry’s first-ever asset-backed green bond in 2014 to support the sale of environmentally friendly vehicles. The risk on these bonds was the same as traditional Toyota corporate bonds. As the financial market prices risk, green bonds and traditional bonds with similar risk profiles are priced identically—explaining the broad success of green bonds.

Who are the key players in the certification industry and how will the certification process evolve?

**N. Schürhoff:** Several organizations offer Green Label certifications that allow investor demands for green investing and cover a broad spectrum of ‘green shades.’ For example, the Climate Bonds Initiative provides standards and a certification procedure that establishes sector-specific eligibility criteria to judge an asset’s low carbon value and suitability for issuance as a green bond. The SIX Swiss Exchange recently started a partnership with the Climate Bonds Initiative, facilitating access to green investments in Switzerland. The International Capital Market Association provides Green Bond Principles which are voluntary process guidelines that outline the general criteria most certification schemes follow. These Green Bond Principles include, for instance, recommendations to obtain external reviews like those provided by rating agencies such as Moody’s Green Bond Assessments. In addition, there also exists the possibility for asset managers to apply internal ratings. Finally, some countries have developed their own national taxonomies of what constitutes eligibility as a green bond, such as the Green Bond Endorsed Project Catalogue in China. The certification process will likely evolve within the next few years and resemble the credit rating industry, with just a few major players providing external ratings.

**B. Gacon:** The green certification industry is missing a global rating system which covers all types of green investments, such as what Max Havelaar provides with regard to fair trade and Standard & Poor’s does for credit ratings. The situation in the bond market is largely covered, but other types of green investments lack overall clarity, leaving it up to investors to look into the specifics of each product. The European Union has started looking into this to protect investors’ interests. Although this is a good initiative, one will need more than a single definition of what qualifies as a green investment to avoid a unique type of investment policy.

Green finance and ESG ratings are sometimes perceived as being two cures for the same disease. How different are the two, and which is most effective?

**N. Schürhoff:** The emergence of ESG ratings has primarily been motivated by the reduction of information asymmetries between companies and investors. Nowadays, green finance is an important component of ESG investing and ESG ratings, but not the only one. All three dimensions of ESG now receive large attention from investors.

**S. Döbeli:** They are two different things, as they apply to different types of assets. Green finance is a form of thematic investing, either through investments in companies that qualify their products and services as green or direct investments in green infrastructure. ESG ratings are a tool for sustainable investments that have a much broader scope than green finance. ESG ratings are employed to measure the sustainability performance of companies of all sectors (or even countries) and can influence an investment decision or form the basis for an active engagement with company management.
How do investors react to mandatory corporate disclosure on carbon dioxide emissions?

P. Krüger: Research is divided on the financial effects of mandatory disclosure regarding corporate greenhouse gas emissions. On the one hand, some argue that such disclosures are costly to firms as they require firms to invest additional resources to comply with the disclosure requirements. Also, mandatory disclosure might oblige firms to disclose confidential information that benefits competitors. On the other hand, disclosure can also have beneficial effects. For instance, it can reduce information asymmetries between investors and firms, thereby increasing liquidity and firm value. Disclosure can also improve risk sharing, which would also benefit corporate value. The Companies Act 2006 Regulations 2013, a piece of regulation that requires UK quoted companies to publicly report their greenhouse gas emissions in their annual report in a standardized manner, is an interesting setting in which to study the financial effects of mandatory greenhouse gas emissions disclosure.

How did the market react to the disclosure of carbon dioxide emissions by UK quoted companies?

P. Krüger: Data covering publicly listed European companies between 2008 and 2014 reveals several unique insights regarding investor behavior and increased greenhouse gas emissions transparency. First, investors responded positively to mandated transparency regarding corporate greenhouse gas emissions in the UK. Compared to similar European companies, Tobin’s q—a measure of the total value of a firm—increased by approximately 12 percent on average for all firms concerned by the Companies Act after the introduction of the regulation. Second, this finding holds mainly for firms that were not already compliant with the Companies Act after the introduction of the regulation. Indeed, firms that were already reporting greenhouse gas emissions before 2013 on a purely voluntary basis did not see significant changes in firm value. In other words, investors repriced firms that were more strongly affected by the regulatory requirements, whereas the value of firms that were already compliant was unchanged. Regarding the mechanisms, I find that financial valuation increases were mainly due to reduced information asymmetries, as evidenced by higher liquidity, higher trading volumes, and lower bid–ask spreads.

Were carbon intensive UK firms, such as BP and Shell, affected differently compared to less carbon intensive firms?

P. Krüger: The data show that the financial effects were strongest in the most carbon intensive industries, such as the oil, gas, and basic materials sectors. This implies that investors attach most value to greenhouse gas emissions disclosures in sectors where such disclosures matter most. Conversely, firms from industries that are not responsible for a lot of greenhouse gas emissions, such as those in the health care sector for example, were virtually unaffected by the Companies Act.

What do these findings imply for the global landscape?

P. Krüger: The research suggests that the introduction of mandatory greenhouse gas emissions disclosure positively affects firm valuation, and more so for carbon intensive firms. These findings imply that investors value such disclosures. More generally the research implies that investors value increased transparency regarding climate change risks. It would be interesting to see how the US stock markets would react should disclosure related to climate risk become mandatory. Interestingly, some US Senators recently introduced the Climate Risk Disclosure Act of 2018. This bill seeks to introduce mandatory greenhouse gas emissions disclosure for listed companies in the US and in ways is similar to the UK legislation. In a follow-up paper, a coauthor and I also study the real effects of the UK regulation. We find that the regulation in the UK did not only have beneficial financial, but also beneficial societal effects. Indeed, UK firms reduced their greenhouse gas emissions much more strongly than comparable European firms after the regulation, implying that such disclosure regulation could help governments achieve the ambitious climate targets set out in the Paris Agreement.

Green finance is largely voluntary and market-driven – which is not the case of carbon taxation and emission trading schemes – could this flexibility help explain its success, and what would be its limitations?

B. Gacon: In general, market-driven initiatives are effective as they are more non-binding and evolutionary. Overall, firms are not paying or being paid for the externalities—negative or positive—they cause. As regulatory initiatives have been unable to tax carbon emissions correctly, market distortions have emerged. Such initiatives have generated cases where excess funding takes place in certain sectors of the economy and there is a lack of funding in others, thus generating financial bubbles. Voluntary or mandatory public disclosure by firms, in a repeatable and explainable format, works well in practice and is the most effective tool currently as it avoids having regulators discern what is good from what isn’t and leaves the decision to the opinion of investors and the general public.

S. Döbeli: Green finance has indeed been largely voluntary and market-driven in the past. Currently, things are changing as we now see a strong wave of regulation, especially in the European Union, with respect to both green and sustainable finance. The EU Action Plan for financing sustainable growth has definitely moved sustainable finance up on the agenda of market players. This will lead to more transparency regarding sustainable and green finance, and most likely to strong market growth, too. Yet, it remains to be seen what the effect of their taxonomy—which will define in detail what can be considered as green and what not—will be. I hope it won’t stifle innovation in areas where constant innovation is key.
Swiss Finance Institute
Swiss Finance Institute (SFI) is the national center for fundamental research, doctoral training, knowledge exchange, and continuing education in the fields of banking and finance. SFI’s mission is to grow knowledge capital for the Swiss financial marketplace. Created in 2006 as a public–private partnership, SFI is a common initiative of the Swiss finance industry, leading Swiss universities, and the Swiss Confederation.

Editors
Dr. Silvia Helbling
Head of Knowledge Exchange and Education

Dr. Cyril Pasche
Director Knowledge Exchange and Education

Contact
Dr. Cyril Pasche
+41 22 379 88 25
cyril.pasche@sfi.ch