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CSR Index

Preface by
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Director-General of
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Table of contents

Preface

The SDGs as roadmap for inclusive, sustainable, and fair globalization

Michael Møller

Director General of the UN, Geneva

It is a truism to say that we live in challenging times. But to set the frame for this year's CSR2018, let's recall the facts:

- First, climate change: Last year was the hottest ever. The past decade has been the hottest on record. The number of natural disasters has quadrupled since 1970. Millions of people and trillions of assets are at risk from rising seas and other climate disruptions. According to the World Bank, the impact of extreme natural disasters is equivalent to a global USD 520 billion loss in annual consumption, and forces some 26 million people into poverty each year. Let me ask those of you who have invested in real estate in coastal cities / have you reassessed those investments recently? You might want to do that!

- Second, rising inequality: Eight men (because they are men, not women) hold the same wealth as the bottom half of humanity. Entire regions and countries fail to catch up to the waves of progress, left behind in the Rust Belts of our world. In two-thirds of European economies, youth unemployment remains above 20%. While the baseline outlook may be strengthening, growth remains fragile and weak. Certainly too weak and too fragile to create the almost 500 million jobs needed in the next decade to meaningfully dent the number of unemployed young people. All of this undermines the very foundations of our societies.

- Third, the nuclear peril: Global anxieties about nuclear weapons are at the highest level since the end of the Cold War. It may not be priced in the markets, but the fear is not abstract; and neither is the risk of further proliferation.

- Fourth, unresolved conflicts: From Syria to Yemen, from South Sudan to the Sahel, Afghanistan and elsewhere, peace remains elusive. These conflicts provide fertile ground for violent extremism and drive migratory movements on an unprecedented scale. One UN study has estimated that the cost of conflict in a single year exceeds USD 14 trillion or 13.4% of global GDP.

The list goes on but I will stop here because I think the bottom line is clear: business as usual is not an option. Complacency is not an option. Not if we want to give our children the way of life, the opportunities, the security we ourselves enjoyed.

But here comes the good news: We have a plan. And the world is increasingly acting in line with this plan. For the first time in history, all 193 member states of the United Nations have adopted a blueprint for peace, prosperity and dignity for all on a healthy planet: the 2030 Agenda on Sustainable Development.

With 17 Sustainable Development Goals (SDGs for short), all of us, including the business sector, have a roadmap for inclusive, sustainable and fair globalization. The goals are unique because they call for action by all countries – poor, rich, and everything in between – to promote prosperity while protecting the planet. They recognize that ending poverty must go hand-in-hand with strategies that build sustainable economic growth. They cover the spectrum of social needs from education and health to social protection and job opportunities, while tackling climate change. They are integrated and indivisible. They balance the three dimensions of sustainable development: the economic, the social and the environmental. They do not leave anyone behind.

Achieving these goals would create a world that is comprehensively sustainable: socially fair; environmentally secure; economically prosperous; inclusive; and more predictable.

So far so good, but why, you may ask, are we discussing this? After all, if the Financial Times is any indication, the coming end of Quantitative Easing or the recent volatility of Bitcoin are top of mind. The short answer is the question itself.

I want to make the case for asset managers, hedge funds, insurers and pension funds, that we all together have a stake in the success of the Agenda 2030. When Dr. Faber, the Chairman of the German Stock Exchange and others joined me three and a half years ago in Geneva, we agreed on the importance of proving the added value of SDGs for the business community – and we identified two mutually reinforcing arguments:

First, the SDGs as a moral imperative.

No modern company, no modern investor can conceive of themselves as external to the environment in which they operate. Your actions – what and how you produce, where and how you invest – have an impact. You are shareholders in the world. You have responsibility for this world. We are increasingly seeing that companies use the Sustainable Development Goals as their roadmap, adjust business plans accordingly, and hold their managers accountable to them.

At its most basic, supporting the Agenda 2030 is quite simply "the right thing to do". This is not trivial. Given the stakes of inaction, complacency or disregard – namely, a planet unable to support life, a fractured economy marred by social conflict, failing governance structures hostile to investment – the argument could really stop right here. At the end of the day, you can only achieve long-term success if you operate in an economically stable, politically sound, and socially cohesive environment. Everything else is secondary.

But on top of being the right thing to do, it is also the smart thing to do. And this brings me to my second argument: the SDGs are a commercial opportunity, as the sustainability index which is described later in this book.

The omnipresent question at conferences, in board rooms across the world, on the trading floors of London, Hong Kong or New York is always: "Where will growth come from?" A derivative of that question, better tailored to everyone in this room, would be: "How do you get a return on

your capital?" With over USD 9 trillion of bonds trading with negative yields as we speak, it is a fair question.

My argument here has nothing to do with philanthropy, or with normative social or political beliefs. Rather, the case for incorporating the lens of the SDGs in your investment strategies is commercial. Think about what finance achieves, if done right: it matches long-term savings and investment, financing the infrastructure essential to productivity. Now consider this data point: Recent estimates tell us that to achieve the SDGs by 2030, we will need an additional USD 2.4 trillion in investments per year. Investments in low-carbon infrastructure, in energy, in agriculture, in health, and in education.

You can see this as a challenge, but better yet as an opportunity. In fact, it is above all else a really compelling growth story. According to the Business Sustainable Development Commission launched in Davos last year, achieving the SDGs would open up at least USD 12 trillion in market opportunities. And that is actually a modest assumption if you consider that achieving the single goal of gender equality could contribute up to USD 28 trillion to global GDP by 2025.

Mark Twain, himself a passionate if somewhat unfortunate investor, once said that "you can't depend on your judgment when your imagination is out of focus." This is what the Agenda 2030 can correct – it allows us to adjust our perspective, beyond the short-termism of quarterly reports, towards an appropriately long-term horizon. The point is that the more you invest with foresight, the less you will regret in hindsight.

But you don't even have to look that far ahead. Markets bring the future forward, and the financial impacts often occur immediately, even if the real impact may be several years into the future. The combined market capitalisation of the top four US coal producers has fallen by over 90% since the end of 2010, and three filed for bankruptcy last year. There has been similar, albeit less acute, drama for the more diversified German utilities.

The message is simple: The sustainability train has left the station. Get on board or get left behind. Those who fail to bet on the green economy will be living in a grey future.

Final point – less quantitative and more cultural: The universal and integrated nature of the SDGs challenges us to work in a more horizontal and collaborative manner than we have ever done before. But to work together, we need to understand each other. And to understand each other, we need to speak the same language.

Not too long ago, it felt like the language of diplomacy, of the United Nations, was met by business with something in between bemusement and bewilderment. And, if I may add, the feeling was sometimes mutual. It may be that the stakes are simply too great now for the disconnect between the private and public sectors to continue. But it may also be that the SDGs have built a linguistic bridge, a common reference point, for all of us to come together.

A recent survey of over 1,000 CEOs from around the world by the UN Global Compact and Accenture found that 87 per cent "believe the SDGs provide an opportunity to rethink approaches to sustainable value creation." Another 70 per cent of those CEOs "see the SDGs providing a clear framework to structure sustainability efforts." These findings showcase the strong and growing support for applying the SDGs in a business context.

Why? Because the 17 goals – such as "End poverty", "Eradicate hunger", or "Promote decent work for all" – give businesses a scorecard for sustainability.

Equally important, they give investors a benchmark.

To be able to invest through a sustainability lens at scale, the lens needs to be sharpened. Investors need transparent measurement and granular reporting to see the impact of their capital, and to evaluate the performance of firms against verifiable metrics.

This is why I strongly commend the work of the Global Sustainability New Index Institute. By giving investors the tools and the information they need to truly and holistically assess corporate performance – not just balance sheet and cash flow projections but performance measured against the SDGs – they enable investors to tap the full potential of sustainable value creation.

Companies that put sustainability at the core of what they do outperform those that don't. We have seen this on climate action, which influences 13 of the 17 SDGs: businesses that take action enjoy 18% higher returns on investment. And it is no wonder these firms outperform – think Tesla, think Google, think Apple.

- They outperform because sustainability gives them the compass and perspective to take the long-term view.

- They outperform because sustainability connects them to the *Zeitgeist.*

- They outperform because – if they are innovative enough to go sustainable – they are nimble enough to navigate volatile, competitive markets.

- They outperform because they attract the best talent – or have you met a high-flying millennial who doesn't care about sustainability?

Scaled up, The Institutes' benchmarking could create a well-defined, rated and liquid market for sustainability as a tradable good across regions and industries. Just consider the macroeconomic benefits alone – from absorbing excess global savings and helping to push up global equilibrium interest rates, to ultimately increasing global growth. Growth that is sustainable and inclusive, that benefits not just a few at the top, but that lifts up the fortunes of the many.

The world has the resources to deliver the 2030 Agenda, not least in the trillions of savings that are locked up and earn low or negative returns.

To liberate and invest them towards inclusive, sustainable growth is the role of finance. And that is why finance will make or break the whole endeavour.

There is our responsibility. There is our opportunity.

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1. Introduction

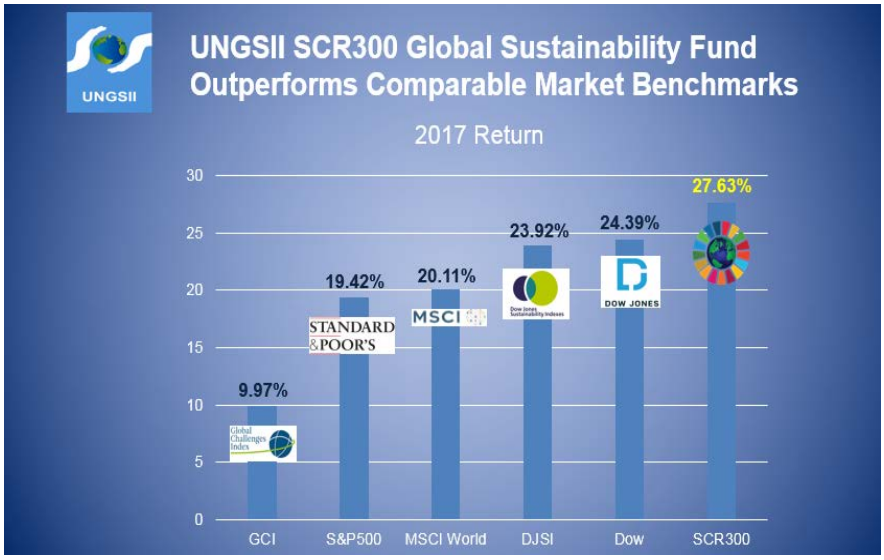
Moving from negative screening to active SDG investment

– The first year of UNGSII Foundation

Roland Schatz

Founder and CEO of Media Tenor

Coming to Davos in 2018 feels strange. After years of research, planning and almost endless rounds of feedback, the UNGSII Foundation is not only hosting its first SDG Lab in Davos but, more importantly, is sharing results. The UNGSII SCR300 went live in 2017 with a presentation at the UN in New York on April 19. We shared the results of our analysis on the first largest corporations disclosing their commitments to one or more of the 169 Sustainable Development Goals in their legally binding 2016 annual reports. More importantly, we looked at whether experts like the UNGSII all-star financial advisory team would be able to turn this data into a financial product. And yes, the UNGSII SCR300 ended 2017 at plus 27.63% outperforming all the other relevant options:



As important at the SDG Lab in Davos 2018 is, we will also share our experience of how to take the results of the UNGSII SCR300 and start teaching the first results to a network of schools in 72 countries. Hosted by UNGSII partners, the GCH Foundation and Hopsports, this will reach three million children once per day during their Brain Break sessions.

From year one we will operate on both pillars. We are not only trying to provide reasonable products to the financial world, as this sector has the highest impact on ensuring that the SDGs will be implemented by 2030, and we are also reaching out to the next generation. The foundation has already built success since the initial meeting took place at the Palais des Nations in Geneva on May 9, 2014. Since then it has continued to work on transparency and condensing complex matters down to a digestible level that can be accessible both to professionals working on Wall Street and to children in Paraguay, Vietnam, and other countries. We want both groups to embrace the clear messages of the index and to start enjoying working with and implementing them.

For this reason it made sense to team up with experienced institutions like the YMCA. This will ensure that the UNGSII can, once per quarter, ask the next generation in at least 120 countries around the globe what they think. This will make sure we listen to those who will actually be in charge once the SDGs become a reality in 2030. Without building this unique Global Youth Poll, the foundation would put itself at risk of working on solutions which might not be heard or understood by the next generation.

Last but not least, we are making sure to build a platform where the best practice performers in government, business, education, and NGOs can show their experience to the world and where different stakeholders will be able to learn from each other. Therefore, the plan around the Global Goals Conference has turned into a reality. As early December 2018, winners in each category will be invited to empower their colleagues from different countries and sectors as well as selected groups from the next generation. We want to make sure we no longer need to invent the wheel over and over again. We will take advantage of places such as the SDG Lab in Geneva and make sure everybody has access to knowhow and diverse strategies for implementing the SDGs as quickly as possible.

One more tool was also developed. SDG masterclasses will be run once per quarter for one week in Geneva, New York, Bonn and Vienna. These classes will offer a MBA style condensed teaching sessions for those interested in the usage of the SDGs as asset managers or similar, while at the same time helping to build networking amongst the leading UN institutions and NGOs in these four UN hubs.

But let's start at the center: the successful release of the UNGSII SCR300. The reason to get started became obvious in 2017, when ZEG announced its plan to leave the UN Global Compact by stating the following:

> Retail cooperative ZEG, Germany's largest association of independent bicycle sellers, said it is cancelling its membership in the United Nations Global Compact Initiative to protest the award of a top environmental honor to a Chinese bike-sharing operator it considers one of the world's biggest bicycle "polluters.'' In a decision announced on December 14, ZEG, which represents 960 independently owned bicycle retailers in Germany, said it will leave the UN initiative to protest the "2017 Champions of the Earth'' award to Chinese bike sharing operator Mobike, whose business model ZEG charges has led to bicycle "pollution'' and clutter on a global scale.
>
> The UN Global Compact Initiative is a voluntary effort to encourage sustainable development and address environmental risks. On December 5, a sister organization, the UN Environment Program, awarded Mobike with its highest honor for attempts to build a pedal-powered green economy. ZEG called the award to Mobike "absurd,''

given the company's policy of placing millions of cheaply made bicycles in public areas around China, which has led to unneeded aluminum production, clutter and ultimately more landfill waste.

ZEG CEO Georg Honkomp said Mobike's business model is not bettering the environment in China, but worsening it by cluttering the country's already crowded public squares and traffic arteries.

"The decision of the United Nations Environment Program (UNEP) to award Mobike is a slap in the face to all of those 8,700 companies from 140 countries that have committed themselves to the strict ten basic principles of the Global Compact,'' Mr. Honkomp said, referring the group's guidelines on sustainable development. "It is absurd that a company like Mobike was awarded the highest environmental award.''

"Huge amounts of cheap bikes that are not needed are pushed into the market,'' Mr. Honkomp continued. "This requires enormous quantities of aluminum. We as a dealer cooperative cannot and do not want to support this."
In awarding its honor to Mobike, the United Nations Environment Program focused on the issue of environmental protection in addition to protection of human rights, the fights against corruption and child labor and the promotion of decent working conditions.

ZEG said the UN award to Mobike ignores a key principle of the UN Global Compact Initiative, the "precautionary principle,'' which encourages companies to take an incremental, sustainable approach when tackling environmental problems. Mobike's business model does not follow the precautionary principle, Mr. Honkomp said.

In a fierce battle for market dominance and venture capital in China, Mobike and its competitors are literally pouring bikes onto the streets and squares of major cities such as Beijing (which already has approximately 2.3 million bike-sharing bikes).

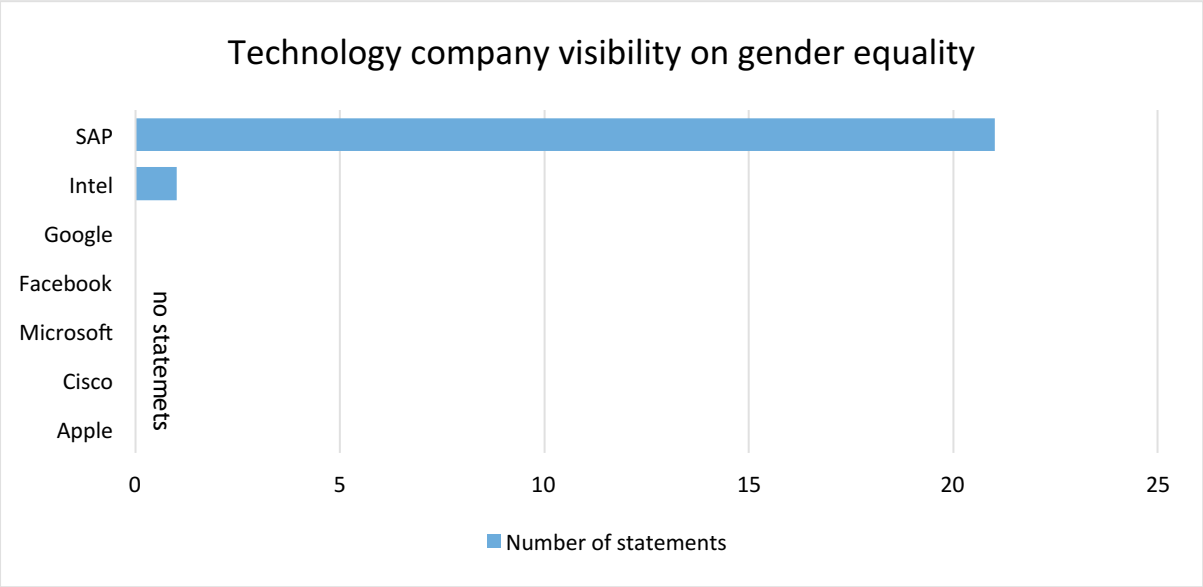
The bikes are simply left on the streets without any maintenance and service, or any distribution philosophy, Mr. Honkomp said. Hundreds of thousands of well-preserved bicycles are ending up in landfills in the battle between the bike sharing companies, he said.

ZEG is a national central purchasing association serving Germany's independent bicycle retailers. The group operates a central warehouse in Cologne with more than 41,000 bicycles, e-bikes, motor scooters, mountain bikes and racing bikes, as well as bicycle parts. ZEG members sell the products of renowned bicycle makers such as Hercules, Kettler, Kalkhoff, Cannondale, Scott, Koga and KTM. ZEG also develops exclusive bicycle models with companies such as Pegasus, Bulls, Green Mover and ZEMO. ZEG members also have the exclusive rights to sell world-famous Pinarello racing bikes in Germany.

This example is just one out of hundreds for why we need to move away from awards based on single activities and instead look into the full picture as reliably as possible. This includes moving away from giving credit to those company or government documents which are in no way legally binding. Therefore the UNGSII Foundation is not interested in looking into the

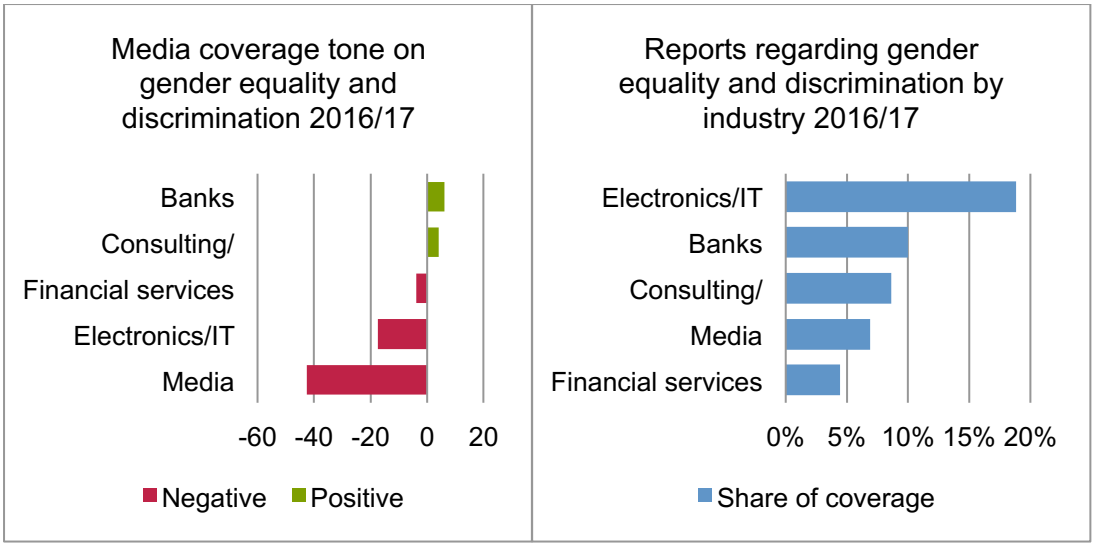
nicely done, but not legally binding, sustainability reports provided by the corporate sector, NGOs, and governments.

It makes a complete difference if instead we read carefully, line-by-line what listed companies disclose in regards to the 169 SDGs in the non-financial sections of their annual reports. If Facebook would disclose how it treats male and female employees in this document, it would provide insights to both the public and to its own employees. In the case of the summer 2017 Silicon Valley drama it was very easy to see if Google and similar were right in sacking those employees who published a paper stating that only men are good in this profession. This was a clear attack on SDG5. Looking into the UNGSII SCR300 we can quickly see that except for Intel none of the large listed companies operating out of Silicon Valley disclose any of their philosophy regarding Gender Equality in their legally binding document. No word from the Chairman, nothing from the CEO, and nothing from all the other senior executives.



The industry was caught by the fact that nothing they tried to declare as defining defined their philosophy was stated or signed by the top management or founders. So how could and should anyone inside or outside of Apple know what the standards in regards to the SDGs were and are in 2017?

And that is the reason why at UNGSII SCR300 we not only look into the legally relevant self-declaration of the largest 400 corporations in the world (representing a market cap of more than 25 trillion USD), but also double check with what those professionals at WSJ, FT, Les Echos, Mint, Handelsblatt, and other leading global business media publish about these companies on a daily basis. In one glance we realized that journalists were always sceptical in regards to the implementation of SDG5 when it comes to the IT Industry. They were covering this topic the most compared to other industries, so it was obviously newsworthy over years. The judgement was clear: very negative.

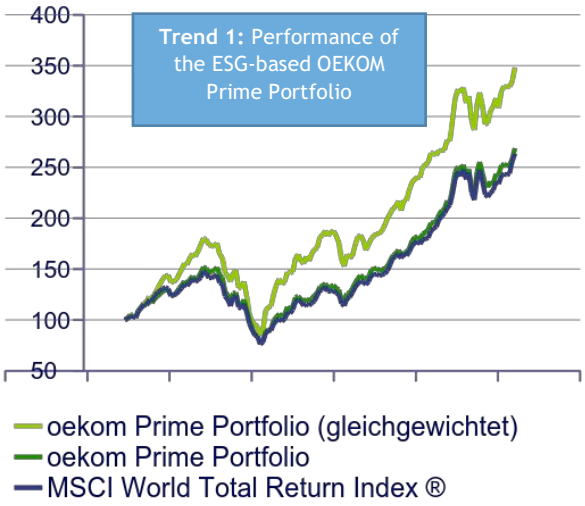


Both, the in depth value of the UNGSII SCR300 data as well as long-term trend data going back to the year 2000 ensure that single stories popping up an online feed never have a chance to over- or under- emphasize a single event happening in one region which may not be at all representative for the complete company.

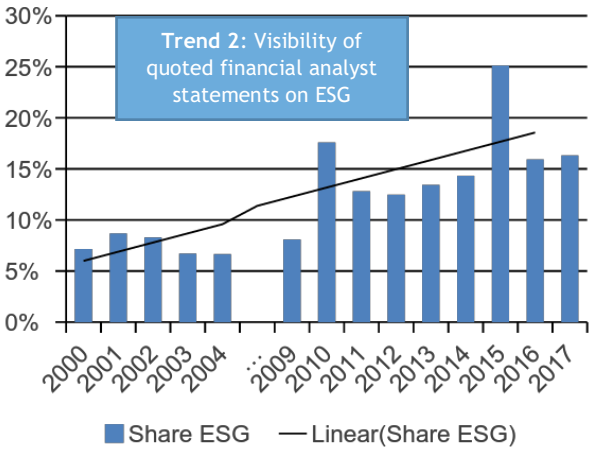
But let's take one step back and take a look how and why UNGSII got started.

The problem until 2017 was the following: Only 30-60% of a company's value is disclosed in i's annual report according to Professor Eccles of Harvard Business School and PWC. On top of this, the inability to compare non-financial performance as part of a consistent analysis framework is also missing for global investors. Over time, this has led to poor investment decisions that have repeatedly resulted in financial crises. The last one, in 2008, caused a major trust meltdown, due to poor governance and a lack of standards.

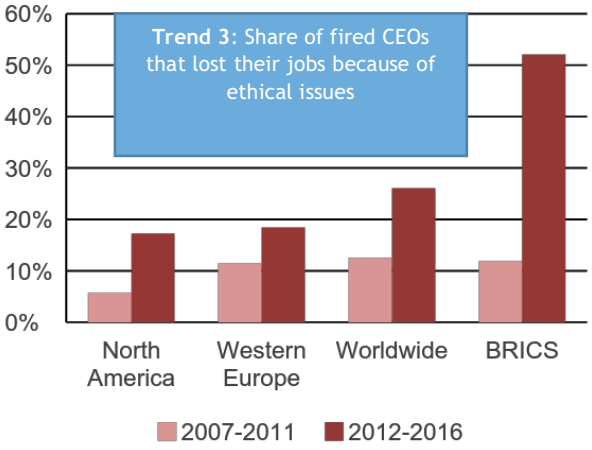
Once the 193 heads of state signed the SDGs on behalf of all stakeholders in September 2015 a new set of standards were not only agreed to by all countries in the world, they were binding for everyone they represented. The UNGSII Foundation creates unique transparency on the progress of both countries and companies. Leading rating agencies like OEKOM prove that investing in companies with a track record in sustainable behavior (ESG) creates added value.



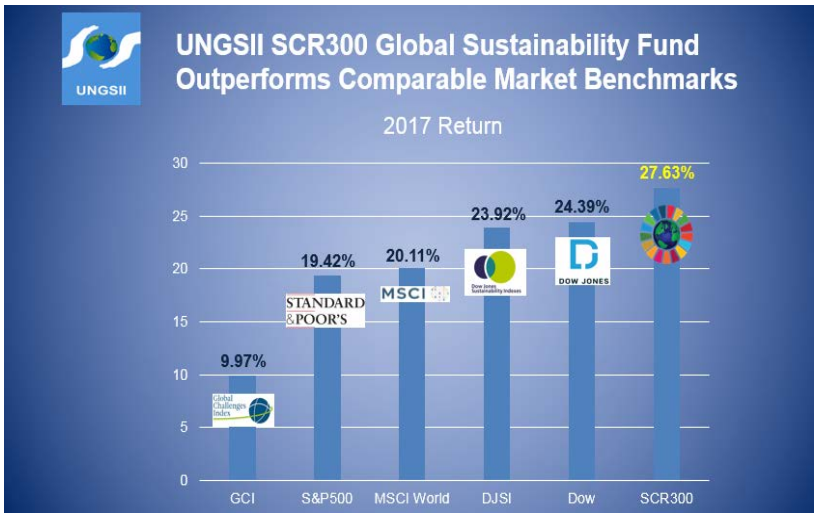
Combining UNGSII's curated analysis of global corporate commitment to the SDGs with due diligence on their ESG performance, executed by OEKOM, helps investors make better informed decisions about the financial and social impact of their investments.



Trend 2 indicates that financial markets embrace this concept. And now Trend 3's review of today's management being fired for lack of ethical commitment could transition to a review of tomorrow's CEOs being fired for their lack of commitment to the SDGs.

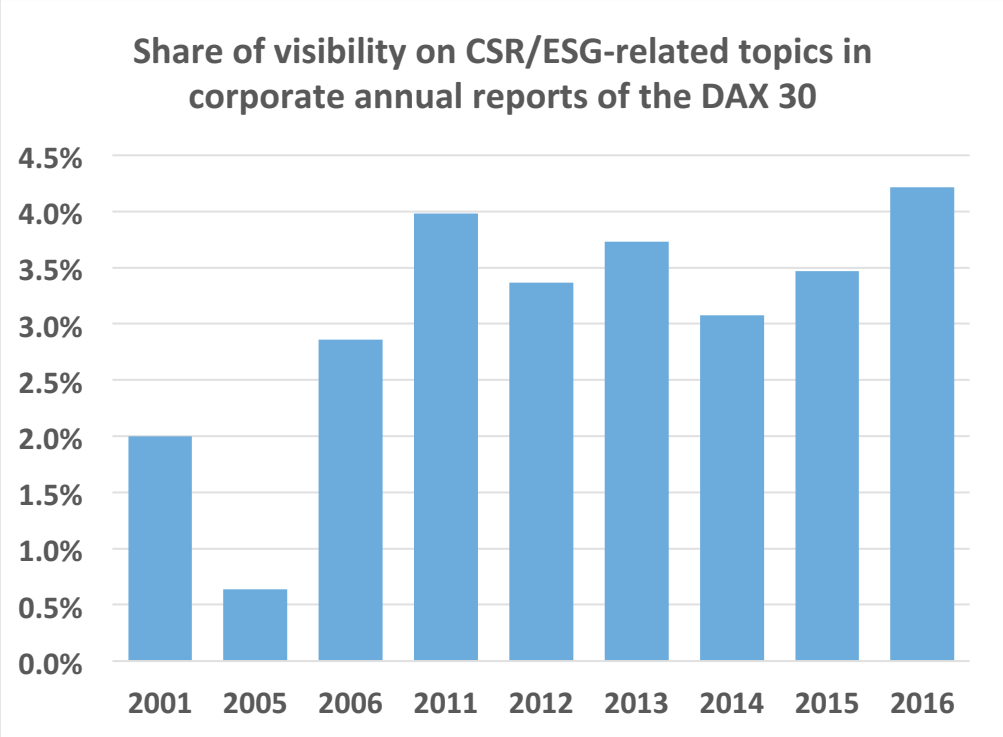


The UNGSII SCR300 Investment Fund's rate of return was 27.63% more than three points higher than its closest competitor. This highlights that responsible, socially conscious business is also profitable business, providing unique opportunities for investors to move away from negative screening to SDG impact investment. Because transparent responsibility and sustainability improvements are always possible for all companies, the multiple data sources and regularly updated nature of the UNSGII SCR300 means its companies are always at the forefront of the business and investing
advantage offered by supporting the SDGs.



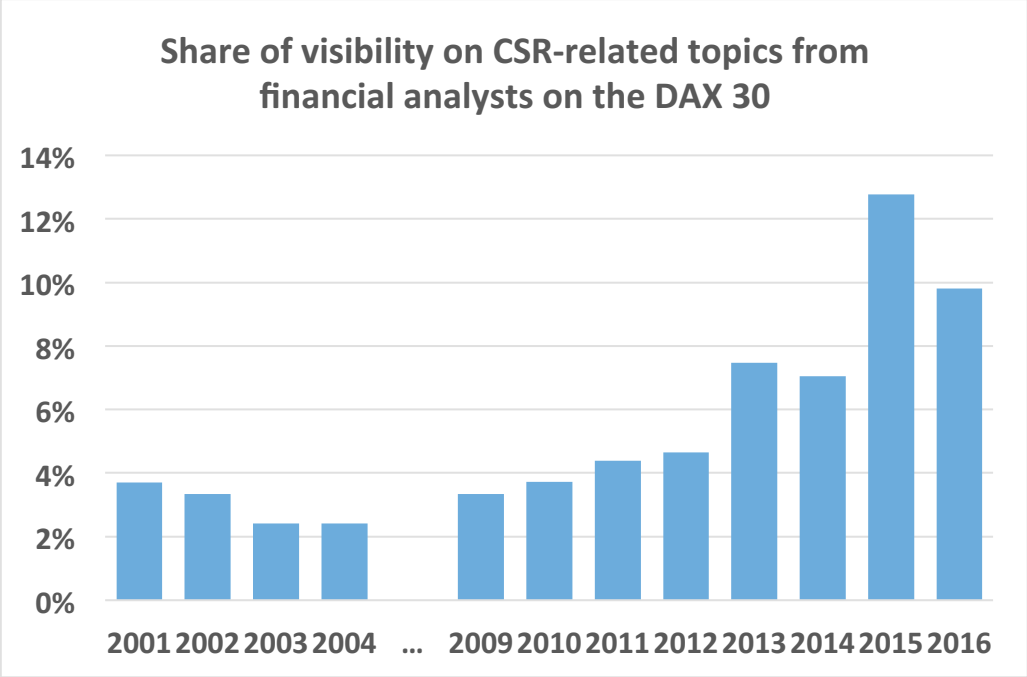
The good performance is satisfying but not totally a surprise to those familiar with the overall trends taking place since the end of Enron and the burst of the Internet bubble in 2000. The level of visibility for CSR/ESG topics in annual reports has grown steadily since 2001. This shows that companies are aware of the importance of these issues to stakeholders and profitability. Now with the SDGs in place, companies have a clear way of discussing key responsibility issues using a framework that is consistent across industries and businesses. This allows investors to make direct comparisons and for all stakeholders to track progress.

Prior to the SDGs, it was easy for companies to only address CSR issues that they felt had a direct relationship to their business, but the SDGs send a message that overall societal well-being matters.



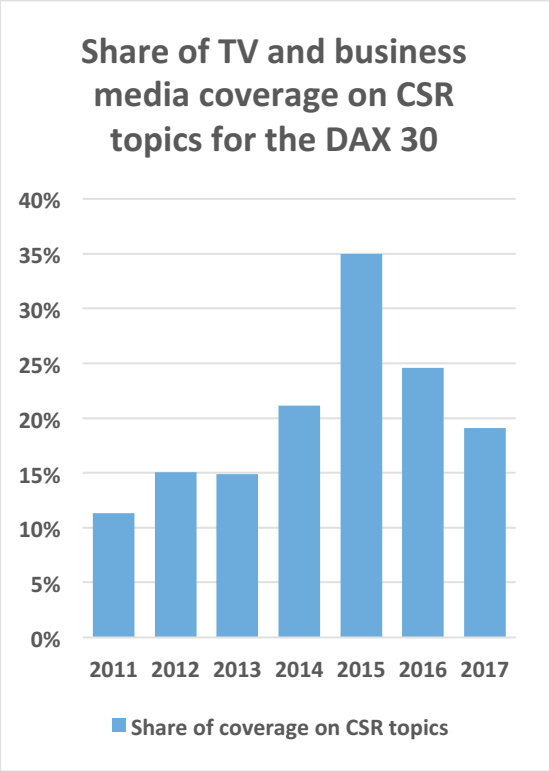
Quoted financial analysts have also been increasingly visible on CSR issues. This reflects both analyst commentary and the selection of quotations from them by journalists. This increase sends a clear message however – how a company performs on CSR activities is an appropriate investment criteria for the market to consider.

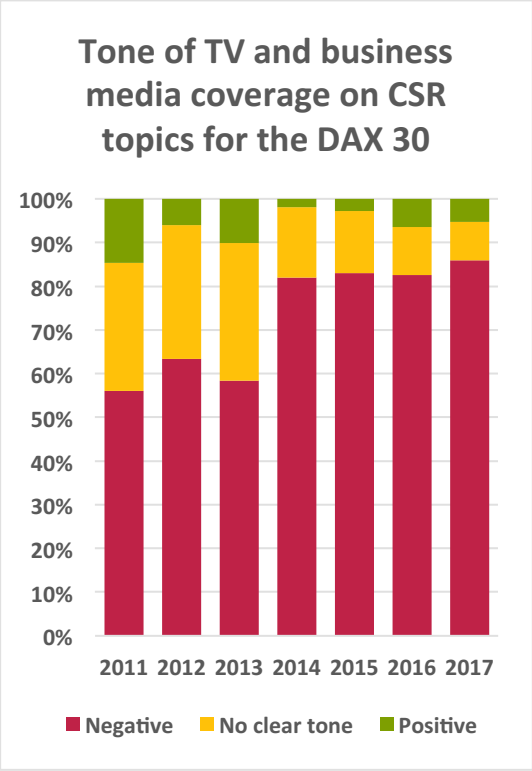
Because financial analysts are usually speaking with a clear agenda about a company's stock and whether investors should buy, hold, or sell they are more prone to focusing only on the extremes of CSR news – very positive actives or very negative actions. The opinion of quoted financial analysts is a key part of the picture.



But as both the self-declarations of corporates based on their legally binding annual reports as well as the assessment of financial analysts alone would not give a full picture of what drives the markets, UNGSII SCR300 is also studying carefully the financial sentiment influenced by two sources: large business media as well as TV prime time news. As the former CEO of Allianz, Michael Diekmann made clear while briefing its own top management and being asked how they should act and whether business ethics could be a helping indicator: Always act as if a journalist of The Wall Street Journal or The Times is standing next to you. As long as you think what you do could be covered next day in the newspaper – go ahead.

TV and business media have long reported strongly on CSR issues, but this reporting has mostly been focused on scandalization. Without the present of a "constructive news" ethos, media do not necessarily cover corporate initiatives about reducing in equality, improving cleanliness of water, or eradicating poverty. Instead, coverage focuses entirely on where companies have failed – such as in the recent emissions scandal. This data is essential, but the full picture of performance can only be achieved through combining both corporate self-reporting on the SDGs in the legal document that is an annual report and media coverage. Where a discrepancy in tonality exists, the SCR300 score is weakened, and stakeholders are advised to further investigate.





This is the reason why UNGSII Foundation took the effort to create three different sets of data in order to create the most solid base for transparency and building investment decisions:

1) All 376,663 statements in 400 annual reports issued by large corporations in 2016 were captured and categorized by human analysts
2) All 2,088,092 reports on these 400 companies from 2001 - 2016 in international business print media (e.g., FT, WSJ, Handelsblatt, etc.) were captured and analyzed by human analysts

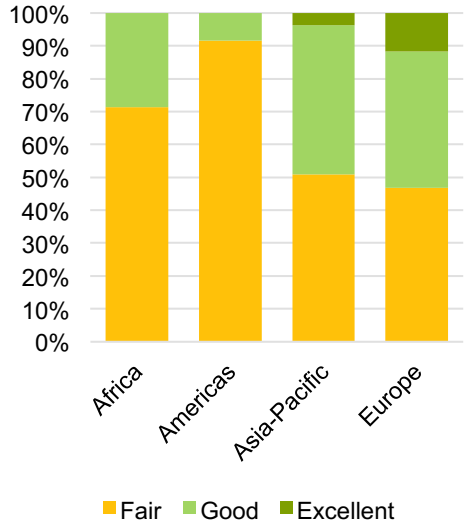
3) All 1,097,967 quotes from 2001 – 2016 by financial analysts in international business print media on these 400 stocks and more were captured and analysed by human analysts

These data points will be updated on an ongoing basis, as new annual reports will be released in 2018; quarterly results will be published by the companies; and the business media will continue covering these corporations with their editorial teams while finance sector experts will continue to offer judgement on whether selling or buying the stock is recommended or not.

The 300 top companies analyzed already talk about their commitment to the SDGs in their annual reports. This presents multiple opportunities. Impact investors have the opportunity to make solid profits while also helping the best performers in the categories they are most committed to stay best in class.

6% of companies are demonstrating exceptional commitment. Not only are they committed to the SDGs, they refer to them by name and address all of most of them in their annual reports. This helps to spread awareness and enlist others in helping to improve the planet. Focus on the SDGs and companies that contribute positively to the world will only continue to grow.

European companies perform the best in regard to the visibility of the SDGs in the annual reports of their companies with over 50% of European companies commenting on the SDGs at a level of good or excellent. This is ahead of other regions where discussion of the SDGs is less frequent. In particular this is markedly different than in the U.S. where the majority of companies do not reference the SDGs at a significant level. This is due to a number of factors, including a trend towards only producing a 10-K and not a magazine-style annual report in the U.S., as well as public sentiment about both the U.N. and some of the key SDGs (e.g., Climate Action).

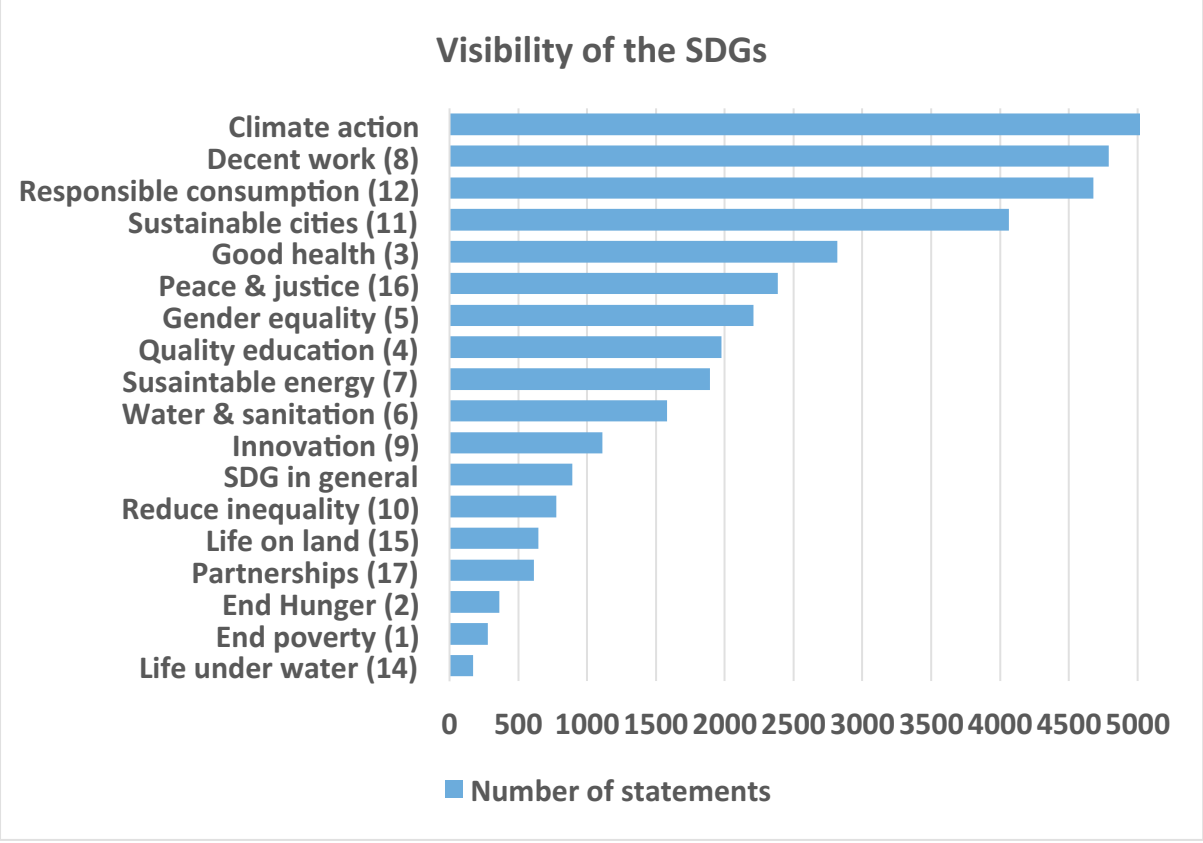


The UNGSII SCR300 not only provides in-depth 360-degree public available data on the individual 400 largest corporations. It is also able to provide insights on which of the 169 SDGs are already in focus for the top management of these corporations, how their focus differs per continent and industry and, most importantly as we approach 2030, whether the intensity of disclosure is growing – or not. At the same time, several conferences like the

WEF Sustainability Summit in New York in September 2017 or the UNCTAD conference in early November or the EURO Finance WEEK in Frankfurt, saw overarching activities that started to create awareness. This awareness included the idea that state pension funds should be invested in the SDGs in order to support the global initiatives on education and also that governments should make it mandatory that for public tenders beyond a size of 50 million USD that the only companies allowed to participate are those which disclose their commitment to more than 3 SDGs in their annual reports.

Listening to the C-suite of 400 of the world's largest corporations representing more than 25 trillion USD in market cap, we can see their priorities when we aggregate the data on the 17 main SDG themes: Climate action was by far the most visible of the SDGs. This was due to a combination of factors, including legal requirements in some regions to report on greenhouse gas production and control. The visibility of climate action also showcased the urgency of this topic and reflected consumer expectations that companies behave responsibly when it comes to their impact on the environment.

Regional differences related to the acceptance of climate change as a crisis were, however, a factor. While some industries necessarily addressed this topic more than others – i.e., automakers, energy producers, and oil, and gas companies – concern on this topic was visible across all industries. Decent work and responsible consumption are ranked second and third, closely followed by sustainable cities and good health. A few SDGs have extremely limited visibility, showcasing opportunity for companies that step forward.



But no matter from what perspective one tries to utilize the UNGSII SCR300 research, the overwhelming message is clear. 75% of the largest blue chips are already so committed to the SDGs that they consider them worthwhile to include in their own annual reports. Even better, more than 20% are already significantly explaining their business and activities of the year

along with the 17 SDGs. This creates more than just hope that the world is ready to meet the challenge of implementing all SDGs by 2030. As EY illustrated at the UNCTAD conference in Geneva in early November 2017, whether or not the SDGs will become real by 2030 is not a question of finance. It is solely a question of will power on all levels from all parts of society on all continents.

After presenting the UNGSII SCR300 at the UN in New York it became clear, that the foundation should accelerate its activities to include the next generation in the learning and communication process. Thanks to the thought leadership of Mingkai Chin, the energizing founder and leader of the GCH Foundation and his partner, Tom Root, Founder and CEO of Hopsports, the first set of schools were selected. This will reach 3 million children in 72 countries through teaching the results of the SCR300. What does it mean when Apple or Facebook keep quiet on gender issues? Why are banks the most prominent industry when the media disclose short comings in connection with corruption? How is it possible to ban plastic bags in some countries while others seem to feel less nervous regarding waste? As the education system around the world is rather strict and conservative, there was little time to prepare in order to receive the green light from the authorities to become part of the school year starting mid-August 2017. Yet, even this deadline was met thanks to great team effort from HopSports and GCH Foundation.

Based on that experience, a group of youth organizations gathered in Geneva to meet with Michael Moller, other senior officials from the United Nations, and the Secretary General of the International Parliamentary Union (the global association of all parliaments in the world) to discuss how children could take a more active role during the process of implementing the SDGs. As of fall 2017 the representatives of the Big 6, the largest youth organizations in the world, will receive invitations to key events at the UN in Geneva and are able to participate in the SDG Lab.

One further initiative was created: the Global Youth Poll. This will ensure that all around the world at least in 120 countries the next generation will be heard on a regular basis. Once per quarter a poll will be run in order to reach the 10-14, 15-19, 20-24 and the 25-29 age groups. Thanks to the partnership with the global YMCA, representing 30 million young people in 120 countries as well as the GCH Foundation, HopSports, and the EveryWon initiative it became realistic to ensure that the young people will be able to not only participate online, but also once per quarter at one of the local YMCA buildings. During this they will have one person within the same age group guiding them through the questions.

All these concrete projects, research results, and events – including the first SDG Lab taking place at the Hotel Hilton in Davos on each day of the World Economic Forum's Annual Meeting – have been beyond what was expected when the idea of an index was created and discussed in Davos starting in 2015. The partnerships created in 2017 have already shown in early 2018 that the ask for transparency and the ability to form data into valuable products and education formats meets the interest of all stakeholders.

2. ESG and financial performance: aggregated evidence from more than 2000 empirical studies

Alexander Bassen, Thimo Bush, Gunnar Friede

Close to 60 trillion US Dollars in assets under management – or 50% of the total global institutional assets base – are currently managed by Principles for Responsible Investment (PRI) signatories (PRI 2015a PRI (Principles for Responsible Investment). 2015a. "Signatory Base AUM Hits $59 Trillion." http://www.unpri.org/whatsnew/signatory-base-aum-hits-59-trillion/.

On the one hand, this development clearly demonstrates the commitment of financial markets toward environmental, social, and governance (ESG) criteria within investment decisions. However, on the other hand, far-reaching shifts of mainstream investors toward embracing sustainable investment practices remain rather slow (Reynolds 2014 Reynolds, Fiona. 2014. "Mainstream Slow to Accept Benefits of Responsible Investment." *Financial Times, Europe*, November 17, 22. Busch, Bauer, and Orlitzky 2015 Busch, Timo, Rob Bauer, and Marc Orlitzky. 2015. "Sustainable Development and Financial Markets: Old Paths and New Avenues." *Business & Society* 1–27. doi:10.1177/0007650315570701. PRI 2015b PRI (Principles for Responsible Investment). 2015b. "The Principles for Responsible Investment – Report on Progress 2015.").

Less than a quarter of investment professionals consider extra-financial information frequently in their investment decisions (EY 2015 EY. 2015. *Tomorrow's Investment Rules 2.0. Emerging Risk and Stranded Assets Have Investors Looking for More from Nonfinancial Reporting* (EY Climate Change and Sustainability Services).) and just about 10% of global professionals receive formal training on how to consider ESG criteria in investment analysis (CFA Institute 2015 CFA Institute. 2015. *Environmental, Social and Governance (ESG) Survey*.).

For many, the business case for responsible investing seems not obvious (Feri 2009 Feri. 2009. *Nachhaltige Investments Und Nachhaltigkeitsfonds Aus Anlegerperspektive – Studie 2009* (Feri Euro Rating Services). Bad Homburg. ; Cohen et al. 2011 Cohen, Jeffrey, Lori Holder-Webb, Leda Nath, and David Wood. 2011. "Retail Investors' Perceptions of the Decision-Usefulness of Economic Performance, Governance, and Corporate Social Responsibility Disclosures." *Behavioral Research in Accounting* 23 (1): 109–129. doi:10.2308/bria.2011.23.1.109. Riedl and Smeets 2015 Riedl, Arno, and Paul Smeets. 2015. "Why Do Investors Hold Socially Responsible Mutual Funds?" SSRN Working Paper Series. doi:10.2139/ssrn.2354905.). Still, the question of how compatible ESG criteria are with corporate financial performance (CFP) has remained a central debate for practitioners and academics alike for more than 40 years.

Though there are many positive examples for the ESG–CFP relation, researchers often claim that results are ambiguous, inconclusive, or contradictory (Aupperle, Carroll, and Hatfield 1985 Aupperle, Kenneth E., Archie B. Carroll, and John D. Hatfield. 1985. "An Empirical Examination of the Relationship Between Corporate Social Responsibility and Profitability." *Academy of Management Journal* 28 (2): 446–463. doi:10.2307/256210. Griffin and Mahon 1997 Griffin, Jennifer J., and John F. Mahon. 1997. "The Corporate Social Performance and Corporate Financial Performance Debate: Twenty-Five Years of Incomparable Research." *Business & Society* 36 (1): 5–31. doi:10.1177/000765039703600102. Rowley and Berman 2000 Rowley, Tim, and Shawn Berman. 2000. "A Brand New Brand of Corporate Social Performance." *Business & Society* 39 (4): 397–418. doi:10.1177/000765030003900404. van Beurden and Gössling 2008 van Beurden, Pieter, and Tobias Gössling. 2008. "The Worth of Values – a Literature Review on the Relation Between Corporate Social and Financial Performance." *Journal of Business Ethics* 82 (2): 407–424. doi:10.1007/s10551-008-9894-x; Hoepner and McMillan 2009 Hoepner, Andreas G. F., and David G. McMillan. 2009. "Research on 'Responsible Investment': An Influential Literature Analysis Comprising a Rating, Characterisation, Categorisation and Investigation." *SSRN Electronic Journal*: 1–84. doi:10.2139/ssrn.1454793. Revelli and Viviani 2015 Revelli, Christophe, and Jean-Laurent Viviani. 2015. "Financial Performance of Socially Responsible Investing (SRI): What Have We Learned? A Meta-Analysis." *Business Ethics: A European Review* 24 (2): 158–185. doi:10.1111/beer.12076.).

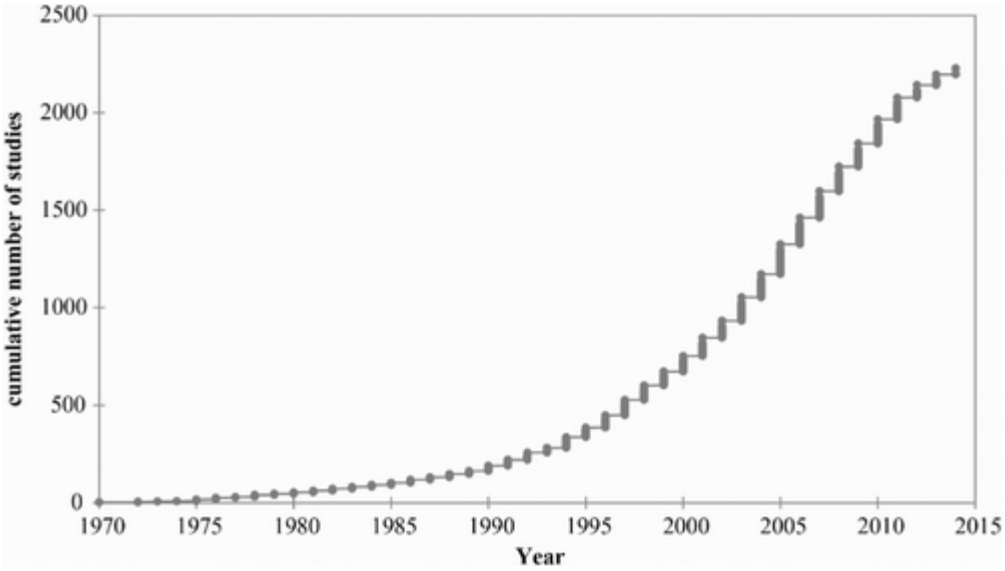
Scholars and practitioners are, in particular, undecided about the general effect including its measurement and durability (Barnett 2007 Barnett, Michael L. 2007. "Stakeholder Influence Capacity and the Variability of Financial Returns to Corporate Social Responsibility." *Academy of Management Review* 32 (3): 794–816. doi:10.5465/AMR.2007.25275520. Devinney 2009 Devinney, Timothy M. 2009. "Is the Socially Responsible Corporation a Myth? The Good, the Bad, and the Ugly of Corporate Social Responsibility." *Academy of Management Perspectives* 23 (2): 44–56. doi:10.5465/AMP.2009.39985540. Wood 2010 Wood, Donna J. 2010. "Measuring Corporate Social Performance: A Review." *International Journal of Management Reviews* 12 (1): 50–84. doi:10.1111/j.1468-2370.2009.00274.x. Orlitzky 2011 Orlitzky, Marc. 2011. "Institutional Logics in the Study of Organizations: The Social Construction of the Relationship Between Corporate Social and Financial Performance." *Business Ethics Quarterly* 21 (3): 409–444. doi:10.5840/beq201121325. Borgers et al. 2013 Borgers, Arian, Jeroen Derwall, Kees Koedijk, and Jenke ter Horst. 2013. "Stakeholder Relations and Stock Returns: On Errors in Investors' Expectations and Learning." *Journal of Empirical Finance* 22 (June): 159–175. doi:10.1016/j.jempfin.2013.04.003. Orlitzky 2013 Orlitzky, Marc. 2013. "Corporate Social Responsibility, Noise, and Stock Market Volatility." *Academy of Management Perspectives* 27 (3): 238–254. doi:10.5465/amp.2012.0097. Reynolds 2014 Reynolds, Fiona. 2014. "Mainstream Slow to Accept Benefits of Responsible Investment." *Financial Times, Europe*, November 17, 22. Authers 2015 Authers, John. 2015. "Vice versus Nice." *Financial Times, Europe*, June 25, 7.).

Thus, there is an ongoing debate about the role and the impact of the financial sector on the natural environment and society (Weber 2014 Weber, Olaf. 2014. "The Financial Sector's Impact on Sustainable Development." *Journal of Sustainable Finance & Investment* 4 (1): 1–8. doi:10.1080/20430795.2014.887345.[Taylor & Francis Online],).

In order to derive a more comprehensive picture, several review studies summarize primary ESG–CFP studies. Yet, all these first-level review studies provide an incomplete picture. This

study is the first effort to provide aggregated evidence based on more than 2000 empirical studies that have been released since the 1970s (see Figure 1).

Figure 1. Estimated number of empirical studies on the ESG–CFP relation over time.



We chose a two-step research method to analyze existing review and primary studies. First, we include findings from so-called vote-count studies. Vote-count studies count the number of studies with significant positive, negative, and nonsignificant results and "votes" the category with the highest share as winner (Light and Smith 1971 Light, R. J., and P. V. Smith. 1971. "Accumulating Evidence: Procedures for Resolving Contradictions among Different Research Studies." *Harvard Educational Review* 41 (4): 429–471. doi:10.17763/haer.41.4.437714870334w144.).

These studies provide interesting insights, but are less sophisticated from a methodological point of view. The shortcomings are well documented in the literature.[1]1. The statistical explanatory power in studies is usually low and the primary study might come to the conclusion, based on its calculated significance values and sample sizes, that a certain effect is nonsignificant. Vote-count reviews may also come to biased conclusions by simply concentrating on significant statistics of primary studies to decide if an effect across studies is positive or negative. Potentially they overestimate nonsignificant results. Besides, the explanatory power of vote-count studies shrinks with the increasing number of (contradictory) studies. Meta-studies directly import effect sizes and samples sizes to compute a summary effect across all primary studies. This aggregation method of data could better detect existing correlation patterns in combined samples (Hedges and Olkin 1980 Hedges, Larry V., and Ingram Olkin. 1980. "Vote-Counting Methods in Research Synthesis." *Psychological Bulletin* 88 (2): 359–369. doi:10.1037/0033-2909.88.2.359. Hunter et al. 1982 Hedges, Larry V., and Ingram Olkin. 1980. "Vote-Counting Methods in Research Synthesis." *Psychological Bulletin* 88 (2): 359–369. doi:10.1037/0033-2909.88.2.359.). Second, we aggregate the findings of econometric review studies – so-called meta-analyses – to derive a second-order meta-analysis.

In total, 60 review studies – both vote-count studies and meta-analyses – with a gross number of 3718 underlying studies on the empiric relation between ESG criteria and CFP provide the starting point for our second-level review study.[2]2. The term "second-level review study"

describes our aggregation of first-level review studies, regardless if they are vote-count studies or meta-analyses. “Second-order meta-analysis” is the psychometric aggregation technique for first-level meta-analyses as introduced by Schmidt and Oh (2013 Schmidt, Frank L., and In-Sue Oh. 2013. “Methods for Second Order Meta-Analysis and Illustrative Applications.” *Organizational Behavior and Human Decision Processes* 121 (2): 204–218. doi:10.1016/j.obhdp.2013.03.002.). This technique is used for the statistical aggregation of the 25 meta-analyses in our sample to compute summary effect sizes. When adjusted for overlaps, this figure reduces to a net number of more than 2200 unique studies. This still represents a dataset, which is 35 times larger than the average of analyzed primary studies in prior review studies. In this study, we explain both systematic methods of summarizing extant research and present a research symbiosis of vote-count studies and meta-analyses in the spirit of a best-evidence synthesis (Slavin 1986 Slavin, Robert E. 1986. “Best-Evidence Synthesis: An Alternative to Meta-Analytic and Traditional Reviews.” *Educational Researcher* 15 (9): 5–11. doi:10.3102/0013189X015009005.).

Through analyzing what is by far the most comprehensive dataset on existing ESG–CFP research to date, we find that the business case for ESG investing is empirically well founded. Investing in ESG pays financially. Furthermore, we highlight that the positive ESG impact on CFP is stable over time. Based on the data, we are able to derive conclusions for portfolio and nonportfolio studies. Portfolio studies comprise of studies on long-short ESG portfolios and in particular studies on ESG mutual funds and indices. Different asset classes, regions, and categories of E, S, and G. Particularly promising results are obtained when we differentiate between regions, nonportfolio studies, and asset classes other than equities.

1.1 Data

Since the earliest review of vote-count ESG–CFP studies (Aldag and Bartol 1978 Aldag, Ramon J., and Kathryn M. Bartol. 1978. “Empirical Studies of Corporate Performance and Policy: A Survey of Problems and Results.” In *Research in Corporate Social Performance and Policy*, edited by L. E. Preston, 165–199. Greenwich: JAI Press.), the studies providing secondary analysis of this relation has risen considerably, including both academic and numerous additional practitioner papers. The growth in number of ESG–CFP research publications has been particularly tremendous since the beginning of the 1990s. Based on our sample, we find that at least 2200 empirical ESG–CFP studies exist.

1.1.1 Search

For our analysis, only academic studies – regardless if they are working papers, published journal papers, or written for a commercial audience – were considered. Review papers that did not provide quantitative summaries of their findings were not included in our sample. Besides ancestry research and expert opinion, all relevant scholar databases and publisher sites were searched: Academy of Management Journals, ABI/Inform, Ebsco, Emerald, Google Scholar, Oxford Journals, Sage, Science Direct, Sprinker Link, and Web of Science. We also searched for nonpublished material on Econbiz, NBER, Repec, and SSRN. The keyword search combinations included the three components of E, S, and G and its abbreviations. In particular, we used the search terms environment(al) (performance), social (performance), responsib(le/ility), sustainab(le/ility), human capital, (corporate) governance – all in relation to (corporate) financial performance.

The first 100 hits of each single database and key word query, sorted by relevance, were further processed. Within this pre-filtered results we then searched for the terms meta,

review, literature, overview, analysis, study/ies, and examination. Together with the expert opinion studies, this yielded a narrower sample of 149 studies, which were analyzed in more detail by abstract or full paper. Single study designs, narrative reviews without clear tables/explicit summary results, and review studies without relevant ESG–CFP categorization were excluded. We applied a definition of ESG that reflects the exemplary list of variables of Clarkson (1995 Clarkson, Max B. E. 1995. "A Stakeholder Framework for Analyzing and Evaluating Corporate Social Performance." *Academy of Management Review* 20 (1): 92–117. doi:10.5465/AMR.1995.9503271994.), Wood (2010 Wood, Donna J. 2010. "Measuring Corporate Social Performance: A Review." *International Journal of Management Reviews* 12 (1): 50–84. doi:10.1111/j.1468-2370.2009.00274.x.), and the investment approaches in GSIA (2013 GSIA. 2013. "Global Sustainable Investment Review 2012." 1–46. Accessed August 3 http://gsiareview2012.gsi-alliance.org/.). We did not differentiate whether the motives for ESG performance of the firm are for altruistic or strategic reasons (McGuire 1969 McGuire, Joseph W. 1969. "The Changing Nature of Business Responsibilities." *The Journal of Risk and Insurance* 36 (1): 55–61. doi:10.2307/251140. Baron 2001 Baron, David P. 2001. "Private Politics, Corporate Social Responsibility, and Integrated Strategy." *Journal of Economics & Management Strategy* 10 (1): 7–45. doi:10.1162/105864001300122548.; McWilliams, Siegel, and Wright 2006 McWilliams, Abagail, Donald S. Siegel, and Patrick M. Wright. 2006. "Corporate Social Responsibility: Strategic Implications." *Journal of Management Studies* 43 (1): 1–18. doi:10.1111/j.1467-6486.2006.00580.x.).

CFP measures were defined as accounting-based performance, market-based performance, operational performance, perceptual performance, growth metrics, risk measures, and the performance of ESG portfolios (Cochran and Wood 1984 Cochran, Philip L., and Robert A. Wood. 1984. "Corporate Social Responsibility and Financial Performance." *Academy of Management Journal* 27 (1): 42–56. doi:10.2307/255956. Orlitzky and Benjamin 2001 Orlitzky, Marc, and John D. Benjamin. 2001. "Corporate Social Performance and Firm Risk: A Meta-Analytic Review." *Business & Society* 40 (4): 369–396. doi:10.1177/000765030104000402.; Orlitzky, Schmidt, and Rynes 2003 Orlitzky, Marc, Frank L. Schmidt, and Sarah L. Rynes. 2003. "Corporate Social and Financial Performance: A Meta-Analysis." *Organization Studies* 24 (3): 403–441. doi:10.1177/0170840603024003910.; Peloza 2009 Peloza, John. 2009. "The Challenge of Measuring Financial Impacts from Investments in Corporate Social Performance." *Journal of Management* 35 (6): 1518–1541. doi:10.1177/0149206309335188.). We also considered specific parts of a study (Viviers and Eccles 2012 Viviers, S., and N. S. Eccles. 2012. "35 Years of Socially Responsible Investing (SRI) Research – General Trends over Time." *South African Journal of Business Management* 43 (4): 1–16. doi:http://hdl.handle.net/10500/12853. Mayer-Haug et al. 2013 Mayer-Haug, Katrin, Stuart Read, Jan Brinckmann, Nicholas Dew, and Dietmar Grichnik. 2013. "Entrepreneurial Talent and Venture Performance: A Meta-Analytic Investigation of SMEs." *Research Policy* 42 (6–7): 1251–1273. doi:10.1016/j.respol.2013.03.001.; Stam, Arzlanian, and Elfring 2014 Stam, Wouter, Souren Arzlanian, and Tom Elfring. 2014. "Social Capital of Entrepreneurs and Small Firm Performance: A Meta-Analysis of Contextual and Methodological Moderators." *Journal of Business Venturing* 29 (1): 152–173. doi:10.1016/j.jbusvent.2013.01.002.) when its focus was not entirely on the ESG–CFP relation – provided a vote-count estimate or effect size calculation was possible. In case of different versions of a review study, the latest version – or ideally, the published version – remained in our sample. All studies were required to be available in electronic format. The cut-off date for study inclusion was online availability until December 2014.

1.1.2 Sample

In total, we identified 35 vote-count studies (Table 1) and 25 meta-analyses (Table 2) which combine results from 3718 (gross) primary studies of which 1816 studies stem from vote-count studies and 1902 from meta-analyses. All studies were scaled with a unique identifier in the format author 1, author 2, …, author *i* (year). Different review author citations formats, citations years of study versions, and author typing errors were normalized. All available statistical summary information of review studies and all information reported on primary study level were imported and normalized for further statistical analysis.

3.1.3

Table 1. Overview of studies on the ESG–CFP relation (vote-count studies sample).

Table 1. Overview of studies on the ESG–CFP relation (vote-count studies sample).

Study	Focus	Number of studies (*N*)	Share of findings			
			Positive	Neutral	Negative	Mixed
Arlow and Gannon (1982)	S	7	42.9%	42.9%	14.3%	
Cochran and Wood (1984)	S, E	13	69.2%	23.1%	7.7%	
Aupperle, Carroll, and Hatfield (1985)	S, E	9	55.6%	22.2%	11.1%	11.1%
Ullmann (1985)	S, E	24	54.2%	20.8%	12.5%	12.5%
Capon, Farley, and Hoenig (1990)	S, E	14	75.9%		19.5%	4.6%
Wood and Jones (1995)	S, E	51	49.0%	21.6%	13.7%	15.7%
Pava and Krausz (1996)	S, E	21	57.1%	38.1%	4.8%	
Griffin and Mahon (1997)	S, E	50	44.0%	12.0%	22.0%	22.0%
Roman, Hayibor, and Agle (1999)	S, E	45	60.0%	24.4%	4.4%	11.1%
Richardson, Welker, and Hutchinson (1999)	E, S	22	50.0%	45.5%	4.5%	
Margolis and Walsh (2003)	S, E	126	42.9%	22.2%	5.6%	29.4%
Salzmann, Ionescu-Somers, and Steger (2005)	S, E	12	50.0%	25.0%	25.0%	

McWilliams, Siegel, and Wright (2006)	S, E	12	33.3%	25.0%	16.7%	25.0%
Gillan and Starks (2007)	G	39	35.9%	43.6%	5.1%	15.4%
Ambec and Lanoie (2007)	E	41	68.3%	22.0%	4.9%	4.9%
van Beurden and Gössling (2008)	E, S	34	67.6%	26.5%	5.9%	
Peloza (2009)	S, E	130	63.0%	22.0%	15.0%	
Blanco, Rey-Maquieira, and Lozano (2009)	E	32	71.9%	21.9%	6.3%	
Molina-Azorín et al. (2009)	E	32	62.5%	12.5%	12.5%	12.5%
Horváthová (2010)	E	44	54.7%	29.7%	15.6%	0%
Westlund and Adam (2010)	S	21	85.7%			14.3%
Love (2010)	G	45	77.8%	0%	22.2%	
Derwall, Koedijk, and Horst (2011)	Funds	18	16.7%	33.3%	22.2%	27.8%
Günther, Hoppe, and Endrikat (2011)	E	274	44.5%		11.8%	43.7%
Sjöström (2011)	E, S	21	23.8%	33.3%	14.3%	28.6%
Boaventura, Santos da Silva, and Bandeira-de-Mello (2012)	S, E	58	55.2%	27.6%	10.3%	6.9%
Rathner (2013)	Funds	25	13.2%	72.0%	14.9%	0%
Schultze and Trommer (2012)	E	36	50.0%	19.4%	5.6%	25.0%
Viviers and Eccles (2012)	Funds	59	23.4%	56.2%	20.3%	
Fifka (2013)	Reporting	45	53.3%	42.2%	4.4%	
Kleine, Krautbauer, and Weller (2013)	E, S, G	182	30.8%	31.9%	7.7%	29.7%
Revelli and Viviani (2013)	Funds	75	24.0%	48.0%	14.7%	13.3%
Capelle-Blancard and Monjon (2014)	Funds	61	3.3%	47.5%	16.4%	32.8%
Clark, Feiner, and Viehs (2015)	E, S, G	110	85.5%	5.1%	0.9%	8.5%
Schröder (2014)	E, S	28	57.1%	7.1%	10.7%	25.0%
Total/*n*-weighted average		1.816	48.2%	23.0%	10.7%	18.0%

This table displays all considered vote-count studies for the analysis. Meta-analytical studies with nontransferable or nontransparent effect sizes that nonetheless allow a vote-count analysis were included in the vote-count studies sample as well. Focus "S" and "E" denote a Social (S) or Environmental (E) focus. For studies with combined E and S focus, the order of S and E indicates the relative weight of S vs. E. The labeling "E, S, G" indicates no relative weight within groups. The number of primary studies in each vote-count analysis is denoted *N*. For vote-count studies with transparent vote-count on primary study, the share of findings is calculated based on this primary information. For all other cases, the reported summary results of the vote-count reviewers are used.

1.1.3 Table 2. Overview of studies on the ESG–CFP relation (meta-analyses sample).

Table 2. Overview of studies on the ESG–CFP relation (meta-analyses sample).

Authors	Focus	Number of studies (*N*)	Number of observations (*N*)	Average correlation *r* (uncorrected)
Frooman (1997)	E, S	22	2.161	0.312(b)
Orlitzky and Benjamin (2001)	S, E	18	6.186	0.149
Orlitzky (2001)	S, E	20	6.889	0.061
Orlitzky, Schmidt, and Rynes (2003)	S, E	62	33.878	0.184
Allouche and Laroche (2005)	S, E	79	57.409	0.143
Combs et al. (2006)	S	90	19.319	0.150
Wu (2006)	S, E	120	21.933	0.166
Rosenbusch, Bausch, and Galander (2007)	E	62	21.742	0.190
Darnall and Sides (2008)	E	9	30.000	0.077
Pavie and Filho (2008)	S, E	112	170.737	0.083
van Wijk, Jansen, and Lyles (2008)	S	28	4.627	0.190
Margolis, Elfenbein, and Walsh (2009)	S, E	214	38.483	0.133
Vishwanathan (2010)	E, S	189	n.a.	0.070
Crook et al. (2011)	S	66	12.163	0.170
Rosenbusch, Brinckmann, and Bausch (2011)	S	46	21.270	0.133
Unger et al. (2011)	S	70	24.733	0.076
Rubera and Kirca (2012)	S	153	33.544	0.146
Albertini (2013)	E	52	62.943	0.090
del Mar Miras-Rodríguez et al. (2015)	E, S	91	31.878	0.067
Dixon-Fowler et al. (2013)	E	39	22.869	0.062
Golicic and Smith (2013)	E	31	15.160	0.305
Mayer-Haug et al. (2013)	S	58	50.045	0.044(b)
Endrikat, Guenther, and Hoppe (2014)	E	148	201.511	0.082(b)
Stam, Arzlanian, and Elfring (2014)	S	43	13.263	0.157
Revelli and Viviani (2015)	Funds	80	89.496	–0.003(a)
Total/*n*-weighted average		1.902	992.239	0.118

This table displays all considered meta-analyses for the analysis and includes the number of primary studies in each meta-analysis and the corresponding number of observations. Amplifications on the original reported number of included primary studies have been made, if not the entire sample was used. For four meta-analyses not all originally reported number of studies could be verified through data in the provided appendix and for three studies a condensed study set was used. The gross number of studies therefore decreases from 2091 to 1902 studies. Focus "S" and "E" denote a Social (S) or Environmental (E) focus. For studies with integrated S and E focus, the order of S and E indicates the relative weight of S vs. E studies. The indices (a) and (b) for the uncorrected effect size *r* indicate the source of the effect size in case, it was modified from the originally stated results: (a) transformed from d/g in *r* and (b) derived from stated corrected study results with either a meta-analysis provided individual attenuation factor or a calculated artifact attenuation factor of 0.72.

Not all primary studies were made transparent by the review authors. Eight review studies containing 929 primary studies (25.0% of the sample) were not identifiable on primary level. This meant that the results were included in the summary effects, but no further analysis on primary study level was possible. Within the remaining uniquely identifiable 2789 (gross) primary studies, the overlap within review studies was subsequently accounted for. The resulting net number of identifiable unique primary studies was $n = 723$ for the vote-count

studies and n = 1214 for the meta-analyses. Of these, 259 studies overlap within the two review approaches – which brought the final number of unique identifiable primary studies in the sample to n = 1678. Those 259 overlapping studies remained within the vote-count studies and meta-analyses sample as separation to one or the other review approach was not possible without losing data granularity.

Based on our sample of unique identifiable studies (n = 1678) and the number of nontransparent studies (n = 929), we estimated that at least 550 studies need to be added for a more complete estimate of the overall number of existing empirical studies on ESG–CFP published since the 1970s. This estimate was adjusted for the various overlaps within the vote-count studies and meta-analyses sample.[4]4. Two of the typical ways to treat missing data are model-based distribution estimation and the replacement of missing data (imputation) with estimated ones (Schafer and Graham 2002 Schafer, Joseph L., and John W. Graham. 2002. "Missing Data : Our View of the State of the Art." *Psychological Bulletin* 7 (2): 147–177. doi:10.1037//1082-989X.7.2.147.; Tsikriktsis 2005 Tsikriktsis, Nikos. 2005. "A Review of Techniques for Treating Missing Data in OM Survey Research." *Journal of Operations Management* 24 (1): 53–62. doi:10.1016/j.jom.2005.03.001.). The latter is applied due to the nonparametric nature of the data. We estimate the total number of missing net studies based on the subgroup means of overlaps in transparent vote-count studies, meta-analyses, and among both. The determined subgroup overlap means are applied to each subgroup of nontransparent studies.

1.2 Methods

Two different ways for aggregation of the primary and secondary study results are applied, each with different calculation methods depending on the context. For comparability between results in the vote-count studies and meta-analyses, we compute distributions of outcomes and correlation effect sizes. Besides aggregated summary effects, we provide further fine-grained analysis on subgroup level. Depending on data availability in vote-count studies and meta-analyses, an analysis for different asset classes, regions, categories of E, S, and G as well the relation over time is conducted. When both vote-count studies and meta-analyses offer this information, the more comprehensive primary study sample is chosen. When the sub-sample stems from vote-count studies, the analysis focuses on the distribution of outcomes; when the sub-sample stems from meta-analyses, the focus is on effect sizes.

Raw correlations, corrected correlations, sample sizes as well as corresponding variances, standard errors, confidence interval (CI), and credibility interval (CrI) have been extracted from the original meta-analyses as far as possible for further calculations. If necessary, some of the effect sizes and variances were transformed or derived for the calculation of a second-order meta-analysis.

1.2.1 Calculation of distributions

1.2.1.1 Vote-count studies

Distributions of positive, negative, neutral, and mixed outcomes are calculated for vote-count studies based on the results of the gross study sample and the net study sample. Within the gross study sample, it is possible that the same primary study is analyzed multiple times by different review study authors who may interpret each study differently. These interpretations are treated as independent study outcomes – no further adjustments are made. When a primary study is analyzed by more than one review author, the net study sample is adjusted

for this constraint and different review authors' interpretations are harmonized. On average, every unique primary study in the vote-count sample is analyzed by 1.8 review authors. To decide on the overall interpretation per unique study, a binomial test with three equally probable outcomes is applied (positive, neutral, and negative). A probability of greater than .95 served as cut-off point to determine the final interpretation for the study. If no clear positive or negative assignment was possible, the study is classified as neutral and/or mixed.

1.2.1.2 Meta-analyses

Vote-count reviewers provide an assessment of the extent to which an observed relation in a primary study is a significant outcome. When undertaking a meta-analysis of primary studies, this assessment is performed by the second-level reviewer. In order to adjust for significance of the results, we employ a 95% CI and 95% CrI based on the determined meta-analytical variance in the $n = 25$ meta-analyses. We calculate the 95% CI via the determined standard error (SE) for attenuated (r) and disattenuated (p) results. (1) (2)

The 95% CrI is then calculated via the standard deviation of the attenuated and disattenuated correlations. (3) (4)

The true variance for $\hat{\bar{r}}_i$ (the meta-analytical mean of attenuated correlations) is $\hat{\sigma}^2_{\hat{\bar{r}}_i}$ and the corresponding variance for $\hat{\bar{p}}_i$ (the meta-analytical mean of disattenuated correlations) is $\hat{\sigma}^2_{\hat{\bar{p}}_i}$. As we are interested in the degree of significant positive and negative results, we place the intervals around zero instead of the meta-analytical mean. The resulting distributions may appear unusual on first glance as they define results significantly different from zero. The calculation is also conducted for the uncorrected and corrected correlations in the 551 primary studies, which possess transparent effect size data. We apply the same corresponding intervals that are utilized for the set of meta-analyses. Finally, we determine the number of studies that are above and below the intervals, categorize them as positive or negative and put them in relation with the sample size. All studies within the interval are classified as neutral.

1.2.2 Calculation of effect sizes

1.2.2.1 Vote-count studies

Even though vote-count studies usually do not report effects sizes like standardized mean differences (d/g) or correlations, it is possible to approximate them with the provided data. Methods have been introduced during the time when broader application of meta-analytical techniques were being developed (Hedges and Olkin 1980 Hedges, Larry V., and Ingram Olkin. 1980. "Vote-Counting Methods in Research Synthesis." *Psychological Bulletin* 88 (2): 359–369. doi:10.1037/0033-2909.88.2.359.; Hedges and Olkin 1985 Hedges, Larry V., and Ingram Olkin. 1985. *Statistical Methods for Meta-Analysis*. San Diego: Academic Press.) and were further refined in the 1990s (Bushman 1994 Bushman, Brad J. 1994. "Vote-Counting Procedures in Meta-Analysis." In *The Handbook of Research Synthesis and Meta-Analysis*, edited by Harris Cooper and Larry V. Hedges, 193–213. New York: Russel Sage Foundation. ; Bushman and Wang 1995 Bushman, Brad J., and Morgan C. Wang. 1995. "A Procedure for Combining Sample Correlation Coefficients and Vote Counts to Obtain an Estimate and a Confidence Interval for the Population Correlation Coefficient."

Psychological Bulletin 117 (3): 530–546. doi:10.1037/0033-2909.117.3.530.).[5]5. The method assumes simplistically comparable sample sizes for the underlying primary studies, which is rather the exception in research synthesis. It is also constructed as fixed effect model, which assumes that studies draw samples from a population with the same standardized mean difference (Hedges and Olkin 1980 Hedges, Larry V., and Ingram Olkin. 1980. "Vote-Counting Methods in Research Synthesis." *Psychological Bulletin* 88 (2): 359–369. doi:10.1037/0033-2909.88.2.359.). The calculated effect size for the vote-count sample should therefore be seen as quick approximate estimate instead of a final analysis (Hedges and Olkin 1985 Hedges, Larry V., and Ingram Olkin. 1985. *Statistical Methods for Meta-Analysis*. San Diego: Academic Press.). The effect size *r* is determined by calculating the ratio of$p_0(\rho)$, which divides the number of positive studies by the sum of positive and negative studies, and by putting it in relation with the corresponding number of studies *n*. The estimation for the correlation coefficient *r* of a single vote-count study is subsequently determined through linear extrapolation based on the correlations coefficients provided (Hedges and Olkin 1985 Hedges, Larry V., and Ingram Olkin. 1985. *Statistical Methods for Meta-Analysis*. San Diego: Academic Press. 63ff). In a final step, the estimated correlation factors per vote-count study are sample-size weighted and aggregated to an overall estimation of the average correlation *r* for the vote-count sample.

1.2.2.2 Meta-analyses

First-order meta-analytical results for the sample of primary studies are calculated with the Hunter–Schmidt approach (Hunter, Schmidt, and Jackson 1982 Hunter, John E., Frank L. Schmidt, and Gregg B. Jackson. 1982. *Meta-Analysis: Cumulating Research Findings Across Studies*. Beverly Hills: Sage; Hunter and Schmidt 2004 Hunter, John E., and Frank L. Schmidt. 2004. *Methods of Meta-Analysis: Correcting Error and Bias in Research Findings*. 2nd ed. Newbury Park: Sage.). The approach is used by more than 80% of meta-analyses in management research (Aguinis et al. 2011 Aguinis, Herman, Dan. R. Dalton, Frank A. Bosco, Charles A. Pierce, and Catherine M. Dalton. 2011. "Meta-Analytic Choices and Judgment Calls: Implications for Theory Building and Testing, Obtained Effect Sizes, and Scholarly Impact." *Journal of Management* 37 (1): 5–38. doi:10.1177/0149206310377113. , ,). It is similar to the second-order meta-analytical methodology which applies a fully random effect model.

All other average effect sizes and summary statistics of the 25 meta-analyses are determined with Schmidt and Oh's method for second-order meta-analysis (Schmidt and Oh 2013 Schmidt, Frank L., and In-Sue Oh. 2013. "Methods for Second Order Meta-Analysis and Illustrative Applications." *Organizational Behavior and Human Decision Processes* 121 (2): 204–218. doi:10.1016/j.obhdp.2013.03.002.). A second-order meta-analysis combines a number of methodologically comparable and independent first-order meta-analyses. It allows knowledge aggregation across a tremendous set of primary studies. Such a meta-analysis sample is potentially closer to a complete set of studies in certain research fields and allows for robust generalizations. Apart from the efficient aggregation of huge datasets, the method is statistically superior to other approaches for summarizing first-order meta-analyses. Conventional approaches will most likely provide inaccurate estimates of the true mean effect size and are prone to second-order sampling errors in the variances across all meta-analyses. The approach chosen considerably reduces the remaining sampling error variance of first-order meta-analyses and allows a better estimation of the true (nonartifactual) variance across these mean effect sizes (Schmidt and Oh 2013 Schmidt, Frank L., and In-Sue Oh. 2013. "Methods for Second Order Meta-Analysis and Illustrative Applications." *Organizational*

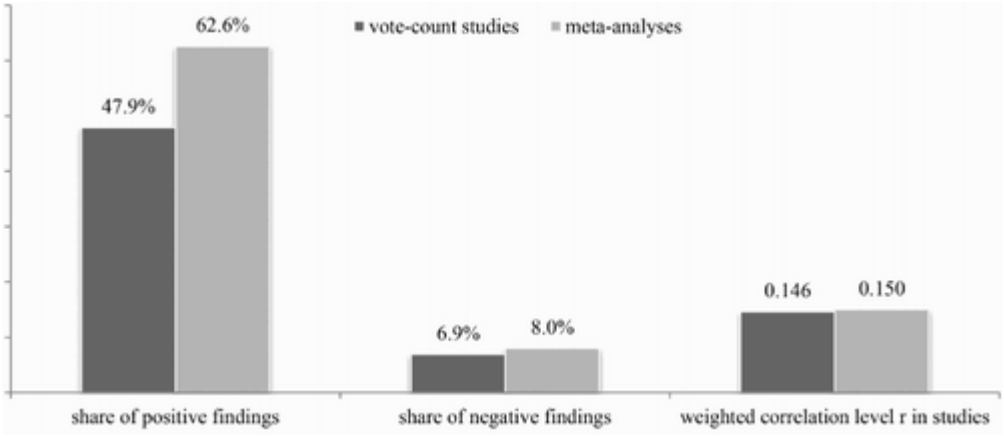
Behavior and Human Decision Processes 121 (2): 204–218. doi:10.1016/j.obhdp.2013.03.002.). Because of the considerable number of first-order meta-analyses in our sample which make use of artifact distribution correction, we calculate our results with the artifact distribution approach of Schmidt and Oh.[6]6. Please refer to table 1, p. 210 in Schmidt and Oh (2013 Schmidt, Frank L., and In-Sue Oh. 2013. "Methods for Second Order Meta-Analysis and Illustrative Applications." *Organizational Behavior and Human Decision Processes* 121 (2): 204–218. doi:10.1016/j.obhdp.2013.03.002.) for a technical summary of the approach.

In order to differentiate whether correlations and corresponding variance are first-order (based on extracted primary studies) or second-order (aggregated vote-count studies or meta-analyses), we add one or two lines above letters for attenuated correlations *r* and disattenuated correlations *p*. The applied circumflex accent indicates that the values in the meaning of psychometric meta-analysis are estimates of the parameters, not the parameters themselves (Schmidt and Oh 2013 Schmidt, Frank L., and In-Sue Oh. 2013. "Methods for Second Order Meta-Analysis and Illustrative Applications." *Organizational Behavior and Human Decision Processes* 121 (2): 204–218. doi:10.1016/j.obhdp.2013.03.002.; Schmidt and Hunter 2015 Schmidt, Frank L., and John E. Hunter. 2015. *Methods of Meta-Analysis: Correcting Error and Bias in Research Findings*. 3rd ed. Newbury Park: Sage. 229). Correlations containing lines above the letter but not marked with a circumflex are meta-analytical averages but are not determined using a psychometric meta-analysis.

1.3 Results

Figure 2 displays our summary of findings: approximately 90% of studies find a nonnegative ESG–CFP relation, of which 47.9% in vote-count studies and 62.6% in meta-analyses yield positive findings with a central average correlation level in studies of around 0.15. The following paragraphs discuss the findings in more detail.

Figure 2. Overall summary results.



1.3.1 Summary effects: distributions

1.3.1.1 Vote-count studies

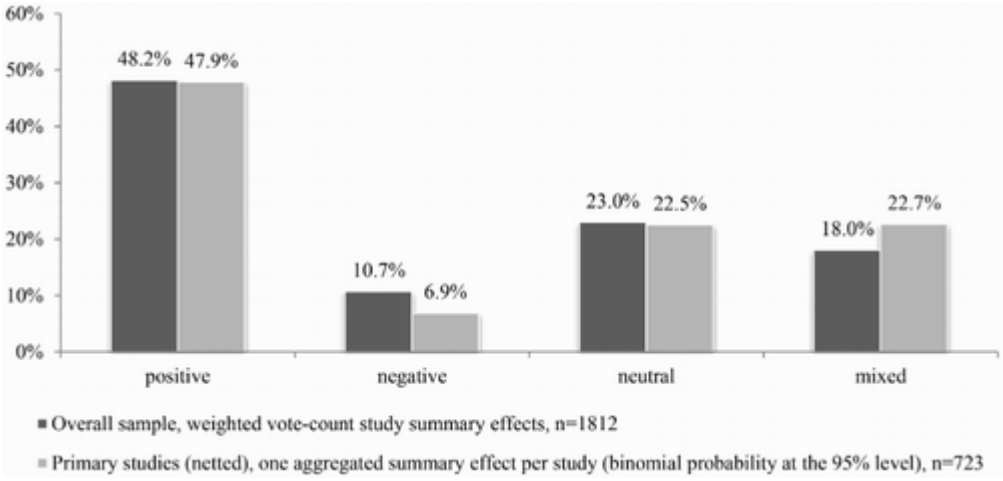
In a first step for the analysis of distribution results, all 1816 vote-count studies in the gross sample are treated as unique studies without adjusting for overlap among the vote-count studies. The overall weighted share of positive findings in the sample is calculated at 48.2%.

In 41.0% of all results, the findings lead to neutral (23.0%) or mixed findings (18.0%). Just 10.7% of all analyzed studies exhibit a negative ESG–CFP relation.

In a second step, we account for the amount of nondisclosed and overlapping studies among the gross number of 1816 studies. The transparent studies are netted and in case that the first-level reviewer assessments differ, the findings are synthesized with a binomial test. The additional check does not meaningfully change the distribution of the positive and neutral findings (47.9% and 22.5%, respectively). However, a proportion of the negative findings cannot be considered statistically significant anymore if two or more reviewer interpretations are synthesized with a binomial test. The share of negative findings in the sample decreases to 6.9% of studies. Instead, the share of mixed results increases to 22.7%.

Either way, depending on which of the two approaches (unadjusted gross studies/net studies adjusted with binomial test) is applied, close to 50% of all analyzed studies in the vote-count sample find a positive relation and around 10% a negative one. The small distribution difference in the results is explained by a slightly more comprehensive overall sample and the net approach for study interpretation when more than one reviewer analyzed the same primary study (Figure 3).

Figure 3. ESG–CFP relation in vote-count studies.



1.3.1.2 Meta-analyses

Out of the 25 meta-analyses in the sample, just one study displays a summary effect size that has a negative ESG–CFP correlation – albeit very close to zero (Revelli and Viviani 2015 Revelli, Christophe, and Jean-Laurent Viviani. 2015. “Financial Performance of Socially Responsible Investing (SRI): What Have We Learned? A Meta-Analysis.” *Business Ethics: A European Review* 24 (2): 158–185. doi:10.1111/beer.12076.). The sample size adjusted share of absolute positive correlation findings in meta-analytical summary effect for the 1902 studies stands with 95.8% considerable higher than in vote-count studies. However, this number is not adjusted for statistical significance. If we apply the 95% CI and 95% CrI, for the meta-analytical summary effects and the number of transparent primary studies, the figures change accordingly (Table 3). For the 25 meta-analyses, the share of positive findings is reduced to 74.9% (95% CrI, attenuated results). However, the share of negative results remains at 0%, as the lowest effect in the 25 meta-analyses is –0.003. A quarter (25.1%) of the sample effect sizes is within the CrI and is correspondingly classified as neutral results.

1.3.2 Table 3. Distribution results in dependency of correlation intervals.

Table 3. Distribution results in dependency of correlation intervals.

Share in	Interval type	Correlation interval (r)	Percentage of studies classified		
			Positive	Negative	Neutral
n = 25 meta-analyses	adj. 95% CI, attenuated	±0.0147	95.8	0	4.2
	adj. 95% CrI, attenuated	±0.0733	74.9	0	25.1
	adj. 95% CI, disattenuated	±0.0185	95.8	0	4.2
	adj. 95% CrI, disattenuated	±0.0924	90.7	0	9.3
n = 551 primary studies	adj. 95% CI, attenuated	±0.0147	80.9	14.2	4.9
	adj. 95% CrI, attenuated	±0.0733	62.6	8.0	29.4
	adj. 95% CI, disattenuated	±0.0185	80.9	14.5	4.5
	adj. 95% CrI, disattenuated	±0.0924	63.9	8.5	27.6

This table outlines the results of the distribution analysis of positive, negative, and neutral results in meta-analyses and in dependency of different correlation intervals. Whereas CI indicates the confidence interval and CrI the credibility interval.

To eliminate potential positive biases in these meta-analytical summary effects, we also drill down to the primary study level and the sample of 551 studies. The share of studies with significant positive correlations is reduced to a minimum of 62.6% (95% CrI, attenuated results) with a maximum percentage of negatives as high 14.5% (95% CI, disattenuated results). An attenuated correlation level (interval) above 0.141 would be needed to bring down the percentage of positive correlations to the level in the vote-count studies of 47.9%. This cut-off is close to the population unweighted average correlation of 0.159.

1.3.3 Summary effects: correlations

1.3.3.1 Vote-count studies

Next, an approximation of the correlation effect size in vote-count studies based on the vote-count method of Hedges and Olkin (1985 Hedges, Larry V., and Ingram Olkin. 1985. *Statistical Methods for Meta-Analysis*. San Diego: Academic Press. , 47ff) is conducted. The weighted average correlation $\bar{r}_{\upsilon}$ in all vote-count studies is calculated at 0.146. The corresponding *p*-value of <.001 indicates a correlation factor highly significant and different from zero. The additional check for statistical power (Cohen 1988 Cohen, Jacob. 1988. *Statistical Power Analysis for the Behavioral Sciences*. 2nd ed. New York: Academic Press. ; Faul et al. 2007 Faul, Franz, Edgar Erdfelder, Albert-Georg Lang, and Axel Buchner. 2007. "G*Power 3: A Flexible Statistical Power Analysis Program for the Social, Behavioral, and Biomedical Sciences." *Behavior Research Methods* 39 (2): 175–191. doi:10.3758/bf03193146.) reveals that for the determined $\bar{r}_{\upsilon}$ and the corresponding number of *n*, the chance of a Type II error is close to zero.

1.3.3.2 Meta-analyses

For reasons of comparability with the vote-count effect size estimate $\bar{r}_{\upsilon}$, we compute the attenuated sample-size weighted average correlation for the 25 meta-analyses. The calculated correlation $\bar{r}_{m}$ is 0.118. The *p*-value of similarity of $\bar{r}_{m}$ and $\bar{r}_{\upsilon}$ is notably high at 0.638. This means vote-count studies and meta-analyses determine statistically comparable results for the

ESG–CFP relation. However, generalizing this finding for both methods universally may not be appropriate due to the almost independent samples containing few overlaps and very different variance levels.

Next, we calculate the first-order meta-analytical averages as both uncorrected and corrected parameters for the transparent sub-sample of 551 primary studies. The correlation $\bar{\hat{r}}_i$ is determined at 0.119 and $\bar{\hat{\rho}}_i$ at 0.169. The meta-analytical second-order effect size for the 25 meta-analyses combining 1902 gross studies reveals a correlation of $\bar{\bar{\hat{r}}}_i = 0.108$ and for the corrected effect size $\bar{\bar{\hat{\rho}}}_i = 0.150$. Worth mentioning is that the value for the vote-count effect size $\bar{\bar{r}}_v$ is statistically not different from the first- and second-order meta-analytical results

(minimum p-value .351 for the difference to $\hat{\bar{r}}_i$). Even though the vote-count technique is a rough estimate based on simplified assumptions, it nonetheless yields surprisingly comparable estimations of the ESG–CFP relation compared to the sample of meta-analyses aggregated with the method for second-order meta-analysis – at least for our setup.

The p-values for all of our meta-analytical means are below .01 and indicate a statistical highly significant positive deviation from zero. In a similar manner, the 95% CrI of 0.058–0.242 for $\bar{\bar{\rho}}_i$ is another indicator of the positive nature of the ESG–CFP relation. Moreover, the control for statistical power of these values reveals very robust results, with a Cohen's power for all figures above 0.8 and in four cases close to 1 (Table 4).

1.3.4 Table 4. Effect size in dependence of aggregation approach and sample.

Table 4. Effect size in dependence of aggregation approach and sample.

Number of review analyses	N	Effect size	Effect size value	power$^{\alpha = 0.05}$	$\hat{\sigma}^2$	CI_L	CI_U	CrI_L	CrI_U	Fail-Safe N
35	1.816	$\bar{\bar{r}}_v$	0.146***	0.999						
25	1.902	$\bar{\bar{r}}_m$	0.118***	0.999						
–	551	$\hat{\bar{r}}_i$	0.119***	0.804						
–	551	$\hat{\bar{p}}_i$	0.169***	0.991						
25	1.902	$\hat{\bar{\bar{r}}}_i$	0.108***	0.997	0.0014	0.094	0.123	0.035	0.182	717
25	1.902	$\hat{\bar{\bar{p}}}_i$	0.150***	0.999	0.0022	0.132	0.169	0.058	0.242	987

This table depicts first-order and second-order meta-analytical results. Attenuated correlations are marked as r and disattenuated correlations as p. The number of lines above letters indicates the first- or second-level nature of the effect size. The additional circumflex accent indicates psychometric meta-analytically effect sizes. Correlations not marked with a circumflex are meta-analytical averages but not determined with psychometric meta-analysis. $\bar{\bar{r}}_v$ is the sample-size weighted second-level effect size in vote-count analyses and $\bar{\bar{r}}_m$ the sample-size weighted second-level average effect size in meta-analyses. $\hat{\bar{r}}_i$ and $\hat{\bar{p}}_i$ are the attenuated and disattenuated first-level effects sizes in transparent primary studies, and $\hat{\bar{\bar{r}}}_i$ and $\hat{\bar{\bar{p}}}_i$ are the second-order meta-analytical attenuated and disattenuated averages. The deviation of all effect sizes from zero is tested for significance. $\hat{\sigma}^2$ is the estimated true variance for $\hat{\bar{\bar{r}}}_i$ and $\hat{\bar{\bar{p}}}_i$. Power 0.05 is Cohen's power with $\alpha = 0.05$ and for the corresponding sample and effect size. For the second-order meta-analytical correlation means $\hat{\bar{\bar{r}}}_i$ and $\hat{\bar{\bar{p}}}_i$ CI_L/CI_U symbolize the 95% CI and CrI_L/CrI_U the 95% CrI. L indicates the lower and U the upper bound of the interval. Fail-Safe N is Rosenthal's (1979, 1991) statistic to detect potential publication bias in meta-analyses. Fail-Safe N states the number of (future) studies with null results, until the effect size loses its significance level. A level above $5*n + 10$ for Fail-Safe N is considered unlikely to assume publication bias within studies. This can be ruled out. The significance thresholds for p-values are ***$p < .01$.

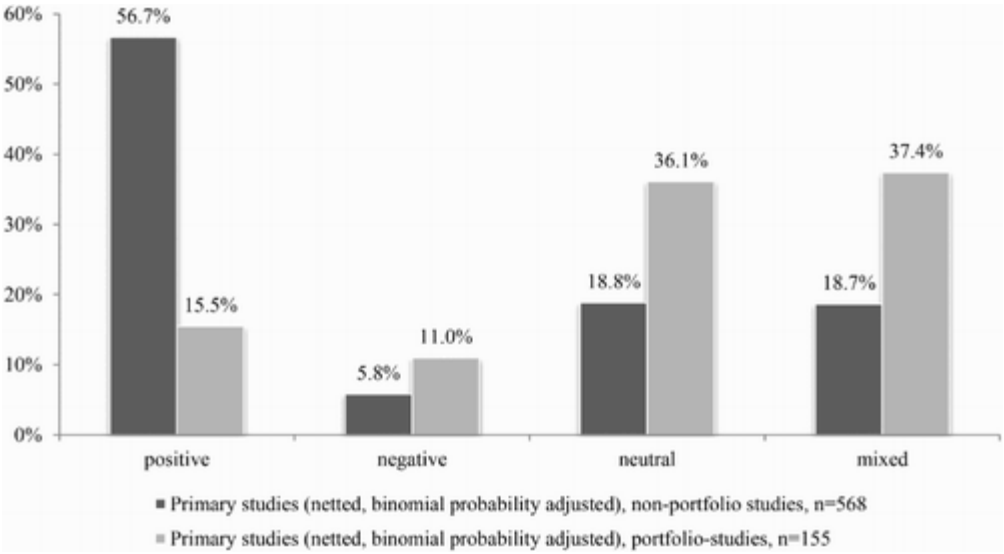
1.3.5 Portfolio studies and nonportfolio studies

All previous vote-count and meta-analysis effects contain a blend of nonportfolio and portfolio studies. Making this differentiation is important as aggregated firm performance in virtual portfolios and financial products such as mutual funds or indices may deviate from primary firm data. Several primary portfolio studies and corresponding reviews report an abnormally low level of positive findings. And vice versa, a high level of mixed findings, compared to nonportfolio studies (Bauer, Koedijk, and Otten 2005 Bauer, Rob, Kees Koedijk, and Rogér Otten. 2005. "International Evidence on Ethical Mutual Fund Performance and Investment Style." *Journal of Banking and Finance* 29 (7): 1751–1767. doi:10.1016/j.jbankfin.2004.06.035. Peloza 2009 Peloza, John. 2009. "The Challenge of Measuring Financial Impacts from Investments in Corporate Social Performance." *Journal of Management* 35 (6): 1518–1541. doi:10.1177/0149206309335188.; Kleine, Krautbauer, and Weller 2013 Kleine, Jens, Matthias Krautbauer, and Tim Weller. 2013. *Nachhaltige Investments Aus Dem Blick Der Wissenschaft: Leistungsversprechen Und Realität*. Research Center for Financial Services Steinbeis-Hochschule Berlin. ; Revelli and Viviani 2015 Revelli, Christophe, and Jean-Laurent Viviani. 2015. "Financial Performance of Socially Responsible Investing (SRI): What Have We Learned? A Meta-Analysis." *Business Ethics: A European Review* 24 (2): 158–185. doi:10.1111/beer.12076.). In order to differentiate between portfolio and nonportfolio effects, we deconstruct all distributions and summary effect sizes with sufficient sample size in both blocks of study groups.

The relevance of this distinction becomes apparent when looking at the vote-count studies. The share of positive results in the $n = 155$ identifiable portfolio-related studies shrinks considerably (15.5%) in comparison to nonportfolio-based studies (56.7%). Studies with neutral or mixed findings increase proportionately in portfolio-based studies and constitute

nearly three quarters. The share of negative studies increases marginally compared to nonportfolio studies (11.0% vs. 5.8%) (Figure 4).

Figure 4. ESG–CFP relation in vote-count studies in dependence of portfolio- and nonportfolio sample.



Comparable results are found when all portfolio-focused vote-count studies are separately analyzed based on estimated effect sizes. The five primarily portfolio-focused vote-count studies exhibit a negative correlation $\bar{\bar{r}}_{v(p)}$ of –0.061 in comparison to the 30 primarily nonportfolio-focused vote-count studies with $\bar{\bar{r}}_{v(non\text{-}p)}$ of 0.177. The difference between both groups is highly significant (Table 5). These conclusions are supported when the first-level meta-analytical results in the transparent primary studies are deconstructed. The differences in correlations are not so pronounced, nonetheless significant (Table 5). This distinct deviation of portfolio and nonportfolio findings is examined in more detail in the "Discussion" section.

1.3.6 Table 5. Effect size in dependence of portfolio and nonportfolio samples.

Table 5. Effect size in dependence of portfolio and nonportfolio samples.

Number of review analyses	*N*	Effect size	Effect size value	power$^{\alpha = 0.05}$	Non-*p* and *p* difference
30	1.578	$\bar{\bar{r}}_{v(non-p)}$	0.177***	0.999	.238***
5	238	$\bar{\bar{r}}_{v(p)}$	–0.061*	0.154	
–	471	$\hat{\bar{r}}_{i(non-p)}$	0.131***	0.815	.076**
–	80	$\hat{\bar{r}}_{i(p)}$	0.055**	0.078	
–	471	$\hat{\bar{p}}_{i(non-p)}$	0.183***	0.981	.089**
–	80	$\hat{\bar{p}}_{i(p)}$	0.094***	0.132	

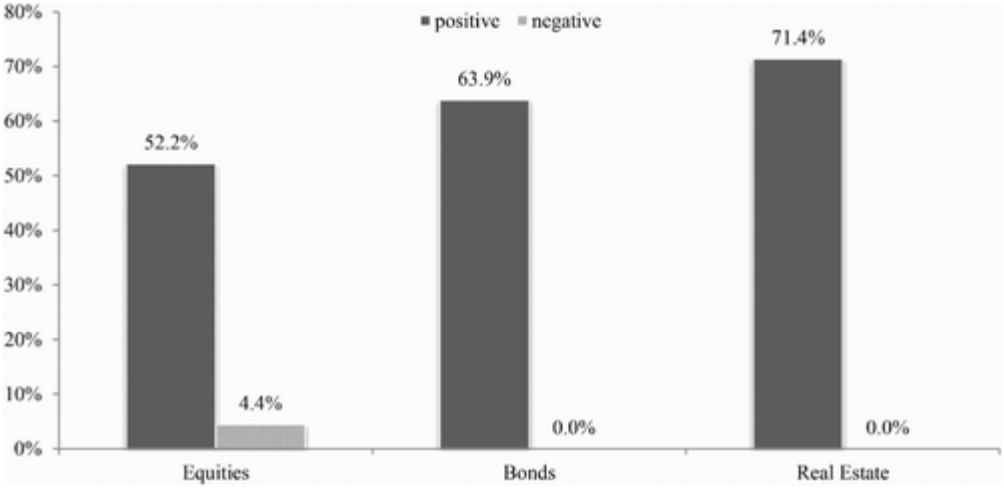
This table deconstructs the results in Table 4 for $\bar{\bar{r}}_v$ (*p*), $\hat{\bar{r}}_i$, and $\hat{\bar{p}}_i$ in nonportfolio studies effect sizes (non-*p*) and portfolio studies effect sizes (*p*). Power0.05 is Cohen's power with $\alpha = 0.05$ and for the corresponding sample and effect size. The difference of portfolio and nonportfolios studies in effect sizes is tested for significance. The significance thresholds for *p*-values are $^{*}p < .10$, $^{**}p < .05$, and $^{***}p < .01$.

1.3.7 Sub-effects in asset classes

Aside from the overall distribution of results and correlation factors in vote-count studies and meta-analyses, the data allow for examinations of differences in asset classes (D'Antonio, Johnsen, and Hutton 1997 D'Antonio, Louis, Tommi Johnsen, and R. Bruce Hutton. 1997. "Expanding Socially Screened Portfolios." *The Journal of Investing* 6 (4): 79–86. doi:10.3905/joi.1997.408434.; Bhojraj and Sengupta 2003 Bhojraj, Sanjeev, and Partha Sengupta. 2003. "Effect of Corporate Governance on Bond Ratings and Yields: The Role of Institutional Investors and Outside Directors." *The Journal of Business* 76 (3): 455–475. doi:10.1086/344114. Eichholtz, Kok, and Quigley 2010 Eichholtz, Piet, Nils Kok, and John M. Quigley. 2010. "Doing Well by Doing Good? Green Office Buildings." *American Economic Review* 100 (5): 2492–2509. doi:10.1257/aer.100.5.2492.) – although with limited availability of nonequity classes. In a sub-sample consisting of 751 gross and 334 net studies within the vote-count sample 87.1% analyze equity-linked relations.

In contrast, nonequity asset classes both for bonds and real estate display a considerably higher share of positive findings over equities. More than two-thirds of studies uncover significant positive performance relations to ESG criteria. The share of positive votes for the 36 analyzed bond studies stands at 63.9% – with 13 neutral or mixed findings (36.1%). The relatively young research field of green real estate studies is reflected with seven studies in the total sample. Five studies (71.4%) find a positive and the other two a neutral relation (Figure 5).

Figure 5. ESG–CFP relation in main asset classes (vote-count studies sample), $n = 334$ net studies.



1.3.8 Sub-effects in ESG categories

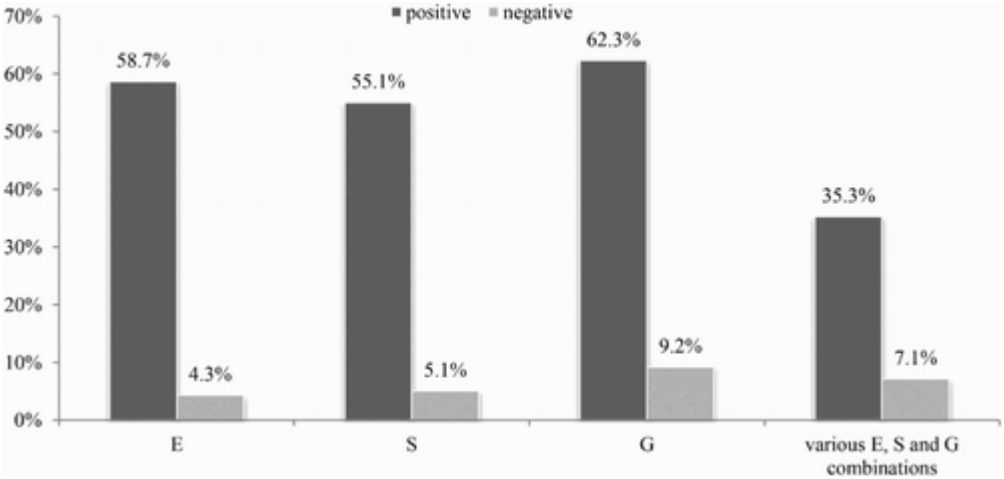
A key question is whether any of the three ESG letters may have a dominating effect on CFP. Some meta-analyses find significant positive relations for corporate environmental performance and CFP (Albertini 2013 Albertini, Elisabeth. 2013. "Does Environmental Management Improve Financial Performance? A Meta-Analytical Review." *Organization & Environment* 26 (4): 431–457. doi:10.1177/1086026613510301. Dixon-Fowler et al. 2013 Dixon-Fowler, Heather R., Daniel J. Slater, Jonathan L. Johnson, Alan E. Ellstrand, and Andrea M. Romi. 2013. "Beyond 'Does It Pay to Be Green?' A Meta-Analysis of Moderators of the CEP–CFP Relationship." *Journal of Business Ethics* 112 (2): 353–366. doi:10.1007/s10551-012-1268-8. Endrikat, Guenther, and Hoppe 2014 Endrikat, Jan,

Edeltraud Guenther, and Holger Hoppe. 2014. “Making Sense of Conflicting Empirical Findings: A Meta-Analytic Review of the Relationship Between Corporate Environmental and Financial Performance.” *European Management Journal* 32 (5): 735–751. doi:10.1016/j.emj.2013.12.004.). Human capital-focused meta-analyses (Combs et al. 2006 Combs, James, Yongmei Liu, Angela Hall, and David Ketchen. 2006. “How Much Do High-Performance Work Practices Matter? A Meta-Analysis of Their Effects on Organizational Performance.” *Personnel Psychology* 59 (3): 501–528. doi:10.1111/j.1744-6570.2006.00045.x. Crook et al. 2011 Crook, T. Russell, Samuel Y. Todd, James G. Combs, David J. Woehr, and David J. Ketchen. 2011. “Does Human Capital Matter? A Meta-Analysis of the Relationship Between Human Capital and Firm Performance.” *Journal of Applied Psychology* 96 (3): 443–456. doi:10.1037/a0022147. Rosenbusch, Brinckmann, and Bausch 2011 Rosenbusch, Nina, Jan Brinckmann, and Andreas Bausch. 2011. “Is Innovation Always Beneficial? A Meta-Analysis of the Relationship Between Innovation and Performance in SMEs.” *Journal of Business Venturing* 26 (4): 441–457. doi:10.1016/j.jbusvent.2009.12.002. also find highly significant positive correlations. Various review studies on multifaceted corporate governance aspects and its relation to CFP exist and also support a positive relation (Dalton et al. 1999 Dalton, Dan R., Catherine M. Daily, Jonathan L. Johnson, and Alan E. Ellstrand. 1999. “Number of Directors and Financial Performance: A Meta-Analysis.” *Academy of Management Journal* 42 (6): 674–686. doi:10.2307/256988. Gillan and Starks 2007 Gillan, Stuart L., and Laura T. Starks. 2007. “The Evolution of Shareholder Activism in the United States.” *Journal of Applied Corporate Finance* 19 (1): 55–73. doi:10.1111/j.1745-6622.2007.00125.x. Love 2010 Love, Inessa. 2010. “Corporate Governance and Performance Around the World: What We Know and What We Don't.” *The World Bank Research Observer* 26 (1): 42–70. doi:10.1093/wbro/lkp030.). However, not all of the E-, S-, and G-specific findings are free from ambiguity and no large-scale comparison between the subgroups has been undertaken yet.

For our sample of vote-count studies with identifiable ESG categories in 644 studies, we determine a relatively even positive relation for E, S, and G. The highest proportion is found in G with 62.3% of all cases. Governance-related aspects, on the other hand, demonstrate also the highest percentage of negative correlations with 9.2%. If the share of negative findings is deducted from positive ones, environmental studies offer the most favorable relation (58.7–4.3%). Studies with a social focus show 55.1% (5.1%) positive (negative) outcomes, hence the weakest relation.

When reviewing studies with various combinations of ESG criteria, 35.3% report positive (respectively 7.1% negative) findings. The downside bias primarily arises from a high proportion of portfolio-based studies in this section (39.1%). If all these studies were excluded, the positive (negative) rate stands at 51.7% (4.8%) which is nonetheless lower than pure E, S, and G approaches (Figure 6).

Figure 6. E, S, and G categories and their relation to CFP (vote-count studies sample), $n = 644$ net studies.



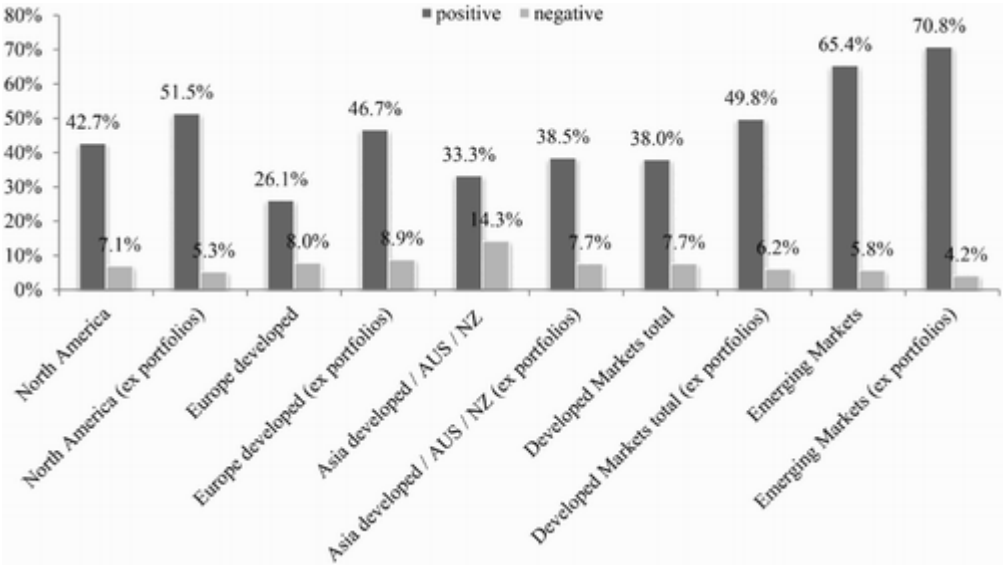
1.3.9 Sub-effects in regions

Some studies have analyzed potential differences in the ESG–CFP relation across regions. Though findings are far from consistent, some hypothesized that the ESG–CFP relation across countries is particularly affected by a higher humane orientation (del Mar Miras-Rodríguez, Carrasco-Gallego, and Escobar-Pérez 2015 del Mar Miras-Rodríguez, María, Amalia Carrasco-Gallego, and Bernabé Escobar-Pérez. 2015. "Are Socially Responsible Behaviors Paid Off Equally? A Cross-Cultural Analysis." *Corporate Social Responsibility and Environmental Management* 22 (4): 237–256. doi:10.1002/csr.1344.). Others find that the ESG–CFP relationship for US assets is significantly higher compared to non-US assets (Allouche and Laroche 2005 Allouche, José, and Patrice Laroche. 2005. "A Meta-Analytical Investigation of the Relationship Between Corporate Social and Financial Performance." *Revue de Gestion Des Ressources Humaines* 57: 1–18. ; Dixon-Fowler et al. 2013 Dixon-Fowler, Heather R., Daniel J. Slater, Jonathan L. Johnson, Alan E. Ellstrand, and Andrea M. Romi. 2013. "Beyond 'Does It Pay to Be Green?' A Meta-Analysis of Moderators of the CEP–CFP Relationship." *Journal of Business Ethics* 112 (2): 353–366. doi:10.1007/s10551-012-1268-8.). In contrast, a few researchers also discover significantly higher effects for studies conducted in the rest of the world (Albertini 2013 Albertini, Elisabeth. 2013. "Does Environmental Management Improve Financial Performance? A Meta-Analytical Review." *Organization & Environment* 26 (4): 431–457. doi:10.1177/1086026613510301. ; Golicic and Smith 2013 Golicic, Susan L., and Carlo D. Smith. 2013. "A Meta-Analysis of Environmentally Sustainable Supply Chain Management Practices and Firm Performance." *Journal of Supply Chain Management* 49 (2): 78–95. doi:10.1111/jscm.12006.).

We detect two main patterns in the data based on 843 gross studies with disclosed regional identifier that are netted for a final sample of 402 studies. First, developed markets excluding North America exhibit a smaller share of positive results. This contrast is most apparent between North America (42.7% positive) and developed Europe (26.1% positive). Developed Asia/Australia possess a positive share of 33.3%, though with the largest share of negatives as well at 14.3%. The total sample excluding North American stands at 27.8% positive share. A check of the underlying studies reveals a larger share of portfolio-based studies within the European and Asian/Australian sample that potentially biases the data. However, when omitting all portfolio studies for the developed market samples, the positive ratio for North America increases to 51.5%, and for Europe and Asia/Australia combined to 45.6%. This implies that the previous gap between the two samples shrinks considerably – from 14.9 to 5.9 percentage points.

Second, the Emerging Markets sample shows, with 65.4%, a considerable higher share of positive outcomes over developed markets. Excluding the proportion of portfolio studies, the ratio increases further to 70.8%. Based on 52 single studies in Emerging Markets solely focused on equity-linked studies, the spread to developed markets is considerable (Figure 7).

Figure 7. ESG–CFP relation in various regions (vote-count studies sample), $n = 402$ net studies.



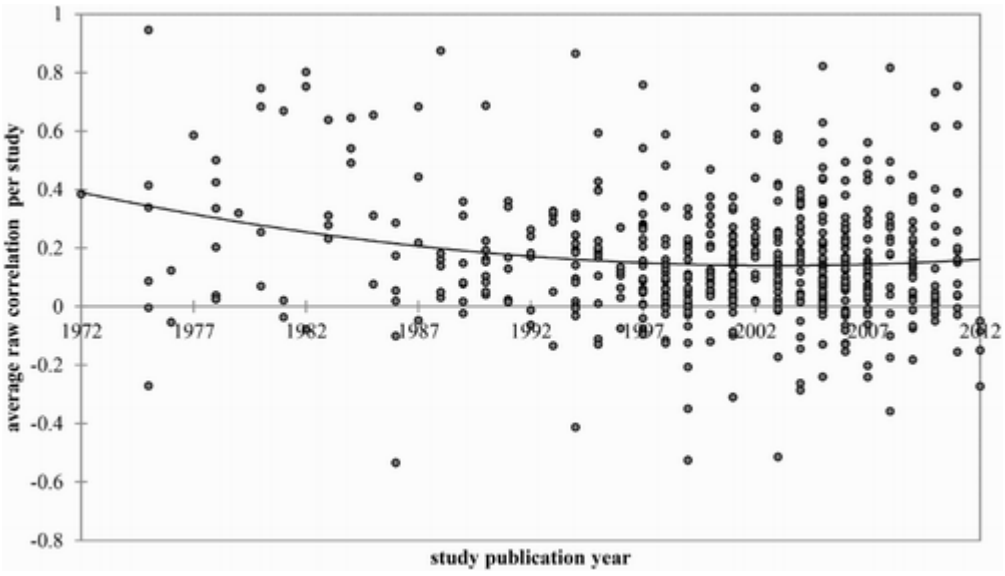
1.3.10 ESG effect over time

The question has been raised of whether the ESG–CFP relation is stable over time (Griffin and Mahon 1997 Griffin, Jennifer J., and John F. Mahon. 1997. “The Corporate Social Performance and Corporate Financial Performance Debate: Twenty-Five Years of Incomparable Research.” *Business & Society* 36 (1): 5–31. doi:10.1177/000765039703600102. Borgers et al. 2013 Borgers, Arian, Jeroen Derwall, Kees Koedijk, and Jenke ter Horst. 2013. “Stakeholder Relations and Stock Returns: On Errors in Investors’ Expectations and Learning." *Journal of Empirical Finance* 22 (June): 159–175. doi:10.1016/j.jempfin.2013.04.003.). Theoretically, the increasing amount of UN PRI signatories and, presuming an increasing ESG awareness within investment strategies, a decreasing ESG alpha (shrinking correlations over time) would be expected due to learning effects in capital markets. Empiric findings of meta-analyses investigating if investors’ increased focus on stakeholder issues also lead to changing ESG–CFP patterns over time present a fuzzy picture (Pavie and Filho 2008 Pavie, Juliana Junqueira Esmeraldo, and Luiz Alberto Nascimento Campos Filho. 2008. “Corporate Social Responsibility and Financial Performance: A Meta-Analysis.” Paper presented at the 34th EIBA annual conference paper, Tallinn, December 11–13. http://eiba2008.ttu.ee/public/Papers/67.pdf. Rubera and Kirca 2012 Rubera, Gaia, and Ahmet H. Kirca. 2012. “Firm Innovativeness and Its Performance Outcomes: A Meta-Analytic Review and Theoretical Integration.” *Journal of Marketing* 76: 130–147. doi:10.1509/jm.10.0494. Albertini 2013 Albertini, Elisabeth. 2013. “Does Environmental Management Improve Financial Performance? A Meta-Analytical Review.” *Organization & Environment* 26 (4): 431–457. doi:10.1177/1086026613510301. Endrikat, Guenther, and Hoppe 2014 Endrikat, Jan, Edeltraud Guenther, and Holger Hoppe. 2014. “Making Sense of Conflicting Empirical Findings: A Meta-Analytic Review of the

Relationship Between Corporate Environmental and Financial Performance." *European Management Journal* 32 (5): 735–751. doi:10.1016/j.emj.2013.12.004.) (Table 2).

Out of the 1214 primary studies in meta-analyses, 551 studies possess transparent correlation coefficients and publication years. For this sub-sample, we do not find indications to support the learning hypothesis. Although the dispersion of effects, positive and negative alike, increase since the beginning of the 1990s, the aggregated picture stays unchanged. Besides simple observations of the regression line, the time-invariant relation is supported by various trend tests which all fail to detect a time-dependent change of the correlation factors for every year since the mid of the 1990s (Figure 8). The applied tests are Pettitt, SNHT, Buishand, and von Neumann. The null hypothesis of the tests verifies if a time series is homogenous between two randomly selected times within the time series. The different tests allow conclusions not only for an assumed normal distribution but also for nonparametric distributions. Only data previous to 1997 are assessed as nonhomogenous to later observations in 2 of 4 tests. The SNHT test detects significantly higher results before 1985. The Buishand test detects significantly higher results previous to 1997 at the .05 level.

Figure 8. ESG–CFP correlation factors in primary studies in dependency of study publishing dates (meta-analyses sample), $n = 551$ net studies.



1.4 Discussion

Both vote-count and meta-analytic studies yield comparable results. This is a surprising outcome since the underlying studies are comprised of nearly independent samples (12.9% overlap) and apply different methods. Both methods yield robust results which reinforces the claim that there is a business case for ESG investing. On the one hand, the effect size-transformed vote-count results do not overestimate effect sizes for our sample and lead to comparable results measured as correlation *r* in comparison to the meta-analytical studies ($\bar{r}_v = 0.146$ vs. mean correlation in meta-analyses between 0.108 and 0.169). Vote-count studies produce, on the other hand, more modest estimates for determining the proportion of positive and negative findings compared to meta-analyses. The share of neutral/mixed results is potentially overestimated for vote-count studies. Vote-count reviews determine whether the effect per study is significant by narrowly focusing on the underlying primary study sample size. Meta-analyses, by contrast, average effects across the entire sample of underlying

studies which reduces the meta-analytical mean variance. Smaller variances mean lower thresholds (lower correlations) for significance in meta-analyses.

While overall correlation averages between 0.108 $(\hat{\bar{r}}_i)$ and 0.169 $(\hat{\bar{p}}_i)$ could be considered rather "small" (Cohen 1988 Cohen, Jacob. 1988. *Statistical Power Analysis for the Behavioral Sciences*. 2nd ed. New York: Academic Press. 1992 Cohen, Jacob. 1992. "A Power Primer." *Psychological Bulletin* 112 (1): 155–159. doi:10.1037/0033-2909.112.1.155.), they reflect common effect sizes in social sciences (Richard, Bond, and Stokes-Zoota 2003 Richard, F. D., Charles F. Bond, and Juli J. Stokes-Zoota. 2003. "One Hundred Years of Social Psychology Quantitatively Described." *Review of General Psychology* 7 (4): 331–363. doi:10.1037/1089-2680.7.4.331. Tamim et al. 2011 Tamim, Rana M., Robert M. Bernard, Eugene Borokhovski, Philip C. Abrami, and Richard F. Schmid. 2011. "What Forty Years of Research Says About the Impact of Technology on Learning: A Second-Order Meta-Analysis and Validation Study." *Review of Educational Research* 81 (1): 4–28. doi:10.3102/0034654310393361. Lipsey et al. 2012 Lipsey, Mark W., Kelly Puzio, Cathy Yun, Michael A. Hebert, Kasia Steinka-Fry, Mikel W. Cole, Megan Roberts, Karen S. Anthony, and Matthew D. Busick. 2012. *Translating the Statistical Representation of the Effects of Education Interventions into More Readily Interpretable Forms*. *National Center for Special Education Research (NSCER 2013-3000)*.) and, notably, might have relatively high relevance for competitive global securities markets. Based on correlation factors and the distribution analysis of more than 2000 empirical studies, we feel confident in generalizing that ESG criteria and CFP are, on average, positively correlated.

The distinct positive empiric result is found across various approaches, regions, and asset classes – except for portfolio-related studies. This outlier is potentially the source of the widespread misperception on the ESG–CFP relation. Institutional and private investors typically conclude that the ESG–CFP relation is, at best, neutral – consistent with the neoclassical understanding of capital markets (Markowitz 1952 Markowitz, Harry. 1952. "Portfolio Selection." *Journal of Finance* 7 (1): 77–91. doi:10.2307/2329297. Fama 1970 Fama, Eugene F. 1970. "Efficient Capital Markets: A Review of Theory and Empirical Work." *The Journal of Finance* 25 (2): 383–417. doi:10.1111/j.1540-6261.1970.tb00518.x. Friedman 1970 Friedman, Milton. 1970. "The Social Responsibility of Business is to Increase Its Profits." *The New York Times Magazine*. doi:10.1007/978-3-540-70818-6_14. ; Fama 1991 Fama, Eugene F. 1991. "Efficient Capital Markets: II." *The Journal of Finance* 46 (5): 1575–1617. doi:10.1111/j.1540-6261.1991.tb04636.x.). Such an assumption about the ESG–CFP relation can be a key barrier for the broad uptake of sustainable investing among investors and investment advisors (Paetzold and Busch 2014 Paetzold, Falko, and Timo Busch. 2014. "Unleashing the Powerful Few: Sustainable Investing Behaviour of Wealthy Private Investors." *Organization & Environment* 27 (4): 347–367. doi:10.1177/1086026614555991. Reynolds 2014 Reynolds, Fiona. 2014. "Mainstream Slow to Accept Benefits of Responsible Investment." *Financial Times, Europe*, November 17, 22. CFA Institute 2015 CFA Institute. 2015. *Environmental, Social and Governance (ESG) Survey*. Paetzold, Busch, and Chesney 2015 Paetzold, Falko, Timo Busch, and Marc Chesney. 2015. "More than Money: Exploring the Role of Investment Advisors for Sustainable Investing." *Annals in Social Responsibility* 1 (1): 195–223. doi:10.1108/ASR-12-2014-0002.).

The realized performance in portfolios depends on the overlapping effects of systematic and idiosyncratic risks (Campbell et al. 2001 Campbell, John Y., Martin Lettau, Burton G. Malkiel, and Yexian Xu. 2001. "Have Individual Stocks Become More Volatile? An

Empirical Exploration of Idiosyncratic Risk." *The Journal of Finance* 56 (1): 1–43. doi:10.1111/0022-1082.00318. Luo and Bhattacharya 2009 Luo, Xueming, and C. B. Bhattacharya. 2009. "The Debate over Doing Good: Corporate Social Performance, Strategic Marketing Levers, and Firm-Idiosyncratic Risk." *Journal of Marketing* 73 (6): 198–213. doi:10.1509/jmkg.73.6.198.), on construction constraints (Clarke, de Silva, and Thorley 2002 Clarke, Roger, Harindra de Silva, and Steven Thorley. 2002. "Portfolio Constraints and the Fundamental Law of Active Management." *Financial Analysts Journal* 58 (5): 48–66. doi:10.2469/faj.v58.n5.2468.), and on costs for portfolio implementation (Carhart 1997 Carhart, Mark M. 1997. "On Persistence in Mutual Fund Performance." *Journal of Finance* 52 (1): 57–82. doi:10.2307/2329556. Khorana, Servaes, and Tufano 2009 Khorana, Ajay, Henri Servaes, and Peter Tufano. 2009. "Mutual Funds Fees Around the World." *Review of Financial Studies* 22 (3): 1279–1310. doi:10.1093/rfs/hhn042.) which may distorts pure ESG performance. Indeed, we find a significant difference in correlation levels of portfolio and nonportfolio studies. We argue that ESG portfolios should be expected to exhibit lower correlations to CFP and less positive findings for the following three reasons: (1) following the "drowned out by noise" argument (Peloza 2009 Peloza, John. 2009. "The Challenge of Measuring Financial Impacts from Investments in Corporate Social Performance." *Journal of Management* 35 (6): 1518–1541. doi:10.1177/0149206309335188.), various overlapping market and nonmarket factors in a portfolio tend to cover potentially existing ESG alpha. (2) Most ESG funds constitute a mixture of so-called negative and positive ESG-screened funds, which could result in distortion and cancellation of any remaining effects (Derwall, Koedijk, and Ter Horst 2011 Derwall, Jeroen, Kees Koedijk, and Jenke Ter Horst. 2011. "A Tale of Values-Driven and Profit-Seeking Social Investors." *Journal of Banking & Finance* 35 (8): 2137–2147. doi:10.1016/j.jbankfin.2011.01.009.). (3) Only studies on portfolios (in particular mutual funds) embed management fees and other costs such as performance fees and trading costs. Observed effects in firm-specific study designs are typically calculated without such fees and costs. As roughly 2.5% per annum in various fees are carried by the average mutual fund (Carhart 1997 Carhart, Mark M. 1997. "On Persistence in Mutual Fund Performance." *Journal of Finance* 52 (1): 57–82. doi:10.2307/2329556. Barber, Odean, and Zheng 2005 Barber, Brad M., Terrance Odean, and Lu Zheng. 2005. "Out of Sight, Out of Mind: The Effects of Expenses on Mutual Fund Flows." *The Journal of Business* 78 (6): 2095–2120. doi:10.1086/497042. Khorana, Servaes, and Tufano 2009 Khorana, Ajay, Henri Servaes, and Peter Tufano. 2009. "Mutual Funds Fees Around the World." *Review of Financial Studies* 22 (3): 1279–1310. doi:10.1093/rfs/hhn042.), real correlation patterns in portfolio studies are most likely distorted. We conclude that portfolio-study findings have to be treated as a specific outcome of a subgroup within the entire ESG–CFP discussion. Investors, on average, are unlikely to harvest the existing ESG alpha after implementation costs. However, it can be argued, sophisticated investors are more likely to do so (Grossman and Stiglitz 1980 Grossman, Sanford J., and Joseph E. Stiglitz. 1980. "On the Impossibility of Informationally Efficient Markets." *The American Economic Review* 70 (3): 393–408. doi:jstor.org/stable/1805228. Hoepner 2013 Hoepner, Andreas G. F. 2013. *Environmental, Social, and Governance (ESG) Data: Can It Enhance Returns and Reduce Risks?* Deutsche AWM Global Financial Institute. Nagy, Kassam, and Lee 2015 Nagy, Zoltán, Altaf Kassam, and Linda-Eling Lee. 2015. "Can ESG Add Alpha? An Analysis of ESG Tilt and Momentum Strategies (MSCI ESG Research Inc.)."). Thus, our results underpin previous findings: at the worst case, investors in ESG mutual funds can expect to lose nothing compared to conventional fund investments (Hamilton, Jo, and Statman 1993 Hamilton, Sally, Hoje Jo, and Meir Statman. 1993. "Doing Well While Doing Good? The Investment Performance of Socially Responsible Mutual Funds." *Financial Analysts Journal* 49 (6): 62–66. doi:http://dx.doi.org/10.2469/faj.v49.n6.62.; Humphrey and Tan 2014 Humphrey, Jacquelyn

E., and David T. Tan. 2014. “Does It Really Hurt to Be Responsible?” *Journal of Business Ethics* 122 (3): 375–386. doi:10.1007/s10551-013-1741-z. Revelli and Viviani 2015 Revelli, Christophe, and Jean-Laurent Viviani. 2015. “Financial Performance of Socially Responsible Investing (SRI): What Have We Learned? A Meta-Analysis.” *Business Ethics: A European Review* 24 (2): 158–185. doi:10.1111/beer.12076.).

Regional findings reveal that within developed markets, there is a higher share of positive results from North America compared to Europe and Asia/Australia. This can partially be explained by the lower share of portfolio studies within the sub-sample for North America.

Within the individual E, S, and G categories, E and G exhibit a slightly more positive relation than S-focused studies. However, the difference between E and S studies with positive and negative outcomes is marginal (maximum 4.3% percentage points). Meta-analyses focusing on social aspects (van Wijk, Jansen, and Lyles 2008 van Wijk, Raymond, Justin J. P. Jansen, and Marjorie A. Lyles. 2008. “Inter- and Intra-Organizational Knowledge Transfer: A Meta-Analytic Review and Assessment of Its Antecedents and Consequences.” *Journal of Management Studies* 45 (4): 830–853. doi:10.1111/j.1467-6486.2008.00771.x. Crook et al. 2011 Crook, T. Russell, Samuel Y. Todd, James G. Combs, David J. Woehr, and David J. Ketchen. 2011. “Does Human Capital Matter? A Meta-Analysis of the Relationship Between Human Capital and Firm Performance.” *Journal of Applied Psychology* 96 (3): 443–456. doi:10.1037/a0022147. Stam, Arzlanian, and Elfring 2014 Stam, Wouter, Souren Arzlanian, and Tom Elfring. 2014. “Social Capital of Entrepreneurs and Small Firm Performance: A Meta-Analysis of Contextual and Methodological Moderators.” *Journal of Business Venturing* 29 (1): 152–173. doi:10.1016/j.jbusvent.2013.01.002.) usually find higher correlations, in contrast to environmental-focused meta-analyses (Albertini 2013 Albertini, Elisabeth. 2013. “Does Environmental Management Improve Financial Performance? A Meta-Analytical Review.” *Organization & Environment* 26 (4): 431–457. doi:10.1177/1086026613510301. Dixon-Fowler et al. 2013 Dixon-Fowler, Heather R., Daniel J. Slater, Jonathan L. Johnson, Alan E. Ellstrand, and Andrea M. Romi. 2013. “Beyond ‘Does It Pay to Be Green?’ A Meta-Analysis of Moderators of the CEP–CFP Relationship.” *Journal of Business Ethics* 112 (2): 353–366. doi:10.1007/s10551-012-1268-8. Endrikat, Guenther, and Hoppe 2014 Endrikat, Jan, Edeltraud Guenther, and Holger Hoppe. 2014. “Making Sense of Conflicting Empirical Findings: A Meta-Analytic Review of the Relationship Between Corporate Environmental and Financial Performance.” *European Management Journal* 32 (5): 735–751. doi:10.1016/j.emj.2013.12.004.). We conclude that no single E, S, and G category demonstrates a meaningful superior positive relation to CFP.

The strength of our analysis is the aggregation of a large number of studies through secondary research on review studies, but it is also uncovers the inherit limitations of the underlying studies. One of them is the lengthy academic publication period of primary and likewise secondary research. Although our second-level review study includes all relevant review studies published until the end of 2014, it loses some representativeness for primary studies with a publication date of 2012 and younger.

1.5 Conclusion

Through a second-level review of 60 review studies – including both, vote-count studies and meta-analyses – on the ESG–CFP relation, we are able to combine more than 3700 study results from more than 2200 unique primary studies. Based on this sample, we clearly find evidence for the business case for ESG investing. This finding contrasts with the common perception among investors. The contrary perception of investors may be biased due to

findings of portfolio studies, which exhibit, on average, a neutral/mixed ESG–CFP performance relation. It is important to be aware that the results of these (to date about 150 studies) are overlaid by various systematic and idiosyncratic risks in portfolios and, in the case of mutual funds, by implementation costs. Still more than 2100 other – in particular company-focused – empiric studies suggest a positive ESG relation.

ESG outperformance opportunities exist in many areas of the market. In particular, we find that this holds true for North America, Emerging Markets, and in nonequity asset classes. Our results propose that capital markets so far demonstrate no consistent learning effects regarding the ESG–CFP relation: Since the mid-1990s, the positive correlation patterns in primary studies have been stable over time (Table 1).

Based on this exhaustive review effort, our main conclusion is: the orientation toward long-term responsible investing should be important for all kinds of rational investors in order to fulfill their fiduciary duties and may better align investors' interests with the broader objectives of society. This requires a detailed and profound understanding of how to integrate ESG criteria into investment processes in order to harvest the full potential of value-enhancing ESG factors. A key area for future research is to better understand the interaction of different ESG criteria in portfolios and the relevance of specific ESG sub-criteria for CFP. These insights will shed further light on the ESG determinants for long-term positive performance impacts.

1.6 Acknowledgements

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1.7 Disclosure statement

No potential conflict of interest was reported by the authors.

1.8 Notes

1. The statistical explanatory power in studies is usually low and the primary study might come to the conclusion, based on its calculated significance values and sample sizes, that a certain effect is nonsignificant. Vote-count reviews may also come to biased conclusions by simply concentrating on significant statistics of primary studies to decide if an effect across studies is positive or negative. Potentially they overestimate nonsignificant results. Besides, the explanatory power of vote-count studies shrinks with the increasing number of (contradictory) studies. Meta-studies directly import effect sizes and samples sizes to compute a summary effect across all primary studies. This aggregation method of data could better detect existing correlation patterns in combined samples (Hedges and Olkin 1980 Hedges, Larry V., and Ingram Olkin. 1980. "Vote-Counting Methods in Research Synthesis." *Psychological Bulletin* 88 (2): 359–369. doi:10.1037/0033-2909.88.2.359. , , ; Hunter et al. 1982 Hedges, Larry V., and Ingram Olkin. 1980. "Vote-Counting Methods in Research Synthesis." *Psychological Bulletin* 88 (2): 359–369. doi:10.1037/0033-2909.88.2.359. , ,).

2. The term "second-level review study" describes our aggregation of first-level review studies, regardless if they are vote-count studies or meta-analyses. "Second-order meta-analysis" is the psychometric aggregation technique for first-level meta-analyses as

introduced by Schmidt and Oh (2013 Schmidt, Frank L., and In-Sue Oh. 2013. “Methods for Second Order Meta-Analysis and Illustrative Applications.” *Organizational Behavior and Human Decision Processes* 121 (2): 204–218. doi:10.1016/j.obhdp.2013.03.002. ,). This technique is used for the statistical aggregation of the 25 meta-analyses in our sample to compute summary effect sizes.

3. Portfolio studies comprise of studies on long-short ESG portfolios and in particular studies on ESG mutual funds and indices.

4. Two of the typical ways to treat missing data are model-based distribution estimation and the replacement of missing data (imputation) with estimated ones (Schafer and Graham 2002 Schafer, Joseph L., and John W. Graham. 2002. “Missing Data : Our View of the State of the Art.” *Psychological Bulletin* 7 (2): 147–177. doi:10.1037//1082-989X.7.2.147. , ; Tsikriktsis 2005 Tsikriktsis, Nikos. 2005. “A Review of Techniques for Treating Missing Data in OM Survey Research.” *Journal of Operations Management* 24 (1): 53–62. doi:10.1016/j.jom.2005.03.001. , ,). The latter is applied due to the nonparametric nature of the data. We estimate the total number of missing net studies based on the subgroup means of overlaps in transparent vote-count studies, meta-analyses, and among both. The determined subgroup overlap means are applied to each subgroup of nontransparent studies.

5. The method assumes simplistically comparable sample sizes for the underlying primary studies, which is rather the exception in research synthesis. It is also constructed as fixed effect model, which assumes that studies draw samples from a population with the same standardized mean difference (Hedges and Olkin 1980 Hedges, Larry V., and Ingram Olkin. 1980. “Vote-Counting Methods in Research Synthesis.” *Psychological Bulletin* 88 (2): 359–369. doi:10.1037/0033-2909.88.2.359. , ,). The calculated effect size for the vote-count sample should therefore be seen as quick approximate estimate instead of a final analysis (Hedges and Olkin 1985 Hedges, Larry V., and Ingram Olkin. 1985. *Statistical Methods for Meta-Analysis*. San Diego: Academic Press.).

6. Please refer to table 1, p. 210 in Schmidt and Oh (2013 Schmidt, Frank L., and In-Sue Oh. 2013. “Methods for Second Order Meta-Analysis and Illustrative Applications.” *Organizational Behavior and Human Decision Processes* 121 (2): 204–218. doi:10.1016/j.obhdp.2013.03.002.) for a technical summary of the approach.

7. The applied tests are Pettitt, SNHT, Buishand, and von Neumann. The null hypothesis of the tests verifies if a time series is homogenous between two randomly selected times within the time series. The different tests allow conclusions not only for an assumed normal distribution but also for nonparametric distributions. Only data previous to 1997 are assessed as nonhomogenous to later observations in 2 of 4 tests. The SNHT test detects significantly higher results before 1985. The Buishand test detects significantly higher results previous to 1997 at the .05 level.

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3. Creating a Methodology for Investing in a Portfolio of Socially Responsible Assets

Joseph A. Cajigal, Conor Platt and Alfred R. Berkeley

Overview

There are numerous philanthropic financial initiatives. Many fail or become slowly ineffective. So why is this one worth your participation?

This new initiative is global and particularly difficult; but is also unique in its approach. This initiative is a follow on to a failed initiative: specifically, the Millennium Development Goals promulgated by the United Nations in the year 2000. This new initiative is called the United Nation's Sustainable Development Goals for 2030.

This new initiative is the result of serious soul searching by senior United Nations officials, heads of states and their advisers. The Millennium Development Goals ("MDGs") were an initial set of goals that in some part have succeeded, but in many other areas were inadequate or poorly defined. Some of the goals were greatly affected by the financial recession of 2008, but the recession is not the only reason that the MDGs' were unsuccessful. The Millennium Goals failed because there was little to no accountability. Furthermore, there was close to no transparency into what was accomplished and what was not accomplished. Additionally, companies were able to claim compliance by purchasing the use of a United Nations logo without effectively moving toward sustainability. There was plenty of blame to go around. Specifically, this new initiative is designed to fix those roots of failure.

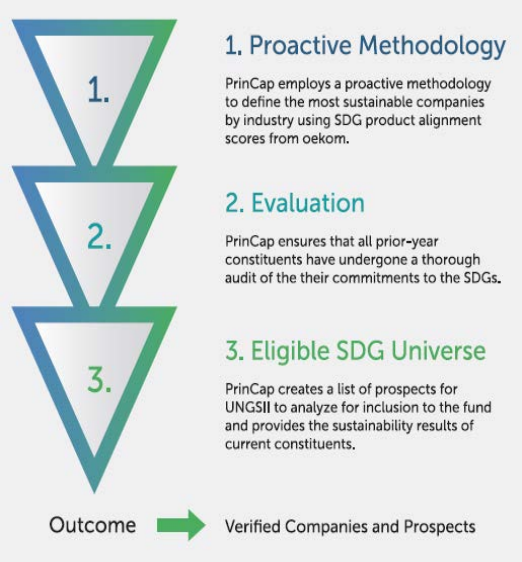
This new initiative brings accountability and transparency to the United Nations' ambitious Sustainable Development Goals for 2030 ("SDGs"). Understanding the complexities of operating within the United Nations bureaucracy, senior United Nations officers and advisors established a non-profit foundation outside the United Nations. Its charter is to bring positive attention to companies and countries that are genuinely moving toward more sustainable businesses, and to create financial instruments that enable investors to support these companies. Here is our approach:

Socially Responsible Investing Analysis

We analyze a global universe of stocks looking for high quality sustainable companies across all sectors and industries. The global universe that we utilize covers about2500 issuers, and is updated on a quarterly basis. We use third-party sources as well as our own proprietary analysis to make investments decisions.

The assessment of the social and governance as well as the environmental performance of a company as part of the investment decision is carried out with the aid of over 100 social and environmental criteria, selected specifically for each industry. We continually adjust the criteria to keep up with the latest developments and findings. As a leader in this type of analysis we are often trying to use quantitative measures of what are essentially qualitative topics.

Proactive Industry Metrics



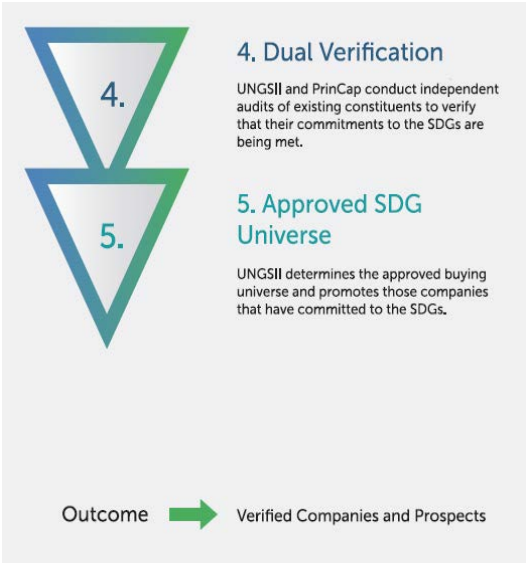
We specifically take a "best in practice" approach to ensure that all sectors and industry are represented, with higher thresholds for high carbon and controversial industries. On an annual basis, we analyze the quarterly and year over year changes of key sustainability & governance metrics by industry. We want to ensure that a current constituent is worthy of further inclusion. For prospects, we are looking for the leaders within an industry. One of our data partners has recently created an addition ratings system to assess a company's product portfolios to calibrate their alignment to the UN SDG goals. We have incorporated this metric into our analysis and will be assisting in its expansion.

In line with our goal of being an agent of change, we accept companies with average overall sustainability ratings, but with above average SDG scores relative to their industry peers. At the same time, we exclude any companies with severe violations against the UN Global Compact Principles or a low score regarding SDG compatibility of their product portfolio.

The resulting buying universe is a broadly diversified, global universe of companies against which to apply our deeper SDG investment methodology. It is important to note that fostering the SDG goals in large multinationals should have a two pronged effect. First to enable scaling sustainable strategies, and second to bolster the efforts of private companies to develop the next stage solutions.

Corporate Commitment Analysis

The corporate commitment factor is provided by UNGSII using leading media analyst Media Tenor's media sentiment data as a control system. It allows investors to see if companies are accurately representing their commitments to the SDGs.



Additionally, media sentiment data can help identify companies that are committed to the SDGs but not yet able to convey this information effectively to the media. Companies that are strongly visible on the SDGs in their annual reports tend to receive high shares of support in the media. If companies stress SDGs in their annual reports and the media sees a gap in reality, companies are likely to attract adverse publicity and subsequent negative reactions from stakeholders such as investors selling and consumers walking away.

The visibility and tonality of their statements and reports– in general and associated with the SDGs specifically – can help drive share prices up and down. This can be an important tool in predicting price fluctuations over time intervals. It has been reported that a company with a consistently strong reputation on social development issues tend to benefit from lower borrowing costs and better scores in employee rankings.

UNGSII conducts a detailed audit of legally binding statements by the company incorporating SDG goals into their business practices, and hold them to account year over year. UNGSII analysts read and categorize the annual reports of companies and central banks according to direct and indirect references to the SDGs. A media Impact study is conducted analyzing the business media and how they report on these companies. Journalists and other corporate stakeholders' views are compared to the views of financial analysts and their perception of financial and non-financial value drivers. A corporate assessment ranking is made.

Financial and Investment Analysis

Financials represents the largest volume of data, combining publicly available financial forecast and historical data. We break financials down into the following Fundamental components: Growth, Earnings Revisions and Valuation. We also employ technical analysis focusing on Relative Strength, Trend and Momentum analysis.

We specifically look at the following criteria:

1) Fundamental prospects for growth – (i.e., measuring returns on invested capital, sales, and earnings)

2) Incremental changes in earnings prospects (i.e., observing earnings revisions)

3) Valuation – (i.e., using a variety of measures such as earnings, sales, enterprise value, book value, and free cash flow)

4) Price Momentum – (i.e., focusing on fundamentally-driven price momentum–isolating for the effects of size (i.e. large or small/mid cap-bias), style (growth or value), and risk (beta), and secondarily focusing on near-term mean reversion in price)

5) Relative Strength – (i.e., evaluating each stock versus its peers within a specific industry based on intermediate price movements)

6) Technical Trend – (i.e., evaluating each stock based on its intermediate to longer-term technical trends in price, liquidity and volatility factors)

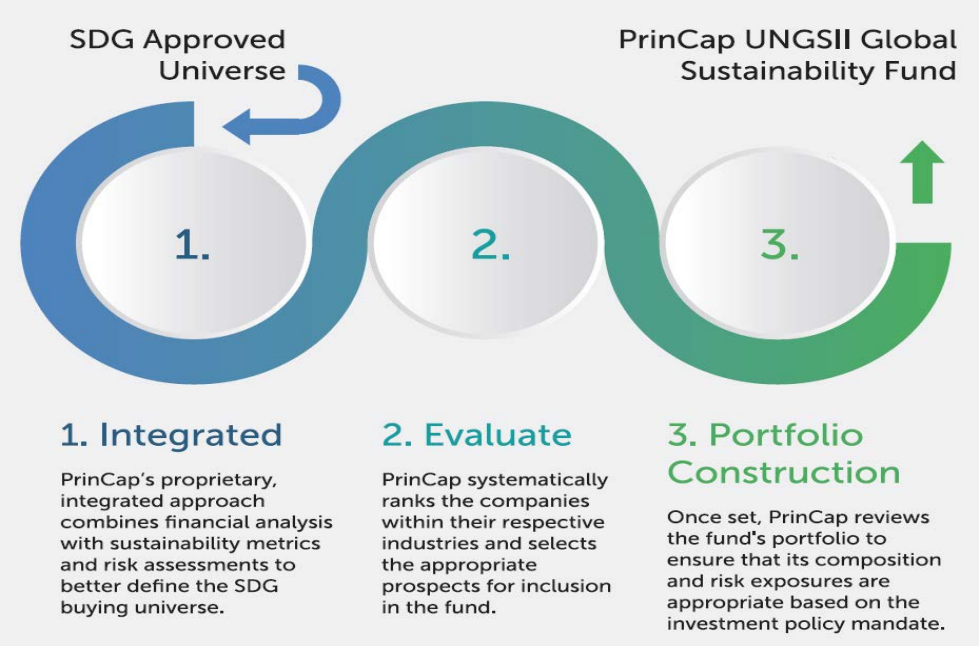
Portfolio Construction

Using a proprietary factor weighted approach, we rank each company against the overall universe by Financials, Environmental, Social, and Governance data in order to ensure that portfolio constituents are truly committed to sustainable growth. In constructing the portfolio, we are guided by the work of Henry Markowitz's thesis "Portfolio Solution" (1952), William Sharpe's Capital Asset Pricing Model (1964), subsequent work by A.G. Becker and the paper produced by Gary Brinson et al "Determinant of Portfolio Performance" (1986). We employ

current versions of Modern portfolio Theory which provided a framework for seeking to maximize returns at a given level of volatility.

The focus of this analysis is on the historical relative and absolute risk in the portfolio - across multiple time frames and diverse market environments. When constructing the portfolio, the following key Modern Portfolio Theory statistics are analyzed and considered:

- Diversification - considering the number of holdings, security and sector weightings and country weightings
- Standard Deviation - measuring volatility or risk
- Upside and Downside Capture Ratios - measuring the portfolio' performance relative to a market index during specific periods
- Beta - measuring an asset's risk in relation to the market
- Alpha - predicting incremental return from the portfolio when the market is stationary
- R-Squared - calculating the statistical measure representing the percentage of the portfolio's or security's movements
- Tracking Error - measuring of the standard deviation of the difference between a selected market index and a portfolio's quarterly returns
- Information Ratio - measuring of the risk adjusted return of the portfolio



Our portfolio will usually be comprised of between 250 – 300 constituents with a broad exposure to companies classified by varying style and market capitalization.

Final Thoughts

In summary, we are seeking your participation in this new UNGSII initiative because it is designed to incentivize companies to commit to Sustainable Development while it earns you a solid return on your investment. There are, of course no guarantees of good financial performance. Our approach is straight forward: we apply traditional investment rules to a select universe of companies that have committed to sustainability and implement their commitment in their business.

By pooling the resources of many investors, we mean to send a clear message to companies and governments that major corporations and world leaders must commit to sustainable activities and that the institutional investment community will invest in companies that commit to doing the right thing.

Sustainable development is on the cusp of taking off. We need your help in sending a clear, loud message. Join us.

4. SDGs – the chance to embed true sustainability into corporate strategy

Katrin Muff

The Global Agenda for 2030 and the need for an "outside-in" perspective

The Sustainable Development Goals (SDGs) represent the globally negotiated and broadly accepted agreement of our Grand Challenges until 2030. The SDGs are formulated into 17 Global Goals (see Figure 1). We may agree with them or not; these Global Goas have become the agreed reference point and may be our best chance to advance towards a goal where all of us are living well on our one planet.

Figure 1: The Sustainable Development Goals (SDGs)

How does business react to these SDGs? On the upside, there is increasing awareness among business leaders that the SDGs represent a "billion dollar investment opportunity" [i] for businesses as the SDGs provide a strategic outline for innovation and where new markets will emerge as a result of needs that are currently under addressed. On the downside, these opportunities are not obvious and organizations can be tempted to use the SDGs to merely showcase how existing business activities, contribute to the 17 global goals. While such examples are important, they further accentuate the "big disconnect" of business doing a lot of good while at the same time the state of the world is deteriorating. It is critical to enable business to quantum leap from focusing predominantly on its current activities and considering the SDGs as just another reporting requirement instead of the long-term source of innovation and success while serving society and the world.

What is needed so that business can indeed become a force for good to society and the world? In order to achieve the full potential the SDGs present for business, we need efforts of Corporate Social Responsibility (CSR) and Corporate Responsibility (CR) to advance so that business becomes "truly sustainable" [ii]. In course of the this decade, most large organizations have been required to adapt their business model towards a refined shareholder model, thus shifting their perspective beyond the short-termism imposed by a pure shareholder maximization focus. Such a first step of considering sustainability in business has been inspired by CSR developed in the 80s and 90s. Triple bottom line thinking has been inspired by a broader CR thinking and has resulted in a number of leading multinationals, such as Unilever, to engage in a further integration of sustainability in their business, creating triple bottom line value for multiple stakeholders. Yet, these "inside-out" perspectives of how business operates in the world are no longer sufficient. Unless business shifts its perspective to an "outside-in" view and takes the SDGs as the starting point for product development and value creation, it will not maximize its potential of being a force for good.

The three challenges of shifting from "inside-out" to "outside-in"

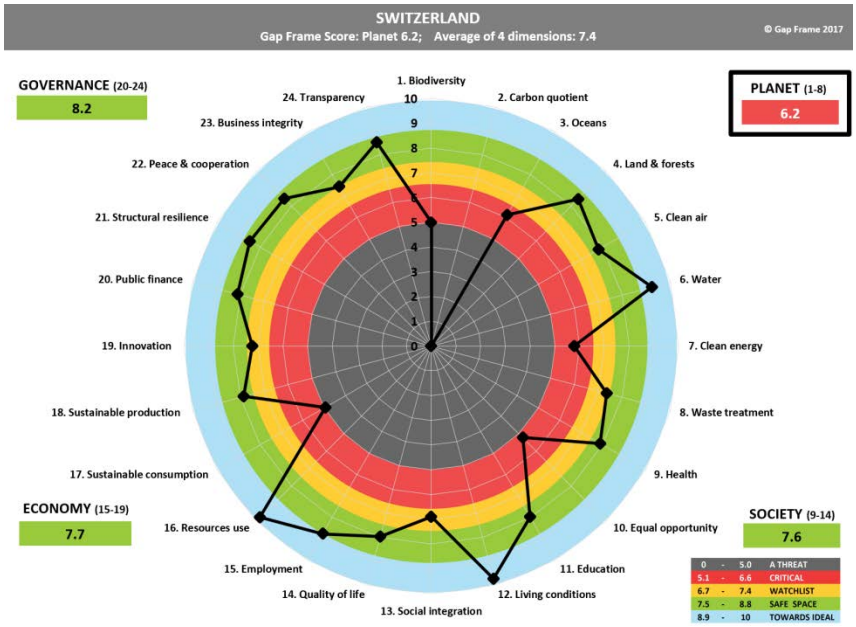


Figure 2: An overview of the priority issues in Switzerland (the GapFrame.org)

Adopting such an "outside-in" perspective in order to become "truly sustainable" means that a company starts by understanding the burning issues in the region it operates (see Figure 2). The **first challenge** relates to lacking or confusing information about what these issues might indeed be. Initially, the SDGs seem focused more on issues that concern developing countries than developed countries, leaving organizations quite puzzled in the maze of information around global challenges. In a second step, a company identifies its core competencies and resources to find new innovative ways to apply these to solve the Grand Challenges, creating future services and products that both serve society and the world, and ensure its economic wellbeing. This **second challenge** relates to how a company identifies strategic opportunities beyond its current markets and clients. It also challenges the decision-making process of a company, in particular regarding strategy development as a more continuous and emergent process, as compared to top-down and periodically. Third, as the company discovers new applications of its core strengths, it will also identify new partners in new sectors and industries to work with in co-creating solutions for the SDGs. This **third challenge** relates to

additional leadership competencies required to being able to manage beyond traditional company boundaries and includes knowhow in working with institutions that have other interests, priorities and definitions of success.

Interrelated tools for an "outside-in" perspective

There are various tools available to deal with these important challenges separately. The real challenge here is the need for an integrated approach of the three key challenges that are need to be overcome when shifting from "inside-out" to "outside-in" perspective in order to truly solve the SDGs. It is helpful to consider these three challenges as three different dimensions of engagement as referred to when discussing global responsibility: the "**I – we – all of us**" (see Figure 2). There is the individual level that addresses the leadership dimension discussed as the third challenge (the "I"), the group level addresses the organizational dimension identified as the second challenge (the "WE"), and the Grand Challenges or issue-related challenges reflects the larger societal dimension of the first challenge (the "ALL-OF-US"). These three dimensions are interconnected and interdependent. Wanting to change one dimensions often implies the necessity to change and amend the others. Let us look at tools that were designed so that they address not only each challenge individually but enable a further three-dimensional transformation across all three challenges:

The societal dimension: The **Gap Frame** online platform offers a tangible translation of the SDGs into a set of national priorities that offers a starting point for any institutions (government, non-government or business) to adopt an "outside-in" perspective and focus on a relevant issue in the region in which it is active. New, co-creative processes for multiple-stakeholders such as the **Collaboratory** are required to create a space for organizations and institutions of different sectors to work together in solving complex issues.

Organizational dimension: A company faces two parallel challenges: first, a revision of its strategy process from a traditional bi-annual approach to an ongoing fluid strategy adaptation process. A related SDG strategy tool is being prototyped by five Swiss businesses in 2017. Second, a review of how the company organizes around a purpose that anchors both its role and contribution to the world, as well as a focus on its core shared values and built competencies and expertise. New options in the area of self-organizations are emerging and while perhaps not suitable to every type of organization, operating systems such as **Holacracy** offer thought-provoking new alternatives to existing hierarchies.

Individual dimension: There are numerous ways for a leader, an engaged citizen, indeed anybody with an appetite to bring about change to develop into what we call a responsible leader. Somebody who "demonstrates a deep understanding of the interdependencies of the system and the own person, is distinguished by an ethical and values-based attitude, and able to build long-term relations with different stakeholders embracing their needs, while initiating change towards sustainable development"[iii]. **The Competency Assessment of Responsible Leadership (CARL)** offers a free online tool to assess these competencies both in educational processes, in companies and among social entrepreneurs.

Figure 3: The Circle Model (Muff, 2017)

If we thus want business to change the world by working on the SDGs, we can safely assume that it is only possible to change the world, if we are able to change not only ourselves but also the way we work together.

Three levers of change to enable this transformation

The need to understand the true opportunity of the SDGs using an outside-in perspective

The SDGs are the opportunity for mankind to get back on track regarding how we live together, how well we live and how to live on this planet. It is also a golden business opportunity for organizations with the innovation power and appetite to build business solutions for these Grand Challenges. Concretely, we need co-creative processes to develop such new social innovations for stakeholders to engage as equals. Second, we need a snapshot overview highlighting priority issues to be tackled country-by-country, as a starting base for such multi-stakeholder conversations to ensure viable business solutions to solve our Grand Challenges.

The need of a practical strategy tool to translate SDGs into such business opportunities

For companies of any size to truly embrace these golden long-term opportunities, there are important challenges to be overcome to consider and apply strategy in such a new way. There are two levers of change for a company to engage outside of its organizational boundaries and introduce resulting opportunities within its structure. First, its executive team needs to acquire the competencies to embrace the "outside-in" view as a new strategic process. Second, the organizational structure needs to become adaptive to such outside-in change and to enable such change. This can be achieved by distributing the power from few to many and by implementing the principles of self-organization so that the internal structure can match the speed of change of the external environment in which the company operates.

The need for responsible leadership competencies to cooperate outside business boundaries

The emergence of truly responsible leaders at any level of any organization is closely connected with the personal journey of people to become engaged citizens and their ability to hear and to express their inner purpose and values of who they are and what they do, both at

home and at work. While the personal development journey belong to every individual and can hardly be generalized, let us focus on two levers in the context of work. First, the continuous friction of an individual daring to bring more of herself to work can create a powerful sense-making journey for an individual. Second, the possibility to align what matters to an individual with her professional activity and the purpose of the organization will translate into an increasing appetite and capacity to help the company to align its purpose with its role in society and the world.

Experience in social innovation has shown that spaces where these three dimensions can interact and build on each other, can generate multi-level transformations. Such moments are created when an empowered individual (the I) is representing her company (the we) in a multi-stakeholder process geared to solve a problem she truly cares for (the all-of-us). Nothing less than the miracles that occur as a result from such alignment of the **"I – WE – ALL OF US"** are what is needed to get us to a place where the SDGs become history and we are all living well on our one planet.

Tools mentioned:

- The Gap Frame: www.gapframe.org
- The Collaboratory: http://www.bsl-lausanne.ch/thought-leadership/the-collaboratory/
- Holacracy: www.holacracy.org
- The Competency Assessment for Responsible Leadership (CARL): http://www.bsl-lausanne.ch/thought-leadership/carl/

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5. The New Standard in Health & Wellness

Joshua Luckow

The Vision

To enable people from all around the world to live consciously, healthily and enthusiastically; reducing the burden of preventable illness on individuals and society while being in harmony with our ecosystem.

The Mission

To become a world leader in offering personalized, holistic, and integrated health and wellness experiences within hospitality environments, living communities, and digital platforms.

Our Shared Goals

We are focused on generating a sustainable triple bottom line return for all stakeholders.

People: Creating transformative, first-in-class experiences that enrich the lives of all involved

Planet: Orchestrating eco-conscious environments that are in harmony with their natural surroundings

Profit: Optimizing shareholder value and diversified profitable revenue

Who We Are

Leveraging decades of knowledge and experience, we are experts in designing, developing, and managing highly profitable first-in-class resort and hotel operations, real estate communities, and standalone spa and wellness centers on land and sea, as well as designing and selling complementary products. We are adept at administering fully integrated and holistic health and wellness experiences within finely nurtured cultures that are mission driven, passionate, and innovative. Our core foundation resides in the establishment and long-running execution of the award-winning, experiential brand Canyon Ranch—a global industry pioneer and leader for nearly 40 years.

We are undaunted by complexity and expert in servicing the whole person— mind, body, and spirit. We are masters at orchestrating a multitude of first-in-class health and wellness offerings within well-designed immersion settings—hundreds of services, products, classes, lectures, and workshops provided within spa, health, and wellness spaces as large as 12,500 m2. For decades, we have been tackling complex health issues such as mental health, sleep medicine, genetics, brain health, obesity, microbiome, and corporate wellness—topics just now being highlighted in the mainstream.

We achieve 100% guest participation, maximizing and diversifying profitable revenue within our operations. We have extensive knowledge on how to service high-profile guests (billionaires, Fortune 100 CEOs, celebrities), the middle-class, and underserved populations. Our former operations have earned countless awards and accolades for transformational, life enhancing experiences.

We are masterful at leading, integrating, and coordinating a diversity of health and wellness professionals, from massage therapists, aestheticians, and personal trainers…to physicians, psychologists and complementary medicine specialists…to spiritual guides, healers, and creative artists. Hundreds of exceptional staff, operating in concert with our guest-focused resort/hotel teams, to deliver unparalleled value to our guests and homeowners.

We are well networked globally, with each core member possessing a stellar reputation in the market. For decades, we have collectively cultivated long-term relationships with owners, operators, investors, consortiums, market influencers, thought leaders, tour operators, and media, along with passionate guests, homeowners, and staff loyal to the vision and mission of our wellness model—a network that will be leveraged to achieve incredible success.

Our Guiding Principles

A set of core principles guides SolaVieve in its strategy and execution. These fundamental elements have been cultivated over decades by its top leadership team and form the bases of all commercial and philanthropic activities.

Culture First, Lifestyle Focused

At our core is a culture of enthusiasm, collaboration, and exploration, with open-mindedness, innovation, and the pursuit of mastery throughout. We are not about momentary detoxifications or mere escapism, but nurturing one’s lifestyle.

Servant Leadership & Engaged Staff

We are collaborative, creative leaders who are passionate about serving others within dynamic ecosystems, artfully structuring the organic. We are conductors of talented, engaged staff who have the support and autonomy to pursue their visions while embodying our many offerings and overall brand.

Self-evaluation & Accountability

As an organization, we nurture a culture of accountability and continuous self-improvement, grounded in a commitment to evidence-based decision- making. Deeply-rooted research, monitoring, and evaluation practices help to ensure that positive health and wellbeing outcomes are measurable and maximal for our clients, and guard the organization against the risks of inefficiency, stagnation, and irrelevance.

High Touch & High Tech Synergy

Woven into our high touch environment are technologies that enhance personalization, distribution, operational efficiencies, and the overall guest and staff experience. Telehealth, auto-analytical tools, and conscious social networking will be used seamlessly before, during, and after stays, as well as for communities outside the four walls of our establishments to enrich and support the lifestyle transformations of our clients, monetize the value of our advanced offerings, and widen our client base.

Personalized Approach

We are guest-, homeowner-, and staff-centric, honoring the individuality of each—from areas of interest, to health status, to readiness for change. Our offerings and delivery methods are driven by their voices and catered to maximize impact and satisfaction. We listen intently to both spoken and unspoken messages and we seek to establish connections with all those we service. The pursuit of a mindful, healthy life is universal, and requires a personalized approached to be achieved and sustained.

Holistic & Integrated Marketplace

We are committed to servicing the whole person: mind, body, and spirit. Our holistic and integrated array of offerings comprise multiple business units that collegially “compete” for guest consumption. Competition rests on innovation, relevance, and the degree of integration across the organization. An all-inclusive environment designed to minimize the transactional costs that prevent someone from pursing their passion, curiosity, and recommended health action. A sustainable atmosphere that actively reduces the burdens placed on the consumer—from sourcing of products and materials to treatment of staff and the environment. Every element within our ecosystem reinforces our commitment to maximizing a triple bottom line return: people, planet, profit.

Lead with Education & Inspiration

Education and inspiration drive sales, not hard selling or upselling. Staff are viewed and admired by guests as experts in their field, able to sift through the noise of global misinformation with integrity and selfless interest. We will be celebrities to the celebrities, driven by a passion to collaboratively serve and enlighten others. Our environments will be sanctuaries for guests, homeowners, and staff, enabling rejuvenation, exploration, and transformation.

Our Business Model

SolaVieve is a convergence of five industries: hospitality, healthcare, spa, technology, and real estate. Orchestrating the vast array of market intricacies and consumer interests, capabilities, and demographics—coupled with a diversified and passionate staff-base—is a

complex endeavor for which we have honed our skills and developed best practices over the past four decades.

We are seasoned at finding order within a seemingly chaotic environment to achieve outsized goals of profitability, transformational experiences, and brand equity within the elusive experiential market.

Integration

The heart of our business model is the integration of three key elements: people, programming, and places. We establish mission-driven, collaborative, and innovative cultures of diversified staff who receive from us the three hallmarks of motivation: purpose, mastery, and autonomy. We achieve whole systems integration throughout the operation, where physicians work hand in hand with spiritual healers, physiologists with nutritionists, psychologists with body healers, technologists with marketers, and so on. This enriched atmosphere is focused on engaging and servicing the guests and homeowners at a deep, transformative level.

Through dozens of individual, yet tightly integrated, business units, we operate a complex system of holistic and personalized offerings—from services and products, to classes and workshops; from structured packages and programs, to organic à la carte discoveries. Likewise, we individualize our back of the house functional areas while keeping them connected to the whole. This business structure, along with our extensive data mining and analyses, creates unparalleled clarity into our operations, enabling us to strategically push and pull levers based on demand and performance indicators, internal innovations and insights, and advancements in the market. While segmented, all business units are viewed as a whole and constitute the substructure of our holistic ecosystem.

We design well-appointed spaces that perfectly combine form and function. Energy centers, collaboration zones, sanctuaries, etc., are all modelled and woven into the programmatic experience. Traditional hospitality and healthcare elements—guest rooms and lobby, examination rooms and diagnostic areas— are all elevated to the experiential and human-centric level. Our guests, homeowners, and staff are immersed in an environment that exudes health and wellbeing.

Like a university, subcultures abound throughout the property, such as exercise enthusiasts, spiritual seekers, and creatives. Physical spaces for each interest group have their own design guidelines to ensure they are authentically represented, while remaining interconnected with the whole of the operation.

Maximizing & Diversifying Profitable Revenue

We operate well-beyond traditional hospitality revenue streams and healthcare models by designing and executing our environments to achieve 100% guest participation in a wide array and ever-evolving suite of health and wellness offerings, while also building experiences around products to drive sales. To maximize guest spend and revenue per room, we create a personalized, all-inclusive, and transaction-less environment that enables guests to freely and safely explore offerings based on inspiration, referrals, and changing interests. We keep connected with our guests post-stay to remain ever-present in their thoughts and to

market our products, services, and return visits. Operational efficiencies are achieved through a watchful eye on expenses, deep understanding of where to allocate resources, and the cultivation of ownership within our staff.

Such an environment generates significant pricing power, guest loyalty, staff innovation and tenure, and control over expenses.

Knowledge Acquisition and Management

We recognize the greatest asset within an organization are the insights, perspectives, and feedback from consumers and staff. Consequently, we develop robust knowledge acquisition and management systems to capture, digest and utilize such information. We always originate with the guest's and homeowner's intentions, goals, and interests, as well as listen for their unspoken truths to guide us in improving their experiences. Likewise, our executive teams are not blocked by middle management to gain wisdom and ideas from line level staff. Rather, we bring our open door policy to the floor. We decentralize decision making to ensure the most informed individual is empowered to make and influence decisions.

Whole Person Integration

At SolaVieve, we honor the whole person: mind, body, and spirit. We enable our guests to create a sustainable lifestyle of health and happiness. Our staff are professional, collaborative, and integrated across disciplines. We are adept at working with a diversified set of guests, in terms of health status, interests and goals, and demographic variances. We always start where the guest is on their evolutionary path, and create sufficient variation in our programming to stay relevant throughout a guest’s lifetime.

Health & Healing

A balance exists where the best of Western and Eastern medicine is blended to deliver maximum value to our guests.

Western Medicine; Traditional Chinese Medicine & Ayurvedic; Mental Health; Weight Loss; Sleep Medicine; Brain Health; Pain Management; Dermatology; etc.

Fitness & Movement

Our guests will gain confidence with physical activities while finding the joy and benefit of incorporating exercise into their daily lives.

Aerobic; Strength; Hiking; Biking; Boot Camps; Functional Exercises; Dance; Pilates; Indoor Cycling; Water Activities; Diagnostics & Testing; etc.

Spiritual & Creative

With our guidance, guests will discover their inner divine and creative nature.

Meditation & Mindfulness; Yoga & Qigong; Counseling; Metaphysics; Painting & Sculpting; Creative Writing; Music; Crafts, etc.

Rest & Relaxation

Our guests will unwind and luxuriate in restorative treatments that rejuvenate their vitality.

Massage; Wraps & Exfoliations; Watsu; Skincare; Cosmetics; Hair & Nails; Healing Energy; Foot Health; etc.

Food & Nutrition

Our guests will experience how easy and enjoyable it is to eat in harmony with their bodies, learning practical solutions to sustain a healthy lifestyle.

Healthy Cuisine; Healing Foods; Cooking Demos; Digestive Health & Microbiome; Menu Planning; Diagnostics & Testing; etc.

Personal Growth

Here are opportunities to discover new areas of interest and gain life-enriching insights.

Theatre & Art Appreciation; History & Culture; Organizational Skills; Life Skills; Philosophy; Permaculture; etc.

A Wave of Paradigm Shifts

This is the dawn of a consumer-led revolution within the booming wellness market. Luxury expenditures are shifting from material possessions, to life enrichment; healthcare, from sick care, to optimal living; wellbeing, from occasional, to a way of life.

Decades in advance of these shifts, our SolaVieve team already mastered the art of transforming lives while generating sustainable triple bottom line returns. When we align ourselves with this holistic wellness revolution, we profit along with humanity and the planet.

Vacationing

From indulgence to purpose

Hospitality

From conventional to experiential

Healthcare

From institutional to personalized

Spa

From glamour to meaningful

Wellness Revolution

“There is one health truism that no scientific research has ever contradicted in all these years: It is easier to preserve health than to repair it. The path to optimal health is clearly defined—walking it is still up to you.”

– Mel Zuckerman, Founder of Canyon Ranch

Global Wellness Economy

$3.7 trillion market

5.2% p.a. growth [2013-2015]

Wellness Tourism

$563 billion market

7.5% p.a. growth [2015-2020]

Luxury Tourism

€1.25 trillion market

6.2% p.a. growth [2015-2025]

At $3.7 trillion, the global wellness economy and the majority of its segments are far outpacing the global travel & tourism industry and 3.5 times larger than the global pharmaceutical industry.

At $563.2 billion, the global wellness tourism segment is growing nearly twice as fast as global tourism.

With luxury tourism growing nearly 30% faster than global tourism, the overall luxury market is undergoing a significant paradigm shift towards valuing experiential over material consumption.

Europe Wellness Tourism

$193 billion market

4% CAGR [2013-2015]

North America Wellness Tourism

$216 billion market

5% CAGR [2013-2015]

Asia-Pacific Wellness Tourism

$111 billion market

15% CAGR [2013-2015]

From 2013-2015, Europe was ranked No. 1 globally for wellness trips, North America was No. 1 for wellness expenditures, and Asia-Pacific experienced the fastest growth in both expenditures (15% CAGR) and trips (13% CAGR).

International wellness tourists spend 61% more than typical international tourists, with domestic travellers spending 164% higher.

76% of European luxury travellers spend 10-days or longer on their trips, with 54% spending €5,000 - €10,0000 and 18% spending over €10,000 per trip. Approximately 40% of European consumers rate the obtainment of a healthy life above all other pursuits, such as personal finances.

Global Wellness Institute; Global Wellness Economy Monitor January 2017

Amadeus; Shaping the Future of Luxury Travel | Future Traveller Tribes 2030

Pangaea Network; Luxury Travel Trends 2014 | 4th Edition

European Travel Commission and Future Foundation; Lifestyle Trends & Tourism | How Changing

Consumer Behaviour Impacts Travel to Europe

Sustainable Development Goals

"We are determined to take the bold and transformative steps which are urgently needed to shift the world onto a sustainable and resilient path." -- United Nations

In 2015, a pledge was made at the United Nations by 193 heads of state to implement 17 Sustainable Development Goals. SolaVieve is committed to advancing these goals through our sustainable business practices and our ethical commitment to the wellbeing of people and the planet. Together we can realize our shared vision of a healthier and happier world.

SDG 3: Good health and well-being

Our focus is on prevention and lifestyle modifications, rather than unnecessary pharmaceuticals, invasive surgeries, and temporary detoxifications. Citizens, governments, and healthcare systems around the world are feeling the burden of preventable diseases and conditions, adversely affecting millions of lives while draining essential resources that could be redirected to other crucial development goals. One in two adults and nearly one in six children are overweight or obese in OECD countries with malnutrition rampant in developing countries. Cardiovascular disease is the number one cause of mortality and mental health disorders are some of the largest and fastest growing diseases. We believe that prevention is better and cheaper than the cure; and so our goal is to address these conditions and more by offering and promoting a life of wellbeing, resulting in longer and healthier lives and flourishing communities.

SDG 4: Quality education

We are committed to advancing health and wellbeing education. We create environments and implement programs that promote a lifetime of learning, and seek to continually expand the knowledge base and increase the conscious decisions of our clients. We sift through the noise of misinformation in the market and focus on practical, personalized solutions. Moreover, we seek to share and disperse the repository of knowledge that we generate with the broader community, believing ultimately that everyone benefits from a greater social awareness of the value of health and wellbeing. Our emphasis is on creating and preserving life-long trusted relationships focused on individual empowerment, which we never compromise for the pursuit of short-term financial gain.

SDG 5 & SDG 10: Gender equality & reduced inequalities

The right to pursue vibrant good health is universal. We operate environments that balance the intellectual and intuitive pathways, embrace feminine leadership and sensibility, and strive to lead all, equally, toward wellbeing, regardless of age, gender, or socioeconomic background.

Within our operations, there are no perceivable VIPs; billionaires and school teachers receive equal generosity. With every staff member capable of delivering transformative value, there is no distinct hierarchy of importance; the physician, the massage therapist, and the housekeeper are treated with equal respect and opportunity. We nurture the divine qualities in all while maintaining a universal perspective.

SDG 8: Decent work and economic growth

Our goal is to generate meaningful, purposeful, mission-driven work, while providing marketable wages and superior working conditions. We believe in decentralizing decisions to empower the most informed and capable staff to operate autonomously within their areas of expertise. We encourage and enable our staff to immerse themselves in our wellness life-style—professionally and personally. Our focus is on developing the capabilities of the individual as well as the collective, so that the value we create in our operations is shared by all.

SDG 9: Industry, innovation and infrastructure

Our integrative environments enable collaborations and innovations within and across health disciplines—breaking down traditional barriers. Our business structure creates a marketplace of healthy competition that ensures innovation and relevance pervades. Our creation of digital platforms and other communication technologies will facilitate an interactive flow of information and services between health professionals and clients—creating value within and beyond the four walls of our establishments for all socioeconomic classes.

SDG 11 & SDG 13: Sustainable cities and communities & climate action

We develop lifestyle communities centered around health and vitality, ensuring that all elements are designed and operated as components of a fully functional ecosystem. We are ever conscious of our impact on the planet and heighten the guests' awareness through education and experiences. We will actively lower our carbon footprint by designing and managing operations that use sustainable energy and materials, advanced waste management practices, and land conservation.

SDG 17: Partnerships for the goals

We are aware that we cannot do this alone, and will require strategic partnerships to advance the health and wellbeing of our planet and its inhabitants.

6. Building the UNGSII SCR300 Index

Joseph A. Cajigal, Conor Platt and Alfred R. Berkeley

Overview

There are hundreds of do-gooder financial initiatives. Hundreds of initiatives fail outright or die a slow death on the altar of good intentions.

Why is this one worth your participation?

This new initiative is particularly large and particularly difficult; but is also unique. This initiative is a follow on to a failed initiative: specifically, the Millennium Development Goals promulgated by the United Nations in the year 2000.

This initiative is the result of serious soul searching by senior United Nations officials and advisers. They examined the whole Millennium Development Goals program and process to spot problems The Millennium Development Goals failed for several reasons: the financial recession of 2009 sapped financial support and typically receives the blame for failure. But the recession is too easy an answer.

Under the surface, the Millinium Goals failed because there was little to no accountability. Furthermore, there was little to no transparency into what was accomplished and what was not accomplished. Additionally, companies were able to claim compliance by purchasing the

use of a United Nations logo without effectively moving toward sustainability. There was plenty of blame to go around.

Specifically, this new initiative is designed to fix those roots of failure. This initiative brings accountability and transparency to the United Nations' ambitious Sustainable Development Goals for 2030. Understanding the complexities of operating within the giant United Nations bureaucracy, senior United Nations officers and advisors established a non-profit foundation outside the United Nations. Its charter is to bring attention to companies and countries that are genuinely moving toward more sustainable businesses, and to create financial instruments that enable investors to support these companies. Here is our appoach:

Socially Responsible Investing Analysis

We analyze a global universe of stocks looking for high quality sustainable companies across all sectors and industries. The global universe that we utilize covers ~2500 issuers, and is updated on a quarterly basis. We use third-party sources as well asn our own propriatary analysis to develop our custom rankings..

The assessment of the social and governance as well as the environmental performance of a company as part of the corporate rating is carried out with the aid of over 100 social and environmental criteria, selected specifically for each industry. We continually adjust the criteria to keep up with the latest developments and findings. This turns out to be hard work as we are often trying to use quantitative measures of what are essentially qualitative topics.

Proactive Industry Metrics

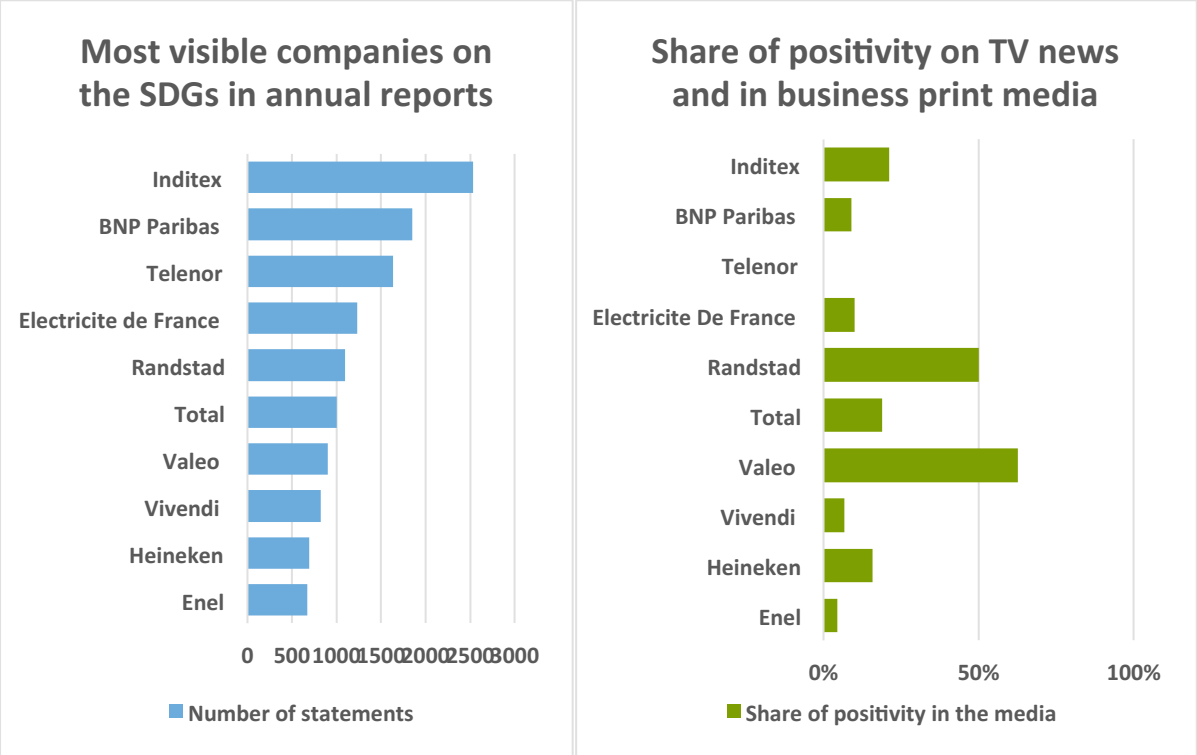
We specifically take a best in industry approach to ensure that all sectors and industry are represented, with higher thresholds for high carbon and controversial industries. On an annual basis, we are analyzing the quarterly and year over year changes of several key sustainablity & governance metrics by industry in order to ensure that a current constitutent is worthy of further inclusion. For prospects, we are looking for the leaders within an industry. One of our data partners, Oekom have recently created an addition ratings system to assess a companies product portfolios to calibrate their alignment to the UN SDG goals. We have incorporated this metric into our analysis and will be assisting in its expansion.

In line with our overall goal of being an agent of change, we will accept companies with average overall sustainability ratings, but above average SDG scores relative to their industry peers. At the same time, we are excluding any company with severe violations against the UN Global Compact Principles and/or a low score regarding SDG compatibility of their product portfolio.

The resulting buying universe is a broadly diversified, global universe of companies to apply our deeper SDG investment methodology.

Corporate Commitment Analysis

The corporate commitment factor is provided by UNGSII using leading media analyst Media Tenor's media sentiment data as a control system. It allows investors to see if companies are accurately representing their commitments to the SDGs.



Additionally, media sentiment data can help identify companies that are committed to the SDGs but not yet able to convey this information effectively to the media. Companies that are strongly visible on the SDGs in their annual reports tend to receive high shares of support in

the media. If companies stress SDGs in their annual reports and the media sees a gap in reality, companies are likely to attract adverse publicity and subsequent negative reactions from stakeholders such as investors selling and consumers walking away.

The visibility and tonality of their statements and reports– in general and associated with the SDGs specifically – can help drive share prices up and down. This can be an important tool in predicting price fluctuations over time intervals. It has been reported that a company with a consistently strong reputation on social development issues tend to benefit from lower borrowing costs and better scores in employee rankings.

UNGSII conducts a detailed audit of legally binding statements by the company incorporating SDG goals into their business practices, and hold them to account year over year. UNGSII analysts read and categorize the annual reports of companies and central banks according to direct and indirect references to the SDGs. A media Impact study is conducted analyzing the business media and how they report on these companies. Journalists and other corporate stakeholders' views are compared to the views of financial analysts and their perception of financial and non-financial value drivers. A corporate assessment ranking is made.

Financial and Investment Analysis

Financials represents the largest volume of data combining publically available financial forecast and historical data. We break financials down into the following Fundamental components: Growth, Earnings Revisions and Valuation. We also employ technical analysis focusing on Relative Strength, Trend and Momentum analysis.

We specifically look for high quality cash flow/dividend growth companies, companies with favorable returns on invested capital, identifiable track record of demand drivers of growth and earnings surprises. We specifically look at the following criteria:

7) Fundamental prospects for growth – employing metrics for returns on invested capital, sales, and earnings

8) Incremental changes in earnings prospects (i.e. earnings revisions)

9) Valuation – using a variety of measures (based on earnings, sales, enterprise value, book value, and free cash flow)

10) Price Momentum – primarily focusing on fundamentally-driven price momentum– isolating for the effects of size (i.e. large or small/mid cap-bias), style (i.e. growth or value), and risk (i.e. beta), and secondarily focusing on near-term mean reversion in price

11) Relative Strength – evaluating each stock versus its peers within a specific industry based on an intermediate price movements.

12) Technical Trend – evaluating each stock based on its intermediate to longer-term technical trends in price, liquidity and volatility factors.

Portfolio Construction

Using a proprietary factor weighted approach we rank each company against the overall universe by Financials, Environmental, Social, and Governance data in order to ensure only the highest quality portfolio constituents. In constructing the portfolio, we are guided by the work of Henry Markowitz's thesis "Portfolio Solution" (1952), William Sharpe's Capital Asset Pricing Model (1964), subsequent work by A.G. Becker and the paper produced by Gary Brinson et al "Determinant of Portfolio Performance" (1986) in employing current versions of Modern portfolio Theory which provided a framework for seeking to maximize returns at a given level of volatility.

The focus of this analysis is on the historical relative and absolute risk in the portfolio's track record—across multiple time frames and diverse market environments. When constructing the portfolio, the following key Modern Portfolio Theory statistics are analyzed and considered:

- Diversification – attention to number of holdings, security and sector weightings and country weightings.
- Standard Deviation- measurement of volatility or risk
- Upside and Downside Capture Ratios measuring the portfolio' performance relative to a market index during specific periods
- Beta- measurement of an asset's risk in relation to the market
- Alpha - incremental return from the portfolio when the market is stationary
- Correlation
- R- Squared- the statistical measure representing the percentage of the portfolio's or security's movements,
- Tracking Error-the measurement of the standard deviation of the difference between a selected market index and a portfolio's quarterly returns
- Information Ratio – the measurement of the risk adjusted return of the portfolio

Our portfolio will usually be comprised of between 250 – 300 constituents with a broad exposure to companies classified by varying style and market capitalization.

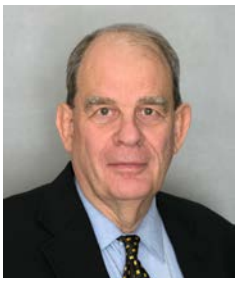
Final Thoughts

In summary, we are seeking your participation in this new UNGSII initiative because it is designed to incent companies to commit to Sustainable Development while it earns you a solid return on your investment. There are, of course no guarantees of good financial performance. Our approach is straight forward: we apply traditional investment rules to a select universe of companies that have committed to sustainability and implement their commitment in their business.

By pooling the resources of many investors, we mean to send a clear message to companies and governments that world leaders must commit to sustainable government and that the institutional investment community will invest in companies that commit to doing the right thing.

Sustainable development is on the cusp of taking off. We need your help in send a clear, loud message. Join us.

7. Authors and Editor



Alfred R. Berkeley is Chairman of Princeton Capital Management LLC, Previously, he was president of the NASDAQ Stock Market, acting chair of the US President's National Infrastructure Advisory Council, and general partner at Alex. Brown & Sons. He served as Vice Chair of the Evaluation Committee of the United States National Medal of Technology and Innovation. He has served on the board at various institutions: Johns Hopkins University, the Johns Hopkins University Applied Physics Laboratory, Webex Communications Inc., Policy Management Systems Corporation, Safeguard Scientifics Inc., Comshare, and Edgar OnLine. He has served as chairman of XBRL US and currently serves on the board at The University of Maryland School of Medicine, Realpage Inc. and Outward Bound.

Alexander Bassen is a professor of capital markets and management and Head of the Center for a Sustainable University at the University of Hamburg, Germany. He holds doctoral degrees (Ph.D. and German Habilitation) from the European Business School (Oestrich-Winkel) and the Technical University of Munich in Germany. He is a member of the German Council for Sustainable Development – advisory body of the German Federal Government, co-chair of the UN PRI Academic Network Steering Committee, member of the Commission on Environmental, Social & Governance Issues (CESG) of the European Association of Financial Analysts Societies (EFFAS) and member of the advisory panel for sustainability of Deutsche Asset and Wealth Management (Deutsche Bank). Alex research interests are responsible investment, corporate governance, and sustainability reporting.

Timo Busch is a lecturer at the Department of Management, Technology, and Economics of ETH Zurich and holds a position as full Professor of Management and Environmental Sustainability at University of Hamburg, Germany. His research centers on organizational theories and the natural environment, focusing on three areas: climate change risks and carbon management, the corporate sustainability / financial performance debate, and industrial ecology and corporate performance analysis.

Joseph A. Cajigal is the Chief Executive Officer of Princeton Capital Management' and is responsible for managing equity and balanced portfolios for clients. Previously, Joe was founder of Hudson Canyon Investment Counselors. Previously he was the Executive Officer responsible for the management of Fiduciary Trust Company International's ("Fiduciary") domestic mutual fund company, its non-U.S. mutual fund company and its registered broker dealer. During his tenure, he served as a member of Fiduciary's Management committee, Fiduciary's Executive committee, Division Executive for the Investors Services Division, President of its tax planning and compliance subsidiary and President of its New York Stock Exchange registered broker-dealer. Joe holds a BA degree in Mathematical Economics from St. Peter's College.

Gunnar Friede is Senior Fund Manager for Multi Asset with Deutsche Asset Management and joined in 2005. For more than 10 years he contributes to the firm's ESG efforts and spearheaded several achieve¬ments for mainstreaming ESG aspects.

He is co-author of the EFFAS Certified ESG Analyst training program and currently researches in collaboration with the University of Hamburg on ESG and financial performance. One of the research outcomes, the meta-analysis "ESG and financial performance: aggregated evidence from more than 2000 empirical studies", demonstrates clearly the business case for ESG investing. Funds under his management received a Euro Fund Award four years in a row 2014-2017.

He is a graduate of the HTW Berlin where he studied International Management and Finance. Gunnar is Certified European Financial Analyst (CEFA) and Certified Inter¬national Investment Analyst (CIIA).

Joshua Luckow is an international and entrepreneurial executive possessing two decades of experience in public and private global firms ranging in size from $180 million to $52 billion. He has contributed to the advancement of several growth industries, such as: health & wellness; information technology; healthcare; and pharmaceutical. Joshua has worked in all key areas of business: strategy, operations, business development, branding & marketing, finance, information technology, and audit.

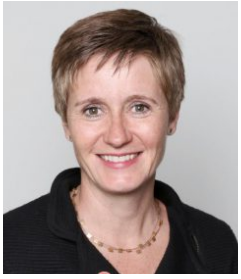
Michael Møller is the Director-General of the United Nations Office at Geneva. Mr. Møller has over 35 years of experience as an international civil servant in the United Nations.

He began his career in 1979 with the Of- fice of the United Nations High Commis- sioner for Refugees and worked with UN- HCR in different capacities in New York, Iran, Mexico, Haiti and Geneva.

Between 1997 and 2001, he was the Head of the Office of the Under Secretary-General for Political Affairs at United Nations headquarters; between 2001 and 2006, he was the Director for Political, Peacekeeping and Humanitarian Affairs in the Office of the Secretary-General, while serving concurrently as Depu- ty Chief of Staff for the last two years of that period.

Mr. Møller also served as the Secretary-General's Special Rep- resentative for Cyprus from 2006 to 2008 and was the Execu- tive Director of the Kofi Annan Foundation from 2008 to 2011.

Born in 1952 in Copenhagen, Mr. Møller completed a Master's course in International Relations at Johns Hopkins University and a Bachelor's degree in International Relations from the University of Sussex, United Kingdom.



Katrin Muff is a thought leader in the transformative space of sustainability and responsibility at Business School Lausanne, where she acted as Dean from 2008-2015 until self-organization made such a title redundant. Under her leadership, the school focused its vision on entrepreneurship, responsibility and sustainability in education and research. Her business experience includes 10 years at ALCOA (GM in Russia, Industry Analyst for Global M&A in the U.S. and Business Analyst Europe), 3 years as Director, Strategic Planning EMEA at IAMS Europe (Procter&Gamble), and 3 years as a co-founder of Yupango, a coaching consultancy dedicated to start-ups and training management teams.

Conor Platt is the founder and CIO of Confluence Capital Management, which runs a private all-weather investment partnership, Confluence Capital, LP. Confluence has been advising Princeton Capital on the development of their sustainable strategies and portfolio construction. Previously, Conor was the co-founding CEO and CIO of Etho Capital, a sustainable asset manager with ETF and Index solutions. Etho Capital was recognized as a FAST Company Innovative Company in 2016, and its US Focused ETF(ETHO) has been one of the top performing sustainable ETFs since inception. Previously, he worked at Brown Brothers Harriman on the Portfolio Strategy team upon earning his MBA from the Tepper School of Business at Carnegie Mellon University. He was an analyst at Morgan Stanley in New York after receiving his B.S. in Finance with honors at Carnegie Mellon University.

Roland Schatz is the Founder and CEO of Media Tenor Inter-national and InnoVatio Publishing. Schatz is a journalist in the 5th generation of his family and has devoted the past 30 years to implementing Perception Change by empowering media. In 2008, he launched, together with Prince Ghazi of Jordan, the C1 One World Dialogue foundation, to improve Inter-Faith-Dialogue. The InnoVatio network of academics, entrepreneurs and media leaders initiated the UN Global Sustainability Index. Schatz hosts masterclasses on ‘Unlearning Intolerance’ at the UN and teaches at the Institute for Future Management of the Sigmund Freud University in Vienna. In 2013 Schatz was ap-pointed Senior Advisor to the General Director of the UN in Geneva.