In focus

Why might ESG factors increase returns?

November 2021

Many investors today seek more than impact from their ESG portfolios. They want returns too. By now, there are literally thousands of papers asking whether ESG adds to – or detracts from – expected returns. But there is no consensus, and nor is one to be expected, because there is little agreement about which companies are "better" or "worse" from an ESG perspective. Even more fundamentally, there is no particular reason why "good" companies should generate better returns; after all, capitalism is a system of economics, not ethics.

Ashley Lester, PhD
Head of Schroders Systematic Investments

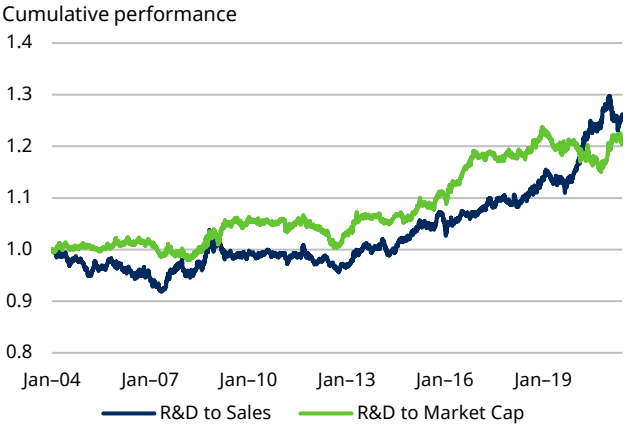
Hettie Mccarthy
Quantitative Analyst, Schroders Systematic Investments

In this paper, we take a different approach. We ask whether particular activities of companies that are especially relevant to ESG investors can add to expected returns, and if so, why. From the many available measures of ESG, we select for closer examination three that seem to be associated with positive returns – R&D, carbon intensity and worker safety. Generally, expected excess returns are a reward either for taking risk or for using information more efficiently than other investors. We find that our three selected features are no different – and thereby gain further insights into what types of ESG measures are most likely to generate excess returns.

Research and development

The first activity we consider is research and development (R&D). It may not seem self-evident that firm R&D is relevant to ESG. But one of the most socially important activities companies undertake is R&D adding to the stock of knowledge in the world. Scientific and technological development is at the heart of economic progress, and, in this, corporate R&D plays an important role alongside publicly-funded research[1].

Figure 1: Returns to R&D intensity



Source: Schroders, 30 June 2021. Returns of a theoretical long-short global equity investment strategy that buys the most R&D-intensive companies within each industry and sells the least.

Figure 1 shows returns to a theoretical long-short investment strategy that buys the most R&D-intensive companies within each industry and sells the least. We measure the R&D intensity of a company by scaling its R&D spending by either sales or market cap. The strategy invests in all stocks in the MSCI ACWI, a comprehensive index of around 2000 large cap companies globally. In general, returns to the strategy were muted through the first decade of the 2000s, before accelerating over the past decade or so. Because the strategy compares companies within the same industries, it is not simply a proxy for technology stocks, although the factor does seem to do well when technology stocks are also doing well.

Outperformance of research-intensive companies was first documented in the academic literature in 1996, well before both the current interest in technology stocks and the internet boom of the late 1990s[2]. This finding has since been replicated in many studies, both in the US and in the international stock market[3].The literature has investigated two main explanations for the premium. The first theory attributes the premium to underlying risk. If the payoff to R&D is more uncertain than the payoff to other forms of corporate investment, R&D-intensive firms should show greater average growth in valuation and profitability than less intensive firms, but also greater dispersion in returns.

[1]Patent and associated intellectual property protection exist to motivate firms to undertake R&D and to some extent these offset the social benefits, however firm innovation remains central to economic growth. The literature is unmanageably vast but a good recent popular discussion by a leading scholar is Aghion et al (2021), The Power of Creative Destruction: Economic Upheaval and the Wealth of Nations".

[2]Lev and Sougiannis (1996) "The Capitalisation, amortisation and value-relevance of R&D", Journal of Accounting and Economics, 21(1) 107-138.
[3]Hou et al (2016) "Corporate R&D and Stock Returns: International Evidence".

Schroders

An alternative set of explanations centres on various types of market imperfections. For example, the R&D premium could be caused by relatively short-sighted investors, combined with delayed pay-offs to R&D. Alternatively, investors may undervalue spending on R&D because accounting rules dictate that it is written off to the profit and loss account rather than capitalised onto the balance sheet, as occurs with other investments. If some R&D should actually be regarded as an investment (and hence capitalised), this convention depresses the book value of R&D-intensive firms, making them appear "expensive" relative to their peers.

In practice, the empirical literature finds some evidence to support both explanations. Consistent with the risk-based theory, R&D-intensive firms do indeed seem to show greater average growth in valuation and profitability, at the expense of greater variation in returns[4]. On the other hand, consistent with an information-based interpretation, excess returns seem to be larger for firms pursuing more original "research" rather than mimicking "development" – despite the payoff to these firms being no riskier[5]. Similarly, firms that are closely technologically connected to other firms pursuing successful research also outperform, suggesting that investors typically under-react to news of technological progress[6]. These findings support the view that the premium might reflect primarily limitations of investors – whether myopia or simply inability to fully appreciate the potential of basic research.

In short, after extensive study, the R&D premium is well established across many periods and geographies. Both theories explaining the premium also have empirical support, which suggests that both mechanisms may be at work. From an investment perspective, if the premium is a return for risk, investors should seek to exploit the premium in the context of well-diversified portfolios that also exploit other, unrelated, sources of excess return. If the premium is driven by investor behaviour, it is at least theoretically possible that it might one day be arbitraged away. However, there appears no evidence of this in recent data; indeed, as we noted earlier, returns to R&D intensive firms have been particularly strong over the past decade or so.

Carbon intensity

The second activity we examine is carbon intensity. As the climate crisis has grown ever more pronounced over recent years, investor attention has become increasingly focused on investing in companies that can be part of the transition to a lower carbon economy.

The most widely-used measure of a company's contribution to climate change is its carbon emissions. This is far from a perfect measure of a company's climate risks. For some companies this is obvious; a manufacturer of wind turbines or solar cells might be critical to reducing longer-run emissions, but nevertheless responsible for many tons of carbon dioxide emissions (for example, because its factory uses coal-powered electricity). More broadly, if carbon pricing becomes a major feature of national economies, factors such as the price elasticity of demand for a company's products and the marginal cost of its carbon abatement will be more important than its raw emissions. However, data on carbon emissions are both widely available and relatively reliable, and hence serve as an important proxy for corporate carbon risk.

There are three definitions of carbon emissions, known as Scope 1, 2 and 3. Scope 1 emissions are those for which a company is directly responsible, as they arise from sources the company owns or controls. For example, the carbon released from petrol used in a company car is a scope 1 emission. Scope 2 emissions include also the emissions from purchased electricity, heat and steam. For example, the electricity used to power an office building or a steel smelter is a potential source of Scope 2 emissions. Scope 3 emissions include a much broader set of corporate activities, such as business travel, employee commuting, transportation and distribution (both upstream and downstream) and use of sold products. Clearly, as the emissions definition becomes more expansive, it becomes more descriptive of a company's activities as a whole, but also much more subject to estimation error, as well as double-counting (or more) emissions across companies. (A business class flight could create Scope 1 emissions by the airline but also Scope 3 emissions by both the company buying the ticket and the oil company providing the fuel.[7])

Since Scope 1 emissions seem too limited but Scope 3 emissions seem overly subject to measurement error – and in fact are not widely reported – we focus on Scope

[4]Ibid.
[5]Hirshleifer, Hsu and Li (2017) "Innovative Originality, Profitability and Stock Returns", NBER WP23432.
[6]Lee, Teng Sun, Wang and Zhang (2017) "Technological Links and Predictable Returns".
[7]Obviously, complications like these are why economists almost universally recommend some form of carbon pricing as part of dealing with climate change. A carbon price would be "paid" by the Scope 1 emitter – the only administratively feasible scheme – but the market economy would ensure the costs are actually distributed efficiently across all those responsible for the use of the carbon. Relying on voluntary non-market mechanisms – including ESG investment – to solve the climate crisis without the support of an effective carbon pricing regime is inefficient and unlikely to succeed, particularly given the limited time remaining to meet the Paris goals.

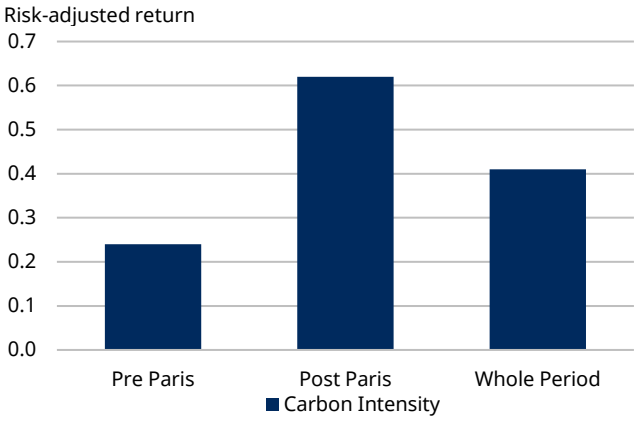
2 emissions. Throughout, we normalise emissions by sales, and refer to the resulting measure as a company's "carbon footprint".

Most quantitative work examining excess returns assumes a more or less stationary business environment. For example, other things equal, if R&D generated a return premium a decade ago it will probably still generate a return premium today and a decade from now. Of course, other things may not be equal. First, investment factors go in and out of style; value recently endured a long losing streak before returning to profitability around the start of 2021. Second, market practitioners may arbitrage away previously successful factors. 20 years ago, it was possible for mainstream funds to trade on corporate earnings surprises and generate reliable excess returns. Today, market participants fully adjust prices to reflect earnings surprises within minutes of their announcement. Finally, underlying changes in the business environment may make certain measures more or less germane over time. For example, R&D seems to have gradually become more important to companies, while book value has become correspondingly less effective as a predictor of returns.

Carbon intensity differs from all of these. Although the climate crisis has been well-appreciated by scientists for decades, it seems only to have crystallised as a significant investment risk since the Paris Agreement of 2016[8]. This is perhaps characteristic of markets, which are excellent at pricing quantifiable risks, but often seem not to react to risks which are known but not yet quantifiable. The bull market of the first quarter of 2020, when the Covid-19 epidemic was well-known but had not yet spread widely beyond China, is a classic example.

Accordingly, Figure 2 shows the performance of a long-short investment strategy going long companies which are relatively less carbon-intensive and short those that are relatively more carbon-intensive. As with the R&D factor, we neutralise by industry, so the strategy compares similar companies and is not just trivially short oil companies. We compare performance before Paris on the left and after it on the right. The difference is stark: there is effectively no evidence of excess returns prior to the signature of the Paris agreement, while returns since the agreement are positive and similar to those traditional investment factors.

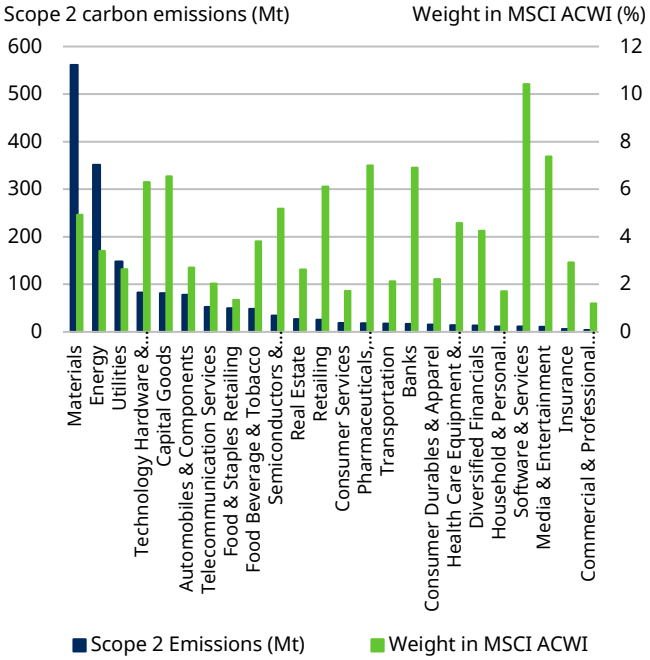
Figure 2: Returns before and after the Paris Agreement of carbon intensive long-short strategies



Source: Schroders, 30 June 2021. Returns of a theoretical long-short global equity investment strategy that buys the least carbon-intensive companies within each industry and sells the most. Returns are broken down into separate time periods. Before Paris Agreement 31 October 2009 to 30 November 2016; After Paris Agreement 30 November 2016 to 30 June 2021; and Whole Period 31 October 2009 to 30 June 2021.

Can we find further causal evidence by digging deeper into the patterns of post-Paris returns? An outstanding feature of Scope 2 carbon emissions is that they vary widely by industry. Emissions by the financial sector are negligible, while approximately 75% of all Scope 2 emissions from companies in the ACWI (the broad index of developed and emerging market stocks) come from the 10% of market cap accounted for by the materials, energy and utilities sectors.

Figure 3: Industry contributions to Global scope 2 emissions

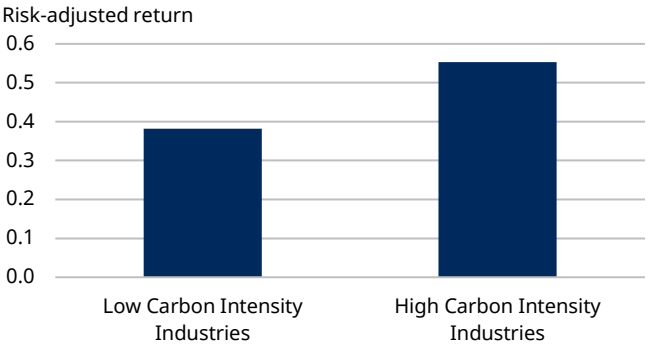


Source: Schroders, MSCI 30 June 2021.

[8]The Paris Agreement was the legal agreement, currently signed by 191 countries, that committed signatories to keep the rise in global temperature to below 2 °C.

It is hard to believe that Scope 2 emissions would be as material in pricing a bank as in pricing a mining company. Figure 4 below shows that this indeed is the case. It divides industries into high emitters and low emitters, and builds the same long-short investment strategy in each. Returns to the strategy are significantly higher in high-emitting industries than in low-emitting industries.

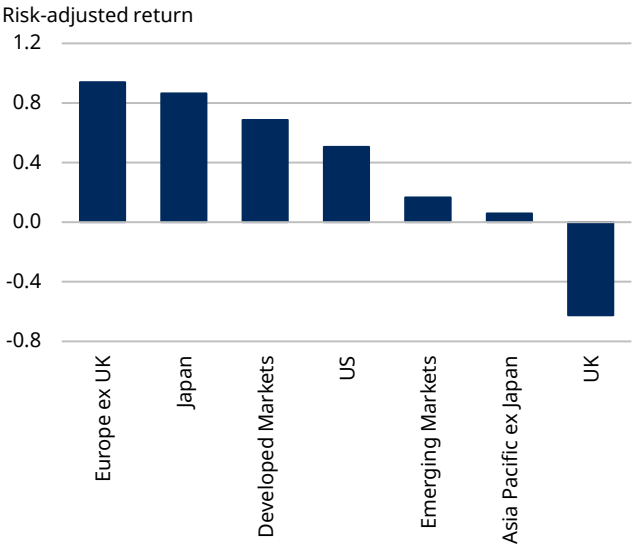
Figure 4: Returns to carbon intensity in high vs. low intensity industries



Source: Schroders, 30 June 2021. Returns of theoretical long-short global equity investment strategies that buy the least carbon-intensive companies within each industry and sell the most. We have broken the universe down into low and high carbon intensive industries and calculated returns for two resulting long-short strategies for the period after the Paris Agreement, 30 November 2016 to 30 June 2021.

Examining geographies tells a similar story. Regulation and carbon pricing are probably most advanced in continental Europe, and least advanced (among major stock markets) in the US and emerging markets. Figure 5 shows that returns to carbon intensity have been significantly greater in Europe than in markets with less developed carbon regulation.

Figure 5: Industry and geography returns to carbon intensity



Source: Schroders, 30 June 2021. Returns of theoretical long-short regional equity investment strategies that buy the least carbon-intensive companies within each industry and sell the most. Returns are broken down into separate regions for the period after the Paris Agreement 30 November 2016 to 30 June 2021.

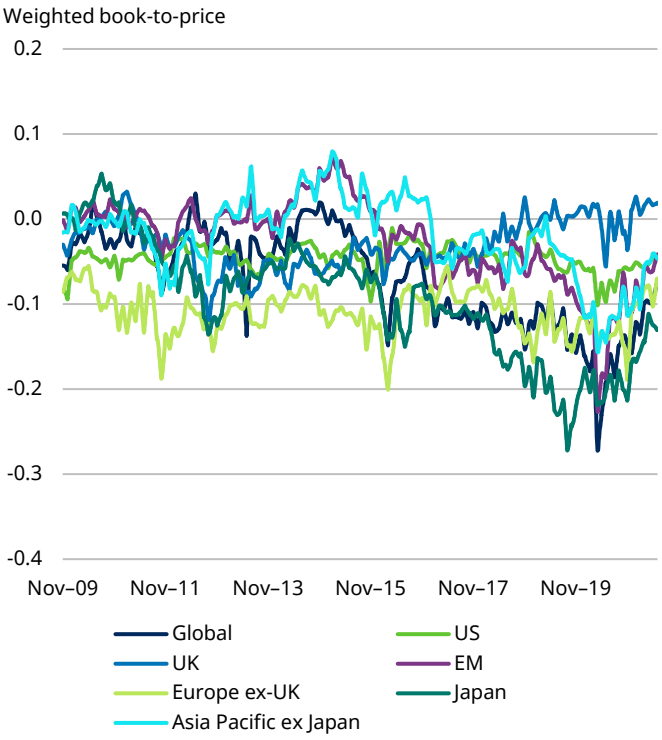
We have so far shown evidence that carbon intensity has come to be a priced risk factor since the signature of the Paris Agreement in 2016. The evidence from disaggregating the data by industry and geography supports this interpretation of the data, as returns are greatest in industries where carbon is most relevant, and in geographies where carbon regulation is most advanced.

But have returns to less carbon-intensive companies since 2016 merely generated a valuation "bubble" in less carbon-intensive companies, with no further risk premium (or worse, negative returns) to be expected in future? We have already shown that relative returns to less-carbon intensive companies have been significantly smaller in markets with less developed carbon regulation, such as the US and emerging markets, than in markets with more developed regulation, such as Europe. This is consistent with our previous observation that markets tend to struggle to price risks before they consolidate into a readily quantifiable form. In turn, therefore, if regulation becomes more aggressive, particularly in markets that have so far lagged, returns to low-carbon companies will also likely increase.

We can also seek evidence of exaggerated valuations directly, by examining whether less carbon-intensive companies are much more highly valued compared to earnings than more carbon-intensive companies. Figure 6 shows a measure of cheapness, measured by book-to-price, for the carbon strategies considered earlier, indexed to take a value of zero at the time of the Paris agreement[9]. A lower, more negative value suggests that less carbon intensive companies are more highly valued than those which are more carbon intensive. While relative valuation of carbon-intensive companies does shift over time, the shifts are for the most part relatively small and show little evidence of systematic bias by region. For example, while less carbon-intensive companies seem to become more valuable in Japan through 2020 (where the factor has worked quite well), they show a similar pattern in emerging markets (where it has not). Therefore, while it is possible that carbon-intensive companies may one day become overpriced, there is little evidence of this effect so far.

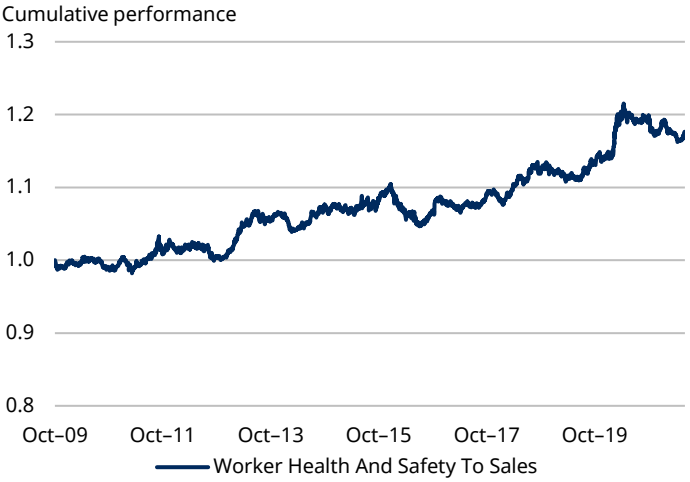
[9]The measure is weighted book-to-price for the long-short carbon intensity signal portfolios across different universes.

Figure 6: Valuation spreads to carbon intensity across regions



Source: Schroders, 30 June 2021. Weighted book-to-price for theoretical regional long-short equity investment strategies that buy the least carbon-intensive companies within each industry and sell the most.

Figure 7: Returns to our health & safety signal



Source: Schroders, 30 June 2021. Returns of a theoretical long-short global equity investment strategy that buys the safest companies for workers within each industry and sells the least.

Worker health and safety

The final ESG indicator we consider is worker safety. There is no quarter-century of finance literature relating to this topic, nor is it central to the deliberations of governments around the globe. It does not even tend to figure very prominently in reports on firm ESG characteristics. But despite this inattention, worker safety is an enormously important issue. The International Labour Organization estimates that nearly 2.8 million workers each year die as a result of their work, with a further 374 million serious non-fatal work-related injuries each year[10].

The figure below shows the performance of an investment strategy using our measure of worker safety, which weights together fatalities and injuries. The performance of the signal is remarkably consistent over time, displaying less accentuated long-run swings than, for example, R&D. It is therefore all the more surprising that there has been so little attention to worker safety as a signal of corporate performance.

Recalling our framework that predictable sources of excess returns must come from either systematic risk or from an informational advantage over other investors, it seems obvious that worker safety belongs to the latter category. It is hard to think of reasons why companies that do a particularly good job of providing a safe working environment would justify a risk premium. The figure below shows some simple measures that support this view. If anything, as might be expected, companies that are safe for their workers are also somewhat "safer" – in the sense of less volatile – for their investors. Over the past decade, a portfolio of the top 25% of "safest" companies for workers had a volatility of 15.9%, while the bottom 25% had volatility of 17.3%.

We therefore prefer the alternative hypothesis that returns to this signal are the result of investor inattention. It is easy to imagine why investors (and academics) may not pay attention to these signals. For one thing, very few investors have ever experienced at first-hand a workplace where worker safety is actually a material concern, and so it may simply not occur to them to be interested in worker safety as either an ESG concern or a return driver.

A deeper reason may be that the direct cost to firms of worker safety may seem too small to have a significant effect on firm financial performance. Schroders' proprietary measure of sustainability, SustainEx, suggests that total costs per annum of worker safety are less than 5 basis points of total market cap. By contrast, it is easy to see – including for investors – how a successful R&D project could materially drive future firm revenues.

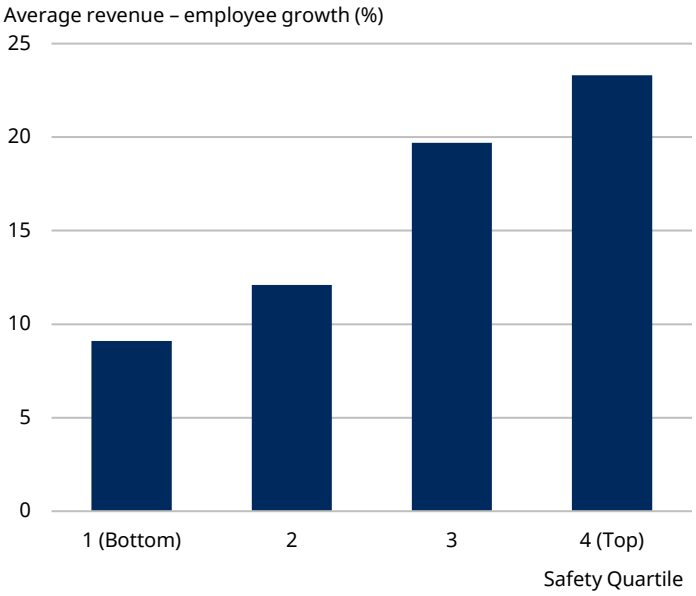
[10]The overwhelming majority of work-related fatalities are from sickness, with around 350,000 fatalities per annum from injuries. Serious injuries are defined as those resulting in more than 4 days' absence from work.

Source: https://www.ilo.org/global/topics/safety-and-health-at-work/lang--en/index.htm accessed on July 23, 2021.

So why might worker safety be a driver of positive returns over and above those to be expected from reduced direct costs? The small amount of literature tying market performance to health and safety emphasises several mechanisms[11]. The most obvious mechanism in the world's largest stock-market, the US, is through the effect of poor worker safety on health-insurance costs (whether or not the employer self-insures). However, the way in which companies achieve superior health and safety is probably more important. Forward-thinking management in dangerous workplaces emphasises high-performance work systems over traditional control-driven Taylorist thinking[12]. High-performance work systems rely on empowering employees and devolving decision-making, and focus on developing committed and skilled workers. While many companies describe their management approach using language like this, in dangerous industries worker safety is a tangible measure of their success.

Consistent with this theory, Figure 8 below shows that firms that provide safer workplaces (each line represents a higher quantile of safety, neutralised by industry) generally also show faster revenue growth over the preceding three years.

Figure 8: Average revenue growth minus employee growth by safety quantile



Source: Schroders, 30 June 2021.

[11]See Fabius et.al. (2016) "Tracking the market performance of companies that integrate a culture of health and safety", JOEM 58(1) and associated references.

[12]Zacharatos et.al. (2005) "High performance work systems and occupational safety" Journal of Applied Psychology 90(1).

Conclusion

Too many papers over recent years have asked whether "ESG leads to better performance". Indeed, a Google Scholar search on "ESG stock performance" reveals a depressing 24,400 hits, nearly 15,000 of which have been published since 2017 alone.

To our mind, however, asking whether "better ESG" leads to improved stock performance is no more sensible than asking whether "better accounts" lead to improved stock performance. Just as some accounting information is highly relevant to future financial performance and some is not, not all ESG information is equally relevant to predicting future stock returns.

In this paper we have applied this insight by examining a limited set of ESG characteristics in detail, and asking why they might be associated with improved performance. The answer, in each case, is subtly different. There is a venerable body of literature associating corporate R&D with outperformance. Since R&D is inherently a risk activity, it is not surprising returns to R&D-intensive companies might represent a true "risk premium". Equally, however, limited investor understanding and the vagaries of accounting rules may also lead R&D-intensive companies to outperform. Carbon-intensive companies, by contrast, have previously paid little or no price in stock market returns for their contributions to global warming. However, we find evidence that regulatory pressure over recent years, particularly in relatively carbon-intensive industries, may lead these companies to underperform their "greener" peers. Finally, we show that companies that provide relatively safe workplaces for their workers may outperform. In business terms, this is because they are relatively more likely to have engaged workforces and forward-thinking management. In financial terms, this is likely due simply to investor inattention to a metric with which few investors have personal familiarity.

End investors may have many reasons for pursuing ESG investments. For many, simply knowing that their investments are aligned with their values may be enough in itself. However, investors interested in ESG as a source of returns must abandon their quest for simplistic or one-size-fits-all metrics, or any idea that "passive" ESG is likely to outperform in the long-run. Beating markets is still hard. Using ESG to beat markets is hard too, and requires careful thought and analysis.

Important information

The views and opinions contained herein are those of the authors as at the date of publication and are subject to change due to market and other conditions. Such views and opinions may not necessarily represent those expressed or reflected in other Schroders communications, strategies or funds.

This document is intended to be for information purposes only. The material is not intended as an offer or solicitation for the purchase or sale of any financial instrument or security or to adopt any investment strategy. The information provided is not intended to constitute investment advice, an investment recommendation or investment research and does not take into account specific circumstances of any recipient. The material is not intended to provide, and should not be relied on for, accounting, legal or tax advice. Any references to securities, sectors, regions and/or countries are for illustrative purposes only.

Information herein is believed to be reliable, but Schroders does not represent or warrant its completeness or accuracy. No responsibility or liability is accepted by Schroders, its officers, employees or agents for errors of fact or opinion or for any loss arising from use of all or any part of the information in this document. No reliance should be placed on the views and information in the document when taking individual investment and/or strategic decisions. Schroders has no obligation to notify any recipient should any information contained herein change or subsequently become inaccurate. Unless otherwise authorised by Schroders, any reproduction of all or part of the information in this document is prohibited.

Any data contained in this document have been obtained from sources we consider to be reliable. Schroders has not independently verified or validated such data and they should be independently verified before further publication or use. Schroders does not represent or warrant the accuracy or completeness of any such data.

All investing involves risk including the possible loss of principal. Exchange rate changes may cause the value of any overseas investments to rise or fall. Past Performance is not a guide to future performance and may not be repeated. This document may contain "forward-looking" information, such as forecasts or projections. Please note that any such information is not a guarantee of any future performance and there is no assurance that any forecast or projection will be realised. For your security, communications may be taped or monitored.

Note to viewers in the European Union/European Economic Area: Schroders will be a data controller in respect of your personal data. For information on how Schroders might process your personal data, please view our Privacy Policy available at www.schroders.com/en/privacy-policy or on request should you not have access to this webpage. Issued by Schroder Investment Management (Europe) S.A., 5, rue Höhenhof, L-1736 Senningerberg, Luxembourg. Registered No. B 37.799.

Note to readers in the United Kingdom: Schroders will be a data controller in respect of your personal data. For information on how Schroders might process your personal data, please view our Privacy Policy available at www.schroders.com/en/privacy-policy or on request should you not have access to this webpage. Issued by Schroder Investment Management Limited, 1 London Wall Place, London, EC2Y 5AU. Registered Number 1893220 England. Authorised and regulated by the Financial Conduct Authority.

Note to readers in Argentina: Schroder Investment Management S.A., Ing. Enrique Butty 220, Piso 12, C1001AFB – Buenos Aires, Argentina. Registered/Company Number 15. Registered as Distributor of Investment Funds with the CNV (Comisión Nacional de Valores).

Nota para los televidentes en Argentina: Schroder Investment Management S.A., Ing. Enrique Butty 220, Piso 12, C1001AFB - Buenos Aires, Argentina. Inscripto en el Registro de Agentes de Colocación y Distribución de PIC de FCI de la Comisión Nacional de Valores con el número 15.

Note to viewers in Brazil: Schroder Investment Management Brasil Ltda., Rua Joaquim Floriano, 100 – cj. 142 Itaim Bibi, São Paulo, 04534-000 Brasil. Registered/Company Number 92.886.662/0001-29. Authorised as an asset manager by the Securities and Exchange Commission of Brazil/Comissão de Valores Mobiliários ("CVM") according to the Declaratory Act number 6816.

Note to viewers in Hong Kong: Schroder Investment Management (Hong Kong) Limited, Level 33, Two Pacific Place 88 Queensway, Hong Kong. Central Entity Number (CE No.) ACJ591. Regulated by the Securities and Futures Commission. In Hong Kong, this material is issued by Schroder Investment Management (Hong Kong) Limited and has not been reviewed by the SFC.

Note to viewers in Indonesia: PT Schroder Investment Management Indonesia, Indonesia Stock Exchange Building Tower 1, 30th Floor, Jalan Jend. Sudirman Kav 52-53 Jakarta 12190 Indonesia. Registered/Company Number by Bapepam Chairman's Decree No: KEP-04/PM/MI/1997 dated April 25, 1997 on the investment management activities and Regulated by Otoritas Jasa Keuangan ("OJK"), formerly the Capital Market and Financial Institution Supervisory Agency ("Bapepam dan LK"). OJK makes no representation of approving or does not approve this advertisement or publication, nor declare the truth or adequacy of the contents of this advertisement or publication.

Note to viewers in Japan: Schroder Investment Management (Japan) Limited, 21st Floor, Marunouchi Trust Tower Main, 1-8-3 Marunouchi, Chiyoda-Ku, Tokyo 100-0005, Japan. Registered as a Financial Instruments Business Operator regulated by the Financial Services Agency of Japan. Kanto Local Finance Bureau (FIBO) No. 90.

Note to viewers in People's Republic of China: Schroder Investment Management (Shanghai) Co., Ltd., RM1101 11/F Shanghai IFC Phase (HSBC Building) 8 Century Avenue, Pudong, Shanghai, China, AMAC registration NO. P1066560. Regulated by Asset Management Association of China.

Note to viewers in Singapore: Schroder Investment Management (Singapore) Ltd, 138 Market Street #23-01, CapitaGreen, Singapore 048946. Company Registration No. 199201080H. Regulated by the Monetary Authority of Singapore. This advertisement or publication has not been reviewed by the Monetary Authority of Singapore.

Note to viewers in South Korea: Schroders Korea Limited, 26th Floor, 136, Sejong-daero, (Taepyeongno 1-ga, Seoul Finance Center), Jung-gu, Seoul 100-768, South Korea. Registered and regulated by Financial Supervisory Service of Korea.

Note to viewers in Switzerland: Schroder Investment Management (Switzerland) AG, Central 2, CH-8001 Zürich, Postfach 1820, CH-8021 Zürich, Switzerland. Enterprise identification number (UID) CHE-101.447.114. Authorised and regulated by the Swiss Financial Market Supervisory Authority (FINMA).

Note to viewers in Taiwan: Schroder Investment Management (Taiwan) Limited, 9F, 108, Sec.5, Hsin-Yi Road, Hsin-YI District, Taipei 11047 Taiwan, R.O.C. Registered as a Securities Investment Trust Enterprise regulated by the Securities and Futures Bureau, Financial Supervisory Commission, R.O.C.

Note to viewers in the United Arab Emirates: Schroder Investment Management Limited, located on 1st Floor, Gate Village Six, Dubai International Financial Centre, PO Box 506612 Dubai, United Arab Emirates is regulated by the Dubai Financial Services Authority. 602456.