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CLEAR PATH ANALYSIS

SUSTAINABLE SMART BETA INVESTING FOR INSTITUTIONAL INVESTORS

Establishing the necessity of combining ESG and Smart Beta into effective and sustainable investment strategies

OCTOBER 2017

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David Underwood, (Former) Assistant Chief Investment Officer, Arizona State Retirement System

Paul R. T. Johnson Jr., Trustee, State University Retirement System of Illinois

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- Ben McNamara, Producer, Clear Path Analysis

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- Paul R. T. Johnson Jr., Trustee, State University Retirement System of Illinois
- Robert Whitelaw, Professor of Finance, NYU Stern School of Business
- Kenneth St. Amand II, Vice President and Client Portfolio Manager, Natixis Asset Management
- Tony Campos, Director, Sustainable Investing Product Management, FTSE Russell

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Vice President and Client Portfolio Manager, Natixis Asset Management

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SECTION 1

NAVIGATING THE 'SUSTAINABLE SMART BETA' LANDSCAPE: WHAT DOES IT ALL MEAN?

1.1 WHITEPAPER

Smart sustainability: Giving pension providers controlled sustainable exposure

1.2 INTERVIEW

How has the emergence of sustainable smart beta benefited investors?

1.1 WHITEPAPER

Smart sustainability: Giving pension providers controlled sustainable exposure

David Harris,
Head of Sustainable Investment, FTSE Russell and Head of Sustainable Business, London Stock Exchange Group

Recently, a major shift has been observed among asset owners who once took a "tokenistic" approach toward environmental, social and governance (ESG) and are now looking to integrate it into core investment strategies. The pensions industry considers ESG themes, including the transition to a green economy, as an integrated part of their investment philosophy and processes. Asset owners, including defined benefit schemes, are citing ESG risks as central to their fiduciary responsibility. FTSE Russell recently surveyed 200 asset owners globally and asked what their strongest motive was for incorporating ESG considerations into their investment decisions. The top motive was not "societal good" but rather "avoid long term risk."

In responding to these trends and meeting the changing requirements of our clients, FTSE Russell has developed an approach that combines a commitment to ESG with the sophistication of smart beta indexes. We call this combination of sustainable parameters and risk premia via factor exposure within a single index solution "smart sustainability".

The launch of the FTSE4Good Index over 15 years ago was one of the first clear and decisive moves into the sustainable space by an index provider. At the time, the index appealed largely to the retail rather than the institutional market. However, in the intervening years we have seen a profound change in asset owner attitudes toward ESG, with a growing appreciation of the economic drivers associated with sustainability, as well as the reality and growing risks associated with the transition to a green economy.

This trend has been reinforced by layers of multinational, institutional- and country-level legislation and directives designed to mitigate global warming, improve corporate working practices, and strengthen corporate governance. In relation to climate change these include—and are often framed by—the over-arching Paris Agreement (made between 195 governments in 2015) that aims to limit increases in global average temperature to less than 2°C above pre-industrial levels.

There have also been a growing number of investor and finance-focused initiatives. Some of these are industry led, such as the Principles for Responsible Investment (PRI), the Sustainable Investment Forums (SIFs) and the Institutional Investors Group on Climate Change (IIGCC). Others are regulator or government led, such as the G20 Green Finance Study Group co-chaired by the People's Bank of China, the Bank of England, and the Financial Stability Board's Task Force on Climate-related Financial Disclosure, the UK's Green Finance Taskforce or the European Commission convened High Level Expert Group on Sustainable Finance.

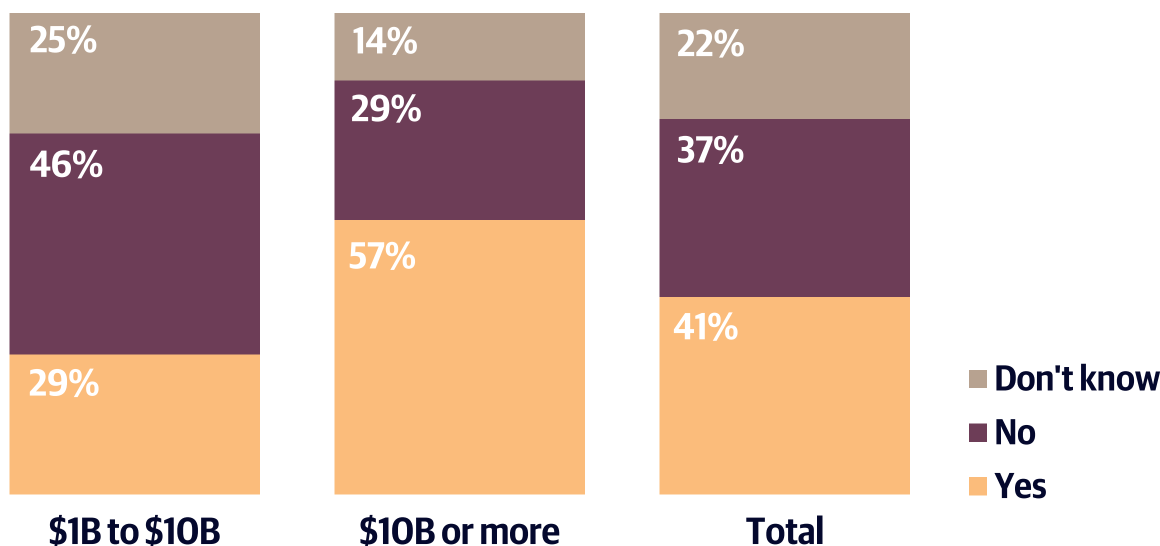
At the PRI Annual Conference in Berlin, Christiana Figueres, the architect of the Paris Climate Agreement called on investors to increase allocations to the green economy by 1% of assets.

The accelerating global trend toward the reduction of greenhouse gases presents all investors with a range of risk factors to consider. Mark Carney, the Governor of the Bank of England, set out in a speech at Lloyd's of London that there were three key risks to financial stability due to climate change: liability risks, transition risks, and physical risks.

These risks have also been picked up by the UK Institute of Actuaries (IFoA), the international professional body for actuaries. This past May, the IFoA sent a "Risk Alert" to all of its members drawing their attention to the "material risk" that climate change poses, stressing its members' responsibility to "consider how climate-related risks affect the advice they are providing."

The results of the FTSE Russell smart beta survey for 2017 clearly illustrate the extent of the shift in attitudes. Among asset owners who are using, evaluating or planning to evaluate smart beta index-based strategies, 57% of larger asset owners, anticipate applying ESG considerations to a smart beta strategy. Further, the main rationale (69%) for incorporating ESG was to "avoid long term risk". While the move towards ESG appears to be global, it is most pronounced among large European institutional investors.

Exhibit 1 - Do you anticipate applying ESG considerations to a smart beta strategy?

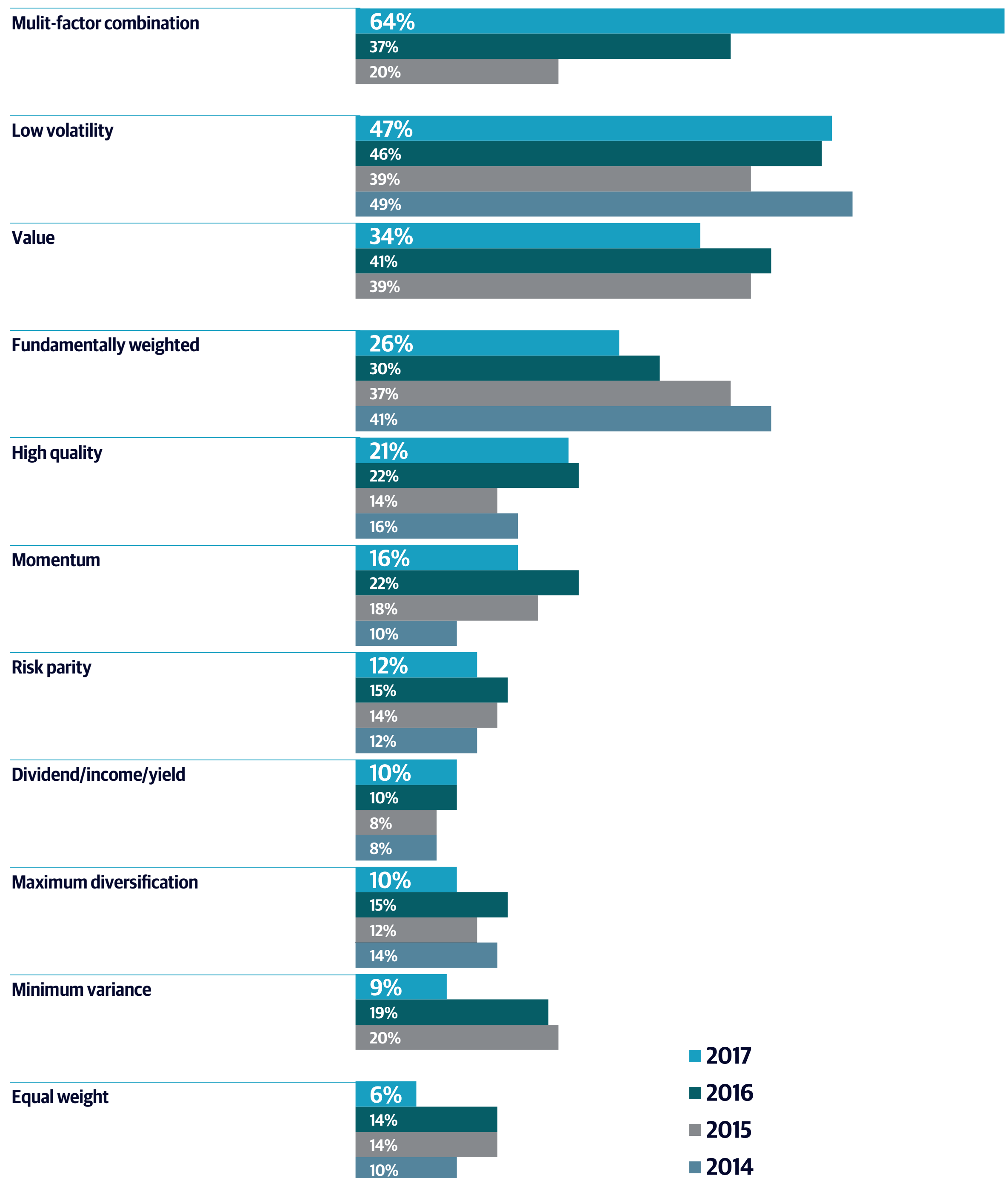


Source: FTSE Russell, Smart beta: 2017 global survey findings from asset owners. Segment = Have a smart beta allocation OR are currently evaluating smart beta strategies OR are planning to evaluate smart beta strategies in the next 18 months.

In response, to this growing demand, FTSE Russell has developed two different types of data sets to help asset owners better understand and evaluate ESG risks. The first is based on FTSE Russell's ESG Ratings data model. It measures how well companies manage operational ESG risk exposures and evaluates over 4,100 companies on 14 different "themes" such as health and safety, anti-corruption, tax transparency, climate change, and water use. Based on a precise and clearly defined methodology, a tiered data set of ESG Ratings is calculated, reflecting each company's overall exposure to, and management of, ESG risks.

The second data set – FTSE Russell's Green Revenues data model – focuses on the revenues companies generate from green goods products and services. The FTSE Green Revenues data model, captures detailed corporate revenue history, covers 13,500 companies (99% of global market capitalization), of which more than 3,000 have green revenues from one or more of the 60 green subsectors. The model is based on line-entry level revenue data from constituent companies, collected and collated by FTSE Russell analysts according to a rules-based and transparent process, and mapped across a new industrial classification system specific to the green economy, the Green Revenues Classification System. FTSE Russell's sustainable investment data platform enables users to drill down to companies' data attributes, conduct portfolio analysis, measure exposures and perform attribution analysis.

Exhibit 2 - What type of smart beta strategies are you currently using?



Source: FTSE Russell, Smart beta: 2017 global survey findings from asset owners. Segment = Have a smart beta allocation "Multi-factor," "value" and "minimum variance" were not asked in 2014.

The increased focus on ESG has coincided with the rapid rise in investors' adoption of smart beta index-based strategies. Market demand is now moving from single factor index-based strategies (e.g., value, quality, yield, size, volatility and momentum) to strategies combining a number of factors (multi-factor). The FTSE Russell smart beta survey for 2017 shows that among asset owners with a smart beta index allocation, multi-factor combination strategies have grown from 20% in 2015, the first year asked, to 64% in 2017. Not surprisingly, we are now seeing a growing desire for an integrated approach that achieves different factor and sustainability objectives in a consistent manner.

The concept of a smart sustainability index provides investors with tools to assist them in implementing sustainable investment strategies with greater sophistication than in the past. By incorporating ESG considerations with a smart beta index methodology, a single smart sustainability index can now allow asset owners to address their investment beliefs on both traditional risk premia and ESG parameters.

In creating such indexes, FTSE Russell can combine a wide range of sustainable investment data into a single smart sustainability index solution. To see how this works, consider the design of the FTSE Climate Balanced Factor Index—it applies factor tilts based on four risk premia factors (volatility, quality, value and size), and integrates them with three climate parameters. FTSE Russell uses a unique and transparent methodology, a system of sequential tilts that can be applied consistently to "traditional" risk premia factors as well as to sustainability parameters. This contrasts with a composite index approach, which is akin to applying separate allocations to each different element of the smart beta and sustainability methodology and consequently does not consider the interactions between each component.

In the FTSE Climate Balanced Factor Index, the three climate parameters achieve the following:

1. *Reduced exposure to companies with carbon intense fossil fuel reserves*
2. *Reduced exposure to companies with higher carbon emissions through tilting the weights of companies within a sector based on their relative operational carbon emissions*
3. *Increased exposure to companies leading the industrial transition to a green economy through Green Revenues from goods, products and services*

This smart sustainability index launched in November 2016 and was developed in cooperation with HSBC Bank UK Pension Scheme and Legal & General Investment Management (LGIM). HSBC Bank UK Pension Scheme used it as the basis for its DC equity default option, worth £4 billion, through LGIM's new pooled Future World Fund that tracks the index.

This is the start of the next phase in the evolution of both smart beta and sustainable investing. FTSE Russell is providing a flexible framework and tools to combine a variety of sustainability and risk premia factors together into new indexes. The dawn of a new era of ESG integration into passive investment has arrived.

A NEW ERA IN INDEXING

FTSE indexes are used by leading investors in every corner of the world and more U.S. institutional assets are benchmarked to Russell indexes than all other U.S. equity indexes combined. Together, FTSE Russell indexes offer you global breadth and comprehensive market coverage.

Find out more at ftserussell.com

FTSE Russell

1.2 INTERVIEW

How has the emergence of sustainable smart beta benefited investors?

Interviewer

Ben McNamara,
Producer, Clear Path Analysis

Interviewee

Meryam Omi,
Head of Sustainability and Responsible Investment Strategy, Legal & General Investment Management

SUMMARY

- *Companies move towards similar sustainability goals*
- *Asset owners consider long term issues*
- *Returns are protected through better back-testing*
- *Acting now protects future investments*

Ben McNamara: How has sustainable investing changed over the last 15 to 20 years and what's been driving these changes?

Meryam Omi: The industry has changed enormously over the last 15 to 20 years, and particularly in the last five to ten. It used to be dominated by voting, which was almost seen as an administrative function, with ethical investment something of a side issue based on sin stocks, tobacco etc. These factors are still very important but the industry has matured, now incorporating ESG into investment processes and product differentiation. In addition, enhanced engagement with companies is bringing about positive change and talking to policy makers can make sure that regulations and rules are functioning well for the market. In the last five to eight years, the industry has changed almost beyond recognition in terms of the changes that we have seen in the market, and this transformation is likely to continue.

Ben: Legal & General has incorporated a 'Climate Impact Pledge' into its governance process. Could you detail the objectives of the pledge and how they influence the investment decisions you make on behalf of your clients?

Meryam: We represent millions of end clients and also the companies we have invested in, and we are all heading in the same direction when it comes to climate change. As a financial matter, and something that could also define our lifetime, it makes sense to focus on this topic. This helps to incorporate the tools that we have as investors, which include company engagement, voting (which is when we hold companies to account), and divestment, which is the action we can take as investors. Combining these elements together, we are sending a powerful message to companies that this is something that matters to everyone and that we all need to be on the same page. We have chosen to pick companies who are pivotal for this transition in six different sectors: oil & gas, mining, utilities, automobiles, financials (ie. the banks and insurance companies who are financing these other companies) food retailers and distributors who are exposed to a lot of major commodities), import and export, and deforestation. We engage with them directly and question them on how they address and deal with these new challenges and transitions. If the companies don't meet what we consider to be the minimum standard, they are divested out of the Future World Fund. Also, in all other equity holdings we would vote against the Chairman of the company as well; so we are sending amessage to the companies that it is a very important issue that we are engaging with on behalf of our clients. .

Ben: Have there been any issues in terms of this reporting or have people responded positively to it?

Meryam: We have engaged with 84 companies who are the largest in their respective sectors. The vast majority of them have reacted very positively to this engagement. We believe that the questions we are asking are sensible and related to the business. We are seeing divergence between best practices and some of the laggards, but at the same time we believe that having a mutually beneficial dialogue

> CLIMATE CHANGE WILL HAVE A PROFOUND IMPACT ON THE GLOBAL ECONOMY AND THERE IS SOMETHING YOU CAN DO ABOUT IT TODAY WHICH SHOULD HELP TO PROTECT YOUR LONG-TERM RETURNS

can help them to be better in terms of strategy and building resilience to changes in technology and policies. We hope to be seen as a company who supports this transition rather than us just wanting to cut ties with those who aren't up to the right standard. Our engagement has been very positive so far.

Ben: FTSE Russell's 2017 smart beta survey of asset owners found that 60% of respondents in Europe were looking to incorporate ESG considerations into their smart beta allocations. Where do you think this intention has come from and why are clients looking at smart beta strategies as the basis for ESG inclusion?

Meryam: All investors are different. However, many asset owners see ESG in terms of labour, diversify and climate change issues and as something that is financially material to their investments. Yet asset owners are long-term investors with horizons of between 5-30 years, so it makes sense to be addressing these issues now. This means considering long-term issues that could get priced in to markets at some point in the future. Many are invested in index funds, and by using a smart allocation, or 'tilt' where the companies who are exposed to such risks can be reduced in holdings makes sense. Addressing these issues via the index construction is therefore something that many asset owners are keen to explore.

Ben: I understand that you recently launched the 'Future World Fund', a multi-factor based investment strategy with a climate change 'tilt'. What are the aims of the fund and the philosophy behind it?

Meryam: The fund's philosophy is to create an index proposition that is suitable for long-term investors. It's really no different to any other driver for investors. In thinking about this kind of index solution, we felt that combining multi-factor investment with a climate tilt made sense. This was off the back of a lot of thinking about climate change , something that is material to long-term investors as it could have financial consequences. There are clearly also wider potential consequences in not addressing something as big as climate change. Climate change is an issue that we can do something about today, so I really don't see why we wouldn't do it. We have done a lot of thinking and back testing of the data. We have also carried out surveys and focus groups with different groups of people and asked them if they felt that climate change was something that they wanted to address through their investments. Many of them said yes but that they also didn't want to lose their returns. We wanted to create an investment proposition that would meet their future financial needs but at the same time address an issue that is going to have a profound impact on their future

Ben: The recent discussion around the Paris climate change agreement and President Trump's stand demonstrates that people want returns as well as what is best for the planet globally. Has there been a slight shift away for climate issues given President Trump's stance, the mining industry, fracking, gas and some utilities?

Meryam: It is important to remember that addressing climate change does not need to impact the bottom line. Indeed, you could argue the opposite. It's risky to stick to traditional models that are going out of business as a result of the fact that new technologies and

policies are coming in. We have had to do a lot of work in showing that it makes financial sense to address some of these issues now, such as moving to lower carbon technologies. It also makes financial sense to address such a big trend. In terms of the momentum and change in administration in the U.S, we launched this index two days before President Trump came into power, but haven't had the kind of backlash that many feared. While the path may not be smooth – commodities and energy are very cyclical sectors – with the technologies and lower long-term cost of alternatives we can visualise a very different future. Cities and states in America have also said they are on track to meet climate goals that were decided as part of a global community. If you look at the underlying trend, we aren't going back to how things were 20 years ago.

Ben: What would you say to critics of this type of 'smart sustainability' index solution? Could it become a more mainstream investment option?

Meryam: Looking at the FTSE survey's trends of the conversations we are having with companies, we believe that it's definitely becoming more mainstream as it makes a lot of sense for investors. Rather than questioning: "Why do I have to do this, and why is it part of my fiduciary responsibility?", we believe the real question is, "Why wouldn't I do it? Climate change will have a profound impact on the global economy and there is something you can do about it today which should help to protect your long-term returns. It is therefore also aligned with the interest of the end investors who are looking to grow and safeguard their investments and pensions.

Ben: Do you have any final thoughts on this topic?

Meryam: From an asset management perspective, I would reiterate the importance of engagement. You can have a lot of smart index solutions but if you are not sending the message to the companies directly, telling them what path you want to be on, something could be lost in between. Investors should be holding asset managers to account to say that this is important to them ,will have an impact on their investments and ask them to step up. We hold hundreds of millions of pounds in some of these companies so it is important that the voice we speak on behalf of our clients is amplified and sent directly to those who need to hear this message.

Ben: Thank you for sharing your views on this subject.

SECTION 2

EXAMINING A COMBINATION OF SMART BETA AND SUSTAINABILITY STRATEGIES

2.1 ROUNDTABLE DEBATE - UK

What role does Sustainable Smart Beta have in your portfolio?

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What role does Sustainable Smart Beta have in your portfolio?

Moderator

Noel Hillmann,
Managing Director,
Clear Path Analysis

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Jeremy Randall,
Head of Finance, Royal Borough of Kingston

Chris Varco,
Senior Investment Director, Cambridge Associates

David Harris,
Head of Sustainable Investment, FTSE Russell

POINTS OF DISCUSSION

- *Investors are aware of the limitations of recognised indices*
- *Material ESG data is underutilised by mainstream investors*
- *Investors integrate ESG through "exclusion strategies"*
- *Smart Beta and Sustainability strategies expected to last and increase in importance over time*

Noel Hillmann: In your view, how have Factor Investing and Smart Beta evolved over recent years?

David Harris: FTSE Russell was one of the first to provide what is now referred to as Smart Beta indexes which we launched over 10 years ago. When we originally started launching these, they were regarded with some scepticism by the investment community who were very used to standard benchmarks; so, putting these investment strategy parameters into the design of an index was unusual. There was a lot of interest in terms of both asset owners and asset managers wanting to talk about this. In terms of serious allocations, however, in those early years there was actually very little. This has now changed enormously and this is an accepted part in the investment landscape.

Jeremy Randall: There has certainly been an increase in awareness of the limitations of the recognised indices in recent years; notably the impact of market cap (and the way that drives both passive and index tracking strategies in particular) towards "large cap" companies, when in fact better returns may be generated by small or mid cap sized companies.

Koen Van de Maele: We see an increasing awareness that standard indices, purely based on market capitalisation, are sub-optimal. They tend to overinvest in expensive stocks, sectors and regions. Additionally, they are less diversified than most people believe. Also, market capitalisation bond indices overinvest in heavily indebted issuers and tend to have a high duration when yields are low. So, using market capitalisation indices in Fixed Income is at least as sub-optimal as in equity investing. We see a shift from mono-factor Smart Beta towards multi-factor Smart Beta due to its positive diversification effects and lower transaction costs.

Chris Varco: Factor Investing and Smart Beta strategies are justifiably areas of growing investor interest. Model sophistication and product pricing have both improved considerably along the entire spectrum from simple factors tilts to cap weighted passive benchmarks all the way through to sophisticated quant based active Factor Investing approaches. These strategies offer very cost-effective tools for portfolios, and the growing body of ESG data that can be incorporated only adds to the attractiveness of the sector.

Noel Hillmann: In terms of the role that Smart Beta factors play within portfolio construction, do you feel that this has changed over time such that there are a broader set of factors that are being used, or are being used in a different way, to the way they were intended a few years ago?

Koen: Smart Beta, or Factor Investing, goes to the essence of portfolio management as it seeks to increase risk-adjusted returns. Hence, instead of focussing on Information Ratio against a certain (market capitalisation) benchmark, investors increasingly look for an attractive Sharpe Ratio. This shift is also explained by the fact that, more often, portfolio liabilities have no direct link with market capitalisation benchmarks. Usually, focusing on a high Sharpe Ratio is the best way to finance the liabilities of a pension fund, foundation, or other institutional investor.

Jeremy: Managers whose strategies are focussed on specific factors (e.g. value, growth) have been around for some time. We appointed managers focusing on value and "quality/growth" respectively in 2009. The change is probably more in terms of the range of approaches and factors as well as how their performance is measured.

Chris: A growing body of evidence suggests that material ESG data may be underutilized by mainstream investors and its correct use could add significant value to investment returns. Our recent study of emerging markets equities found evidence for persistent ESG alpha (after accounting for the impact of other factors such as style, country, and sector exposure). Sufficient ESG data to incorporate this kind of tilt in emerging market equities has only existed for around four years, since 2013, when the index provider rolled out comprehensive ESG data across the index constituents. The ability to tilt towards ESG quality therefore presents exciting new options for Factor Investing.

David: Some of the areas we developed, such as low volatility approaches, came more recently than the FTSE RAFI Index Series; and now we are seeing that there is a spectrum of different risk premia factors that investors are interested in, which has led us to create our Factor approach. This is where we are trying to boil it down to a series of risk premia factors which can be combined on a consistent basis. This includes value, quality, yield, volatility, size, and momentum. The way that we apply the factors through developing 'Z scores' means that we can bring multiple factors together as an investor desires, because there is that consistent approach and methodology. This also provides a strong basis for customisation to reflect a client's investment beliefs

Noel Hillmann: What strategies are gaining traction and what implications does this have as certain factors collect more assets than others?

Koen: Both ESG adoption as Smart Beta/Factor Investing are secular trends in investment management. Hence, any combination in which Smart Beta portfolio management techniques are mixed with a certain level of SRI screening will be heavily demanded by all types

> "THE GROWING BODY OF EVIDENCE THAT SUSTAINABILITY CONSIDERATIONS ARE MATERIAL FOR INVESTMENT MEANS THAT REGULATORS ARE INCREASINGLY PLACING EMPHASIS ON THE NEED FOR FIDUCIARIES TO CONSIDER ESG FACTORS"

of investors. Furthermore, we see an extension of this trend into corporate and sovereign bond investing.

Chris: The trend towards lower-fee customisable quantitative and Smart Beta strategies is clearly evident, and is just at the beginning. The challenge for investors, however, is to ensure that these core investments are part of a total portfolio approach with a balanced risk-adjusted return profile that does well in all market conditions. We do a lot of customized work for our clients to build appropriate solutions to meet these objectives.

Jeremy: From my view, seeing the move towards LGPS asset pools and the consolidation that brings, there seems to be a trend to more "specialist" managers and strategies - e.g. with a focus on particular regions (e.g. US, emerging markets rather than a "global" strategy) or factors.

David: We see more multi-factor interest with clients who are interested in particular factors wanting to bring them together. When some asset owners are considering their equity allocation, they will sometimes create a range of sub-mandates. They might have a separate value allocation, volatility allocation, and low-carbon allocation, and you actually get a sub optimal outcome by creating those separations. When you are thinking about different asset classes it makes perfect sense to consider how much you will put into equity, fixed income, or property etc. But within an asset class, if you have different investment beliefs, the most efficient approach is to integrate. Otherwise what you find is that those separate mandates can effectively cancel each other out, or at best you are not getting the full level of exposure you could get to those factors if you were doing it on a total portfolio basis.

Noel Hillmann: What does 'sustainability' mean to other investors and end investors? How has this evolved and changed, including the scope of fiduciary duty?

Koen: Companies that score adversely on these ESG criteria will have a higher probability to underperform on a long-term horizon. Institutional investors such as pension fund managers increasingly realise that they have a fiduciary duty regarding the investment portfolio and need to be able to justify why they make certain investments. It's my conviction that a decent SRI screening is part of such a fiduciary responsibility. Additionally, an SRI screening also mitigates reputational risks. Blindly investing in standard market capitalisation indices also means investing in companies that might be involved in child labour, cluster ammunition, anti-personal mines, corruption etc. Many institutional investors would prefer not to be linked to such companies in the press.

Chris: The growing body of evidence that sustainability considerations are material for investment means that regulators are increasingly placing emphasis on the need for fiduciaries to consider ESG factors. For example, The Pensions Regulator (TPR) in the UK's latest 2017 guidance has meaningful new content with regards to how trustees must incorporate ESG considerations.

Jeremy: LGPS funds are long term investors (our liabilities, for example, stretch out long into the future), 50 years plus in the case of active members who have recently joined our schemes. Therefore, for LGPS funds, sustainability should mean the long-term retention of value or delivery of returns which will ensure we are able to meet those liabilities. This is at the core of our fiduciary duty to scheme members and employers. In this context, focussing on companies with strong corporate governance (and avoiding those with poor track records in this area) is likely to lead to returns which are more sustainable than doing the opposite. However, there seems to be a trend in some quarters to narrow the focus and definition of "sustainability" to mean "environmental sustainability". Whilst it is possible that companies which are focussed on this aspect may deliver strong returns, that may lead to an inappropriate narrowing of the opportunity set.

> "Companies that score adversely on these ESG criteria will have a higher probability to underperform on a long-term horizon"

David: Investor approaches are becoming more sophisticated and are interested in how sustainability provides insights with respect to investment risk and returns. What is really interesting now is that Factors and ESG investing are colliding. That is because, as you start to see different sustainability parameters from an investment standpoint, it no longer is an absolute position where you are excluding particular companies or investing only in certain companies who have very specific sustainable characteristics. Instead, investors have a range of investment beliefs across sustainability, climate change, just as they have across other risk premia factors; so, they are trying to bring these two beliefs together that maximizes the exposure that they want to see. This is then feeding into the approach that we are offering clients, which is to have a smart sustainability framework where you have risk premia factors alongside a variety of different kinds of sustainability parameters.

Noel Hillmann: How have Sustainability and ESG factors been integrated into both passive and active investment strategies?

> FOR LGPS FUNDS, SUSTAINABILITY SHOULD MEAN THE LONG-TERM RETENTION OF VALUE OR DELIVERY OF RETURNS WHICH WILL ENSURE WE ARE ABLE TO MEET THOSE LIABILITIES

How reliable is the data at our disposal being used to reach those conclusions?

David: We see a lot of confusion in the market around definitions. We try to be very clear with specific data points to weed out any subjectivity within the analysis. A starting point is really to define definitions into two sides: one side is all about how a company operates and its conduct (in the way that it is governed, interacts with different stakeholders and its operational and environmental performance); The other side is about what a company sells (its products and services), how aligned these are with sustainability and their revenues associated with these areas. For example, here we break down company revenues across 60 subsectors.

Jeremy: Some investors (and managers) are integrating ESG by focussing on "exclusion strategies" for a part of their portfolio. The challenge with this approach is that it may lead to the exclusion of good companies which will deliver strong returns. There are always limitations with available data (not least because forward looking data is generally a forecast derived from past experience).

Chris: We are seeing integration in both passive and active equity. We have seen interesting new innovations in fixed income. We have also worked with a number of hedge funds to launch new ESG solutions and share classes, including two in 2017, to provide new ESG solutions for our clients. As an example, in 2016 we worked with a manager to facilitate the launch of a new active quant ESG emerging markets equity fund in 2016. This is now being used by a variety of foundations, colleges, universities and pension funds as an effective sustainable solution for this allocation.

Koen: We combine an analysis of the business model with a stakeholder assessment. Dedicated SRI analysts will determine if the company's business model is in line with some major sustainability trends that we observe globally. Once this SRI analysis is done, a right balance between SRI 'pureness' and diversification needs to be found. Some product might prefer a higher degree of sustainability whereas other products such as ETFs put somewhat more emphasis on diversification.

Noel Hillmann: Why would you seek to combine factors (Smart Beta) and sustainable parameters? What are you trying to achieve when thinking about factors (in the wholesale sense of looking at everything of one particular type and sustainability together)? How is that any better than taking the active approach?

Jeremy: As with any investment strategy, it's about having a better balance of risk and return.

Koen: If someone would try to construct an optimal investment portfolio, without any prior knowledge of existing benchmarks, I believe that a combination of ESG and Smart Beta would be preferred. Smart Beta/Factor Investing is backed by an increasing amount of academic literature, while intuitively it seems obvious that an ESG screening limits risks and creates investment opportunities over a longer-term horizon. I really believe that these concepts are necessary ingredients when building a long-term investment portfolio.

Chris: One of the most important benefits of sustainable Smart Beta strategies is their easy customisation in line with the investor

profile. For example, we recently worked with a manager to add a Smart Beta and sustainable tilt to a global equity index. This work was totally specific to requirements of one client, with reference to both their sustainable objectives and their broader allocations and factor exposures in active equity and other asset classes. The resulting portfolio had a bespoke conventional Smart Beta factor tilt as well as zero exposure to fossil fuel reserves, reflecting the client's decision to divest from fossil fuels. Compared to the original index it also had 50% lower emissions and double the exposure to green revenues. This was all achieved with a low forecast tracing error (just 0.67%) to the parent passive index, and was delivered for a lower cost than some comparable pooled funds. Indeed, the cost was comparable to many pure passive products. The opportunity therefore lies in building client specific products that complement the other parts of the investment portfolio for strong risk-adjusted returns.

David: You get incredible transparency through applying Smart Beta and sustainability parameters through an index. Some of the market may be surprised by this statement and think that there needs to be quite a lot of black box optimization approaches, but it doesn't need to be that way. What this is very reliant on is being able to make consistent, systematic methodologies across the whole universes. Some in the market see this as a challenge for active funds but good active managers should be able to bring additional insights into their investments, which allows them to have a very different proposition to the Smart Beta funds. High quality active managers have not got anything to fear from the growth of Smart Beta, but when you have got managers who are very reliant on relatively simple models for their fund selection, or are closet trackers, then the future will be very tough for them.

Noel Hillmann: Considering how far the evolution of this can go, do you think that Smart Beta with sustainable parameters will be a lasting and evolving investment strategy? What will be the next steps?

Jeremy: Possibly. Although investment markets and approaches change and evolve over time. As LGPS funds become more mature (some are already cash flow negative) they will be seeking to reduce risk whilst generating the returns needed to reduce and or eliminate deficits over time.

Koen: Any portfolio combining Smart Beta with sustainable parameters surfs on two strong secular waves in investment management. Hence, I believe such strategies will last and even increase in importance over time. They are supported by strong societal trends, such as strong corporate governance models with increasing levels of transparency and the need for an efficient portfolio implementation. These trends will continue to exist and support investment schemes that integrate ESG and Smart Beta in an efficient way.

Chris: Risks and opportunities including the implications of climate change need to be part of the investment decision making process for long-term investors. There is an increased economic basis for sustainable business practice. The data tracking sustainability has also improved vastly in recent years. We therefore see Smart Beta with sustainable parameters as an exciting and important key tool for future proofing client portfolios.

David: On the one hand, the momentum here is huge but we are starting from a very low base. If you look at the majority of passive mandates that are in existence today, the majority are based on standard market cap indexes. Obviously Smart Beta index-based strategies are significant but still represent a significant minority of that total universe of passive. Within this Smart Beta proportion, you are then looking at a much smaller subset which has got sustainability or climate components within it. When you look at new mandates which are coming through the pipeline, however, what we can see is that the shift is radical.

Noel: Thank you for sharing your views on this subject.

SECTION 3

GLOBAL TRENDS – THE LASTING BENEFITS OF SMART BETA

3.1 ROUNDTABLE DEBATE - NORTH AMERICA

Do you see sustainable Smart Beta strategies out-performing traditional investments during stressed markets?

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Do you see sustainable Smart Beta strategies out-performing traditional investments during stressed markets?

Moderator

Ben McNamara,
Producer, Clear Path Analysis

Panellists

David Underwood,
(Former) Assistant Chief Investment Officer, Arizona State Retirement System

Paul R. T. Johnson Jr.,
Trustee, State University Retirement System of Illinois

Robert Whitelaw,
Professor of Finance, NYU Stern School of Business

Kenneth St. Amand II,
Vice President and Client Portfolio Manager, Natixis Asset Management

Tony Campos,
Director, Sustainable Investing Product Management, FTSE Russell

POINTS OF DISCUSSION

- *Define what is meant by 'Smart Beta'*
- *Be sustainable, but not at the expense of the bottom line*
- *Improve the data and understand its context better*
- *Momentum is moving in the direction of improved ESG investing*

Ben McNamara: How do you define Smart Beta/Factor Investing, and how has it evolved over recent years?

David Underwood: I don't like the term Smart Beta as it gives a connotation that I don't feel was really intended. When I have talked internally both with the fund and in groups, I talked more in terms of it being a systematic process. Certainly, what it seeks to accomplish in the broadest sense is a practical application of all the academic work and literature that is out there and that has existed for 40-60 years. When you step back and look at a number of different aspects, certainly from the governance and what your philosophies are, factors give you the change to align more closely with what your principles and main objectives are. The vehicles that have come along to address this have helped but beforehand it was a way of just measuring, and has a direct impact on the authenticity of your performance of that pool of assets that you are monitoring.

Paul R. T. Johnson Jr.: Most people think of Smart Beta as Factor Investing, so changing whatever little component of the world that you think is going to do better. Lynn Blake at State Street said that Smart Beta is any objective, consistent and transparent investment strategy that may capture returns beyond those external cap weighted asset classes. This means that almost anything you are doing to try and make a little more money than buying in a cap weighted index. Whether you overweight certain proportions of a cap weighted index or whatever you decide to put into it, it is wide open. The idea is to make as much extra money as you can and save yourself money by not paying active managers who might not necessarily beat anything. The reason people are moving towards these things is that they were getting tired of paying active managers and not getting anywhere. Also, whilst a typical trustee might be a great English professor they don't necessarily know much about investing but what he does know is that for the most part if you are paying less for something you are probably getting a better deal. People haven't been as comfortable with it (and roll their eyes to the back of their heads when you start talking about it, as it can be confusing for them), even for those who are in the investment world it can be complicated. We are moving this way only because the revenues above and beyond your passive index is that much greater.

David: I approach getting into factors from a different direction and what I see is the two main pillars and columns on how it is employed. Return seeking is one and certainly those different areas that Paul mentioned but also in terms of the broad use of factor based investing is a mechanism for controlling risk. The problem that has been identified over the last few years is that has been chalked up that most active managers can't outperform their indices. There are some structural reasons for this and one is just the effects of cap weighted indices, which have caused that, but when you have this mixture and you are also trying to track a benchmark from a performance and volatility standpoint

Robert Whitelaw: One change has been the increasing adoption of these Smart Beta/Factor Investing concepts for portfolio management. It started with institutional investors but it has now significantly penetrated the retail space and so we see this both with investment advisors as they are paying much more attention to Smart Beta but also in the product space as we have seen a huge proliferation, particularly in the U.S of these Smart Beta ETFs. Another change is the increasing sophistication and breadth of products and strategies and as a result, the change in the way that they are marketed. It is fair to say that the original products in this space were more like enhanced index products. It was taking the index universe, say the S&P 500, and then putting on an alternative weighting scheme so an alternative to market cap or float weighting such as equal, revenue or cash flow weighting. Now, there is a greater appreciation for the return factors that these weighting schemes are loading on for example value, size or momentum. There are attempts to isolate and then combine these pure factors and there are also efforts to construct additional factors like volatility.

Kenneth St. Amand II: The term has become 'factor zoo' as so many people are entering this space. What we have noticed is that even though there are so many different Beta products sometimes offering a capture of the same Beta, the results are different. What we would say to investors and index providers alike is that it is important to understand the approach to capturing and replicating these Betas as they will differ from one group to the next. What we are partial to is the more nuanced capture. We see some systematic approaches being coupled with more fundamental analysis so on one side of our shop we are dedicated to systematic investing and will do a fundamental analysis of companies to create another set of factors which cannot be derived systematically but the result of the analysis can be used systematically and we do this for quality of the company. What we always say to people is to look at how the data is derived and how the Betas are captured, as no processes are alike, and that explains the dispersion of results from people who are reportedly trying to capture the same Betas.

Tony Campos: Smart Beta indexes have acquired a somewhat daunting reputation for complexity. However, most are based on simple intuitive ideas designed to address a specific objective like excess return generation, mitigation of volatility or increasing diversification. Although smart beat indexes all deviate from traditional market cap weighting methodologies there is a difference between

> “ALL FIDUCIARIES SHOULD BE CONSIDERING THESE SUSTAINABILITY FACTORS AS THEY ARE INCREDIBLY IMPORTANT FOR PORTFOLIO PERFORMANCE”

"alternatively weighted" Smart Beta approaches, such as fundamental weighting or equal weighting, and "factor weighted" approaches. What Smart Beta indexes have in common with their market cap weighted counterparts is a consistent, rules based methodology that is transparent. This is particularly useful and relevant for the continued evolution and innovation in Smart Beta indexes and one area where we see a lot of growing interest is in the incorporation of ESG considerations into Smart Beta indexes. For example, in the 2017 Smart Beta Survey conducted by FTSE Russell 57% of large asset owners (with AuM $10bn or more) that are considering Smart Beta anticipate incorporating ESG considerations.

Rob: When you consider portfolio construction, it is best to go back to modern portfolio theory. What matters under this theory is two things, risk and expected return. Smart Beta products and strategies, whether they are traditional Betas or the new Fama French Betas

on profitability and investment or ESG factors; they are useful if they enhance returns, decrease risk or both. Along these lines, the original thinking and motivation was exactly thinking about these two dimensions. It was about access to alternative risk premiums which is about enhancing returns with factors that were perceived to be relatively uncorrelated with the broader stock markets and thus may even decrease risk. Traditionally people viewed Factor Investing within the framework of an enhanced index model and so they were considering it as just an advance on passive, traditional Beta products. If enhanced indexing was Smart Beta then a traditional passive index would be a 'Dumb Beta' product and one can enhance its risk return properties by tweaking it to add a factor exposure, i.e., a Smart Beta exposure. This requires thinking about correlations not just between factors and the market but between the factors themselves. It is really about what the economic underpinnings are of these factors and the sense in which they are going to continue to be useful factors in portfolio construction going forward. Another approach which has been more of a recent change is that people are seeing Smart Beta as not just a tweak on traditional Beta but as a component of the active portion of the portfolio. They think of it as a cost-effective form of active management which is what it really is. Smart Beta is in many ways just quantitative active management and what we are seeing in the asset management industry as a whole, on the active side, is a move away from what you might think of as pure discretionary stock picking to a more quantitative approach. Smart Beta fits very nicely in this bucket of quantitative approaches to active management.

Ben: What does 'sustainability' mean to investors and end investors? How has this evolved and changed within the scope of fiduciary duty?

Rob: Sustainability is a slightly slippery term. People talk about issues like socially responsible investing, ESG factors, as well as sustainability, and some people use these terms interchangeably. Others have very particular issues in mind, for example they may be thinking about stranded assets or climate risk etc. When considering sustainability one of the elements you have to consider is what are the implications for portfolio performance, that is for returns and risk. This includes everything from reputational risk to fraud to environmental catastrophes, to something as simple as carbon footprints. The truth is that we as academics or practitioners do not understand the implications of all of these disparate issues for performance. This doesn't mean that we don't need to think about them and in fact we absolutely need to think about them as we rightly realize that they are very important. There are also the tastes and preferences of end investors as they may be simply uncomfortable with investing in a certain type of firm or are interested in investing in a company whose actions and values are consistent with their own. This may be particularly true for millennials and women who have been well documented as being concerned with ESG issues and are increasingly become an important part of the investor base.

With respect to fiduciary duty obviously portfolio performance falls squarely within the scope of this duty, so you can make the argument that all fiduciaries should be considering these sustainability factors as they are incredibly important for portfolio performance. This is very much in line with the U.S Department of Labor 2015 guidance for pension funds which states that ESG factors effect fund performance and so are the type of thing that pension funds should be looking at. On the preference side it is a bit more nuanced. We believe that intermediaries in the asset management industry don't get to express their personal preferences under the fiduciary duty rule but to the extent that the intermediaries are uncomfortable with certain investments, they need to disclose their investment rules, the potential consequences and these rules need to be firmly grounded in the empirical evidence. When we apply these screens, what do we think we are getting, why are we doing it and what are the potential effects on the diversification, risk and expected returns of these portfolios.

> "It is nice to feel good about something but for me that is way down on the list. The bottom line for me is how much money am I making for the people I am responsible for"

Ken: At Minorva we have a tighter definition of what sustainability is and I often use a quick metaphor when describing it. It definitely does effect the profitability of the business and I would describe it as a young man graduates from college making 60k a year, happens to have some equity, if he spends 60k per year by August he can live on equity and some sort of credit line for a couple of years; but this lifestyle is not sustainable. If you do a careful analysis of a business, you can find what the issues are that make the business not sustainable – let us call it durability. In considering what makes a business durable you can analyze this and achieve a solid understanding of whether it is durable by looking at its financial statements and its business practices. Global Sustainability is the grander vision and we have a pretty solid understanding from capital markets and other research science groups like NASA and know that our practices on this planet are consuming the total renewable resources by August of every year, which is not sustainable. You can take this information and measure each company against these understandings: what is their business, how does it consume and distribute, and what is the impact on the

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planet from this business? If it exceeds the planets ability to renew itself in a year's time then that business not sustainable. The values investing side and the part that is more subjective as was alluded to by Rob is something that we agree with. We don't ever try and say that everyone on the planet is going to say the exact same thing, they want their investments to match their values but their values are harder for them to articulate particularly within the context of even a secondary market as you aren't financing the changing world but participating in its profit.

Paul: Sustainability has been on a steady incline with people looking at it more, the pushback has been what does it do to the bottom line. We all want to be good citizens of the world and there is a line that you don't want to cross in making money, as long as you are being a good citizen and following the laws it is pretty much OK. You also have people show that if you apply some environmental thinking into your portfolio you can actually do better and that is factored into some portfolios. The reason it does better is that more people are now thinking about saving the planet which helps drive the investment side of things. Good governance is a factor that should always be around and if you look at all of ESG it starts to fit in a little bit better, and so you've got people who feel good about it, and it also makes me feel good when I make money, so if it works in that sense then I am all for it. We look at certain factors but don't necessarily have the ESG focus fund that we are putting money into.

David: It has certainly taken on a momentum that keeps gathering momentum. It had its roots in a belief system and this backs up into the governance, not in the ESG aspect, but the governance of a given entity whether it is an endowment or foundation, and foundations have leaned to ESG longer than endowments have. Some of this is the result of a demographic shift certainly in the U.S and globally with the realization that there is a way of applying capital.

In terms of fiduciary responsibility, in days past it was really hard to make an association and it was fought mostly in the carbon based industries. Others than found that there was a social responsibility of doing good and then the governance of companies who run who lower; this was a good thing. Those that sit in a fiduciary capacity are charged with this dilemma of yes they believe in trying to do good for sustainability yet by taking those steps are they degrading the economic value that is being driven in a portfolio and short changing the ultimate beneficiaries of that pool of assets? I came up through the roots as an analyst and portfolio manager and when you look at ESG it is the way that we used to look at companies and the risks that are attending to that revenue stream, capital formation, and earning

stream. When you analyze a company and start to see these elements you can think that this could be more valuable than a company that is not. I see ESG as in some sense for other reasons but the mechanism is returning to some of the validity of what was traditional fundamental valuation work.

Paul: I am still a skeptic, but am happy to have it shown to me that it works. I have fiduciary responsibilities and can't just do the 'feel good' things. I used to Chair Market and Development and we wrote a carbon credit contract. We traded some for a little while but never really got anywhere. But we didn't do it to feel good, we played it that way and would always bring down some kid who had gathered money from his buddies to buy one carbon tax credit so they could have clean air. We did want to feel good about stuff but it was more about making money.

David: I would like to believe that it is all altruistic and that it is market based led and there is demand for this. In a large sense I do feel that there is but it can't be divorced from the more mercenary aspect of it where there are some 300 identifiable factors, but when you really distill down what is robust and has an effect and can be investable it is still down to 8 or 10 at the most with primacy around 5 or 6 of them. When you get into ESG the question that has arisen is does factor based investing distort ESG? Even within ESG there is the case of whether it is total divestment or is it total non investment in areas that are known. Then there is the issue of whether it is just environmental, social, governance or all three. By-in-large the preponderance is more of a tilting away from an environmental issue or social issue rather than total non representation in a given portfolio, and this is the form of work that is being done around factors that address this. There is a certain percentage within an ESG type portfolio tilting towards a certain factor. Up to say 20% of those shows some causative effect or some stronger return than not having that factor induced so there is a natural evolution. Behind this there is a fair amount of product pushing in order to have something else that gives a supplier some shelf space in that highly competitive but highly saturated market of strategies.

Paul: It is nice to feel good about something but for me that is way down on the list. The bottom line for me is how much money am I making for the people I am responsible for. I like the idea that you could have a clean environment; regardless of whether you are a Republican or a Democrat in this country, you want to keep things clean as possible. Of course, we have politicized some arguments here in this country and around the world that we shouldn't have (and the scientists would say so) but all of these factors have played into why these sustainable and environmentally friendly investments are gaining attention. If the market continues to treat those companies better for having that strategy than I am all for it and if this continues it is great. My fear is that if you hit some tough economic times people are not going to look towards what is sustainable but to where they will make money.

Tony: I think that there has been a steady change in the way market participants think about sustainable investing. Generally speaking, this is moving from outdated notions of negative screening based on ethical preferences, and the accompanying performance implications, to more of an understanding that ESG issues represent dimensions of risk and opportunities that good companies and investors need to account for. However, the devil (as always) is in the detail and there are still a range of views with regards to both the "what" and the "how" of sustainable investing. From my perspective, and based on the growing quantity and quality of sustainable investing products (including funds, data, indexes, and analytics) this is going to be a permanent but evolving feature of investment decision-making. In addition, the rationale for employing ESG is changing. In our recent Smart Beta asset owner survey we asked those who were considering incorporating ESG into Smart Beta strategies what the motive behind this was. They cited 'avoiding long term risk' over 'societal good', so asset owners are now clearly viewing ESG as a rationale investment decision

> "I feel that the time is good for [a Sustainable Smart Beta index], when you look at indices whether they are ESG centric or not, all the different industry providers have their own strengths and weaknesses within the construct and disciplines of which they create these indices"

Ben: Do you think that Smart Beta with sustainable parameters will be a lasting and continually evolving investment strategy? How helpful is a Sustainable Smart Beta Index?

Ken: In the 90's when ESG was first used the data wasn't strong. It was used to determine which members of an economic section were the worst players in that sector and a portfolio was then created with a best in each class. We had a best in class product that was built

on weak data and ESG got a very bad reputation. Over time this has evolved and today we are getting better information. If you look at the MSCI, ESG global index, if you look at the world index versus the ESG, the Tracking error is very low particularly in the developed market. The important element here is about disclosure and how these scores are achieved and the content of the index. There are some surprising positions in a lot of the ETFs that are in the market today who are labelling themselves ESG, and investors need to fully understand how the index is being achieved and what the index is telling them. I do believe that an index can be created, that it needs to be transparent, and investors need to understand the content of the constituents of that index to fully comprehend what it is saying to them. Even 'best in class' will have oil and gas names in it.

Rob: Integrating ESG with Smart Beta is a great idea. We know that ESG is increasingly popular and we have data in the U.S that says one in every five dollars is invested taking ESG factors into consideration. This has dramatically increased over time and will increase going forward. If you look at Bloomberg, they have around 900 key performance indexes that are related to these ESG factors, there are now almost 40 U.S traded ETFs in the area of social responsible investing, and Smart Beta itself has been growing rapidly as well. Combining these is a great idea and is something that is the future of investing. You can view ESG parameters as just firm characteristics like size, book to market or momentum. You can think of them as telling you something about the future return distribution. You can also think of them as telling you something about the values of the firm but also about the return distribution. It is a completely natural thing to take these ESG, measures and combine them with other scoring mechanisms which score on value and momentum. It is natural to think about portfolios that score highly across the board. The challenge is around the quality of the data how good is the data and how are people using it. The quality of the data varies a great deal as some are objective and others are less so. So if I want to track say governance issues, I can measure them. Other issues such as carbon efficiency are a little more tricky, but I can look at firms in an industry and find out the extent to which their carbon footprint is low relative to their revenues. Some other elements are barely measured at all – if you consider the S in ESG, so say a companies effect on human rights, this is very difficult to quantify. I would argue that it is equally important but it is simply more difficult to quantify, and this is where we need to make progress. In order to build better products we need to be able to measure these items, and there are some nice initial attempts to make progress on this dimension.

Tony: There is definitely a need for more and better data. But that will come as market participants start to demand and use ESG information more effectively. I think that we are at the intersection of three important trends: Smart Beta, ESG, and the rise of passive investing. Applying the techniques of Smart Beta indexing to ESG integration allows us to capitalize on that and we have done a lot of work recently at FTSE Russell on what we call "Smart Sustainability", which is essentially Smart Beta with ESG included. Ultimately this is about aligning investment objectives with specific ESG goals or preferences. One example of this would work we did for the HSBC DC pension fund in the UK where they had specific investment objectives related to improving risk/return, which they wanted to achieve through an index that increased exposure to a series of risk premia factors (quality, size, volatility, and value). At the same time the pension fund also wanted to incorporate protection for climate change related risks into the index and we were able to help them achieve that by designing a model that included three climate "factors" (carbon emissions, fossil fuel reserves, and revenues from green products). These were combined alongside the traditional risk factors in the index construction process. In this way, we were able to design an index that incorporated climate change risk considerations and that crucially did not materially alter the desired risk factor exposures.

Paul: The problem is who are the audience that is going to invest in this sustainability aspect. You might get a lot of union organizers who like to have that feel good aspect but even there they get pulled back by that fiduciary responsibility. You could argue that if there was an index I wouldn't be surprised that some people will try and throw some money at it because they say they have to be diverse, but beyond that there may be mom and pops who want to buy some, and that is enough to drive it, but it would have to take that long path. It also sounds like something you could say you are doing in front of your constituency if it is something that they want, even if it doesn't make you any money. Or we get called in front of legislators but they don't' care about making money, they care about keeping power and looking good so it'll give us a check mark in a box and a smile and then someone leaves us alone.

David: One is skeptical of how much mercenary effect is in there versus altruism. I feel that the time is good for this, when you look at indices whether they are ESG centric or not, all the different industry providers have their own strengths and weaknesses within the construct and disciplines of which they create these indices. There is an advantage and compromises from an institution and Paul is right that this is likely to get more traction at the institutional arena rather than the individual investor arena. By having an index (although it doesn't go to the poignancy of an individual organization) that has very strong ESG views in their philosophical and governance structure, for those who need to have some exposure, and that has a broad based indices or a selection of indices, in this regard FTSE Russell is coming at a good time to have a recognized broad based index that addresses these; so that you gain the performance experience over time, which gives one the opportunity to see in real-time 'does this work vis a vis something that is not tilted as such?' By having an index that is recognized and that is capturing these returns it gives you a data point that is not biased by a manager effect or gaming the numbers, which is a real advantage especially as it is in real-time. Having it as an investable universe makes even more sense, whether you capture it by a product that replicates it, a manager that invests that for you or a big enough organization that you can do it on your own, and capture that (or pieces of it) makes an awful lot of sense.

Ben: Thank you all for sharing your views on this subject.

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