

# Sustainable Investing Practice: Simplified Complexity

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## **Abstract**

*The model of ‘sustainable investing’ presented in this paper is of long-term investing that is inter-generationally efficient. This model combines the opportunities in the traditional areas of institutional decisions - asset allocation and manager line-up - with the newer fields of extra-financial factors including ESG (environment, social and governance) and active ownership. The development of this model relies heavily on complexity theory in which a system has the properties of: being dynamic and often away from equilibrium; is characterised by agent behaviours; behaves interactively including network effects; produces the emergence of macro patterns from micro-level behaviours; and evolves its characteristics from survival and growth factors.*

*We conclude there are significant investment opportunities for those that focus their attention on ‘sustainable investing’ which can be seen to comprise three broad areas: the asset allocation and manager areas where large costs are incurred as a result of poor sustainability practices; the ESG area where an integrated approach is desirable; and the sustainability mandates area where more sophisticated beliefs are necessary. We see a particular opportunity for sustainability mandates. These will require asset allocation disciplines and we put forward a process for determining appropriate figures in this regard. We include a process by which funds that have dual missions can make such an allocation.*

*We see retirement and economic sustainability as critically positioned at tipping points in their development ; developed world aging and shrinking workforce are leading to big increases in the dependency ratio – raising issues about sustainable retirement; while at the same time population growth and development are challenging the carrying capacity limits of the planet – raising issues about sustainable development. Sustainable investing provides a link between these two issues and presents a win-win: more sustainable investing returns produce both better retirement outcomes and environmental outcomes. Institutional investment funds need to raise their game and play a part in these challenges by employing integrated and / or targeted sustainable investing. Those funds will be able to do so only if they strengthen their governance.*

**Key words and phrases:** pension fund, sovereign wealth fund, sustainable investing, sustainability mandates, investment strategy, investment beliefs, asset allocation, governance, ESG, complexity

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## **I. Introduction**

The model of ‘sustainable investing’ presented in the paper is of *long-term investing that is inter-generationally efficient*. This model combines the opportunities in the traditional areas of institutional decisions - asset allocation and manager line-up - with the newer fields of extra-financial factors, including ESG and active ownership.

The sustainable investing model developed is the result of applying thinking from complexity theory. We argue that the multiple strands in this subject require this specialised theory and need to be considered at the highest level to produce effective and durable practice. The complexity theory we use has the features of path dependency, the interplay of exogenous and endogenous factors and the considerable influence of agency issues and biases (Beinhocker, 2006, Watson Wyatt, 2008).

Discussions about sustainable investing are animated. My experience with funds and managers is that this area remains confused and answers to seemingly simple questions are varied. We give a number of the most common instances of critical questions below:

- Can long-term investment be seen simply as the sum of successive short terms?
- Aren’t sustainable investing and responsible investing for most practical purposes the same?
- Should pension funds ignore sustainable and responsible investing because of the conflict with the paramount issue of financial performance?
- Do sustainable and responsible investment strategies underperform?
- Aren’t all managers weighing ESG factors in their current decision making, at least those they judge to be material?
- Won’t ESG factors fail to show in short-term performance because these are long-term influences?
- Is sustainable investing just about ESG?

These questions share several interesting characteristics. Answering them is critical to our understanding of sustainable investing. Many practitioners I have discussed them with quite quickly will answer ‘yes’ to them all. But in all cases when a wider framing of the problem is used, the answers are much closer to ‘no’. This brings to mind H.L. Mencken’s statement ‘there is a solution to every human problem that is neat, plausible and wrong’.

Part of the challenge from these questions are the numerous strands that affect good answers. For comprehensive analysis of these issues we would need to consider these problems simultaneously from several perspectives: finance and investment; behavioural economics and agency theory; law; pension governance; corporate governance; governments and politics; societal welfare; economics including sustainable economics.

In this paper the author approaches sustainability in investment using the theory of complex systems. Complexity is defined as present when a system has the properties of : being dynamic and at times away from equilibrium; characterised by agent behaviours; exhibiting interactive features including network effects; produces the emergence of macro patterns from micro-level behaviours; and developing the evolution of the system from survival/ growth factors.

The specific application used in respect of investment involves these factors:

- Multi-strand dynamic links among the key issues: investment, legal, governance, politics making problems very difficult to address; they can be specified in multiple ways, there is no ‘stopping rule’ to a solution and optimising is not possible only ‘satisficing’
- An inter-active, highly connected financial system with path dependencies over time

- Agents are highly influential with complicated incentives and drivers in their behaviours
- Multi-period evolution in the system in which success can only usually be properly assessed on an interim basis as there no ‘stopping rule’
- Endogenous factors are significant through the reflexive process by which decisions are taken by parties whose actions then affect the system (rendering previous decisions obsolete)
- Governance issues and government influences are significant to the system.

In Table 1 below we list the considerations that arise under these major headings in respect of both investment in general and sustainable investing in particular.

**Table 1 – Complexity theory applied to investment generally and specifically to sustainable investing**

	<b>General applications to investment</b>	<b>Specific applications to sustainable investing</b>
<b>Multi-stranded</b>	<ul style="list-style-type: none"> <li>- Multiple interactions, multiple players</li> <li>- Tentacles of the issues spread wide</li> <li>- Influenced by power laws</li> </ul>	<ul style="list-style-type: none"> <li>- Multiple stakeholders and goals</li> <li>- Funds herd</li> <li>- ‘Wicked’ problems</li> </ul>
<b>Inter-active/ Networked</b>	<ul style="list-style-type: none"> <li>- Dynamic ‘system’ linking strands</li> <li>- Change unpredictable and non-linear</li> <li>- Disequilibrium</li> </ul>	<ul style="list-style-type: none"> <li>- Network effects through collaboration</li> <li>- Networks like PRI</li> </ul>
<b>Agents</b>	<ul style="list-style-type: none"> <li>- Individuals driven by their incentives</li> <li>- Face incomplete information</li> <li>- Behaviours involve errors and biases</li> </ul>	<ul style="list-style-type: none"> <li>- Combined financial and non-financial objective functions/ goals</li> <li>- Agency/ behavioural drivers</li> </ul>
<b>Multi-period/ Evolution/ Adaptation</b>	<ul style="list-style-type: none"> <li>- Emergent change - new conditions</li> <li>- Fitness landscape defines success - adaptive skills - differentiation</li> </ul>	<ul style="list-style-type: none"> <li>- Adaptive qualities needed to deal with unpredictable changes</li> <li>- Path dependence from environment</li> </ul>
<b>Endogenous factors</b>	<ul style="list-style-type: none"> <li>- Change is occurring from within reflexively</li> </ul>	<ul style="list-style-type: none"> <li>- Pricing model uncertainty applies given the significance of investment flows</li> </ul>
<b>Governance and government</b>	<ul style="list-style-type: none"> <li>- Governance and governments are part of social technology enabling progress</li> </ul>	<ul style="list-style-type: none"> <li>- Governments/ governance part of the problem, including legal issues</li> <li>- Government’s influence on externalities</li> </ul>

How exactly is the application of complexity thinking valuable to this problem? We argue that without this wider framing we will have difficulties with robust conclusions.

Many of the difficulties we see are with treating problems more like engineering problems with an optimised, single solution as the consequence. Increasingly we are recognising that this is unrealistic and is the cause of the confused picture we have of this area as illustrated with our difficulties with the seven core questions at the start of this section.

We see sustainable investing as an example of a ‘wicked’ problem (Rittel and Webber, 1973). Such problems generate high levels of conflict as there is no consensus as to what the problem is, never mind what the solution should be. Because wicked problems are so difficult we become accustomed

to addressing them incrementally and at lower levels but with mixed results. The answers tend to become symptoms of the higher level problem. We should try to address sustainable investing at the highest level despite the increased difficulty.

The model we advocate, as set out in the next section, has been developed by reference to complexity thinking. This paper progresses to sections on sustainability mandates and models of investors before its conclusions.

## II. The belief system of sustainable investing

We start this section with a review of the key beliefs with respect to sustainable investing and the associated norms with investment actions.

Beliefs are assertions and models about the investment world and the way the world works that, when developed and shared, make decision making more effective. Norms are descriptions of how a fund would operate under various conditions in the future, consistent with beliefs. We use the term ‘belief system’ for the collection of beliefs and norms in a particular area of investment. This section puts forward a belief system for sustainable investing.

**Table 2: Investment beliefs**

	<b>Belief</b>	<b>Norm in new model</b>
<b>Asset allocation and Benchmarks</b>	Asset allocation exposures can be amended to consider opportunities arising from periodically extreme valuations and changing risk regimes rather than being stationary	Adopt more dynamic model to exploit asset allocation opportunities (referred to as Dynamic Strategic Asset Allocation)
	Index benchmarks create biases to periodically abnormal pricing with attendant inefficiency	Use of non-price / value benchmarks or absolute return benchmarks
<b>Managers</b>	Many managers promote asset gathering and may not have sufficient regard to longer term sustainability	Use assessment of managers on future indicators having regard to sustainability factors
	Many managers use processes in which shorter term evaluation of opportunities are over-dominant with higher turnover and costs	Favour managers who practice longer term evaluation of opportunities with lower turnover and costs
	Fees are unrealistic with respect to the value proposition contained in them	Favour managers using fee structures that are sound on sustainability
	Expectations for active management are unsustainably high	Favour selective choices of active managers and greater passive element
	Conventional review processes tied to three year goals promote excessive manager turnover	Use assessment over longer periods to produce lower manager turnover
<b>Extra-financial considerations</b>	Extra-financial factors including environment, social, governance influence values and risk over extended time periods	Consider extra-financial factors as an appropriately weighted influence on investment decisions
	By the active use of ownership rights, the value of an investment can be enhanced if deployed	Exercise ownership influence consistent with manager style

These core beliefs provide the foundations to address the questions from the previous section.

*Can long-term investment be seen simply as the sum of the short term?* In the complexity model, the emergence of long-term outcomes is a result that is traced out by a specific a path of inter-dependent short-term outcomes. It is this path dependency that makes the difference between the short term and the long term very clear. Attempts to optimise strategy in the short term without regard to the impact on the longer term will produce simplified and generally unsatisfactory results. This is at the heart of what we mean by ‘sustainability’.

*Aren't sustainable investing and responsible investing the same for most practical purposes?* We accept that the two terms are used casually and at times inter-changeably. We also observe that many practitioners are interested in responsible investing but approach it using sustainable investing themes. The distinction is critical and we suggest it is easiest to consider sustainable investing as being based on investment beliefs and to consider responsible investing as being values-based. While we do not enter further into semantic debate here, we stress that while each fund or organisation may have its own definition of sustainable investing, it is critical to the integrity of the term that each definition is clear and suitable for the objectives of the organisation that creates it.

*Should pension funds ignore sustainable and responsible investing because of the fiduciary duty conflict with the paramount issue of financial performance?* The concept of responsible investing does have certain issues alongside fiduciary duty. However, the concept of sustainable investing is fully reconcilable with fiduciary duty and legally robust. The critical aspect that is necessary in this framing is that sustainable investing is based on an appropriate set of investment beliefs.

*Do sustainable and responsible investment strategies underperform?* We see quite common references to the underperformance of sustainable and responsible investment products. Drawing on wider empirical data suggests that performance patterns of most products in this area are not conclusively better or worse than their traditional counterparts. We can observe in many cases higher risk levels than comparable portfolios although mostly the differences are small. This product data does not shed any real light on whether sustainable *strategies* perform better or worse. We provide some performance data on this later, demonstrating the superior performance of sustainable investing strategies.

*Aren't all managers weighing ESG factors in their current decision making, at least those they judge to be material?* In any sensible investment framework we would expect managers to examine ESG factors and other extra-financial factors in their processes and rationally assign an appropriate weighting in their considerations. All managers would recognise the influence of intangibles like management and culture on performance and ESG factors would similarly figure. However, because of the behavioural biases to be expected in a complex model, we see evidence that ESG factors are often under-weighted in the investment process precisely because they are inexplicit.

*Will ESG factors fail to show in short-term performance because they are long-term influences?* The idea that the influence of ESG factors (we refer to this elsewhere as ESG beta) will make no contribution to short-term performance, but may be influential in the long term is an implausible concept. ESG beta will either show in both periods or neither. There is reasonable evidence that it will show in both the short and long term. The idea that it may be harder to measure in the short term is true, but this should not confuse the issue of its short-term presence.

*Is sustainability mostly about ESG?* This is perhaps the biggest issue. Most practitioners fail to show the subject of sustainability sufficient credit. In our model it is an investment strategy concept based on an expansive view of more economically efficient inter-generational investing.

Moving from these specific points, we develop below the set of beliefs concerning the drivers influencing the performance of various sustainable investing factors.

## **Sustainability in asset allocation and benchmarks**

The key aspects of a fund's investment arrangements start with fund mission and goals, proceed on to cover asset allocation and include benchmarks.

The degree to which risk is shared fairly over time should be reflected in a 'journey plan'. Such a plan sets out the idea of how over time the mission and goals will be accomplished by reference to the mix of investment risk (captured largely in the strategic asset allocation) and further funding required. Critical to the sustainability of the mission of a pension fund is establishing a fair deal between generations of beneficiaries. To achieve this sustainability, one would expect the pension plan to be robust to organisational change over time so that future commitments are covered. An important element in the journey plan is the covenant issue - the ability and willingness of sponsors to support the plan's obligations. So decisions on strategic asset allocation, and how this might evolve given new conditions, should be set in the context of this sustainability challenge. Such framing is most common in the pension fund field. This is also similar for many sovereign wealth funds.

Many funds have favoured relatively static asset allocations. Such an approach would align with stationarity of mean expected returns. This is not aligned with the complexity based model we favour in which endogenous risks based on behavioural biases are a feature. This suggests that a more sustainable model of asset allocation is one that is responsive to changing investment conditions and changes to asset class expectations. This observation is not referring to the investment approach referred to as Tactical Asset Allocation (TAA) as the sustainable principle in this area is more strategic and longer term. References are frequently made to this being a Dynamic Strategic Asset Allocation framework (DSAA).

The risk management practice may be model based but should recognise the numerous critiques of modelling which are particularly apposite in a complexity framework. Allowance for stressed investment conditions alongside normal conditions calls for dual state models which are considerably less easy to work with.

Asset allocation is accompanied by a set of investible benchmarks in a full strategy specification. While the overwhelming majority of investors use capitalisation-weighted indices as their principal benchmarks, in doing so they are using a measure and portfolio influence that has poor sustainability. Capitalisation weightings involve periodic misallocations which are evident periodically in bubbles like the TMT boom in the period up to March 2000 and the valuations of banks in the 2007 to 2009 period. The excess volatility in market prices is generally attributed to endogenous risk factors in which investor sentiment is evident. An empirical result supporting this idea is the out-performance of fundamental and wealth-weighted indices over their capitalisation-weighted counterparts. This effect can be explained by Goodhart's Law which suggests that measures that have initial attractions as tools in a decision process can collapse when pressure is placed on them for control purposes.

## **Sustainability in managers**

We see 'sustainable managers' as managers who are committed to maintain their performance for clients over time and do not compromise future performance for reasons of business development by unplanned asset gathering. The characteristics of sustainable managers are captured in a number of hard to measure or 'soft' factors. As the complexity framework suggests, the changing environment makes the characteristics of success highly contextual.

First, there is the need for strong client-centric ethos evident in both business principles and investment decision-taking. Agency issues are highly influential in investment, in large part due to the asymmetry of knowledge and influence over products. These positive attributes would be evident in strong client management processes, signs of integrity including reference to ethics codes and standards. It would also be evident in seeking forms of relationships with clients being more akin to partnership. Particularly important examples of this are managers co-investing their personal wealth in their own products alongside their clients – indicating affinity.

Second, there is the need for strong culture committed to investment excellence through meritocratic and collaborative work practices and strong resourcing and processes. Indications of this come from the organisation's attitudes to adopting a focused range of investment products not a full range to accommodate marketing. Ownership of an investment firm may play a part in this with models in which integrity in business decisions can be expected. This generally favours partnerships and independent firms over managers who are a smaller part of a bigger firm. We also view the issue of compensation as indicative of the organisation's culture and critically positioned to affect ability to attract and retain key talent.

The third area is a planned approach to maintaining value propositions over time by business limits and product closures. Managers who have the correct attitudes will give considerable attention to introducing soft and hard closes to products. Their thinking on this is best done in advance and advance indications are given to their clients. This imbues a strong ethical stance in which integrity and honesty with value propositions is preferred over concerns about fee generation. It may well require innovation capabilities to maintain sustainable growth, making sure that existing products are complemented by a promising product pipeline.

The fourth aspect of sustainable managers is related to the investment process. In a complexity framework, behavioural biases are significant and entrenched. Organisations have to build substantial determination to off-set biases that are the natural norms. Investment decision making immersed in realistic beliefs and honest self-appraisal and attribution can be one approach. We observe many organisations transact too frequently and incur too much cost to make sustainable performance possible. In contrast, sustainable managers recognise the behavioural tensions and put long-term views into their portfolios and do not have to incur substantial costs as a result. The additional feature is that these organisations need to make their beliefs transparent.

In addition to organisational factors, sustainability in managers is related to the fees embedded in the proposition. Fees can be sized and shaped in ways that are either consistent or inconsistent with a net value proposition and a fair deal. While products vary considerably, it is possible to express certain maximum levels for fees to be reasonable or sustainable. We would argue that fees in which the manager is paid an expected fee above 50% of the expected net alpha over time has poor sustainability. In many instances this would exclude the classic hedge fund fee of '2 and 20'. Desirable features for improved sustainability would include: the principle of balance in fixed and performance fees (getting to a 'sweet-spot' - not too large, not too small); fees based on longer-term performance; appropriate hurdles; low front-ends to performance fees loading with back-end redemption penalties.

Funds themselves need to employ sustainable processes when it comes to hiring and firing managers. Good process in selection is oriented to consider prospective expectations not past results. By understanding the managers' value propositions as an evolving factor not usually subject to fast changes, funds can expect to produce relatively low turnover in managers, with associated savings in transaction costs. Past studies of hiring and firing factors have suggested that decisions taken on de-selection and selection by asset owners tend to be significantly value destructive and unsustainable (Goyal and Wahal, 2003).



Overall industry exposures to active investment products, in particular expensive active investment products, appear high given the net results that tend to materialise. This appears to be a failure of funds to correctly balance the costs and benefits of active management. The explanation for this lays in behavioural biases that under-estimate the difficulties of selecting and de-selecting managers sustainably. This is accentuated by beliefs that incorrectly attribute all instances of good performance to manager skill. Given that many instances are essentially about ‘noise’ and do not indicate a ‘signal’ about skill, expectations are systematically exaggerated (Urwin, 1999).

### **Sustainability in extra-financial factors/ ESG**

It is commonly agreed that extra-financial factors including ESG have some influence on the values and risks of companies and markets. The issue is the size of that influence. We suggest these influences will tend to be significant over extended time periods and it is our inference that significant influences will also be present over relatively short periods. The fact that these influences will be difficult to measure and be small alongside normal price variations should not induce the idea that they can be ignored. We believe this is a significant error that many managers are currently making.

In a recent study of UK equity portfolios, the commentary described climate change as ‘a relatively low order factor in terms of financial impact in their investment horizons’ (Trucost, 2009). One manager highlighted the ‘immediate risk of being fired for poor performance and the market’s focus on quarterly corporate earnings data as reasons for disregarding the long-term issues of climate change’.

We view this failing as arising from a combination of mandate design (short-term, hard benchmark) and cognitive bias (toward the recognition of explicit measurable items). It suggests that managers who are able to work around these problems are competitively positioned over time.

It is also reasonable to suggest some positive effects can arise from more effective and engaged ownership practice. Such practice covers a spectrum of activities by level of engagement with investee companies. At one end of this spectrum lies the voting of shares and other corporate actions attaching to ownership interests. At the other end lies activism where owners or their agents pursue a strategy engineering change. Effective practices as owners cannot be divorced from other aspects of the investment process and it follows that it may be of marginal gain in the case of certain investment management styles. High turnover approaches will not be as conducive to effective influence as lower turnover fundamental styles.

The sustainable investing approaches described above are integrated investment approaches. That is, the discipline of considering ESG and ownership is put alongside other traditional investment processes and approaches. This investment strategy contrasts with an approach that concentrates on securities in the ESG area. We refer to this as sustainability mandates in which a manager is assigned management responsibility for a portfolio that specifically targets securities or assets in the ESG, and in particular environmental opportunities, field.

This introduces an issue of asset allocation. Do we consider such an allocation by its traditional taxonomy (quoted equities, private equities, bonds, infrastructure, etc) or do we categorise it more by its thematic orientation. In practice, a combination of these approaches is desirable.

In reaching any conclusions about the desirability of this sustainability mandates or targeted approach, you would expect much more detailed analysis of the risk and return drivers influencing the performance of such portfolios. We discuss this aspect below in the consideration of ‘ESG beta’. We also discuss sustainability mandates in more detail in the next section covering the major issues of beliefs and mandate design.

## ESG beta

The equity risk premium (ERP) or equity beta can be seen as a systematic risk source which produces sustainable excess returns over the risk free rate. By sustainable we are suggesting there are no reasons why these excess returns will be arbitrated over time largely because the factor driving performance is macro-consistent - all investors can hold equities without tripping up the system. This premium is of course time varying and can be negative over extended periods, reflecting investor flows among other things, but it is reasonable to suggest that it is an enduring part of the financial system and assert that its expected value over time is positive.

The equity beta is made up of a great many companies which in turn have underlying exposures to a number of characteristics. It is possible to break down these beta exposures by geographical and sector components, and also into a number of other fundamental elements of which value, growth, size, momentum, liquidity, leverage are notable. By extension we can map exposure to a fundamental factor that we term 'ESG beta'. ESG beta is essentially an aggregation of companies' financial exposures to environmental and social factors. By financial exposures we mean the costs and benefits of dealing with these factors and how these are changing. This exposure has an associated investment return which is the passive return derived from systematic changes in these ESG costs and benefits. We note that the data to produce this exact factor is as yet limited although measures of so-called 'green beta' have been put forward (see Chia, Goldberg, et al, 2009).

In other research we have put forward environmental change as an investment 'macro-factor' (Watson Wyatt, 2009). A macro-factor is a theme which is influential in the long term and presents opportunities for return enhancement and/ or risk mitigation. The risk and return characteristics of the ESG beta appear to qualify as a macro-factor risk return driver that under *certain changing conditions* produces a premium return for the risks undertaken. This is clearly not in the same position as a sustainable risk return driver which does not need change for its premium to be experienced. Macro-factors incorporate certain disequilibria in pricing and macro inconsistent factors. For the ESG beta to be positive, investment flows are one of these supportive factors. The other principal factors are science and technology, policy incentives, and economic interest to investors. These are covered in more detail in the section on sustainability mandates.

While the case can be made for a premium return from ESG beta we note that there is an even clearer case for seeing it as a long-term risk mitigation factor. The outlook for equity beta, conditional on significant climate change, is impaired by the increasing environmental costs of adaptation and externality mitigation. In such conditions, allocations to ESG beta would have clear hedging properties.

## Quantification of sustainable factors

As part of the belief system, we would wish to be able to quantify aspects of the performance of the components of sustainable investing. Ascribing a value to performance is problematic as many of the aspects of sustainability are governance dependent. So there is no appropriate specification of the problem without referencing governance budget (see Urwin, 2001).

However, there are areas of current practice which we suggest are instances of poor sustainability and there are industry wide estimates we can make of their effects. In this regard following sustainable investing practice gains from an avoidance of costs. That is, a large part of the sustainable investing proposition is based on the principle of *not doing unsustainable things* or rather, as sustainability can be seen as something of a spectrum, *limiting instances of poor sustainability*.

The estimates of the factors are set out in Table 3 below. The total leakage is estimated at 100 -150 basis points per annum. This estimate is made on an industry wide basis – that is we believe it could be the case that all funds could enjoy these gains collectively without tripping the system (although we accept that the industry would have very different characteristics if this actually happened including some unintended consequences).

We also believe that this is a conservative estimate of typical gains from sustainable investing because it does not take any account of the upside opportunities from the area that most forms of better governance would be able to secure.

**Table 3 - Significant examples of poor sustainability and associated leakage**

	<b>Sustainability problems</b>	<b>Approximate leakage</b>
<b>Cap-weighted benchmarks</b>	Benchmarking short-term performance relative to capitalisation-weighted index forces managers into momentum and other non-information-based strategies with consequent price-taking and mispricing away from fundamental value; causing suboptimal capital allocation and periodic bubbles <i>Avoid leakage through absolute return/ non-price benchmarks</i>	50 - 100 bp
<b>Active management</b>	Active management costs the average fund 75bp per annum without net value being added Many products involve the application of 20% performance fees which are incorrectly specified and have excessive option values <i>Avoid leakage by higher passive allocations</i> <i>Avoid leakage by adopting maximum fee standards for active products</i>	25 bp
<b>Turnover</b>	Active management involves average turnover costs in the industry around 45bp per annum without net value being added Turnover by funds of their manager line-up involves total costs of the order of 10bp – 20bp per annum without net value being added <i>Avoid leakage with managers and mandates that involve lower turnover including higher passive allocation</i> <i>Avoid leakage with better process of selecting and de-selecting managers with lower turnover characteristics</i>	25 bp

### III. Sustainability mandates

In this section we explore the investment case for using sustainability mandates and consider possible specifications of those mandates. The mandates we develop below are ones that are predominantly influenced by environmental factors and exploiting environmental opportunities including governance in the considerations. The case for other extra-financial factors is more highly specialised and not directly covered in this paper.

The investment case for sustainability mandates in the environmental opportunities area is made up of four principal components: science and technology, policy or regulatory incentives, investment flows and economic interest to investors.

These are factors that, when taken together, tend to support the case for positive ESG beta or ‘green beta’. In addition we would view there being significant opportunities for alpha in such mandates. The conditions for successful active management appear positive – we expect considerable volatility in pricing and associated pricing model uncertainty which present good conditions for active management to thrive. We note also that harvesting ESG beta successfully is not currently well-suited to passive styles given the limitations of indices in this area and the skills the managers would expect to deploy in a well-integrated proposition combining alpha and beta. However, in keeping with the normal life-cycle pattern of investment opportunities, the place of passive management will certainly grow.

The beta-investment case for sustainability mandates in environmental opportunities will consider the science of climate change. Most predictions on the likely scale of climate change suggest major disruption developing during this century. The Intergovernmental Panel on Climate Change (IPCC, 2007) supports a significant rise in average temperature over the next century. This prediction produces certain likely effects over time (including droughts, changing local weather patterns and reduced yields in some agricultural crops) based on a variety of IPCC reports. Mitigation requires concerted and dramatic, global action on energy sourcing and usage. This in turn will affect many business models. More is made of the links between the science of climate change and economics by Jeffrey Sachs (Sachs, 2008). The interconnected nature of climate change, population growth and need for action on poverty fits well with the complexity framework.

Alongside climate change lies the issue of natural resource depletion, particularly with respect to energy and water. While most commentators would agree that the likelihood of climate change seems extremely high but not completely certain (and there are climate change deniers with strong scientific backgrounds), there would be strong agreement that the likelihood of natural resource depletion is near-certain.

Beliefs centred on the science of climate change and natural resource depletion and degradation are not a necessary pre-condition for a return-seeking allocation to environmental opportunities. Whichever side of the scientific debate you come down on, significant investment flows designed to create a low carbon economy are likely to be underway. Working with these investment flows may create investment opportunities over the next few years for early movers in sectors that benefit from those flows that are largest compared to previous consensus estimates. Much of the recent investment has been led by governments allocating economic stimulus monies in an attempt to simultaneously spark economic recovery and reduce the carbon footprint of creating that spark.

We would expect significant new policy initiatives in this area in the next few years. These could arise from a combination of a political shift or realisation of the need for climate change response or increased problems that are the result of climate change. More broadly, an understanding of policy

in this area is critical to successful implementation of any investment. The environmental technology sector has numerous instances of subsidies and other price incentives with regulations varying by country, being highly technology specific and likely to change at short notice.

The last factor that is germane to success is the issue of whether it will be investors who extract the appropriate economic rent for their capital and risk or whether other stakeholders and intermediaries are better placed to exploit the opportunities. Agency theory suggests that this is a material concern in which the strong governance of investors is critical. There is particular difficulty with returns from technology being predictably and fairly distributed. This suggests that there is a large link between the E and the G of ESG.

In summary, there are four main strands to the investment case: science, policy, flows, profit capture. Various investors will weight these blocks differently. We note that this field is relatively new in finance and so mandate design has not developed particularly far. Indeed, the area has been more product driven with managers of specialised products tending to set up designs that have not always had sufficient regard to investor requirements.

Mandate design is helpful in ensuring that appropriate alignment has been built into the manager's work. It also helps in the monitoring and oversight process ensuring an appropriate dialogue is created. The mandate would include reference to fee structures where appropriate incentives should reinforce the long-term and sustainable aspects of the mandate.

We summarise two mandates that are set up to engage managers in discussions about their capabilities. We do not expect the pattern will be precise with heterogeneity inevitable.

**Table 4 - Sustainable mandate 1: Quoted global equities**

<b>Mandate description</b>	<b>Mandate of listed equities in environmental technology sectors</b>
<b>Asset types</b>	Listed equities, global, no currency hedging
<b>Universe</b>	FTSE Environmental Opportunities All Share
<b>Performance benchmark</b>	World index (global equity benchmark)
<b>Expected volatility</b>	30% annualised (tracking error 6% -10% versus benchmark)
<b>Performance target</b>	Global equities + [ <i>for discussion; 2.5% pa</i> ].

**Table 5 - Sustainable mandate 2: Long term long only combining public and private markets**

<b>Mandate description</b>	<b>Long term mandate with longer-term contract with wide scope to invest in environmental technology themes across public and private markets</b>
<b>Asset types</b>	Listed equities, private equity, infrastructure, green property, carbon trading
<b>Universe</b>	Any business with >20% of revenue / capital coming from environmental technology. Maximum of 70% in private markets, 25% in carbon trading
<b>Performance benchmark</b>	CPI [ <i>Alternatively composite balanced fund return</i> ]
<b>Expected volatility</b>	15% annualised
<b>Performance target</b>	CPI + [ <i>for discussion; 5% p.a. over 10 year period</i> ]

## IV. Sustainable investor models and asset allocation

### Sustainable investment strategy models

There are two generic sustainable investing strategies we see as attractive for certain funds to adopt – the integrated and targeted models (see Table 6 below). These are discussed in more detail in Urwin and Woods (2009).

**Table 6: Alternative investment strategy models**

<b>Investment Strategy Model</b>	<b>Model elements</b>
Integrated sustainable strategy model	<ul style="list-style-type: none"><li>- Asset allocation decided by reference to journey plan with dynamic approach to changes of asset allocation</li><li>- Long-term sustainable mandates with appropriate fees employing sustainable managers selected sustainably</li><li>- ESG and active ownership integrated within decision-making process</li></ul>
Targeted sustainable strategy model	<ul style="list-style-type: none"><li>- Includes allocations to sustainability mandates involving direct investment in mandates with sustainable themes, environmental opportunities, etc</li></ul>

The mission of pension funds is the production of a sustainable return stream sufficient to meet obligations to beneficiaries over successive generations. This mission produces the match between most pension funds and the integrated sustainable strategy model. The fit is legally robust and does not need either complex investment beliefs or substantial investment governance as described earlier.

With most funds adopting delegations to external managers, the key ESG influences are through mandate specification in which requirements are set out for extra-financial consideration and a proposition for ownership influence is included. We assert that the managers in the fund's line-up should be subject to a sustainability 'audit' in which considerations include the alignment to client interest factors as well as adoption of sustainable investing principles. The adoption of PRI may well be a practical and effective route in this respect.

Most pension funds would find the targeted sustainable model more problematic. As we set out earlier, there is a belief system which supports premium returns from ESG betas and alphas, and sustainability mandates. However, a sophisticated belief system is needed and its depth must be substantially greater than the parsimonious version that is involved with the integrated model. This requires a stronger governance model to be successful.

This does not rule out pension funds using a targeted model, but it is likely that relatively few in numbers will favour this route in current circumstances.

What other investor types would most naturally occupy a place using the targeted model? We think this is most natural with the following:

- Sovereign funds
- Non-profit funds
- DC platforms (in which sustainable mandates are included as a participant selected choice)

Clearly the fiduciaries choosing this route should have the requisite governance budget needed to encompass:

- More sophisticated belief systems
- Capability to manage private market assets and other specialised assets
- Asset allocation across the sustainability spectrum

The key additional factor to consider in the targeted model is asset allocation. We could express this situation as made up of a sustainability mandates section of S% and an integrated model allocation of 100-S%.

We should expect the 100-S% allocation to include hybrid investment mandates that put sustainability investments alongside traditional investments on some integrated or tilted basis. The degree to which the hybrid model is attractive will depend on a number of factors. It is likely to prove more difficult if an integrated approach is adopted. In either case it will be harder to monitor given difficulties with the attribution of results.

If this allocation of S% was made purely with how respect to investment criteria we would expect a number of parameters to influence the allocation.

The most significant consideration is assessing how the prospective risk reward pay-off from the sustainability mandate segment compares with that of the traditional segment. Return per unit risk metrics can be estimated in both cases and in the case of the combined fund. This key analysis progresses in a standard way towards assessing the degree to which the sustainability segment improves or deteriorates this measure, and the effect of varying the allocation. We note that the sustainability mandate segment will have considerable assumption uncertainty making this analysis and the conclusions difficult.

There are other parameters to be considered in addition. In this list below, we should think of these as being akin to stress tests of the effect of the inclusion of the additional segment.

- Diversification: ESG exposures would generally involve higher volatility; a 10% sustainability allocation would generally involve an increase in overall volatility of under 1%
- Diversity: The exposure to the ESG macro factor should be set alongside other exposures to macro-factors and sustainable risk return drivers, with undue concentration becoming an issue; a 10% sustainability allocation would introduce lower order change in diversity concentration
- Conviction: Conviction represents the degree of certainty in the belief system with accompanying quantified expectations, greater uncertainty attaches to ESG betas and alphas; a 10% allocation would probably introduce a decline in conviction measure of somewhere under 10%
- Liquidity: Sustainability mandates generally decrease overall liquidity; a 10% allocation might be expected to add up to 25% to total illiquidity
- Peer risk: Some investors are making a comparison with a peer group of some sort; a 10% allocation would introduce a small additional tracking error

- Regret risk: The test of regret we envisage is simply whether the inclusion of the additional portfolio has resulted in a material fall in the overall performance that would have been experienced; a 10% allocation would produce a CVaR of around 1% to 2% at the 95<sup>th</sup> percentile.

Of these parameters, we regard the last as the most helpful. As an example, we can envisage the asset allocation proposal progressing in the following way:

- *We support a [say] 10% allocation to sustainable mandates.*
- *This is based on expecting from this mix: a similar risk reward pay-off to our traditional mandate; with a little more short-term volatility; with some long-term hedging of environmental risk*
- *This is an acceptable short-term regret risk exposure based on stress testing: the consequences of including this mix would in a really bad year be expected to reduce the overall return by around 1½% if we define ‘bad’ as a one in ten year outcome.*

The full process adopted is illustrated below. The belief system employed and governance are critical inputs to the solution.

### **The dual mission fund**

The specification of a ‘dual mission’ fund is described in Urwin and Woods (2009) and has a natural link to the targeted model. Such funds define their mission to combine financial and non-financial goals. The non-financial goals could be specified in many different ways according to circumstances and the values underlying the respective mission.

The combination of two goals presents problems. The exact specification matters a great deal and ideally should weight the two goals. Are they equally important or does one take precedence? It is a further complication that the outcomes with respect to the non-financial goals are hard to measure and mostly inexplicit. We might refer to these as ‘eat-well’, ‘sleep-well’, ‘feel-good’ and ‘do-good’ factors. These are all value expressive factors to contrast with the pure financial characteristics that are utilitarian. They also contain a network dimension – funds pursuing an environmental orientation would hope to persuade others of the merits of this approach and secure a leveraged benefit from their endeavours – a ‘do-good’ factor at work.

Funds have generally expressed their dual mission preferences loosely in these forms:

- Meet ESG goals without materially affecting the optimal financial results
- Meet ESG goals with good financial outcomes
- Meet stated financial goals with good ESG outcomes.

All of these specifications raise issues. Approaches to blend these two parts could use utility theory ascribing subjective weightings to the balance. A more pragmatic solution introduces the regret risk parameter in the following way:

1. Combined fund is a S% sustainability mandates portfolio and a 100-S% integrated portfolio
2. Create the parallel but separate streams of mission, values and goals for these portfolios
3. Mix the two streams by reverse optimisation to identify an S% allocation to the sustainability mandates portfolio
  - the effect of S on investment efficiency/ longer-term return per unit risk is no worse than [X%] weaker than the integrated portfolio
  - we can accept under-performance of [Y%] from the impact of the sustainability portfolio on the integrated portfolio



- stress test this allocation's impact on risk, diversity, liquidity, conviction
  - confirm its suitability or iterate the process
4. Target certain ESG outcomes from both the integrated and sustainability portfolios assessed through audit
  5. Target financial outcomes from both portfolios separately and the combination
  6. Monitor results of the above relative to these targets

While the results will be specific to their exact context, and there is significant subjectivity in the process, we would expect the results of this process in most cases to fall in the ranges below. For large funds such figures might represent medium-term targets given liquidity and governance considerations.

**Table 4 – Specimen results of asset allocation process**

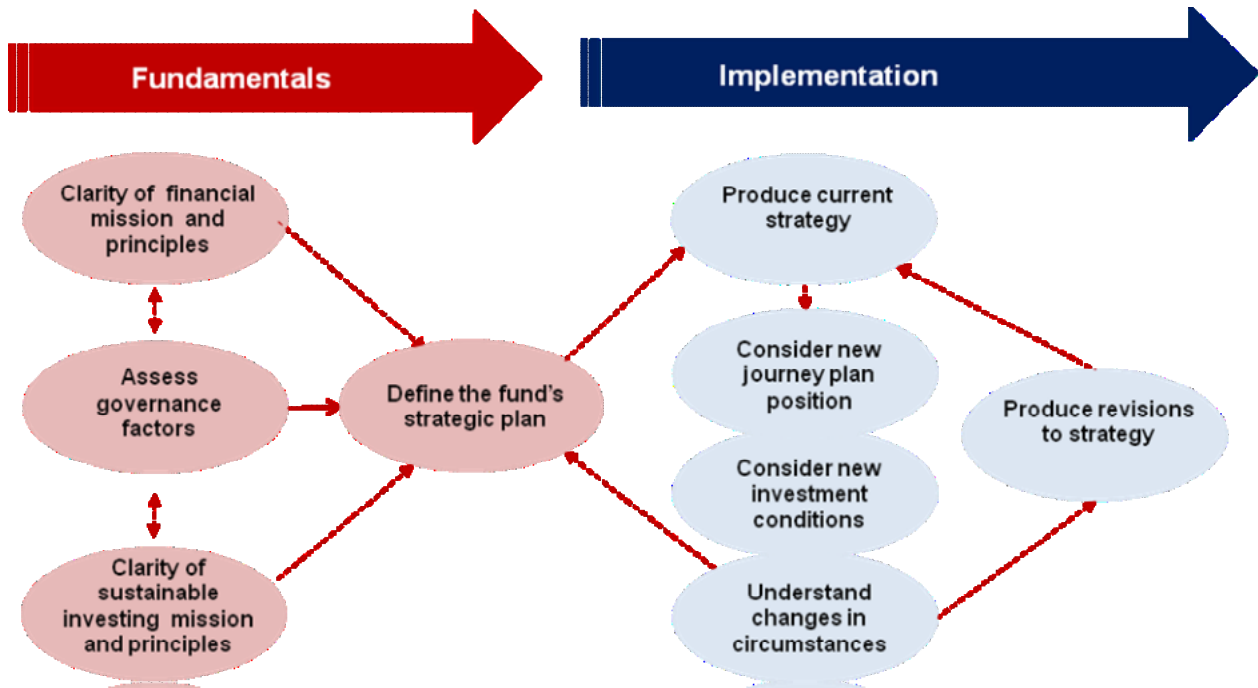
<b>Straw-men strategies</b>	<b>Allocation to sustainable mandates</b>
Pension fund with mainstream governance	Nil
Pension fund with stronger governance with beliefs in ESG beta	Nil – 10%
Endowment with strong ethical stance	2½% - 15%
Endowment with environmental interest	2½% - 15%
Endowment with environmental interest with beliefs in ESG beta	5% - 20%
DC participant with environmental interest	5% - 20%
Sovereign fund with dual mission	5% - 20%
Public pension fund with stronger governance, beliefs in ESG beta, and wider stakeholder responsibility	5% - 20%

### **Ongoing asset allocation process**

Figure 1 sets out a specification for the sustainable investing policy and describes the ongoing process of implementation through iteration and adjustment.

We argue that success with this process requires inputs from clarity of mission, values and beliefs, strategic goals and governance budget. The critical outputs are strategic plans, journey plan and risk budget.

Figure 1 - Sustainable investing policy and implementation process



## V. Conclusions - making the right connections

To conclude we turn to the big picture and the concept of the sustainability of the pensions proposition to successive generations of the retired population. This is referred to as retirement sustainability and requires financing a global pensioner population growing at around 5% per annum from the three pensions 'pillars' in which funded pensions are critical given slower growth in workers relative to dependants.

The contribution to retirement sustainability from workplace pensions will be the result of: investment arrangements; contributions; retirement age; longevity; design and execution to deliver consumption smoothing, insurance, income redistribution and poverty relief – the traditional pensions goals.

For a sustainable retirement system we need: adequate retirement saving to achieve adequate retirement income; fair pensions deals and delivery preserving inter-generational equity, not to come down firmly on one design or another, DB or DC, but observe the merits of both; sustainable growth of assets in funds employed in the markets and strategies of tomorrow.

Pensions governance is the decision making and oversight that takes contributions as inputs and transforms them into pensions as outputs. The most critical aspects of how effectively this transformation occurs are:

- Risk free investment returns: this is largely a function of underlying GDP growth, and saver / dis-saver balance;
- Risk taking investment returns: this is value creation from deploying risk at a sweet-spot (not too much, not too little) in which risk produces a higher return stream without producing inappropriate dispersion of outcomes.

Risk free investment returns in the next 20 or 40 years will likely be challenged by lower prospective growth than in recent times given our current fiscal imbalances and the global aging crunch and (possibly) the additional costs of environmental mitigation. On the other hand, there are several possible sources of higher returns from risk taking.

First there is pensions and investment design that efficiently configures risk sharing across and within generations. This has not yet fulfilled its potential, but is out of scope of this paper. Then there are the macro investment themes connecting with emerging wealth and our global transformation; it is clear that direct investment in developing countries is potentially attractive; essentially the current account surplus countries like China and India will be buying the assets of retirees of developed countries, so supporting the exit strategies of these funds which would otherwise face an imbalanced world with dis-savers compromised. Third, there are the growing opportunities that exist in infrastructure and sustainable technology which seem to be doubly important because they can provide partial answers to both the challenges of sustainable development and retirement sustainability. They also represent a form of hedge against the diminutions in return that would likely arise if climate change proceeds significantly.

If we take a 20 or 40 year view, we can model and project sustainable economic development and sustainable retirement. In figure 2 below there is a succinct version of the 40 year model in equation form using Sachs and Ehrlich for economic sustainability and our own formulation of retirement sustainability. It is critical to look at the two sustainability equations alongside each other and look

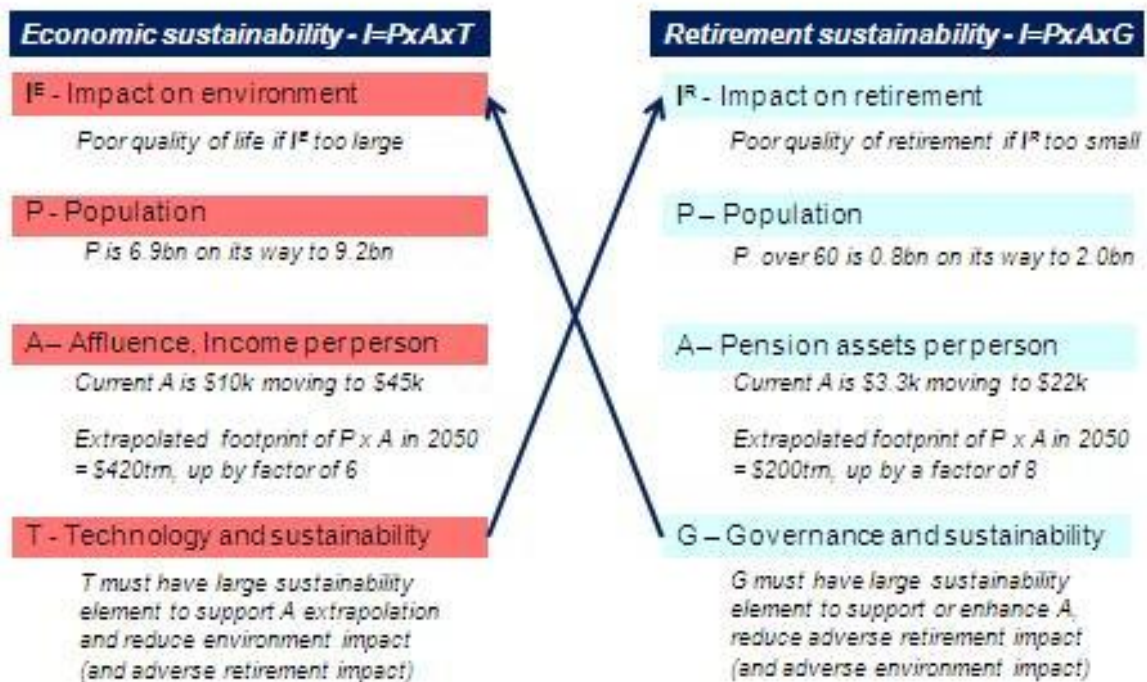
for both equations to balance or be computable.

- The I-PAT equation cannot be balanced satisfactorily without a big contribution from T-technology. Without new sustainable technologies, growth will be frustrated by environmental feedbacks. For T to have the impact necessary, private markets supported by government policies used by institutional investors will be critical.
- The I-PAG equation cannot be balanced satisfactorily without a big contribution from G-governance. Without stronger pension governance, the wealth creating allocations to support retirement sustainability will be frustrated by inadequate pensions. For G to have the impact necessary, private institutions' governance supported by government policies will be critical.
- The cross-terms between I-PAG and I-PAT are critical to these equations balancing: T and G both have effects on both equations.

This supports the likely linkage between sustainable technology and retirement sustainability:

- That business as usual scenarios suggest that we will have big environment feedback issues, lower fund accumulation and poorer retirement outcomes
- That enlightened self-interest scenarios with big sustainability elements can involve fewer environmental issues and improved income growth /income spending quality; and growth from successful investment in sustainable themes producing better pensions.

**Figure 2 - IPAT equation (source Ehrlich/ Sachs) and IPAG equation (source Urwin) with figures covering the 40 year period from 2010 to 2050**



## Closing thoughts

The paper attempts to link a number of separate strands and employs a complexity framework well-suited to work with these many strands. We summarise the essential features of this research:

- It is not a trivial or semantic point to spend time examining what is ‘sustainable investing’, and what it is not
- Our definition of sustainable investing is broad and is focused on ways to simultaneously optimise a fund’s strategy with respect to present and future circumstances, giving rise to opportunities in the mainstream investment space – asset allocation and manager selection – and the more specialised domain – ESG and sustainability mandates
- Targeted investment in sustainability mandates is supported in many instances but it needs stronger beliefs and processes to be implemented successfully
- Retirement and economic sustainability are critically positioned at tipping points in their development ; developed world aging and shrinking workforce are leading to big increases in the dependency ratio – raising issues about sustainable retirement; population growth and development are challenging the carrying capacity limits of the planet – raising issues about sustainable development
- Sustainable investing provides a positive link between these two issues in that the effects of successful sustainable investing will produce both better retirement outcomes and better environmental outcomes
- Governments are a critical swing factor in the success of the sustainable investing field: to internalise existing externalities, lend support to certain societal imperatives in climate change in particular, and also help with governance difficulties that institutional funds are confronting
- Institutional investment funds need to raise their game and play a part in these challenges by employing integrated and / or targeted sustainable investing ; the second of these is the critical factor for a safe landing on longer term sustainability
- They will be able to do so only if they strengthen their governance – adopting best-practice principles and more streamlined delegations.

Sustainable investing has not been a significant issue for most institutional funds in the past. It almost certainly will be in the future. For economic, ethical and social reasons it certainly should be.

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