

Integrating sustainability into Strategic Asset

Allocation: Time for action

Jaap van Dam, Kris Douma, Marcel Jeucken

This paper is a call to action to pension funds and the entire financial ecosystem to achieve a full integration of risk, financial return and real-world sustainable outcomes in the process of strategic asset allocation.

We hope this paper will inspire you to action.

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Introduction and summary

The world is in transition. Increasingly, structural shifts and trends are visible, such as climate change, loss of biodiversity, water scarcity and inequality. Both in terms of scale and urgency, these are significant issues for humanity. Society and international politics are aware of the urgency to achieve a more sustainable economic development. Important expressions of this are the United Nations goals for sustainable development (the 17 UN Sustainable Development Goals, or SDGs) and the Paris Agreement on Climate Change. It is also clear that the contributions of companies and investors are essential to achieving these goals.

Partly in line with this sense of urgency, the world of institutional investors, including pension funds, recognizes that the role and responsibility of asset owners such as pension funds is not only to create financial value, but also to contribute to sustainable development and the importance of creating value for a broader group of stakeholders. The two-dimensional world of risk and return, which has guided investment policy for decades, is thus changing into a three-dimensional world in which the outcomes of investments on both society and the planet is also considered.

Many pension funds are very active in the field of responsible investment. At present, this is often reflected dually. First, in the form of a separate responsible investing policy. Second, as the articulation of the importance or added value of sustainability factors, or ESG (environment, social and governance) factors, in investment beliefs and the application of all types of instruments such as exclusions, screening, voting, engagement, best-in-class strategies and ESG integration in investment decisions. What is striking is that the step of strategic asset allocation is often skipped. This is surprising, given that the impact of decisions at the strategic asset allocation level on the investment portfolio and on global sustainability can be significantly greater than that of decisions at portfolio or company level, especially for pension funds.

Acknowledging this three-dimensional responsibility (risk, return, and contribution to sustainable development) can potentially significantly impact capital allocation, economic growth and sustainability. Most models of strategic asset allocation have a strong preference for historical quantitative series. As such, those models are predominantly 'backward looking'. Such historical datasets provide comfort and 'evidence', but have poor predictive power in a world undergoing major societal and economic changes and transitions. In technical terms: In a non-stationary world, that is, a world that is changing, one must be very careful with models that are based on the past.

To achieve satisfactory long-term pension results, pension funds need to make the strategic allocation more 'forward looking' and create more room for qualitative analyses, as well as (substantiated) visions on world developments and the associated transitions. Such an approach offers more opportunities to integrate sustainability into the strategic asset allocation: With a vision on the long-term transitions, the focus on more sustainability and a good or better financial risk-return profile can go hand in hand (i.e., the impact *of* sustainability *on* the investment portfolio). It also offers the possibility of making a greater contribution to the achievement of societal objectives such as the Sustainable Development Goals (i.e., impact *on* sustainability *of* the investment portfolio).

This paper builds on a 2019 discussion paper of the Principles for Responsible Investment (PRI) titled "Embedding ESG issues into Strategic Asset Allocation Frameworks" (by K. Douma). Following up on PRI's previously published "SDG Investment Case" (2017), that paper focuses primarily on how asset owners (i.e., pension funds) can incorporate ESG issues and SDG objectives within the framework of their risk-return objective. Despite this being a useful first step, we, the authors, have found during

the course of the writing process that narrowly reducing responsible investing to financial benefits ("2D") is no longer sufficient.

We argue for an equal treatment of the financial goals and the social goals of pension funds, i.e., a "3D" world. This is further substantiated in the 2021 SPIL paper entitled "Investing for a Better World" (by M. Jeucken) and the 2020 PRI report "Investing with SDG outcomes" (by M. Jeucken, S. Whitley and N. Fabian). We believe that pension funds, insurers and asset managers alike do not deserve their long-term license to operate if we do not engage in this movement as a sector. For pension funds, this is thus a strategic management process in consultation with its beneficiaries, which thus fits perfectly into its fiduciary responsibility, broadened to a 3D responsibility.

This paper is structured in two parts. The first part presents a number of methods designed to integrate (aspects of) sustainability in the Strategic Asset Allocation. We distinguish five methods with which to integrate sustainability in the Strategic Asset Allocation. A pension fund can choose one or a combination of these methods. In the first four methods, we are still in the 2D world in which sustainability aspects are projected onto financial returns and risks. In the fifth method, we explicitly enter the 3D world in which financial and sustainable goals are equally and integrally considered in determining the strategic asset allocation. The authors advocate for the 3D approach. However, in transitioning towards it, the other four methods can be helpful. The five methods are:

1. Factoring in the effect of long-term sustainability trends on macroeconomic factors
2. Developing sustainability scenarios and their impact on regions/sectors
3. Managing tail risk
4. Freeing up risk budget for greater allocation to SDGs, or 'frontier markets'
5. Taking into account 'real-world outcomes' objectives.

In the second part of this paper, we call on pension funds as well as the relevant players in the surrounding ecosystem to take action. We realize that in some cases there is a lack of tools, measurement methods, or investment options that match this 3D world, but we call for them to be developed as soon as possible.

Integrating ESG and Sustainability into Strategic Asset Allocation

Strategic Asset Allocation (SAA) is perhaps the most important decision that a pension fund makes in order to meet its investment objective. According to research, 90% of the return over time can be traced back to decisions regarding the SAA¹. In the first part of this paper, we discuss the different methods that can be used to incorporate ESG issues and sustainability objectives into the process of strategic asset allocation. Although our focus is on pension funds, this is of interest to any institutional investor with multi-asset return objectives.

The basis for the integration of ESG issues into investment processes, including climate change, biodiversity, and social issues such as human rights and labor standards, as well as the SDGs, is supported in the 2D world by the belief that such a practice improves the risk-return profile of investment portfolios, through better risk management and through more stable, sustainable returns to be generated in the (medium to) long term.

The methods and techniques that have been developed for this purpose are often somewhat narrowly based on a view of the fiduciary duty in which there is only room for financial return and the associated risks. Two methods are usually applied in current (2D) investment practice, either separately or simultaneously: Integration into macroeconomic scenarios (i.e. through interest rate, inflation, and growth expectations), and the development of sustainability scenarios, e.g., with respect to climate change or biodiversity loss.

In continental Europe, we now often adopt a broader view of our fiduciary duty, and participants will often also be sensitive to such a broadened view. The objective of the matter then shifts to the three-dimensional world: Is it possible to achieve more sustainability given a certain level of risk and return? Or perhaps even: Is a new equilibrium of financial return, sustainability and risk conceivable? In this paper, we aim to show that with the help of different methods it is indeed possible to integrate sustainability goals, embedding them in the process of strategic asset allocation.

The flowchart below summarizes the current approach in Strategic Asset Allocation (visible in the diagram in black text), and adds the modifications we discuss in this paper, namely: 1) integration of ESG factors for the benefit of an optimized risk-return perspective ("2D", methods 1-4 below, visible in the diagram in blue); 2) addition of an extra objective to contribute to sustainable development ("3D", method 5 below, visible in the diagram in green).

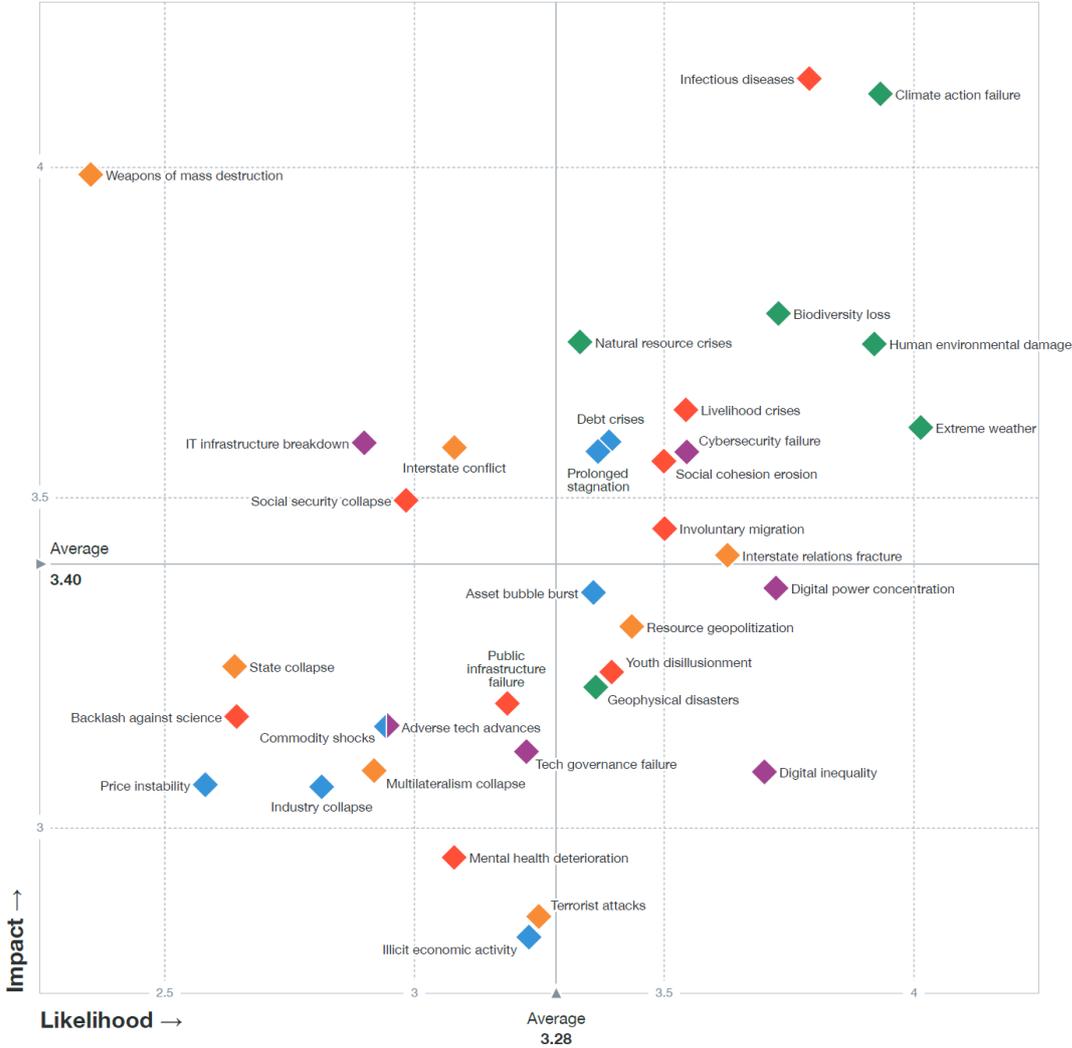
¹ See Brinson G., Hood R., Beebower G. "Determinants of Portfolio Performance", *Financial Analysts Journal* (July/August 1986), pp. 39–44; Brinson G., Singer B. and Beebower G. "Determinants of Portfolio Performance II: An Update", *Financial Analysts Journal*, vol. 47, no. 3 (1991), pp. 40–48; Ibbotson R. and Kaplan P. "Does Asset Allocation Policy Explain 40%, 90%, or 100% of Performance?", *The Financial Analysts Journal*, January/February 2000.

ALM process Formulation of investment objectives			
SAA <i>Integrating ESG issues</i> <i>Adding SDG goals</i>			
<i>Historical data</i>	>	Economic factors that currently determine SAA Economic growth Inflation Interest	Forward-looking scenarios
Risk-return data per asset class (whether or not diversified by regions and sectors)			Used to predict economic factors <i>Adding ESG/SDG risks and opportunities in predictions</i>
			Used to predict risk-return data per asset class <i>Diversification to regions and sectors</i>
			<i>Limiting negative SDG outcomes and strengthening positive SDG outcomes</i>
Selecting most likely (basis) scenario <i>Monitoring and processes related to ESG/ SDG-related tail-risk scenarios</i>			
Risk budget and return expectations <i>Managing ESG-risk in asset classes can free up additional risk budget for more risky asset classes with SDG potential</i>			
Several options for preferred asset mix <i>Risk optimization, return and ESG goals</i> <i>Asset mix with specific SDG goals</i>			

Method 1: Factoring in the effect of long-term sustainability trends on macroeconomic factors

In May 2020, the World Business Council for Sustainable Development (WBCSD) published a report entitled 'Macrotrends and Disruptions shaping 2020-2030: Vision 2050 issue brief,' which outlines 12 macro trends that could affect macroeconomic developments over the next 10 years. That list includes several ESG-related trends, such as demographic change, climate change, (solving) pollution, polarization and radicalism, geopolitical instability, changing lifestyles (post-materialism), and escalating cultural 'clashes'. Similar surveys are also published every year by the World Economic Forum. The results of 2021 are shown in Figure 1 below, which shows that leaders in business, government and science see environmental issues in particular as the most likely and most impactful for the world, economy and society.

Figure 1: World Economic Risk report 2021



In a March 2019 publication, the staff of Aberdeen Standard Investments argue that it makes sense to take a step toward "Incorporating sustainability factors into macroeconomic analysis" (Yashaswini Dunga, Nancy Hardie, Stephanie Kelly, Jeremy Lawson March 25, 2019). Based on research, they conclude that: "As climate change worsens and the forces of populism gather, there is a strong

argument for moving beyond narrow economic measures of national progress. (...) the countries that have been able to blend economic dynamism with environmental, social, and governance dynamism are mostly developing economies. These countries often fly under the radar of traditional macroeconomic analyses."

Factoring in the effect of long-term sustainability trends on macroeconomic factors is not easy, but nowadays it would be unthinkable to study macroeconomic trends without paying attention to these types of trends. In this method, the effects of ESG issues are translated into the drivers that underpin strategic asset allocation, that is, broadly spoken, economic growth, interest rates and inflation. One can think of the depletion of certain raw materials (fossil fuels, uranium, metals essential for modern technology) or climate change, for instance. However, other ESG issues can also have macroeconomic effects. For example, if social inequality contributes to a shift from democratic institutions to more autocratic systems as well as a combination of nationalism and protectionism, does it have material effects on the macroeconomic variables mentioned hereabove?

One example of this approach is documented in Mercer's voluminous 2011 report entitled "Climate Change Scenarios - Implications for Strategic Asset Allocation", to which several pension funds and research institutes contributed. In this report, the impact on macroeconomic factors seemed limited through 2050. Incidentally, with the acceleration of global warming, a new study in 2021 would provide novel insights. Physical impacts were not included in the original report. The 2011 report therefore predominantly considered scenario analyses based on technology, physical impact, and policy changes (Method 2, see below). Another example is Ortec that builds models to predict both the macroeconomic impact of climate change and policies, as well as assists with scenario analyses.

Method 2: Developing sustainability scenarios and the impact on sectors/regions: Opportunities and threats

Determining the influence of ESG and sustainability on macroeconomic trends is challenging, but doing so for the influence of such factors on sectors and regions is not. Therefore, to us, the scenario method applied to sectors or regions seems to be a much more approachable route to naming financial risks and opportunities, identifying their points of leverage on strategic allocation, and developing policies to mitigate the risks, in order to better spread risk and/or take advantage of the opportunities that will arise. We first provide a brief introduction to what scenario analysis is, followed by an example that relates to climate risk.

Scenario analysis is a process that involves analyzing possible future events by considering possible alternatives (sometimes also called "alternative worlds"). The art of scenario modeling is to establish these worlds wisely. If we can model the effects of a scenario on an industry, region, or a company, we get a picture of the risks or opportunities in that scenario. Scenario analysis is done in the context of SAA, primarily to produce systematic forward-looking estimates, that is, predictions of the risk-return profile of different asset classes. This differs from the traditional course that draws on historical data to determine risk-return profiles for a view of the future. At the same time, the "false certainty" of historical correlations is traded for admittedly uncertain forecasts, which are, however, based on integrated macroeconomic/sustainability scenarios.

Climate change has already been identified as an issue relevant to both scenario analysis and SAA. Mercer's work in this area and the Taskforce Climate-related Financial Disclosures' (TCFD) recommendations on the importance of scenario analysis all give weight to its use as part of SAA frameworks. The PRI-supported Paris Agreement Capital Transition Assessment (PACTA) is a tool for

creating climate scenarios. An already widely used scenario asks, for example, how the value of a sector or company would change if the price of a ton of CO₂ increased to 100 or 200 euros. Or, what would happen if the unsubsidized price of renewable energy (such as solar or wind power) were to fall below that of fossil fuels, which in many cases is already the case. It is important to embed such 'thematic' scenarios into a broader scenario analysis.

Effective incorporation of ESG factors (and/or of sustainability targets) raises the question of whether risk-return profiles should also be refined by regions and sectors. If the next 10 years show a shift from fossil fuels to renewables, this is likely to affect the risk-return profiles of different asset classes. It will certainly also have a (greater) impact on the risk-return profiles of regions and sectors. It is easier to analyze and think through potential consequences at this (meso) abstraction level than at the more abstract asset class level.

In other words, it is easier to say something sensible about the risks and opportunities of soft drink producers if policymakers start taking obesity seriously than it is to do so about bonds. You could also call this a "thematic view." We think this could also apply to, say, "water scarcity", "inequality", the "population/migration/education" cluster, or "sectors/companies with a clear social purpose" (see the recent EU Taxonomy of Sustainable Economic Activities). In that case, it is possible to base the strategic asset allocation on the risk-return expectations for those regions and sectors that will play a meaningful role in future economic developments, and only then to consider through which investment categories the investor wants to get exposure to those regions and/or sectors. Depending in part on the maturity of these regions and/or sectors, and on the pension fund's risk appetite, it can then be determined for each region or sector whether the exposure should be provided through bonds, listed equities, real estate, private equity, venture capital, infrastructure, etc.

Method 3: Tail-risk management

In this paper, we assume that scenario analysis is used to arrive at a most likely scenario based on which the asset allocation is made. However, generally, a scenario analysis does not lead to one single outcome. Often, there is also a second (or sometimes even a third) scenario with a non-negligible probability. Does 'quantitative easing' (QE) end in a period of high inflation or not, etc.? Similarly, we could think of a scenario in which social inequality leads to uprisings and/or the erosion of democracy and the 'rule of law' in several countries/regions; or a scenario in which the price of renewable energy drops so far below that of fossil fuels that a major economic shift takes place between regions and (sub-)sectors. If there is such an alternative scenario, calculations are usually also made to determine the desired investment mix if that were to be the case. In addition, a scenario analysis can produce one or more scenarios with a low probability, but a high impact. For such more extreme scenarios the thought will often be: "It won't be that bad." But at the same time, there is a latent anxiety, a little bell in our brains that says, "But what if?" This raises the question of how to deal with black swans, or tail risks. Whereas with scenario analyses you can assign a probability and give it a place in the SAA using bandwidths, the nature of tail risks (small probability, very large impact) does not allow for that and, therefore, requires a different approach than that of scenario analyses. The time horizon of tail-risk management may differ from that of the SAA and/or the scenarios used.

Table: Example of possible more extreme scenarios and probability analysis

Scenario	Probability
Fossil with cost >\$70 per barrel is phased out and offset by sufficient renewable energy growth + Paris Climate Agreement is realized under a low but stable annual global GDP growth of 2%	55%
Fossil fuels remain main source of energy, and 'deepwater drilling', tar sands and polar areas are exploited for fossil: Paris Climate target is not met, temperature rises above 3 degrees Celsius	30%
Tipping point: accelerated global warming and a 6 meters sea level rise within 10 years	5%
Clash between liberal-democratic world and autocratically governed countries leads to far-reaching protectionism, a renewed arms race, tensions and "block formation".	5%
Regular return of severe pandemics	5%

There are three possible options in such extreme scenarios: Ignore, prevent, or prepare. Naturally, ignoring is the easiest option, and many investors have done that before. Preventing is of course the most difficult option, but a SAA strategy that gives a place to real-world outcomes (sustainable goals, SDGs) in addition to risk-return can help ensure that such tail risks will not occur. Especially for large asset owners (so-called 'universal owners'), this is a point to consider. But for almost all asset owners, it is important to prepare for the possibility that the most likely scenario will not become true, but instead, that the alternative scenario or even one of the scenarios characterized as tail risks will.

Preparing can mean two things. First, one can look for a type of 'no regrets' SAA/investment mix, or in other words, opt for an investment mix that is relatively insensitive to shifts in scenarios. However, this will probably result in a relatively low-risk asset mix and, therefore, in moderate expected returns. A second option is to build in flexibility. This means mapping out the possible consequences of the main scenarios and tail risks identified, drawing up ex ante global indications of the changes needed in the SAA/investment mix, setting up a monitoring program, as well as establishing a quick-response plan. In essence, it means adding two elements to the strategic asset allocation process, namely a monitoring policy and a mix of dynamic and tactical asset allocation, based on an analysis of ESG-related tail risks.

Method 4. Freeing up risk budget through ESG risk management

Strategic asset allocation based on the allocation of a certain risk budget generally does not account for the fact that there are also opportunities to invest more or less riskily within an asset class. Increasingly, ESG risks are considered to be 'material' risks. There are compelling studies showing that strong ESG risk management leads to better financial performance (Gunnar Friede, Timo Busch & Alexander Bassen: 'ESG and financial performance: aggregated evidence from more than 2000 empirical studies' in: Journal of Sustainable Finance & Investment, 2015). Even subsequently to this

important meta-study, there have been numerous studies that have pointed to a positive (or at least neutral) impact of ESG integration on the financial performance of investments.

An at least just as important point is that ESG integration contributes to a lower risk profile. In bonds, for example, strong ESG risk management leads to lower default risk. The Financial Times issue of July 2nd, 2019, discusses a study by Mitch Reznick (head of research and sustainable fixed income at Hermes). He states that: "In an analysis of 59 countries between 2009 and 2018, Hermes Investment Management found that countries with the best ESG scores tend to have the lowest CDS spreads and vice versa, suggesting a link between credit risk and ESG performance." In a 2016 study (Evaluating the Relationship Between ESG and Corporate Fixed Income), Riley Clubb, Yoshi Takahashi, and Pete Tiburzio conclude: "We found significant quantitative evidence that ESG scores are positively correlated with small, stable spreads in corporate debt markets. This relationship also applies to other financial metrics such as ROA and leverage ratios. Furthermore, these relationships appear to strengthen during periods of market turmoil, and persist throughout market recoveries. (...) Furthermore, investors in companies with high ESG scores appear to benefit from downside risk protection in bear markets, which may indicate that ESG is being treated as a proxy for quality."

Much of the research focuses primarily on ESG and corporate financial performance, with little focused research on the effect of ESG integration on the risk profile of an investment. Nevertheless, the aforementioned studies provide support for taking into account the potential of ESG integration in reducing the risk of downgrading or bonds' default risk. A calculation of those lower risks can give room to free up a certain 'risk budget' and use it for a slightly higher allocation to less liquid or more risky asset classes with a potentially higher SDG contribution (e.g., infrastructure, sustainable agriculture, emerging markets debt, venture capital, etc.).

Method 5. Taking into account 'real-world outcomes' objectives

The pursuit of "real-world outcomes" can be viewed as a third dimension on top of the more traditional dimensions of risk and return that normally inform SAA decision-making processes. Two variants can be conceptualized:

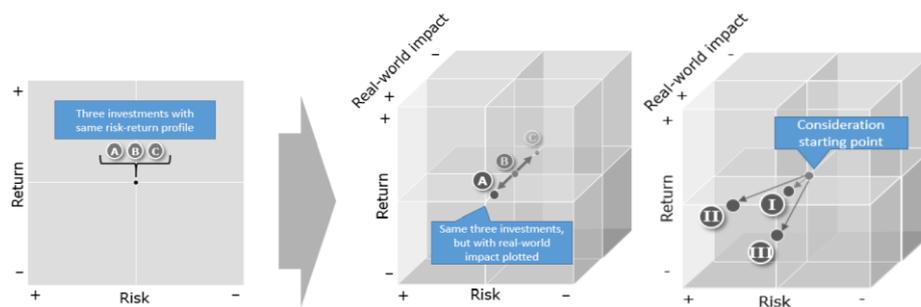
1. Optimization of real-world outcomes under the precondition of equal risk-return profile
2. Integral optimization of risk/return/real-world outcomes.

Variant 1 can be illustrated with Figure 2 below (PRI 2019). This is where:

- (a) in addition to potential investment mixes that best meet a pension fund's long-term risk-return objectives,
- b) investment mixes are sought that can provide additional "better world" benefits given the "real-world outcomes" of each of these investment mixes,
- (c) in a way that still meets long-term risk-return objectives.

When portfolio optimization models identify the 'optimal' mix of assets for a given point on the efficient frontier, they render the various possible portfolios containing different combinations of assets with similar aggregate risk-return profiles. This approach could provide the necessary accountability to embed 'real-world outcomes' considerations into SAA's decision-making processes.

Figure 2: Optimization of 'real-world outcomes' under the precondition of equal risk-return profile²



This approach would allow portfolios that are equally attractive from a risk-return perspective to be identified, while favoring the combination of assets that potentially offers the most positive SDG outcomes. While positive SDG outcomes are highly dependent on the underlying portfolio positions, some (sub)asset classes (e.g., renewable energy infrastructure, green bonds, clean tech venture capital, or other thematic/ impact investments) offer better opportunities for positive SDG outcomes than other categories. Variant 1 potentially leads to re-mixing or changing the asset allocation of a *portion* of the portfolio.

Variant 2 goes a significant step further and involves a policy decision to increase the positive outcomes and contain the negative outcomes of the allocation and investment decisions of the *entire* investment portfolio. This is in line with a 2020 report by the PRI entitled "Investing with SDG Outcomes." In this report, the PRI takes the OECD Guidelines for Multinational Enterprises and the UN Guiding Principles on Human Rights and Business (UNGP) as the basis for reducing the negative outcomes of investments. The SDGs are considered a universally accepted frame of reference for positive outcomes (and, ultimately, impact). Thus, this is where two worlds (SDGs and OECD/UNGP) come together. A double policy objective to on the one hand reduce negative outcomes, and on the other hand increase positive outcomes of the entire investment portfolio, can be set either within the precondition of a certain risk-return objective (this is a particularization of variant 1), or as an independent objective alongside financial risk-return.

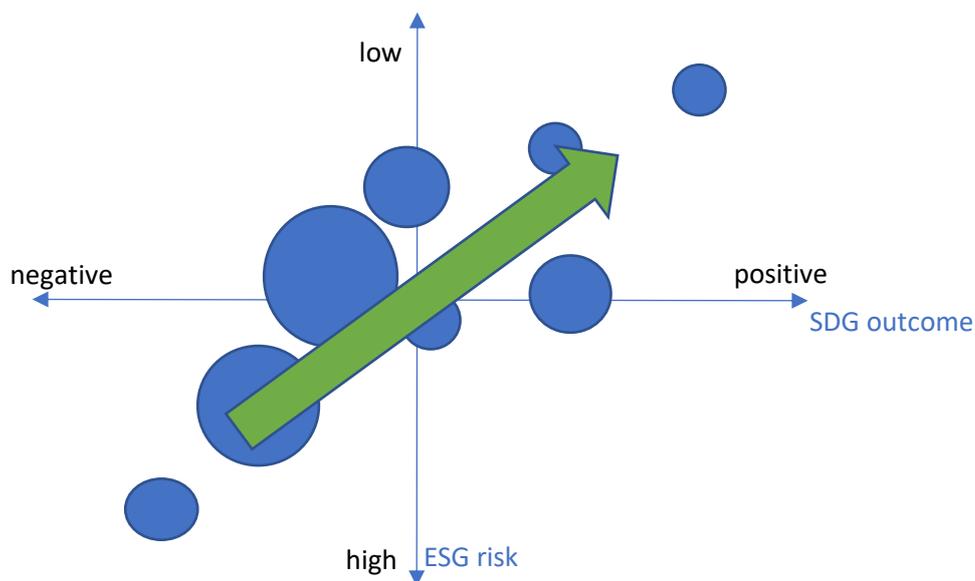
In order to be able to manage the negative and positive real-world outcomes, insight and analysis of all the negative and positive outcomes of the entire investment portfolio, of the conscious and unconscious outcomes, and for the investment processes and products of entities in which investments are made, is needed. This requires attention and data that is partly already available, and partly not yet (making the latter more accessible is part of the EU's Green Deal agenda for the coming years). This insight is then used to set policy objectives: More positive and less negative outcomes. Because many sustainability issues are interlinked (e.g., climate change and water scarcity, or food security and poverty), investors will need to develop an integrated vision across all investments and all SDGs, and determine where the most important impact is that they can influence and want to realize. Dialogue with pension fund beneficiaries and other stakeholders can determine where a pension fund wants to have an impact. Implementing this approach will imply changes to

² Source: PRI, 2019, Embedding ESG issues in strategic asset allocation frameworks.

asset, sector, and/or region allocation, and will also have implications for both implementation within portfolios and reporting (including reporting on real-world outcomes achieved).

Based on a broader sense of responsibility for a better world, pension funds can optimize the negative and positive outcomes of the entire portfolio, with sustainability no longer seen as a precondition but as a variable equivalent to the risk/return ratio. This may sound far-reaching, but the time seems ripe to, in consultation with beneficiaries, broaden the objective function of pension funds from purely financial to both financial and socially sustainable. In addition to achieving a better risk-return profile through the integration of ESG factors, the selected strategic asset allocation and the corresponding investment portfolio contribute to a better sustainability profile (in PRI terms 'real-world outcomes - aligned with the SDGs'). We illustrate this in Figure 3 below by shifting the allocation to the different asset classes (the blue circles are sized according to the size of the asset class) to the top right (a similar exercise can be done at the level of individual securities).

Figure 3: Towards a strategic asset allocation with a better ESG- and SDG-profile³



Measuring the actual real-world outcomes achieved makes the results transparent. Ideally, reporting takes place in real-world terms, in line with the SDGs (who, what, where, how much and to what extent have any negative side-effects been prevented), for instance cubic meters of clean drinking water, MW of clean energy, number of people with better health etc., and not just in financial terms (assets under management in euros). This makes it possible to account for and communicate the broader 3D objective. This will make it clear to pension fund beneficiaries what 'striving for a more sustainable world means in concrete terms. This could in turn increase beneficiaries' interest in pensions, particularly within a defined-contribution system.

³ Source: MHA Jeucken, Verantwoord beleggen 3.0: impact duurzaamheid op én van de beleggingsportefeuille, in Pensioen Magazine, November 2020.

Conclusion

The need to incorporate ESG and sustainability objectives into the process of strategic asset allocation seems obvious to us. In practice, however, this will not be easy, both because it will require all those involved to abandon the 'familiar' approach based on historical data, correlations and risk-return profiles, and because the alternative methods are still in the 'early' stages of development. Nevertheless, we believe that with the theoretical possibilities and methods outlined, the first steps can and should be taken to embed ESG issues and sustainability objectives in the process of strategic asset allocation.

The financial and social aspects of pension funds' investments can no longer be considered separate components of policy-making. ESG issues and sustainability goals should be an integral part of all relevant policy steps and implementation, including strategic asset allocation, a crucial step of for every asset owner and pension fund. Our plea is urgent. First, in order to achieve sustainable pensions. Second, to achieve global sustainable economic development. Realizing the UN Sustainable Development Goals (SDGs) by 2030 will require a considerable effort from countries, citizens, companies, and the financial sector. Scale and speed are of the essence to achieve the necessary change in the world. If pension funds base their policies on a solid forward-looking process of strategic asset allocation, including ESG and sustainability objectives and corresponding practical methods, the movement from backward-looking based on two dimensions to forward-looking with three dimensions will become meaningful, both for pension funds and for society.

This leads us to the following advice for pension funds:

1. In both policy making and implementation, look through three-dimensional lenses at the same time: Risk, financial return and sustainability/social return.
2. Dare to distance yourself from the current thinking (that is partly your own and partly externally imposed) in terms of benchmarks, relative returns, and tracking errors.
3. Integrate the three dimensions into policymaking and strategic asset allocation by 2025 or earlier.
4. Use at least partly forward-looking methods such as scenario analysis in policy-making, to get a better handle on risks, opportunities and responsibilities.
5. Involve beneficiary preferences, both in formulating objectives and in reporting.
6. Determine the desired end goal, e.g.: In 2030 we will assign the same weight to financial and social returns.
7. Start with a step that is realistic for you and implement it incrementally, so that you can learn and adjust as you go (for example, first integrate climate change)
8. During policy-making, use the goals as starting point and translate them into the most effective instruments, rather than the other way around (= reasoning from existing instruments)
9. Ensure that the board and investment committee as, well as any advisors who are to be brought in, have the relevant competencies to be able to successfully carry out 3D investment.

We call on other important players and participants in the pension fund ecosystem to develop, support, and disseminate the ideas and tools that make it possible to achieve good and responsible policy-making in 3D, i.e., the dimensions of risk, return and sustainability.

- **Academia:** Formulate and publish theories and models that allow for the construction of portfolios that are optimally viewed through both a financial and social lens. Formulate solutions to help allocate in a forward-looking manner in a changing world. Do as much empirical research as possible that tests these models and, based on that, formulate recommendations for the policy-making process in which portfolios are constructed. Help to break the dogma that we must invest in all publicly traded companies to have a well-diversified or efficient portfolio.
- **ALM and other technical advisors:** Build the tools that enable 3D policy-making. Think about how the traditional top-down strategic asset allocation (SAA) process should change: Should a sector view be added? How can we start working in a forward-looking way? Why should we accept that broad benchmarks for asset classes (i.e., possibly efficient portfolios through the financial lens, very much not through the sustainability lens) are a given? If we have an idea about the long-term transition of a sector, how should that affect our allocation? Can we identify a range of iso-return risk portfolios with different degrees of sustainability?
- **Consultants:** Show us alternatives to the current (backward-looking) Strategic Asset Allocation model. Provide alternatives to the current governance on pension fund investing, that is, "control by benchmark". Reach out for best practices.
- **Regulators:** Create room for funds' broader objectives, i.e., real-world outcomes as additional source of 'result'. Take the supervision of the social necessity of investments in sustainability more into account (within revised frameworks). Provide more room for reasoned deviations from benchmarks and for less liquid sustainable investments. Support this movement with macro-economic scenario analyses in which ESG and sustainability are fully integrated. Test the competence of the board and relevant bodies to enable 3D investing and implementation.
- **Participant communication:** Based on the idea that pension beneficiaries, as ultimate owners, have social objectives in addition to financial objectives: Strengthen the connection between fund and beneficiaries, incorporate their real-world outcomes and sustainability objectives, and make these a part of the communication with beneficiaries.
- **Asset managers:** Assist pension funds in all possible ways with investment solutions that fit a 3D investment policy and incorporate sustainability in strategic asset allocation.

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