Morgan Stanley

INSTITUTE OF INTERNATIONAL FINANCE

ESG and Trends in Reserves Management

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Introduction

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Globally over US$ 30 trillion of assets are managed with reference to Environmental, Social and Governance (ESG) principles. This represents over 50% growth since 2014 and is a reflection of the significant private sector demand for sustainable investments, as well as the growing public and political pressure for action on ESG. For central banks, ESG has been a focus for many years, and with the creation of the Central Bank and Supervisors Network for Greening the Financial System (NGFS) in December 2018, sustainability is becoming even more topical.

With this in mind, the Institute of International Finance and Morgan Stanley are delighted to jointly launch a new publication on trends in reserves management. To assist central banks and reserves managers—and global investors more broadly—in understanding ESG take-up by public investors, this first edition focuses on sustainable investing in official reserves management.

The first part of this publication is the analysis of a survey of reserves managers themselves. The survey, conducted in late 2019, shows that ESG considerations are becoming increasingly important in the context of managing reserves. Although most institutions surveyed do not yet have explicit ESG strategies or goals, this looks set to change. Many reserves managers are currently considering ESG integration and show a growing interest in the use of ESG ratings and research.

Looking at wider allocation strategy, two-thirds of managers already have a proportion of their reserves in external mandates, typically in credit-, mortgage- and equities-related asset classes. At the time of the survey, respondents saw the low rates environment as the most significant future challenge – this is understandable especially as most reserves managers are restricted to highly rated, short duration assets. The scale of this challenge has only increased in light of the COVID-19 crisis, although asking the same question today would likely uncover additional pandemic-related challenges.

The analysis of the survey results is complemented by a case study of the National Bank of Belgium’s approach to ESG. This firsthand account of the integration of ESG principles by Jan De Wit, Head of Front Office at the Bank, outlines the benefits of a gradual approach, driven by diversification, the emergence of ESG products, and membership of the NGFS. The case study illustrates the questions all reserves managers now face: how to respect and reflect the push for sustainability and ESG, while maintaining their primary focus on portfolio liquidity, capital preservation and return.

The second part of the publication presents a series of essay contributions detailing the benefits of ESG integration and different tools and approaches to incorporating ESG in reserves management. The essay by Sonja Gibbs from the Institute of International Finance presents a framework for understanding the sustainable finance ecosystem. While giving an overview of the different initiatives at each level of the ‘Sustainable Finance Pyramid’, the essay also makes evident the need for international alignment, from data to disclosure, in order to drive investment.

Jessica Alsford, Head of Global Sustainability Research at Morgan Stanley, reviews the rapid growth in ESG products and analyses the different motivations investors have for participating in this market. Jessica makes the case that this growth is a structural trend, driven by changing investor attitudes, evolving definitions of manager fiduciary duty, and the growing evidence of the benefits of ESG integration. The essay also considers the impact of the COVID-19 crisis on ESG investment.

Navindu Katugampola, Head of Sustainable Investing for Fixed Income & Liquidity in Morgan Stanley Investment Management,[1] provides an asset manager's perspective on ESG integration, including discussion of different ESG strategies such as negative screening and thematic investment. The overview of Morgan Stanley Investment Management's approach to ESG illustrates the potential role and tools of external asset managers.

Finally, we present research by the Morgan Stanley Institute for Sustainable Investing showing that, contrary to common opinion, there is no financial tradeoff in the returns of sustainable and traditional funds. The essay compares the performance of over 10,000 ESG-focused mutual and exchange-traded funds between 2004 and 2018. In addition, the research suggests sustainable funds may offer lower market risk.

Tim Adams, CEO of the IIF, stated that "This survey echoes the message we have received from our members across the financial industry: incorporating sustainability considerations will offer some of the biggest challenges – and opportunities – the financial sector has ever encountered. Reserves managers will face a host of new issues, new demands and new stakeholders."

"The emerging interest in ESG by reserves managers is noteworthy and aligns with the trends we have been tracking over the last six years through the Institute's Sustainable Signals survey series," said Audrey Choi, Chief Sustainability Officer and CEO of the Institute for Sustainable Investing at Morgan Stanley. "Interest and adoption of sustainable investing continues to rise, driving asset managers to develop increasingly sophisticated sustainable investing solutions to meet their clients' needs."

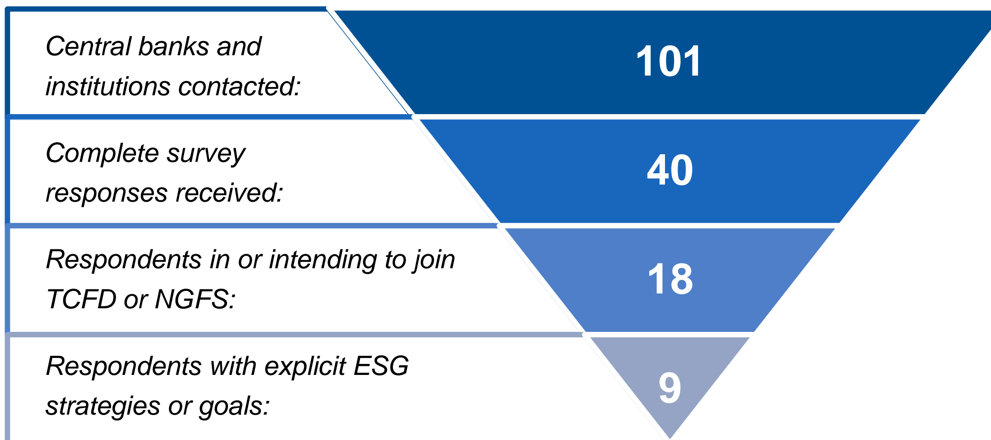
By promoting a better understanding of how reserves managers are tackling ESG integration in practice, we hope to contribute meaningfully to the global dialogue on this issue.

Morgan Stanley and the Institute of International Finance

[1] Morgan Stanley is the parent company of Morgan Stanley Investment Management Inc. and its affiliates. References to "Morgan Stanley" in this document refer to the parent company, not to Morgan Stanley Investment Management Inc. In some instances, Morgan Stanley Investment Management Inc. may leverage or be a part of Morgan Stanley's processes and/or initiatives related to ESG integration.

Survey of Reserves Managers

Morgan Stanley and the Institute of International Finance conducted this survey of reserves managers in late 2019, with a focus on the adoption of environmental, social and governance (ESG) principles by official institutions.[2] Forty institutions responded to the survey, representing over $2.5Tn in assets. A majority of respondents were central banks, although a handful of participants were international institutions. Half the respondents were from Europe, with the remainder spread across Latin America, Africa, the Middle East, Asia and North America.



ESG Integration

Reserves managers are beginning to focus on ESG

Almost half of the respondents are or are considering becoming members of the Network for Greening the Financial System (NGFS) or the Task Force on Climate-Related Financial Disclosures (TCFD). Half already manage green, social or sustainability-linked bonds and many intend to increase exposure in the next 24 months:

> *"We expect to increase exposure to green, social, and sustainable assets. These would only be included if eligible - meaning from AAA or government-related issuers."*
>
> *– Director of Reserve Management, Central Bank*

Moreover, ESG is beginning to be considered as an additional dimension of the liquidity-return-capital preservation framework:

> *"The potential to integrate ESG/Sustainable investment criteria within the external reserves has become more important, along with concentration risk."*
>
> *– Head of Front Office, Central Bank*

[2] It should be noted that these survey responses were completed prior to the COVID-19 crisis. While responses regarding ESG and allocation strategies may reasonably be expected to remain largely unchanged today, the crisis will likely affect the future challenges these institutions face. Full survey results are presented in the Appendix.

"Alongside negative rates, the integration of ESG considerations in the investment process will be one of the biggest challenges in the future."

- Head of Asset Management, Central Bank

Although most institutions do not yet have explicit ESG strategies or goals, this looks set to change

More than three quarters of reserves managers do not have explicit ESG or sustainable investing goals as part of their reserve management strategy. But this looks set to change: the primary reason for not having an explicit ESG strategy is that this has not yet been raised internally to the relevant decision-making body, with many institutions commenting that the issue was currently under consideration.

"We are in the process of defining what role ESG will play in the management of our discretionary investment assets."

– Head of Investments, Central Bank

Concerns were also cited regarding limited product range and perceived lack of liquidity or market depth.

Where they have been adopted, ESG strategies remain rudimentary

For respondents that did have explicit ESG policies or commitments in place, the most common mandate was for negative screening i.e. the exclusion of certain companies or sectors. A majority also had a mandate to purchase green, social and/or sustainable bonds. A positive ESG tilt or ESG integration as an investment criterion was less common.

Use of ESG ratings and research suggests growing interest in ESG integration

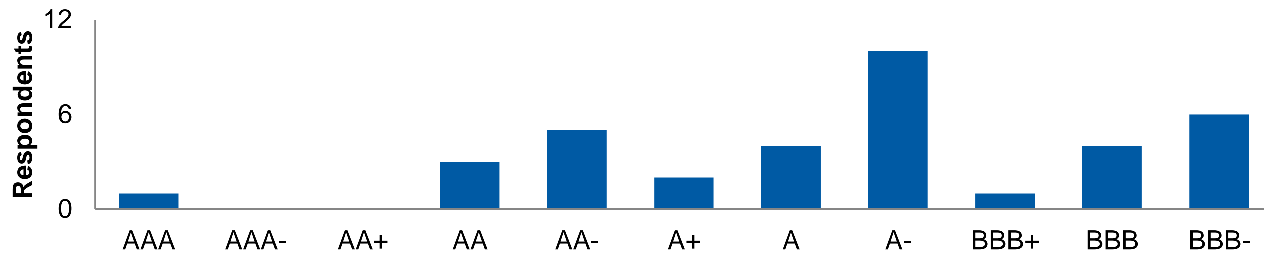
Use of ESG ratings and ESG-specific research remains limited overall. However, a subset of respondents that don't have an explicit mandate already use ESG ratings and research, demonstrating that there is growing interest in this area.

Allocation Strategy

Ratings thresholds guide investment decisions for more than 95% of reserves managers

Almost all reserves managers have an explicit minimum ratings threshold, with only one third of managers able to invest in assets rated lower than A-. In the rare cases where thresholds do not apply, managers are still limited to investing in highly rated products, but benefit from additional flexibility, avoiding the need to mechanically react to any downgrades.

What is Your Minimum Rating Threshold?



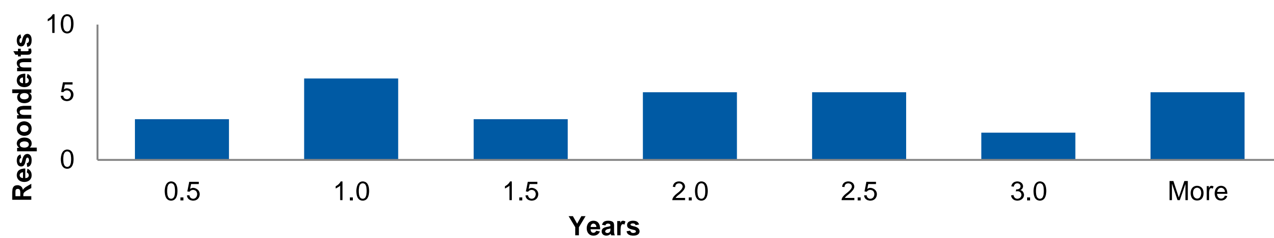
There are two schools of thought regarding ratings for ESG products: some reserves managers are more lenient with regards to rating requirements for ESG, while some see their ratings requirements as a line in the sand.

> *"We expect to increase exposure to green, social, and sustainable assets. These would only be included if eligible - meaning from AAA or government-related issuers."*
>
> *– Director of Reserve Management, Central Bank*

The overall duration of reserves management remains relatively short

More than half of reserves managers have an average allocation duration of 2 years or less. While the duration in most cases doesn't vary between asset classes, some reserves managers have higher average duration hold-to-maturity portfolios.

What is the Average Duration of Your Reserves?



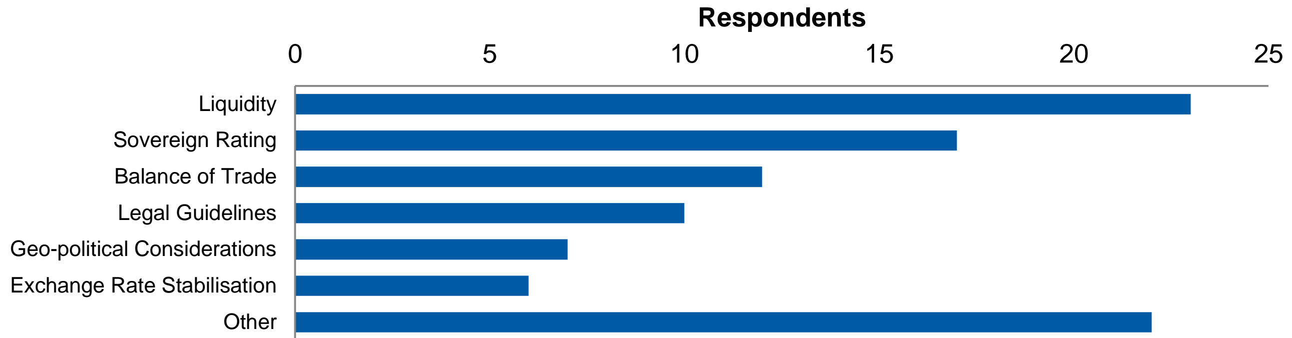
Liquidity and sovereign rating remain the main drivers of currency allocation

Focus on liquidity and sovereign rating sees the US dollar remain the dominant reserves currency, followed by the euro, Japanese yen and British pound. There is, however, positive momentum for the Canadian dollar, Australian dollar and Chinese yuan but we do not see that momentum extend to the higher yielding or highly rated smaller currencies.

Returns and diversification were also common drivers of allocation, e.g.:

> *"The main drivers are risk management considerations combined with our needs in terms of currencies for interventions."*
>
> *– Principal Portfolio Manager FX Reserves, Central Bank*

What are the Main Drivers for Currency Allocation?

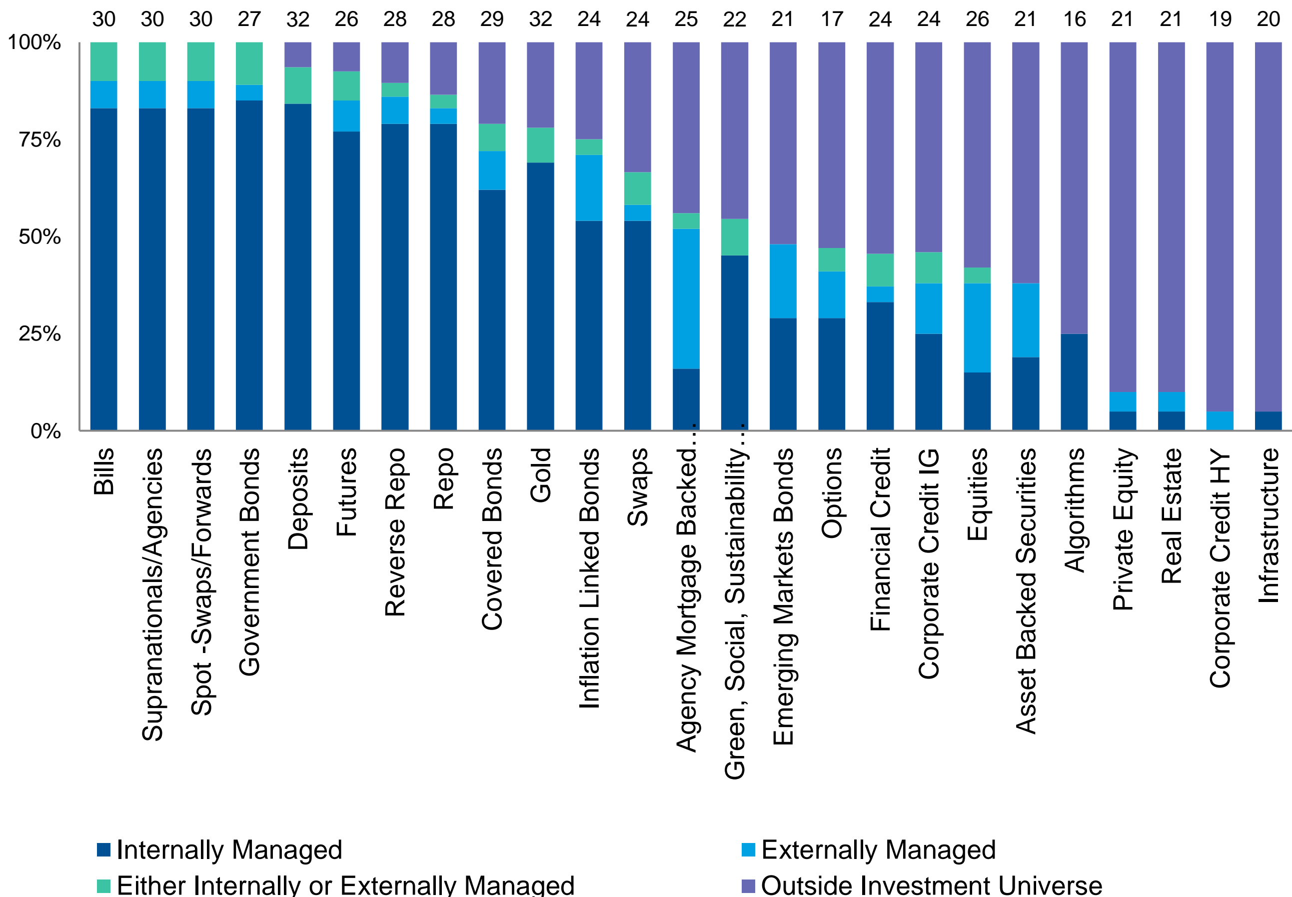


External Mandates

Two-thirds of reserves managers have a proportion of their reserves managed externally

Pure rates products tend to be managed internally by reserves managers. The proportion of reserves managed through external mandates increases in credit, mortgage and equities related asset classes.

Which Asset Classes do you Currently Manage?



Overall, one third of reserves managers expect to increase the share of reserves held in external mandates

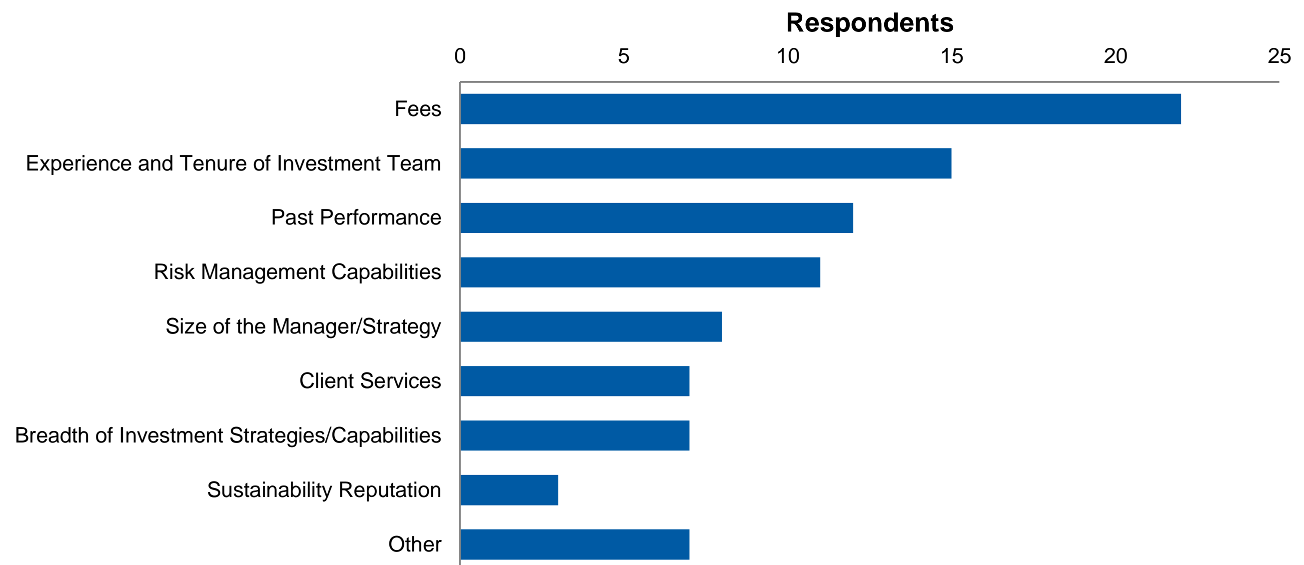
Of reserves managers who already use external managers, almost half intend to increase the share of their reserves held in external mandates within the next two years. Of those who don't yet have external managers, less than 10% expect to create external mandates.

> *"Due to the substantial increase in our external reserves, we are planning to diversify the management by increasing the allocation to external managers."*
>
> *- Middle Officer, Central Bank*

Overall, two-thirds of externally managed reserves include some active management. On balance, more reserves managers are looking to increase the active proportion than decrease.

Fees are the key decision-making factor when selecting an external manager, but what tips the balance is the experience of the investment team and their past performance

What are the Three Most Important Attributes for you When Choosing an External Manager?



Future Challenges

The low rate environment remains the most significant challenge facing reserves managers, while the future impact of technological development is uncertain

A majority of respondents highlighted the low and negative rates environment as the most significant future challenge:

"The biggest challenge is balancing the need for capital preservation and adequate liquidity while continuing to search for yield in a low interest rate environment."

- Senior Portfolio Analyst, Central Bank

"Low expected return environment coupled with increased asset class correlations and increased portfolio risk levels makes managing portfolios challenging."

- Head of Investments, Central Bank

Respondents' opinions diverged over the future impact of technologies, including AI and blockchain:

"Technology is expected to be a net positive with respect to efficiency, investment decisions and risk management. However, it will likely require greater resource allocation. Cyber security is an ongoing concern which is becoming increasingly important."

- Senior Portfolio Analyst, Central Bank

"There will be no imminent impact. We have already implemented changes towards enhancing security, and moving towards more electronic trading."

- Head of Tactical Asset Allocation, Central Bank

Case study: National Bank of Belgium

Developing a pragmatic approach to ESG in reserves management

Jan De Wit, Head of Front Office, National Bank of Belgium

Sustainable investing has become an ever more prominent theme amongst a wide range of institutional investors, including from the official sector. And rightly so. This sharper focus has coincided with two broad phenomena: a tendency towards global policy coordination, and a quest for a fully integrated sustainability approach throughout the investment process. Despite recent cross-border initiatives such as the EU taxonomy on green bonds and the establishment of the Network for Greening of the Financial System among central banks, there is still no consensus on the materiality of the available sustainability frameworks and investment strategies that are being used across various asset portfolios. Moreover, a central bank balance sheet is typically dominated by government bonds, an asset class less suitable for the integration of sustainable investment strategies than more risky assets such as corporate bonds and equities.

Whilst both the concepts of policy coordination and full integration of sustainability aspects within the investment process are appealing, paradoxically – considering their broad scope – they may also deter action, which obviously would be an undesirable outcome. The journey towards a sustainable society is of course a long-term one. A pragmatic step-by-step approach is therefore recommended. Within the National Bank of Belgium (NBB), our approach with respect to sustainable investing has taken this into account.

In practice, this has been translated into gradualism and a resulting staggered approach. Such an agile methodology can help to avoid the lurking pitfall of the status quo, which would be unacceptable considering the societal relevance of the issue. So far, we have thus made gradual progress, and will continue to do so going forward. In this domain, the Bank intentionally positions itself neither as an innovator nor as a laggard, but rather as an early adopter. To use a climate-friendly metaphor, our journey is like sailing on a rough sea: one knows and aspires to the general direction, but is not sure about the exact path. As we move forwards, further fine-tuning is warranted as and when additional elements, such as changes in the market's structure, become clear.

Sustainability through diversification

The starting point cannot be disregarded either, since legacy portfolios matter. Under a classical framework, and the NBB is no exception here, central bank reserve managers tend to focus extensively on considerations of both portfolio liquidity and capital preservation in determining an optimal asset mix. Once those two objectives are deemed to have been broadly met, reflections about enhancing returns also become more prominent. In such a context, the Bank has been gradually pursuing a diversification strategy with respect to its foreign reserves and portfolio management activities. Accordingly, a small part of its dollar reserves has been invested into a high-grade credit portfolio for the last 15 years or so.

With hindsight, this initial small step in terms of diversification also immediately implied the incumbent phase of the Bank's approach towards sustainable investing, as this credit portfolio was susceptible to bring such factors under consideration. Indeed, when pursuing investment decisions related to individual corporations, questions may arise as regards the nature of the underlying business activities, the origin of incorporation, etc. An early decision was taken to pursue a negative screening approach, based upon an external methodology

with an exclusion list, as kept by the risk management function within the Bank. Hence, some potential issuers were excluded from the investable universe beforehand.

Emergence of green bonds and "ESG"

A second opportunity arose when the inaugural issuance of green bonds hit the screens a couple of years later. As NBB portfolio and risk managers jointly concluded that green bonds did not require any separate risk management treatment, it was collegially decided to consider them just like any other plain vanilla bond and thus by default to render them eligible within the prevailing risk framework. This policy, which originated from within the credit portfolio, was subsequently extrapolated to other issuers (sovereigns, supranationals), and thus also had broader repercussions for the other portfolios run by the Bank. The universe of green bonds is currently in full expansion and its relative share in the Bank's portfolios, which is still very low, is expected to expand accordingly.

The third phase within our approach towards sustainable investing came many years later. It was triggered in mid-2017 by the inclusion of the "ESG" acronym within a slide which served as an input for a strategic reflection within the Bank's Financial Markets Department. The ESG notion was taken on board by management and work on pursuing more intrusive strategies soon got under way. As a result, the choice was made by the Board to add an additional positive screening methodology for corporate bonds within the credit portfolio. A contract was concluded with an external provider of ESG ratings on which the thresholds for the screening approach were calibrated.

An interesting side effect of this additional layer in the investment framework for the credit portfolio was the resulting loss in terms of issuer diversification. The Bank compensated for this intra-portfolio loss of diversification by taking on a somewhat broader spectrum in terms of credit ratings for a small part of its portfolio and under stricter issuer share limits. Overall, it implied a very small increase in that portfolio's credit riskiness. In terms of implementation, it was jointly decided both to apply the ESG methodology for new purchases and – for further overall reserve diversification purposes – to increase the size of the credit portfolio. This additional funding tranche enabled a rapid rise in the number of holdings consistent with the newly established ESG framework.

Joining the NGFS and further diversification

A fourth important milestone was the Bank's decision in mid-2018 to join the Network on the Greening of the Financial System. Participation in this forum, including in work streams related to central banks' portfolio management activities, has enabled us to keep well informed about the latest developments within the rapidly evolving landscape of sustainable investing and to contribute to the global official sector coordination in this field.

A fifth phase was concluded in the course of 2019. It consisted of a sectoral reshuffle within the Bank's credit portfolio, which implied a further orientation towards corporate issuers, for which the positive screening ESG methodology applies. This choice obviously widened the ESG footprint but was also inspired by the changing nature of financial sector issuance, which – courtesy of the Total Loss-Absorbing Capacity (TLAC) and Minimum Requirement for own funds and Eligible Liabilities (MREL) regulations – is more and more oriented towards non-preferred seniors. Since such bonds typically rank slightly lower than regular senior bank debt

from a credit ratings perspective, the investable universe according to our risk framework had shrunk accordingly.

The sixth (and so far last) phase in the Bank's sustainable investment journey was also concluded in 2019. It was at the same time meant to be another major step in terms of diversification as the Bank made its inaugural investment, for a small amount, in an equities portfolio. Considering the Bank's lack of previous technical experience in that asset class, it was decided to outsource this mandate to an external asset manager. During the selection process, there was substantial focus on the onboarding of sustainability factors within the mandate. The Bank opted to pursue a passive strategy with a positive screening methodology for ESG factors in the benchmark, fully consistent with the approach previously chosen for the credit portfolio. Moreover, within the externally managed equities portfolio, we also went one step further in the sustainable strategy, since one of the selection criteria had been the external manager's ability to engage with the companies it invested in by exercising voting rights and to hold discussions on sustainability issues, with an expected longer-term material impact on the environment and financial results.

Looking ahead

Sustainability risks, particularly those related to climate change and the environment, will certainly affect society in the long run, and the impact of the current pandemic will further complicate the overall assessment. When the Bank stepped up its sustainability focus within the investment framework a couple of years ago, the change of strategy was assumed to have a neutral effect from a risk return perspective. However, more recently, there are signs of a certain demand-supply imbalance becoming more pronounced, likely reflecting a supply shortage, which makes it possible, for example, for green bond curves to trade persistently through comparable classical peers. As the market structure continues to evolve, the Bank will permanently re-assess its positioning with respect to sustainable investing. Most probably, additional steps towards further integration of sustainability aspects will be taken in the next years.

The Sustainable Finance Pyramid

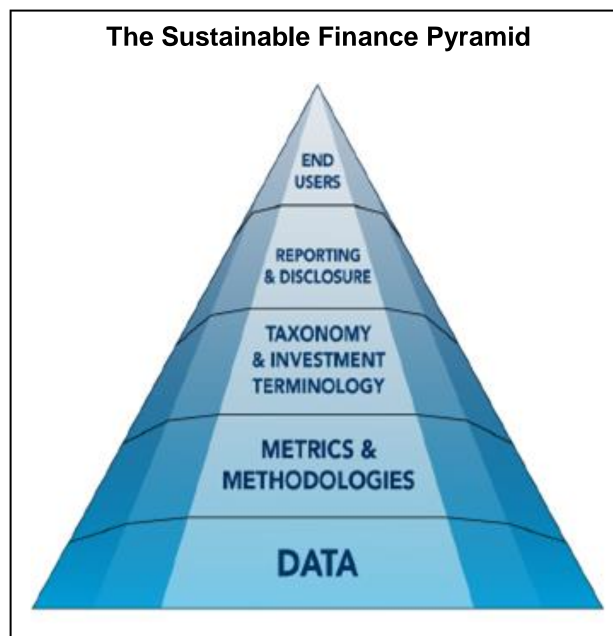
Sonja Gibbs, Managing Director and Head of Sustainable Finance, Institute of International Finance

The IIF's "Sustainable Finance Pyramid" is a conceptual framework to help map the proliferation of new initiatives and tools for assessing both risks and opportunities. Launched in Davos in January 2020, the Pyramid is intended as a toolkit to bring clarity to the complex ecosystem of data, risk assessment methodologies, taxonomies and reporting frameworks that now define the sustainable finance space.

Building blocks for understanding ESG risks and opportunities

The rapid evolution of the sustainable finance agenda has led to a proliferation of overlapping and sometimes competing initiatives and approaches. As demand for sustainable finance and investment rises, the industry faces two key challenges: first, how to manage sustainability-related risks (including physical and transition risks arising from climate change); and second, how to assess and capitalize on new opportunities arising through the transition to a sustainable economy. The toolkit for responding to these challenges can be visualized as a pyramid, with five broad layers.

The Sustainable Finance Pyramid



Data – the foundation for the toolkit

The sustainable finance toolkit starts with data—the bottom layer of the pyramid. Data is fundamental to inform assessment of climate-related and broader ESG risks, innovation in risk assessment, alignment on taxonomies for sustainable activities and financial products, and ultimately enable better disclosure. Granular, accurate, and decision-useful data is also critical for evaluating sustainable finance opportunities, especially in nascent sectors and emerging and frontier markets. Data gaps and inconsistencies are particularly problematic for evaluation of ESG factors, where data sources are often incomparable, incomplete, or missing altogether. Historical data are often unavailable or nonexistent, and—unlike in credit risk assessment—backward-looking climate and ESG data are not necessarily helpful in understanding future risks. Data gaps are thus a challenge across all layers of the pyramid, meaning that scaling up sustainable finance will require harmonization of, and greater access to, relevant data.

Metrics and methodologies – work in progress

The second layer of the pyramid centers on metrics and methodologies— how we measure, assess and quantify climate-related risks and opportunities. Having the right data will provide the foundation, but at the second layer of the pyramid there is little alignment around either metrics or methodologies – what should be measured, and how. In the climate risk space, regulators and the financial services industry are moving quickly to develop relevant scenarios and tools for assessing risks and alignment with low-carbon transition pathways, leading to a proliferation of new initiatives. In the broader ESG sphere, where risks and performance are not as easily quantifiable, progress towards alignment may face larger hurdles.

Key methodological questions on climate risk and alignment within the financial sector include:

- *How do climate risks and opportunities impact the financial sector?* A wide range of initiatives are examining how climate change may impact financial firms' balance sheets and business models. Methodologies in this category—developed mainly by regulators, policymakers, and international entities — include "scenario-based" assessments of physical and transition-related risks and opportunities. While oriented towards similar objectives (such as assessing the exposure of a financial institutions' portfolio to climate-related risks) and often relying on similar underlying assumptions, methodologies can differ significantly with respect to parameters and other variables. Innovation continues apace, including on how such tools can also be utilized to evaluate opportunities for financing the transition.
- *How does the financial services industry impact climate and the broader United Nations Sustainable Development Goals (SDGs) agenda?* This set of questions looks at how well a financial firm's loan or investment portfolio is aligned with international goals like the Paris Agreement or the UN SDGs. In this context, "alignment" considers negative impact (such as a firm's global "carbon footprint"), but also positive impact on climate change, including mitigation and adaptation. Methodologies—typically private sector/NGO driven—look at alignment with specified climate change goals and can help assess "green" finance flows or shifts away from "brown" finance. Leaders in this field include Science Based Targets Initiative (SBTi), the Partnership for Carbon Accounting Financials (PCAF), the Paris Agreement Capital Transition Project (PACTA), and the Carbon Disclosure Project (CDP).

Taxonomy – in search of a common language

The third layer of the pyramid is climate/ESG taxonomy and investment terminology. The key question here is basic, yet complex: what economic sectors and financial assets can be defined as green – and what types of financial products should be classified as 'sustainable finance'? Action to date has largely focused on the climate change dimension, but new regulatory proposals suggest consideration for a wider range of factors – for instance, taxonomies for high-carbon industries, or the consideration of biodiversity loss. Whatever the scope, without a common language and definitions, it will be much harder to measure green capital flows and ultimately scale up to the level of private funding needed to achieve the SDGs.

In this domain, myriad policy-led and market-based initiatives are underway: the proposed EU Taxonomy is a central initiative, serving as a core pillar for the development of standards and labels for financial products. Taxonomies and classification systems for sustainable finance are now in place, in development, or under discussion in many jurisdictions around the world, with a new global forum – the International Platform on Sustainable Finance (IPSF) launched last year to promote knowledge sharing and convergence. On the private sector/NGO side, entities such as the Climate Bonds Initiative have developed science-based certification schemes for specific green bonds, while the Green Bond Principles and Green Loan Principles offer voluntary guidelines for issuers. More broadly, proliferation of overlapping investment terms is seen as a key barrier to scaling up sustainable investment. Initiatives such as the IA Responsible Investment Framework seek to build alignment on a common language; along similar lines the IIF Sustainable Finance Working Group has set out the case for simplifying sustainable investment terminology.[3]

[3] IIF, The Case for Simplifying Sustainable Investment Terminology, 2019

Disclosure and reporting – materiality matters

Building on good climate/ESG data, risk assessment methodologies, and classifications and definitions, the fourth layer of the pyramid brings in disclosure. High-quality disclosures can strengthen understanding of how companies operate and have a material impact on investment decisions. However, disclosure on too many inconsequential characteristics could mislead investors and prompt concerns about "greenwashing" and window dressing of balance sheets. Moreover, the burden of unnecessary disclosure on non-material themes can be high—particularly for small businesses. Striking a balance between materiality and comprehensive disclosure is a challenging task.

In the climate sphere, the recommendations of the industry-led Task Force on Climate-related Financial Disclosures have set out a widely-endorsed framework, which has emerged as a global standard. Looking at the broader universe of ESG factors which are increasingly viewed as material, a number of voluntary frameworks and standards are in use – inspiring increasing concern among market and policy actors regarding competing standards and lack of comparability, and growing calls for alignment. The Corporate Reporting Dialogue's Better Alignment Project seeks to promote more integration between financial and non-financial reporting, and mapping sustainability accounting frameworks against the TCFD. Another alignment initiative was launched in Davos in January 2020 under the auspices of the World Economic Forum with support from the "big four" accounting firms – Deloitte, EY, KPMG, and PwC. This group released a proposal to create a core set of sustainable metrics and recommended disclosures. The metrics will be drawn from existing standards and disclosures, including the Global Reporting Initiative (GRI), the Sustainable Accounting Standards Board (SASB), the Carbon Disclosure Project (CDP), the Climate Disclosure Standards Board (CDSB), and others.

End users – everyone needs a better toolkit

The fifth and final level of the pyramid comprises the many users of the sustainable finance toolkit:

- Regulators and supervisors require a robust toolkit for risk assessment, including scenario analysis and stress testing;
- Investors use data, risk assessment methodologies, taxonomy and reporting to incorporate ESG issues into their investment strategies;
- Policymakers can use these tools to understand climate risk and opportunities, helping shape macroeconomic policy (e.g. carbon pricing);
- International financial institutions and the development finance community need the toolkit both to help drive SDG funding (including via public-private partnerships) and to better understand climate-related risks in the countries they monitor (for example, a recent IMF staff paper examines the role of stress testing for financial resilience to climate risk);[4]
- The media, NGOs, international organizations like the UN, and civil society use the toolkit, particularly climate reporting, as part of their ongoing monitoring of environmental issues, progress on SDG financing and scrutiny of private sector actors.

[4] IMF, Assessing Climate-Change Risk by Stress Testing for Financial Resilience, 2020

The financial sector as catalyst

The financial sector clearly will be a vital catalyst in the transition towards a more sustainable economy. Incorporating climate and sustainability considerations into all aspects of financial decision-making – a goal identified by Mark Carney, former governor of the Bank of England – stands as one of the greatest challenges—and opportunities—the financial sector has ever encountered. Success will require rapid action and innovation to address new challenges, meet new client demands, and engage with new types of stakeholders. However, regulatory uncertainty and complexity could impede the ability of the financial sector to mobilize effectively to provide the necessary investment and insurance underwriting for transitioning. Sustainable finance therefore requires the development of a sound global policy and regulatory framework that ensures an aligned path to achieve the SDGs, protects consumers, supports market development, and facilitates the needed transition in key economic sectors.

Motivations for Sustainable Investing

Jessica Alsford, Head of Global Sustainability Research, Morgan Stanley

Over the last decade Sustainable Investing has moved from being a niche approach to a strategy that is applied to over $31 trillion of assets globally. In Europe, almost half of assets are now managed with some form of Sustainability approach,[5] whilst in the US total sustainability assets under management rose sharply to $12 trillion in 2018, from $8.7 trillion two years earlier.[6] Asia is smaller, but interest is rising. There are now over 360 signatories to the UN Principles for Responsible Investment across Asia-Pacific (versus some 2,370 globally), of which a third was signed in the last two years. In Japan, the Global Sustainable Investment Alliance (GSIA) indicates Sustainable Investing assets increased fourfold between 2016 and 2018, to $2.1 trillion.

There are a number of different motivations for Sustainable Investing, but based on our numerous discussions with asset owners and managers we would summarise them in three groups:

1. Risk Management – analysing Environmental, Social and Governance (ESG) topics to inform views on operational management and control
2. Alpha Generation – linking ESG topics to improved risk adjusted returns
3. Generating positive change – allocating capital to issuers that are improving their impact on society or the environment.

Sustainable Investing: A Structural Growth Trend

The growth in interest in Sustainable Investing has been rapid, particularly over the last couple of years. We see this as a structural change rather than a short-term fashion.

First, demand from asset owners is increasing. A study from Morgan Stanley found that 85% of individual investors in the US are interested in Sustainable Investing – up 10% in just two years.[7] This number then rises to 95% when only considering millennials (vs 86% in 2017), so as wealth is passed on to this generation, appetite for Sustainable Investing strategies is likely to grow.

Sustainability is also being linked to the fiduciary duty of asset managers. In the past, critics of Sustainable Investing argued that elevating ESG in an investment process could be a failure to execute on fiduciary duty. However, earlier this year, the CFA Institute issued a position statement stating “ESG factoring is consistent with a manager’s fiduciary duty to consider all relevant information and material risks in investment analysis and decision making”.[8]

There are numerous studies demonstrating the benefits of incorporating ESG into investment decisions. Our own research *A Quant Lens on ESG* concludes that including certain ESG metrics into a traditional sector-neutral quant model may improve risk-adjusted returns,[9] whilst our *HER Score* has been used to demonstrate that companies with the highest levels of gender diversity outperform their less gender diverse peers.[10]

[5] Global Sustainable Investment Alliance
[6] US SIF
[7] Morgan Stanley Sustainable Signals: Individual Investor Interest Driven By Impact, Conviction and Choice, 2019
[8] CFA Institute, Positions on Environmental, Social and Governance Integration, 2018
[9] Morgan Stanley, A Quant Lens on ESG, 2018
[10] Morgan Stanley, Introducing HERS: Employing Diversity Pays Off, 2019

Elsewhere, a comprehensive meta-study from Arabesque Asset Management found that sustainability can lower the cost of capital, improve operational performance and benefit share price performance.[11]

Legislation on Sustainable Investing is being proposed. In Europe, the European Commission's High-Level Expert Group (HLEG) on Sustainable Finance has recommended a set of measures for sustainable finance in the region. These include clarifying investor duties to extend time horizons and bring greater focus on ESG factors, upgrading disclosure rules to make climate change risks and opportunities fully transparent, and reforming governance and leadership of companies to build sustainable finance competencies.[12]

Adoption across various investment styles and asset classes

The variety of investment strategies now embracing sustainability has expanded beyond long-term investing to include activists, hedge funds, money market funds, ETFs, private equity and Quants. Sustainable Investing has also diversified away from equities to address fixed income assets.

In Europe, fixed income accounts for ~ 40 % of sustainability assets under management, with 57% of this asset class being corporate bonds and a third sovereign bonds.[13]

Investors are integrating relevant ESG factors into corporate and sovereign bond analysis, whilst credit rating agencies have begun to disclose how sustainability impacts their decisions.

Changing approach to data

Data is an important aspect of sustainability investing. Issuers are progressively reporting more quantitative and qualitative information to help investors better understand the risks and opportunities that they face over the short, medium and long term.

Having access to consistent and comparable data remains a challenge but is improving. The Sustainability Accounting Standards Board (SASB) has published a set of standards for 77 industries to help corporates identify and report on financially material sustainability topics.

There are also an increasing number of alternative ESG data providers aiming to convert unstructured data, available at a higher frequency than standard ESG disclosure, into signals that can be used for investment purposes.

Climate Change has emerged as the dominant topic

One of the challenges of ESG data is the wide variety of topics that fall under the three pillars. However, one theme that now dominates Sustainable Investing is Climate Change. The list of climate-related natural catastrophes has lengthened in recent years, with storms, flooding, droughts and forest fires providing a sobering reminder that the physical risks of global warming are already beginning to emerge. Climate Change is no longer being viewed as beyond the relevant time horizon of corporates or asset managers. Indeed, in the World Economic Forum's 2019 Global Risks Perception Survey, Climate Change, and related issues such as natural disasters and extreme weather events, accounted for three of the Top Five risks in terms of both likelihood of occurrence and impact.

[11] Arabesque Asset Management, From the Stockholder to the Stakeholder, March 2015
[12] EU High-Level Expert Group on Sustainable Finance, Financing a Sustainable European Economy, 2018
[13] Eurosif 2018

Investors want to, and need to, understand how issuers are thinking about Climate Change. What steps are they taking to transition towards a low-carbon economy? And are they prepared for the reality if we lose the race against time to sufficiently cut greenhouse gas emissions?

The Taskforce on Climate-related Financial Disclosure (TCFD) is viewed by many as a framework for climate risk analysis and reporting across four areas - Governance, Strategy, Risk Management, Metrics & Targets. Over 500 companies and organizations have now expressed their support for the TCFD and early examples of reports using the framework are emerging.

Engagement for driving change is important

An increasingly important aspect of Sustainable Investing is engagement by asset managers to create positive impact – whether investing in equity or fixed income. This may be with the ambition to reduce plastic consumption, increase energy efficiency or improve working conditions for employees. Even funds that are only incorporating ESG to improve risk adjusted returns are increasingly taking the stance of using their shares to engage with issuers to drive change, and be an active steward of investments.

Sustainable Investing post Covid-19

Early signs suggest to us that Sustainable Investing emerges from the Covid-19 crisis stronger than before. Net outflows during the March market volatility were lower than for the broader market, whilst ESG indices outperformed. Covid-19 is also changing the way in which Environmental, Social and Governance factors are being analysed. There are fears of some delays to the decarbonisation agenda, but already we see a narrative of a “green recovery” coming out of the EU. From a social perspective, Covid-19 has put the spotlight on the need for corporates to demonstrate their ability to generate both purpose and profit. We would expect companies who treat all of their stakeholders fairly during and after the crisis to be in a stronger relative position long term. Finally, capital allocation, executive compensation and fair tax payments are all likely to feature heavily in how investors assess issuers going forward.

Given the range of motivations for both asset owners and issuers to engage in Sustainable Investing and ESG, interest in this area is likely to continue increasing. Further growth will be facilitated by clarification of investor duties, updated disclosure requirements, and, above all, more consistent and comparable data.

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Sustainable Investing for Reserves Managers – An Asset Manager's Perspective

Navindu Katugampola, Head of Sustainable Investing for Fixed Income & Liquidity, Morgan Stanley Investment Management

In recent years, we have witnessed a rapid growth in Sustainable & Responsible Investing globally, driven by an escalation in demand from asset owners, regulators, policy makers and the general public. Investors are increasingly focused on Environmental, Social and Governance ("ESG") considerations as part of their investment process. For Reserves Managers, whose primary objectives are capital preservation, liquidity and return, how is this relevant and what should they consider? In the course of this article, I will elaborate on:

1. Why ESG matters for Reserves Managers
2. What Reserves Managers can do to respond to this evolving market dynamic
3. How asset managers like Morgan Stanley Investment Management (MSIM) approach sustainable investing, and how we can help

Why does ESG matter for Reserves Managers?

For Reserves Managers, the increased scrutiny on sustainable investing presents something of a conundrum – how does it fit within the context of their remit?

The first answer to this is that on the strategic side, many Central Banks and Supervisors have already made a firm commitment in this direction. In December 2017, the Central Banks & Supervisors launched their Network for Greening the Financial System ("NGFS"), an initiative that currently has 63 member organisations and 12 observers, across 5 continents as of March 2020. The recommendations of the NGFS include measures such as improving sustainability disclosure and integrating climate risk into financial stability monitoring. Most importantly for Reserves Managers, the recommendations also include integrating sustainability factors into the management of members' portfolios. More broadly, the commitment from governments on climate change as part of the Paris Agreement, and the focus from policy makers, in initiatives such as the EU Green Deal and the EU Taxonomy of Sustainable Activities, will have an influence on Reserves Managers who will increasingly be encouraged to align to these initiatives and support them.

The second answer is that incorporating ESG into the investment process can enhance, rather than constrain, the Reserves Manager's investment objectives. ESG factors can be integrated as part of an investment analysis to help identify, quantify and manage risks related to sustainability. These sustainability risks – for example, level of vulnerability to environmental disasters (physical risk) or a change in carbon tax regulation (transition risk) – have the potential to cause a meaningful downside impact on an issuer's fundamentals and so on the price of any securities they may have issued. This is very well established in the marketplace, as evidenced by the fact that all the major Credit Rating Agencies are now including sustainability risk elements in their credit rating methodologies. The Principles for Responsible Investment (PRI), of which MSIM has been a signatory since 2013, have played a key role in this process through their "ESG in Credit Ratings Initiative". A further consideration is that significant sustainability challenges, especially if they arise suddenly and are large in scale, may also cause idiosyncratic constraints on investors' ability to trade in and out of securities. For Reserves Managers, the implications are simple but critical to appreciate: preservation of capital, returns and liquidity can be negatively impacted, unless ESG factors are incorporated into the investment process.

What can Reserves Managers do?

Sustainable investing provides Reserves Managers with the opportunity to help drive and support a policy agenda, and the challenge of appropriately managing risks to the price and liquidity of investments.

A simple starting point would be to establish a clear exclusion policy to restrict investments in particular industries or sectors (e.g. tobacco, gambling, weapons) which might be considered the most controversial from a sustainability standpoint, with potentially the highest downside risk exposure. A further enhancement might be to also exclude investments in any issuers who have fallen short of fundamental international standards, such as the UN Global Compact, which focusses on human rights, labour, environment and anti-corruption.

When thinking about an appropriate ESG integration methodology, the importance and sophistication of the strategy is to some extent affected by the asset class being considered. For a rates / highly rated government bond portfolio, a basic approach looking at sustainability factors at a high level would be appropriate, or a portfolio-level assessment of the impact of specific issues such as environmental/climate risk. For credit and equity portfolios, a more comprehensive, company specific analysis would be required, especially because the potential impact on price stability and returns from sustainability factors would be more meaningful. One of the difficulties in implementing an integrated ESG investment methodology is the limitations of external ESG data, which should ideally be transparent, objective and consistent across the investable universe, but may not always be so. A number of third party ESG research and ratings providers exist, but large asset managers like MSIM often develop their own methodologies given the limitations of the data from these providers, and Reserves Managers may wish to consider doing the same. A proprietary approach to ESG analysis, in fact, would give a Reserves Manager the flexibility to adjust the weights of select ESG factors in line with their strategic priorities.

The final aspect to consider is whether thematic investing would be appropriate for Reserves Managers, allocating a portion of their portfolios to particular investments that are helping to address certain sustainability challenges, for example, climate change or access to healthcare. Investing in this way does not have to imply changing the asset allocation from the desired composition. One approach would be to buy labelled green/social/sustainability[14] bonds from issuers who are already eligible for Reserves Managers' portfolios. Labelled green/social/sustainability bonds provide Reserves Managers with the same credit risk exposure as regular bonds, from issuers they are familiar with, but with added transparency directing the Use of Proceeds towards sustainability-focused projects, along with requirements on disclosure and reporting. Bid side liquidity is usually as good or better for green bonds versus regular bonds, however offer side liquidity can be challenging, as this paper can be very well held by the broader investor community. Returns are typically in line with regular bonds from the same issuer as green bonds are backed by the full balance sheet of the issuer, not just the projects to which the proceeds are directed.

What is MSIM's approach to Sustainable Investing, and how can we help Reserves Managers?

As an active manager, MSIM appreciates the importance of integrating ESG considerations into the investment analysis in a way that is additive to investment returns. We are also aware that ESG goals can vary by end investor, hence our ESG strategy is designed to ensure consistency in the objectives and approach, while retaining flexibility in managing our mandates.

[14] Sustainability bonds are aimed at financing a mix of green and social projects.

In Fixed Income, this is reflected in our structure: portfolio managers are responsible for providing customized ESG solutions for specific client needs, and work in collaboration with the Sustainable Investing team to ensure that ESG integration principles are embedded across products. Our ESG analytical models and data inputs are based on the latest research and studies available, including from the Morgan Stanley Institute for Sustainable Investing, a thought leader in the market. All our ESG methods and processes are reviewed by the ESG Governance team, which is chaired by Fixed Income's CIO, and ultimately by the MSIM Sustainability Council, which oversees ESG integration across MSIM's global business.

Our teams have developed specific ESG frameworks for corporate bonds, sovereign bonds, and securitised products. Our analysis of corporate bonds, for example, combines a top-down strategic approach, whereby we set ESG and sector-specific criteria as well as exclusions, with a bottom-up ESG scoring proprietary methodology[15] that is intertwined with fundamental credit research, to ensure that any ESG risk is adequately priced. For sovereign bonds, our benchmarking model corrects external ESG data for income-per-capita to eliminate the wealth bias from external ESG scores, thus allowing investment teams to quantify and compare ESG performance across the entire array of emerging and developed markets. As part of both approaches, we want to reward issuers that demonstrate a willingness to change in response to environmental and social needs, hence we adjust our models by adding an MSIM analyst-driven momentum factor. Over time, we expect the average ESG scores, at sector or at portfolio level, to improve.

Across asset classes, a key tool to achieve the improvement we want to see in ESG scores is engagement. While engagement has been, to date, a priority of equity investors, we believe we also have a duty as large bond owners to advocate for better social and environmental outcomes, with the ultimate goal of driving long-term value. Engagement also helps create a healthy dynamic between investors and issuers, promoting transparency in the market and allowing investors to anticipate the direction of credit risk.

MSIM adopts an active, three-pronged engagement approach across investment grade and high yield entities, which is collaboratively implemented in partnership with the Global Stewardship team. First, it is Integrated, with ESG topics included in regular touchpoints with company management. Second, it is Targeted towards issuers that present the most material ESG flags or challenges. Third, it is Thematic, with engagement priorities set on emerging ESG issues/risks at a sectoral level, such as decarbonisation for energy and utilities, or drug pricing for healthcare companies. The United Nations' Sustainable Development Goals (SDGs) are a powerful framework to leverage in the design of an engagement strategy, as they help synchronise investors and issuers' efforts towards global sustainability objectives and ensure comparability of impact metrics for tracking purposes.

How can Reserves Managers benefit from Asset Managers, such as MSIM's, ESG value proposition?

First, through leveraging our knowledge and expertise. ESG integration and engagement are fundamental to our role as active Asset Managers. We have been, and continue to be, investing significantly in acquiring and developing ESG resources, ranging from business expertise to data and technology, in collaboration with our Global Sustainable Finance team. We thus have an important role to play in helping inform asset owners and other market participants and setting the standards for sustainable investing. Our proficiency can help bridge the gap while Reserves Managers go through the process of upgrading their own internal ESG competencies.

[15] Morgan Stanley Investment Management Fixed Income, Driving Value in Fixed Income Through ESG, 2020

Second, by designing investment solutions that give Reserves Managers the opportunity to achieve their ESG goals while meeting their capital preservation, liquidity and return targets. MSIM Fixed Income offers customized sustainable investing solutions that leverage our ESG analytics and in-depth understanding of the green/social/sustainability bond market.

Third, by undertaking engagement activities on their behalf. Reserves Managers have limited resources to dedicate to engaging with individual issuers. However, as official institutions, they are likely to face increased scrutiny on their position vis-à-vis key ESG issues, even more so if they are members of the NGFS. MSIM can help Reserves Managers design and effectively convey their messages as part of their sectoral or thematic engagement series on key sustainability issues.

Conclusions

The continued rise of sustainable investing will have a significant effect on Reserves Managers, as one of the largest asset owner groups in the market. The right approach needs to be considered to remain dynamic in the face of a rapidly evolving landscape. However, it is clear that ESG analysis can and does enhance the investment decision process. It also gives Reserves Managers the opportunity to make a significant contribution to help drive positive sustainability outcomes. Good investing can therefore be good for the world.

Sustainable Reality: Analyzing Risk and Returns of Sustainable Funds

Morgan Stanley Institute for Sustainable Investing

Two ships may sail the sea in parallel. However, when a storm hits, most captains would rather find themselves at the helm of the ship that was built to endure choppy water. Our analysis of sustainable funds indicates that they are akin to the ship that is resilient in the face of high winds.[16]

What is myth and what is reality?

There is a growing body of academic literature evaluating the performance of sustainable investments in comparison to traditional ones. In the 2000s, a number of studies analyzed the performance of sustainable investments. In general, this body of research found that from a statistical perspective, the return performance of sustainable and traditional funds has been similar.

While academic research is broadly settled on the finding of statistically equal performance, there is an increasing collection of empirical evidence that sustainable funds may provide investors with decreased risk compared to traditional funds. The consensus view of the research community appears to be that sustainable investment choices provide investors returns that are in-line with those of their traditional peers, while offering a greater degree of risk protection.

Using these previous findings as our hypotheses, we set out to evaluate both return and risk performance through the end of 2018. Further, to build upon the literature we assess the differences using a risk-adjusted measure of returns, the Sortino Ratio.[17]

What is the difference between sustainable funds and traditional funds in terms of performance and risk?

We compared the return and risk-performance of ESG-focused mutual and exchange-traded funds (ETFs), as defined by Morningstar, against their traditional counterparts from 2004-2018. We used Morningstar data on exchange traded and open-ended mutual funds active in any given year of the period. In total, 10,723 were sampled using the oldest share class of each fund. We compared their performance on three major indicators:

- Total Returns – a measure of performance net of fees
- Downside Deviation – a measure of risk
- Risk-Adjusted Returns – returns divided by risk, using the Sortino ratio

There is no tradeoff in the financial performance of sustainable funds

The returns of sustainable funds were in line with comparable traditional funds. No consistent or statistically significant difference in total returns existed between ESG-focused and traditional mutual funds and ETFs.

When examining the behavior of total returns by asset class, we find that the differences between sustainable and traditional funds are similarly narrow and of an inconsistent direction. We also find that the magnitude of these differences narrows over time. Sustainable funds' performance is more in line with traditional funds'

[16] Morgan Stanley, Sustainable Reality, 2019
[17] The Sortino ratio takes the difference between expected return and risk-free rate of return divided by the standard deviation of negative asset returns

performance post-financial crisis, particularly for broad US equity and international equity. This change may be due to investors performing more rigorous due diligence on a companies' actions and governance in an effort to pick stocks with decreased volatility and stronger foundations.

Sustainable funds may offer lower market risk

The assessment of risk shows a clear and consistent message – sustainable funds were less risky investments between 2004 and 2018. Sustainable funds experienced a 20% smaller downside deviation than traditional funds. This was a consistent and statistically significant finding.

We found that in years of turbulent markets, such as 2008, 2009, 2015 and 2018, sustainable funds' downside deviation was significantly smaller than traditional funds'. The magnitude of the reduction in volatility offered by sustainable funds is especially notable at the height of the financial crisis in 2008. In 2008, sustainable funds' downside deviation was significantly smaller than traditional funds'. This period showed the largest difference between the two out of all the periods analyzed. A subsequent refresh of our analysis in light of the Q1 2020 market turmoil has come to the same conclusion, with sustainable funds again showing smaller downside deviation than traditional funds.

The risk reduction offered by sustainable funds is largely driven by International Equity and broad U.S. Equity. These two classes consistently show a much smaller downside deviation from sustainable funds as compared to traditional funds. Bonds and Sector Equity show differing results but there is little to no significance for the difference between the medians in these two classes.

The study also looked specifically at the last quarter of 2018, when U.S. stock market volatility spiked, and found that, despite negative returns for nearly all funds, the median sustainable fund outperformed the median traditional fund by 1.39% in U.S. Equity returns, and had a narrower dispersion.

Sustainable funds offer risk-adjusted returns in line with those of traditional funds

There was no consistent and statistically significant difference in risk-adjusted returns. However, when analyzed by asset class, we found that in International and U.S. Equity, there is a trend over the past five years for sustainable funds to offer more attractive risk-adjusted returns than traditional funds.

Bottom line

We find that sustainable funds provided returns in line with comparable traditional funds while reducing downside risk, thus offering favorable risk-adjusted returns to investors. What's more, during a period of extreme volatility, we see strong statistical evidence that sustainable funds are more stable. Incorporating environmental, social and governance (ESG) criteria into investment portfolios may help to limit market risk.

This may all come as a surprise to the 64% of investors—including 77% of millennial investors—who believe that investing sustainably requires a financial tradeoff.[18] But it seems that incorporating ESG criteria into investment decisions makes good sense financially, as well as from an impact perspective. A 2019 Institute for Sustainable Investing survey of individual investors found that 85% of investors are interested in sustainable investments[19], while the Forum for Sustainable and Responsible Investments (US SIF) reports that 1-in-4 dollars now invested in U.S. capital markets included sustainability in its approach.[20] The latest findings from Morgan Stanley suggest many opportunities to narrow the gap between investor interest and adoption.

[18] Morgan Stanley, Sustainable Signals: Individual Investor Interest Driven by Impact, Conviction and Choice, 2019
[19] Ibid.
[20] US Sustainable Investment Forum, Report on US Sustainable, Responsible and Impact Investing Trends, 2018

Appendix: Collated Survey Responses

ESG Integration

Q1. Does your Reserve Management strategy currently include an explicit ESG strategy / Sustainable Investing goals?

	RESPONSES	SHARE
Yes	9	23%
No	31	78%
Total	**40**	**100%**

If yes, what best characterises your institution's mandate? (Please select all that apply)

	RESPONSES	SHARE
Green / Social / Sustainability Bonds – Issuance by SSA, Corporate or Financials	5	63%
Negative screening – Exclusions of certain companies or sectors (e.g. tobacco, fossil fuels)	6	75%
Best-in-class / Positive ESG tilt – Look at every sector and own the best ESG performers (based on in-house or external ESG ratings / scores)	3	38%
Engagement and proxy voting – Using votes to further ESG aims	1	13%
ESG integration – ESG becomes an investment criterion with risk and return	1	13%
Other (please comment / give your explicit mandate)	1	13%
Total	**8**	**100%**

If no, what prevents you from doing so?

	RESPONSES	SHARE
Issue not yet raised	13	46%
Board decision	6	21%
Limited / inadequate product range	6	21%
Lack of liquidity / market depth	5	18%
Lack of experience	5	18%
Reputational risk	1	4%
Other (Please specify)	6	21%
Total	**28**	**100%**

Selected responses:

We have just started to look into this issue, this is currently under consideration

We are in the process of defining what role ESG will play in the management of our discretionary Investment assets

There are difficulties in implementing ESG strategies in central bank portfolios

There are no ESG issues available

Q2. Do you rely on any ESG ratings and/or research as part of your investment analysis?

	RESPONSES	SHARE
Yes	8	20%
No	32	80%
Total	**40**	**100%**

If yes, please specify the data provider:

	RESPONSES	SHARE
External ratings provider	4	50%
In-house ESG scoring methodology	1	13%
Other	3	38%
Total	**8**	**100%**

Selected responses:

We use sell side research coverage
We use a mix of ratings
We have a research provider regarding potential exclusions

Q3. Are you already, or are you considering becoming, part of the Network for Greening the Financial System (NGFS) and/or aligning your institution with the recommendations of the Task Force for Climate-related Financial Disclosures (TCFD)? Please select all that apply

	RESPONSES	SHARE
Yes (NGFS)	16	40%
Yes (TCFD)	5	13%
No	22	55%
Total	**40**	**100%**

If yes, would this also include developing some climate stress testing or scenarios?

	RESPONSES	SHARE
Yes	6	40%
No	9	60%
Total	**15**	**100%**

Allocation Strategy

Q4. Which currencies are currently part of your FX reserves?

	Yes	Could Consider in the Next 12-24 Months	Highly Unlikely to Be Included	Total
USD	38	0	0	38
EUR	31	0	0	31
JPY	25	2	3	30
GBP	25	1	3	29
CAD	20	4	1	25
AUD	17	3	1	21
CNH/CNY	20	3	2	25
KRW	5	1	9	15
CHF	10	1	6	17
MXN	2	1	9	12
NOK	10	2	5	17
SKK	5	2	5	12
DKK	7	4	5	16
ZAR	4	1	8	13
SGD	4	2	7	13
HUF	1	0	10	11
PLN	2	1	9	12
CZK	2	2	8	12
BRL	2	1	9	12

Q5. What are the main drivers for the decision on how to allocate reserves between the various currencies? (Please select all that apply).

	RESPONSES	SHARE
Liquidity	23	61%
Sovereign rating	17	45%
Balance of trade	12	32%
Legal guidelines	10	26%
Geo-political considerations	7	18%
Exchange rate stabilisation	6	16%
Other (please specify)	22	58%
Total respondents	**38**	**100%**

Selected responses:

Risk management considerations combined with needs in terms of currencies of interventions
Hedged returns relative to risks determine our allocation
Adequate diversification, depth and liquidity of financial markets, bank liquidity needs i.e. contingency reasons
Legal certainty, rule of law, contract enforcement, volatility against domestic currency
External liabilities, public debt currency composition
Mandate guidelines, strategic asset allocation
Negative correlations
Yields in specific currencies

Q6. Which asset classes do you currently manage?

	Internally Managed	Externally Managed	Either Internally or Externally Managed	Outside Investment Universe	Total
Bills	25	2	3	0	30
Supranationals/Agencies	25	2	3	0	30
Spot - Swaps/Forwards	25	2	3	0	30
Government bonds	23	1	3	0	27
Deposits	27	0	3	2	32
Futures	20	2	2	2	26
Reverse repo	22	2	1	3	28
Repo	22	1	1	4	28
Covered bonds	18	3	2	6	29
Gold	22	0	3	7	32
Inflation linked bonds	13	4	1	6	24
Swaps	13	1	2	8	24
Agency mortgage backed securities	4	9	1	11	25
Green, social, sustainability Bonds	10	0	2	10	22
Emerging markets bonds	6	4	0	11	21
Options	5	2	1	9	17
Financial credit	8	1	2	13	24
Corporate credit IG	6	3	2	13	24
Equities	4	6	1	15	26
Asset backed securities	4	4	0	13	21
Algorithms	4	0	0	12	16
Private Equity	1	1	0	19	21
Real Estate	1	1	0	19	21
Corporate credit HY	0	1	0	18	19
Infrastructure	1	0	0	19	20

To which assets do you expect to increase / decrease exposure in the next 24 months?
Selected responses:

We expect to increase exposure to green, social, and sustainable assets, but only if eligible – meaning from AAA or government-related issuers.
We expect to increase exposure to government agencies and supranationals
We expect to increase exposure to swaps, forwards and ETFs
We expect to increase exposure to equities and EMD
We expect to increase exposure to MBS
We expect to increase exposure to linkers and swaps
We expect to keep our EUR & USD exposure similar to our strategic allocation that is determined on an annual basis. We do not expect significant changes in the strategic allocation in the next 24 months.

Q7. On a relative basis versus five years ago, which of the following do you think has become more important when deciding on asset allocation?

	RESPONSES	SHARE
Return	14	37%
Capital preservation	12	32%
Liquidity	9	24%
Other (please specify)	4	11%
Total respondents	**38**	**100%**

Selected responses:

The potential to integrate ESG/Sustainable investment criteria within the external reserves, as well as concentration risk, has become more important to us
Liquidity, capital preservation and return have all become more important

Q8. Do you have a minimum rating threshold?

	RESPONSES	SHARE
Yes (please specify)	34	92%
No	3	8%
Total respondents	**37**	**100%**

If yes, please specify:

	RESPONSES	SHARE
AAA	1	3%
AAA-	0	0%
AA+	0	0%
AA	3	9%
AA-	5	15%
A+	2	6%
A	4	12%
A-	10	30%
BBB+	1	3%
BBB	4	12%
BBB-	6	18%
Total	**33**	**100%**

Q9. What is the average duration of your reserves?

	RESPONSES	SHARE
0.5 years	3	10%
1.0	6	21%
1.5	3	10%
2.0	5	17%
2.5	5	17%
3.0	2	7%
More	5	17%
Total	**29**	**100%**

Q9a. How does duration vary between the asset classes and currencies in your portfolio?
Selected responses:

Duration does not vary much between the asset classes and currencies
Duration differs depending on asset classes and currencies
Duration varies depending on our views on future interest rates
Around 70% are from TD, 26% fixed income (0-3 years), 4% cash. in terms of Currencies, mainly come from USD (TM and fixed income exposure)
Duration for deposits is 0.25 years, for government bonds it is 1.50 years
Our FI positions in EUR/USD/GBP are mostly in the 3-7 year bracket, the rest is mostly cash
Our trading portfolios are 1.5 years for EUR and 1.0 years for USD, for our held-to-maturity assets maximum duration is 5.0 years
We tend to add non USD currencies through long duration positions due to the diversification benefits

Q10. Compared to 2 years ago has the proportion of your execution via electronic trading venues increased, decreased, or stayed roughly the same?

	RESPONSES	SHARE
Stayed roughly the same	19	49%
Increased	19	49%
Decreased	1	3%
Total respondents	**39**	**100%**

External Mandates

Q11. What approximate proportion of your reserves is managed externally?

	RESPONSES	SHARE
0%	12	33%
0% < = 5%	10	28%
5% < = 10%	7	19%
10% < = 20%	2	6%
20% < = 50%	3	8%
50% < = 80%	1	3%
80% < = 100%	1	3%
Total	**36**	**100%**

Q11a. Are you planning to increase this proportion in the next 24 months?

	RESPONSES	SHARE
Yes	11	31%
No	24	69%
Total respondents	**35**	**100%**

Q12. What proportion of your externally managed reserves is in active mandates (as opposed to pure index following mandates)?

	RESPONSES	SHARE
0%	9	31%
0% < = 25%	7	24%
25% < = 50%	2	7%
50% < = 75%	0	0%
75% < 100%	0	0%
100%	11	38%
Total	**29**	**100%**

Q12a. Over the next 24 months, do you expect the proportion of your actively managed external mandates to increase, decrease of remain the same (vs all external mandates)?

	RESPONSES	SHARE
Increase	5	17%
Remain the same	21	70%
Decrease	3	10%
Total respondents	**30**	**100%**

Selected responses:

Due to a substantial increase in our external reserves, we are planning to diversify the management by increasing allocation to external managers
We have only one external mandate and we are not planning to increase this number
All our equity mandates are passive and all fixed-income mandates are active, we do not plan to change this
We do not plan to change this as the asset allocation of the reserve portfolio is expected to remain somewhat stable over the period
We may decrease the proportion of actively managed external mandates as we are starting to look into passively managed strategies
We are seeking cost savings by managing internally
We may decrease the proportion of active management due to poor alpha

Q13. What are the three most important attributes for you when choosing an external manager?

	RESPONSES	SHARE
Fees	22	69%
Experience and tenure of investment team	15	47%
Past performance	12	38%
Risk management capabilities	11	34%
Size of the manager / strategy	8	25%
Client services	7	22%
Breadth of investment strategies / capabilities	7	22%
Sustainability reputation	3	9%
Other (Please specify)	7	22%
Total respondents	**32**	**100%**

Selected responses:

The most important attribute in selecting between external managers is the degree of institutional comfort
The key for us is diversification among different strategies
We also consider the Training/Capacity Building services that they provide to potential clients with similar risk profiles

Future Challenges

Q14. How do you see technology affecting the future of reserve management (e.g. Blockchain, cyber security, fintech, AI)?
Selected responses:

We see no imminent impact. We have already implemented changes towards enhancing security, and moving towards more electronic trading.
These technologies will take more time to impact markets than people think
These technologies will need to be monitored and integrated in an adequate and gradual manner, but they are no game changer.
Technology has an important effect. However, as central bank reserve management, in general, has a conservative approach towards technology, change will be slow.
We see no impact in the near future but fintech and AI solutions are on the horizon to support allocation decisions within our mandate, increasing flexibility and allowing less conservative portfolios. Cyber security is an ever present concern and becoming a more of an issue as cybercrimes get more sophisticated and cyber terrorism becomes more of a threat. Blockchain solutions in mainstream finance are further away.
For central banks with a similar risk profile as us, we do not see Blockchain-type currencies affecting the reserves as this kind of instrument will still not be eligible. Other issues (e.g. AI) we do think will affect the way we trade/manage instruments and will require us to implement new risk frameworks and tools.
The impact will be generally positive; technological change has always been a positive driver in financial markets
These technologies will have an important impact on reserve management operations. Technology will (partially) replace some processes e.g. asset allocation, execution
These technologies, as well as algorithmic trading, are having more and more influence on reserves management. This is likely to continue growing over time - not sure exactly where this all ends...
It will enhance analytical capabilities, contribute to the introduction of completely new asset classes
Data Science will help to improve quality of analysis while machine learning will increase the speed of it
We expect technology to change our organizational process, creating better agility, increasing productivity, in order to deliver business value sooner
It is expected to be a net positive with respect to efficiency, investment decisions and risk management. However, it will likely require greater resource allocation. Cyber security is an ongoing concern which is becoming increasingly important
Reserve management may use blockchain technology to record transactions which implies a very strict cyber security framework. In addition, fintech may increase the complexity of the portfolio which could use new instruments.
Cyber security will be essential to ensure confidence in our operations

Q15. What do you see as the biggest challenges facing the reserves management space in the future? Selected responses:

The biggest challenge will be the integration of ESG considerations in the investment process, alongside negative rates.
The inclusion of ESG considerations is the biggest challenge facing reserves managers
The biggest challenge for us is the secular low yield environment. There are too many negative-yielding bonds, which makes it very difficult for us to enhance returns while preserving capital and liquidity
The biggest challenge is generating positive returns in a negative interest rates environment.
The biggest challenge is balancing the need for capital preservation and adequate liquidity while continuing to search for yield in a low interest rate environment
The biggest challenge will be meeting return expectations within legal liquidity requirements.
Lack of liquidity will be a key challenge
The biggest challenge is to guarantee the minimum returns on investing (taking into account the cost of holding reserves), in a low interest rate environment by the main central banks.
Negative returns are the biggest challenge, along with increasing legal and administrative requirements
The low expected return environment coupled with increased asset class correlations and increased portfolio risk levels makes managing portfolios challenging.
The biggest challenge we face is increased political influence
The biggest challenge we face is in evolving our organizational structure and roles. Agile working requires a major shift in reserves management, including constant communication to all parties involved
Technological developments and the global financial situation could be the biggest challenges facing the reserves management space in the future. In addition, is the use of quantitative easing going to become normal practice in the future?
Cyber security will be the biggest challenge in the future

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