MARKET INDICES FOR SUSTAINABLE DEVELOPMENT

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MOBILIST
MOBILISING INSTITUTIONAL CAPITAL
THROUGH LISTED PRODUCTS

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1. EXECUTIVE SUMMARY

- **Available financing for sustainable development in emerging and frontier markets remains at a fraction of the levels required to meet the Sustainable Development Goals (SDGs).** Official aid represents less than 5% of the annual SDG financing gap in developing countries, and despite recent growth, impact capital and development banks cannot compensate.

- **The MOBILIST initiative seeks to harness the unparalleled potential of public markets for sustainable development in low- and middle-income countries.** The initiative, developed by the UK government and delivered in partnership with the government of Norway, offers equity capital, technical assistance, and policy and research support.

- **MOBILIST occupies a unique vantage point at the intersection of public markets and development finance.** This note is the first in our series of thought pieces reflecting on this intersection and explores the role of market indices as a key factor shaping and limiting capital flows to developing countries.

- **With the rise of passive investing, indices directly shape a growing share of capital intermediated by public markets.** For the emerging markets, passive holdings accounted for 1% of the foreign money in public funds in 2000, rising to 10% by 2006, and almost 37% in January 2021. Performance of actively managed funds is benchmarked against the same indices, extending their influence beyond passive strategies.

- **Market participants continue to express discontent with existing benchmarks for emerging and frontier markets.** Concerns relate to concentration, alignment between benchmark methodology and portfolio objectives, frequent constituent turnover, high fees, and potentially excessive market power among index providers.

- **Index providers have responded to clients' demand with a slew of new sustainability indices, though none focuses on the low- and middle-income countries most in need of investment.** More than 55% of country weight in one sustainable impact index is allocated to high-income countries, while more than 45% of a flagship SDG index is allocated to the United States.

- **A new suite of sustainable development indices is needed, targeting those markets that require most capital if we are to deliver the SDGs and international climate commitments.** Our early analysis of top-down indices tilted towards developing countries suggests that investors may be able to outperform existing emerging and frontier market benchmarks. However, further work is needed to build and back-test a dedicated bottom-up methodology to select specific securities.

We hope that this early analysis can serve as the foundation for further collaboration between development financiers, index construction experts, and asset allocators, including emerging markets portfolio managers, to transform the ideas above into practical market benchmarks and investment products that harness the potential of public markets for sustainable development. However, we wanted to emphasise that improving inefficient frontier market indices cannot on its own create a liquid capital market in developing countries, an issue which will be explored in an upcoming MOBILIST report.

2. PUBLIC MARKETS AND SUSTAINABLE DEVELOPMENT

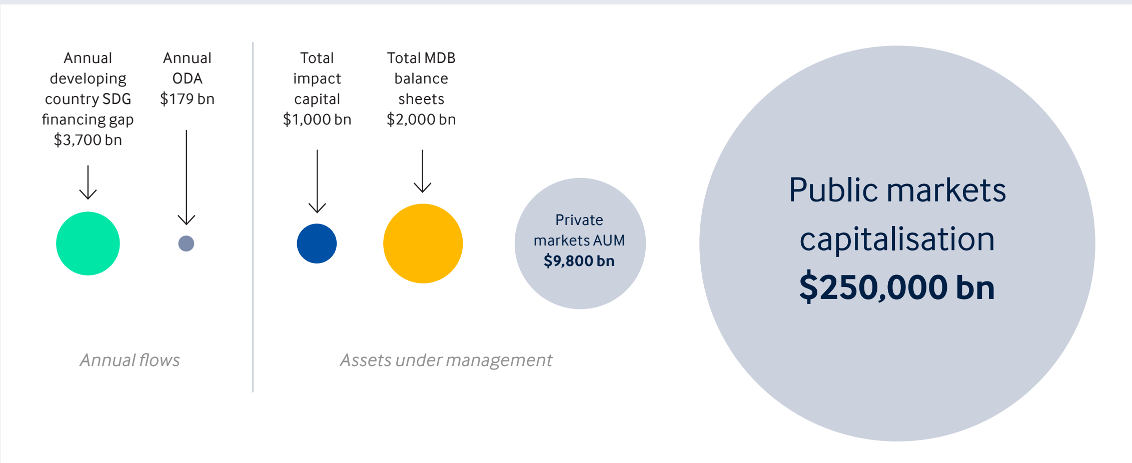
Public markets represent unparalleled potential for sustainable development

Available financing for sustainable development in emerging and frontier markets remains at a fraction of the levels required to meet the Sustainable Development Goals (SDGs). The COVID-19 pandemic added more than one trillion US dollars to the annual financing gap for developing countries in delivering the SDGs, with the gap now exceeding US $3.7 trillion p.a.[1] During 2022, emerging and frontier markets experienced one of the most severe reversals in capital flows in recent years, further increasing financing needs for sustainable development in these economies.[2,3]

Despite recent global economic shocks and reversals, public markets offer unparalleled potential in financing for sustainable development in emerging and frontier markets. Annual Official Development Assistance (ODA) aid flows from donors to developing countries represent less than 5% of the sustainable development financing gap. Even impact investor and official development bank assets are inadequate, meaning private capital will be critical. Despite recent growth in the private markets, Figure 1 shows that stock exchanges continue to intermediate some 10x the amount of capital invested in unlisted assets, 50x the combined balance sheets of the multilateral development banks, and 100x impact assets under management worldwide.

In addition to scale, public markets also offer qualitative benefits for sustainable development.

Figure 1 – Public markets' scale in context[4]



1 https://www.oecd.org/dev/OECD-UNDP-Scoping-Note-Closing-SDG-Financing-Gap-COVID-19-era.pdf
2 https://www.ft.com/content/fe34de37-9389-4672-81a3-738cc044d4a6
3 https://www.imf.org/en/Publications/GFSR/Issues/2022/10/11/global-financial-stability-report-october-2022

4 https://thegiin.org/research/publication/impact-investing-market-size-2022/; https://www.rockefellerfoundation.org/report/reimagining-the-role-of-multilateral-development-banks/; https://www.mckinsey.com/industries/private-equity-and-principal-investors/our-insights/mckinseys-private-markets-annual-review

Transparency and governance standards ensure protection of investors and stakeholders affected by listed companies. Perpetual price discovery and investor scrutiny bring discipline to issuers and policymakers alike. Increasing disclosure of non-financial risks and impacts offer opportunities to scrutinise and incentivise companies' contribution to sustainable development.

The MOBILIST initiative seeks to harness the unparalleled potential of public markets for sustainable development in low- and middle-income countries. The Initiative, developed by the UK government and delivered in partnership with the government of Norway, offers equity capital into pioneering products at IPO, technical assistance throughout the listing journey, and policy and research support to enhance the enabling environment for issuers, investors, and intermediaries.

MOBILIST occupies a unique vantage point at the intersection of public markets and development finance. Our research agenda seeks to generate and share insights at this intersection, by commissioning and delivering original analysis, sharing shorter-form thought pieces, and amplifying others' research and data. This note is the first in our series of thought pieces, and explores the role of market indices as a key factor shaping and stemming capital flows to developing countries. Our hope is to bring a development finance perspective to this public market debate, and to lay analytical foundations from which further work can be built in collaboration with index providers, allocators, and regulators.

3. PUBLIC MARKET FLOWS TO DEVELOPING COUNTRIES

Despite their potential, public market flows to developing countries are a fraction of the amount that can be productively deployed.

Within the emerging and frontier market universe, low- and middle-income countries have the most acute requirements for additional investment and opportunities for productivity and catch-up growth. In keeping with MOBILIST's investable universe, we focus in this piece on low- and middle-income countries as defined by the World Bank, with the exception of G8 members, EU members, and countries with a firm date for entry into the EU. This is the universe of countries that is eligible for ODA, and represents a subset of the emerging and frontier markets. Figure 2 shows that fewer than 60% of countries in the MSCI's popular emerging and frontier market universe is ODA-eligible. 78% of ODA-eligible countries do not feature in this market index universe at all.

This is not a representative subset of emerging and frontier markets. Prior to the COVID-19 pandemic, average GDP per capita in ODA-eligible emerging and frontier markets was one-fifth the average for emerging and frontier markets that are not eligible for aid. Human development was similarly weaker among the ODA-eligible markets, as reflected by average scores of the World Bank's Human Capital Index for 2020.

As a correlate of their lower levels of economic and human development, ODA-eligible markets excluding China and India also receive systematically fewer capital inflows. ODA-eligible emerging and frontier markets for which data were available attracted approximately one-third the amount of foreign direct investment as other emerging and frontier markets. In the five years to May 2022, corporates domiciled in ODA-eligible markets raised just over $100 billion through direct equity issuance on major global stock exchanges.[5] However, only 2% reached corporates in lower-middle income countries and none reached corporates in the least developed countries. Two thirds flowed to East Asia and the Pacific, 28% to Latin America and the Caribbean, and less than less than 5% to sub-Saharan Africa, the Middle East, and South Asia combined.[6]

5 Note that this does not include capital raises on a developing country corporate's domestic exchange.

6 MOBILIST analysis based on Bloomberg Finance LP data.

Figure 2 – ODA-eligible emerging and frontier markets

Emerging Markets

Americas	Europe, Middle East & Africa	Asia
Brazil	Czech Republic	China
Chile	Egypt	India
Colombia	Greece	Indonesia
Mexico	Hungary	Korea
Peru	Kuwait	Malaysia
	Poland	Philippines
	Qatar	Taiwan
	Saudi Arabia	Thailand
	South Africa	
	Turkey	
	United Arab Emirates	

Frontier Markets

Europe	Africa	Middle East	Asia
Croatia	Kenya	Bahrain	Bangladesh
Estonia	Mauritius	Jordan	Pakistan
Iceland	Morocco	Oman	Sri Lanka
Lithuania	Nigeria		Vietnam
Kazakhstan	Tunisia		
Romania	Benin		
Serbia	Senegal		
Slovenia	Cote d'Ivoire		
	Burkina Faso		

ODA-eligible ODA-ineligible

4. MARKET INDICES – RELEVANCE, CONCERNS, INNOVATIONS

Concerns persist in relation to emerging and frontier market indices. Sustainability indices are proliferating but do not focus on those markets that need sustainable investment most.

Prior MOBILIST research investigating emerging and frontier market asset allocation strategy found that "index construction is one of the most important influences of flows to emerging [and frontier] markets".[7] With the rise of passive investing strategies in recent decades, indices directly shape a growing share of capital intermediated by public markets. As of end-2020, 54% of US equity funds' US $11.6 trillion in assets were managed passively, up more than ten percentage points since 2015.[8] Among international and global equity funds, the share of passively managed assets stood at 42% and for US fixed-income managers at 31%.[9] For the emerging markets, passive holdings accounted for 1% of the foreign money in public funds in 2000, rising to 10% by 2006, and almost 37% in January 2021.[10]

In addition to directly informing the allocation of resources managed by tracker funds, these indices serve as benchmarks against which the performance of more actively managed strategies are assessed. MOBILIST research shows that even ostensibly active investors in the larger emerging markets have relatively limited scope to deviate from their performance benchmark, instead preferring to 'hug the index'.

Market participants continue to express discontent with existing benchmarks for emerging and frontier markets. To the extent that existing indices serve allocators effectively in the context of portfolio objectives and fiduciary considerations, the diversion of capital from emerging and frontier markets could be seen as efficient. However, market participants interviewed for MOBILIST research were "consistently unhappy about how benchmarks affect strategies for emerging and particularly frontier markets".[11] Issues identified by participants included a heavy concentration of index weights among a small number of larger emerging markets, a clash between index construction methodologies and portfolio objectives, and frequent inclusions and exclusions of assets and markets, with material consequences for performance and liquidity while fundamentals remain unchanged. High costs compound concerns around index quality and around competition in the sector.

Not withstanding concerns around competition, index providers are acutely aware of their clients' growing consideration of sustainability and ESG issues. A recent FTSE Russell survey shows that 86% of asset owners globally are implementing sustainable investing in their investment strategies, with social issues overtaking carbon and climate as the leading sustainability issue.[12]

7 https://MOBILISTglobal.com/research-data/drivers-of-investment-flows-to-emerging-and-frontier-markets/
8 https://www.bloomberg.com/professional/blog/passive-likely-overtakes-active-by-2026-earlier-if-bear-market/
9 Ibid
10 https://uk.fieracapital.com/en/insights/evolving-country-concentration-in-emerging-mar-ket-indices-opportunities-for-investors/
11 https://MOBILISTglobal.com/research-data/drivers-of-investment-flows-to-emerging-and-frontier-markets/
12 https://content.ftserussell.com/sites/default/files/2022.10.05_asset_owners_survey_release_ final_4.pdf

Index providers have responded by emphasising ESG considerations in existing mainstream indices, and by launching a slew of new sustaina-bility indices. For example, the Dow Jones Sustainability Indices (DJSI) was launched in 1999 as the first global sustainability benchmark built on the S&P Global Corporate Sustainability Assessment. DJSI include the top 10-30% most sustainable market caps per industry. MSCI has similarly launched a suite of Socially Responsible Investing (SRI) indices, targeting companies with high ESG ratings and excluding those that have a negative social or environmental impact. FTSE Russell's FTSE ESG Index Series offers indices that provide risk/return characteristics similar to the underlying universe but with the added benefit of improved index-level ESG performance.

Going beyond negative screens, impact-oriented indices have gained popularity in the past 5-7 years. MSCI launched an ACWI Sustainable Impact Index in 2016, including only companies that generate at least 50% of sales from one or more of eleven Sustainable Impact categories.[13] Thematic indices have emerged, covering varied topics such as energy efficiency, sharing economy, sustainable water transition, natural resource stewardship, and sustaina-ble agriculture. For example, Morningstar and MSCI have launched a joint Global Food Innovation Index, comprising companies that will benefit from creating or using new agricultural technologies of innovative food products.[14] Bloomberg similarly offers a family of climate indices, compliant with EU Paris-aligned benchmarks.[15]

Sustainability specialists have also carved out important positions in the marketplace, with sustainability-first indices. Providers include Sustainalytics, who build on specialised ESG data capabilities to manage two in-house sustainability indices.[16] ISS has similarly launched a suite of ESG indices, including the ISS ESG Freshwater Index Series, which considers companies' water risk exposure and management; the ISS Governance QualityScore Index Series, which identifies well-governed companies; and the US Diversity Index, which allows investors to analyse gender and ethnic diversity of the board members and named executive officers.[17]

Despite this progress, our landscaping and consul-tation is yet to identify indices focused specifically on the markets that require sustainable invest-ment the most. For example, more than 55% of country weight in the MSCI ACWI Sustainable Impact Index is allocated to high income countries;[18] while at the time of writing the United States constituted more than 45% of the MSCI ACWI IMI SDG Impact Select Index.[19] Similarly, more than half of the MSCI Emerging Markets ESG Leaders Index was allocated to China and Taiwan,[20] while 11 out of 24 countries included in the FTSE4Good Emerging index are defined by the World Bank as high-income.[21]

To redirect capital flows towards developing countries, ESG concepts and data need to be adjusted to less developed jurisdictions. To reflect concerns raised in an Intellidex report[22], ESG rating in developing markets need to reflect the data scarce environment and to consider and incentivise *improve-ments* in corporate behaviour even among those companies which are at the beginning of their ESG journey. In other words, an ESG rating should reflect the readiness of companies to contribute to sustaina-ble development and ESG rather than their existing or historic level of ESG compliance. An additional issue is that resource-rich African markets have higher weights in commodity-related stocks, which – due to the nature of their industry – typically face higher barriers to achieving decent ESG scores. To address this issue ESG could be rated against the companies' own industries rather than against a global average. These more realistic rules would encourage both fledgling stock exchanges and individual companies to implement better ESG data reporting guidelines.

13 https://www.msci.com/documents/10199/6d2b3e68-90e0-448e-bd52-eaf0397539d1
14 https://indexes.morningstar.com/our-indexes/details/morningstar-global-food-innova-tion-FS0000HBTF?currency=USD&variant=TR&tab=overview
15 https://www.bloomberg.com/professional/product/indices/esg-and-climate-indices-resources/
16 https://www.sustainalytics.com/investor-solutions/index-research-services
17 https://www.issgovernance.com/esg/index-solutions/
18 https://www.msci.com/documents/10199/6d2b3e68-90e0-448e-bd52-eaf0397539d1
19 https://www.msci.com/documents/10199/ec1f8832-c160-b843-6ae6-b60c337f972f#:~:tex-t=The%20MSCI%20ACWI%20IMI%20SDG,through%20their%20products%20or%20services
20 https://www.msci.com/documents/10199/c341baf6-e515-4015-af5e-c1d864cae53e
21 https://www.ftserussell.com/products/indices/ftse4good
22 Stuart Theobald: DRIVERS OF INVESTMENT FLOWS TO EMERGING AND FRONTIER MARKETS (June 2022)

5. THE NEED FOR SUSTAINABLE DEVELOPMENT INDICES

In this context, there is a gap in the index marketplace for benchmarks to assist allocators seeking exposure to the markets with most catch-up growth opportunity if they are to achieve the SDGs. In this section, we present early-stage analysis of indices constructed to allocate capital for sustainable development in these markets, considering alternative universes and weighting strategies. We do not present final answers; rather, we hope the suggestions below will form the basis of a renewed collaboration between development finance and index construction experts, to build a viable suite of indices for low- and middle-income countries. Potential applications are presented alongside our conclusions.

Since this is an early stage, conceptual analysis of a future Sustainable Frontier Development Equity Index, we focus primarily on the first two of the four key elements of any stock market index provision (see Appendix A for the brief description of the four core components of a typical index methodology).

First, we describe the key steps of constructing an index, assuming that all the necessary top-down (country) and bottom-up (corporate) data is available. However, given our limited access to all the necessary data of all the relevant companies, the index we constructed for back-testing purposes was only based on the available top-down data (see the various top-down methods applied to existing MSCI Indices and their back-testing results in Appendix B). Therefore, the back-testing data only illustrates that even with limited means a developing country index can deliver comparable risk-adjusted returns to the existing MSCI EM/FM benchmarks. This in turn gives a strong indication that a far more sophisticated index, incorporating all the necessary corporate data, required by the principles described below, can potentially deliver markedly more attractive risk-adjusted returns. The indicative results in Annex B are for illustrative purposes only.

UNIVERSE

A key differentiator of the MOBILIST initiative is its focus on developing countries, defined in terms of the OECD Development Assistance Committee's eligibility framework. This universe is presented in Figure 2, and by definition denotes the countries that require the greatest investment to drive sustainable development. These 'developing countries' represent the starting point for our sustainable development indices, and exclude high-income emerging markets, such as Taiwan, South Korea, major Gulf Economies, and markets in Eastern Europe.

Therefore, we identify our investment universe for a Sustainable Development Equity Index in two steps. The first step is based on the top-down condition of ODA-eligibility as described above. The second step is driven by a list of bottom-up requirements to identify the actual index constituent corporates which satisfy the following criteria[23]:

a) derive at least 25% of their revenue from production in ODA-eligible countries. While the index construction should give absolute preference to homegrown companies in ODA-eligible countries, there are countries where local capital markets are unable to accommodate foreign capital. In those cases, such a definition would allow the indirect inclusion of ODA-eligible countries which presently lack investible capital markets, through the addition of companies (wherever they may be listed) that create jobs and investments benefitting ODA-eligible markets. For example, there are successful pan-African businesses, like MTN, the mobile operator originally from South Africa. MTN generates close to 75% of its sales in 17 Sub-Saharan African (SSA) countries, offering digital

23 These criteria should not be considered a definitive list, it is only to stimulate further debate and analysis.

inclusion to ca. 200m subscribers in SSA outside South Africa.[24] Similarly in Asia, Samsung Electronics is now the largest foreign investor in Vietnam by far[25], creating 100,000 jobs, and its Vietnamese operation with a total revenue of USD74.2bn and export turnover of USD65.5bn.[26] This has had an amazing knock-on effect on local industry: by now 210 Vietnamese enterprises are participating in Samsung's supply chain. Companies like MTN and Samsung, which contribute greatly to the development of ODA-eligible countries, could be considered for index inclusion if no other way exists for the inclusion of certain ODA-eligible countries or sectors.

b) provide adequate level of liquidity, information (not just financial but also credible plans for ESG improvement and SDG delivery – see next point) and shareholder protection for foreign capital.

c) exhibit a minimum level of ESG compliance and demonstrate their ability to contribute to sustainable development. Given the early stage of ESG frameworks in ODA-eligible jurisdictions, such a rating would need to reflect the readiness of the company to improve and avoid a sole focus on historic compliance.

WEIGHTING

Once the list of constituent companies is identified, including all companies that pass the hurdles above, the calculation of actual weights could be based on a combination of the factors above: investor accessibility (size of free float, liquidity, etc.), necessary minimum percentage of revenue derived from developing countries and ESG and SDG ratings. Following the necessary adjustments an initial index weight could be allocated to each index constituent.

After the first iteration of the index, the final stage should be a sanity check to ensure that no unwanted risk concentration (company, country, or sector) exists. To address this, if necessary, certain companies, countries, or sectors could be scaled down, while others scaled up to reach not only the appropriate level of diversification, but also to ensure that the index helps to direct capital where it is needed without violating investability rules.

We see a number of **advantages of a bottom-up weighting method for an equity-based sustainable development index:**

- **Helps to resolve political debate:** among the developing countries there are some, which, for political reasons, most index providers may prefer to exclude if the benchmark is set on a top-down basis. However, a bottom-up index would only include companies that have a positive influence on achieving the country's SDGs, without any interference from local authorities, hence political considerations would become less relevant as the capital is directly channelled to the companies that need it.

- **Countries with fledgling capital markets could be included:** under a top-down approach many ODA-eligible countries without functioning capital markets would be automatically excluded. However, the bottom-up index construction allows the inclusion of companies who operate in such territories, while being accessible to investors in an off-shore exchange.

- **Helps to resolve a difficult debate about setting appropriate country weights:** while a top-down approach could generate a complex debate concerning how to balance a country weight between the principle of ODA-eligibility (and what measure of ODA-eligibility to be used) and market size and liquidity, a bottom-up approach would address these issues in a more practical and upfront manner.

APPLICATIONS

With further refinement, the index based on the principles and methods presented above could serve as **the foundation for development of new performance benchmarks and investment products** for market participants offering or seeking greater exposure to the sustainable development of emerging and frontier economies. We see three routes through which a set of sustainable development indices developed in this spirit could affect asset allocation:

1. **Investment products that track sustainable development indices could be structured,** offering allocators exposure to the SDGs and the fight against climate change in markets that need capital most acutely. While sustainable development indices are unlikely to replace mainstream market indices in the near-term, deploying both in combination provides a framework to align investor and asset managers'

24 MTN Annual Report 2021
25 https://www.viettonkinconsulting.com/news/the-journey-of-samsung-in-vietnam/
26 The Economist: Why Samsung of South Korea is the biggest firm in Vietnam (Apr 12, 2018)

incentives. Today investors lack access to passive strategies that offer this specific exposure.

2. These indices offer a benchmark against which **performance of the official development finance institutions' private equity strategies could be benchmarked.** For many of these institutions, the ODA-eligible universe is their addressable market. While the overwhelming majority operate in the private space, their government shareholders could use public market benchmarks to hold official institutions to account.

3. Indices tilting towards the most in-need markets – including our adjusted SDG need and readiness index – could be developed as **a low-cost solution for investors willing to trade-off risk-adjusted return for impact in developing countries.** A suite of impact benchmarks for the ODA-eligible markets could be constructed to suit impact investors' varied priorities, both thematically and in terms of financial return expectations. These may be particularly attractive relative to impact investing opportunities available in the private markets, which are typically illiquid and often come with high transaction costs.

6. CONCLUSIONS AND NEXT STEPS

Public markets offer unparalleled scale, transparency, and investor protection; yet this potential is unfulfilled in the pursuit of sustainable development in emerging and frontier markets. Tens of trillions of US dollars are managed passively against benchmarks that underweight these markets. This is true of major global sustainability indices, while specialised emerging market indices include high-income countries that are responsible for financing their own development.

A new suite of sustainable development market indices is needed, targeting those markets that require most capital if we are to deliver the SDGs and international climate commitments. Our early analysis of such equity indices suggests that once a more sophisticated bottom-up approach is applied, allowing a wider range of companies to be included, with a weight reflecting the quality and quantity of their contribution to the development of ODA-eligible markets, investors may be able to *outperform* existing emerging and frontier market indices while reaching these developing markets. Tilting further by up-weighting for need in relation to the SDGs may provide impact-oriented investors with lower-cost, more liquid strategies than are presently available in the private markets. We also note similar challenges and opportunities in the fixed income space and propose to explore this further in future work.

We hope that this early analysis can serve as the foundation for renewed collaboration between development finance partners, index construction experts, and asset allocators, to transform the ideas above into market benchmarks and investment products that harness the potential of public markets for sustainable development.

We also hope to lay the foundation for further research which could include investigating additional tailor-made benchmarks for regional investors located in ODA-eligible countries. There are ODA-eligible countries, for example South Africa, where the local savings industry is already actively looking to invest in the rest of Africa. Their regional interest could potentially be stimulated by a carved-out part of a Frontier Sustainable Development Equity Index specifically tailored to cover the rest of Sub-Saharan Africa.

APPENDIX A

Understanding index construction.

As S&P Dow Jones explains there are four components of any stock market index methodology - construction, weighting, calculation and review:

- **Construction:** a set of rules that regulate which securities are included in an index and which are not. When setting the rules, the index creator has to answer two fundamental questions: what is the index for (who is the targeted audience/product) and what is the targeted exposure (which market segments)?
- **Weighting:** once index constituents are selected, the index provider selects a weighting methodology to combine individual securities into a weighted-average composite index. The most common weighting methodology is some variation of market capitalisation weighting, though other methods include price weighting, equal weighting and fundamental weighting.
- **Calculation:** based on the weighting method an index value is calculated as the weighted average of individual constituents. Once the index is calculated, a plethora of diagnostic and financial analyses can by undertaken.
- **Review:** a regular (annual, bi-annual, or quarterly) review ensures that the index remains in line with its original purpose. Through this review, the index provider reapplies its construction rules to update the index universe, and updates its security weights if required. This regular review is distinct from any changes to the underlying construction rules and weighting strategies.

APPENDIX B

A top-down sustainable frontier development index: 16 construction, back-testing and caveats.

A key differentiator of the MOBILIST initiative is its focus on developing countries, defined in terms of the OECD Development Assistance Committee's eligibility framework. This universe by definition represents the countries that require the greatest investment to drive sustainable development. These 'ODA-eligible markets' represent the starting point for our sustainable development indices, and exclude high-income emerging markets, such as Taiwan, South Korea, major Gulf Economies, and markets in Eastern Europe.

We screen out markets with inadequate scale, liquidity, and market accessibility, ensuring that index constituents are investable. To proxy for investability, we include only markets that are included in the MSCI Emerging and Frontier Market Index. Countries that do not feature on this index are assumed to face constraints that would make the index unfeasible for major allocators. As noted above, MSCI's proposal to broaden its Frontier Markets Index through methodological updates could expand this universe.

For each ODA-eligible market in the MSCI EFM Index we include the constituents of the MSCI market-specific index. These indices typically cover some 85% of the equity universe.

To isolate the impact of our select universe, we begin by retaining MSCI's EFM Index weights, reflecting market capitalisation adjusted for scale, liquidity, and market accessibility. To account for our smaller universe, weights are scaled up proportionately to ensure a 100% allocation across the ODA-eligible markets.[27] The primary drawback of this approach is a magnification of concentration in the MSCI EFM index.

In addition, we explore alternative weighting strategies that may direct more capital to the markets that need it most within our ODA-eligible universe. We consider three approaches, namely weighting by economic output (proxied by GDP), weighting by population (implying an equal per capita allocation across markets), and weighting by vulnerability to climate change, need for sustainable development, and readiness to receive capital (as defined by a publicly available composite index[28]). While the final strategy seeks to proxy SDG 'need' and 'readiness', we recognise that a weighting strategy on this basis alone could lead to perverse outcomes, with small markets receiving infeasible allocations. For example, this methodology would see Mauritius receiving a greater weight (4.6%) than China (4.3%). Therefore, we adjust the composite index of need and readiness for population, to proxy for absorptive capacity.

Table 1 shows country weights implied by these alternative strategies among the ODA-eligible markets. Weighting by market capitalisation and GDP exacerbate concentration in China, though reduce concentration in East Asia (excluding China) relative to MSCI flagship indices. Population weighting shifts more weight to South Asia, Brazil, and Nigeria, while weighting by SDG need and readiness drastically reduces concentration. Where the market cap and GDP strategies allocate less than 25% to lower-middle countries, both the population and adjusted SDG need and readiness strategies allocate more than 50%. Where the market cap weighting allocates less than 8% to Africa, the SDG need and readiness strategy allocates 18%. Critically, across all of our alternative weighting strategies, 100% is allocated to ODA-eligible low- and middle-income countries.

27 Due to the recent inclusion of Iceland within the MSCI Emerging and Frontier Market Index and therefore lack of price data over the required horizon, Iceland has been excluded from our analysis and the weights have been scaled accordingly.

28 See https://gain.nd.edu/our-work/country-index/methodology/

Table 1 – Top five country weights (five-year average under alternative weighting strategies)

MSCI EFM		Market Cap	
Country	Avg weight	Country	Avg weight
China	36.36%	China	52.09%
S. Korea	12.35%	India	14.13%
Taiwan	11.85%	Brazil	8.77%
India	9.89%	S. Africa	6.65%
Brazil	6.12%	Thailand	3.67%
Other	23.43%	Other	14.69%

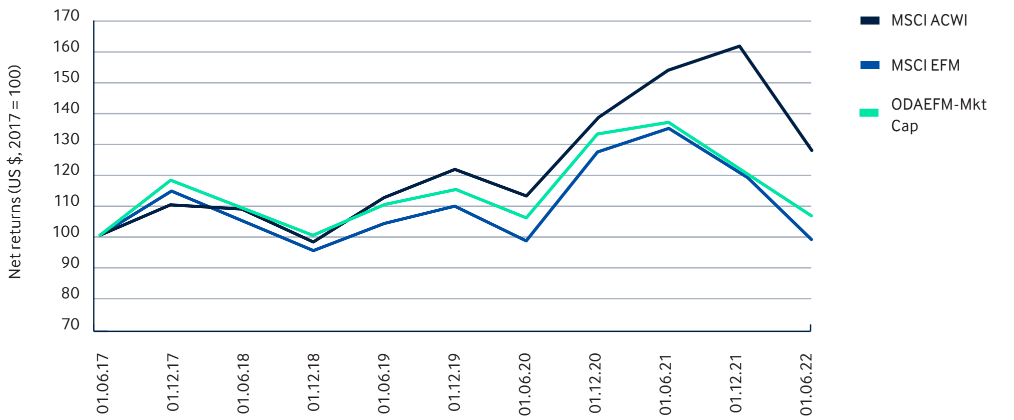
GDP		Population		SDG Need and Readiness	
Country	Avg weight	Country	Avg weight	Country	Avg weight
China	54.65%	China	29.38%	China	16.81%
India	10.28%	India	28.64%	India	16.32%
Brazil	6.23%	Indonesia	5.67%	Indonesia	4.75%
Mexico	4.41%	Pakistan	4.56%	Pakistan	4.16%
Indonesia	3.99%	Brazil	4.42%	Brazil	3.93%
Other	20.45%	Other	27.32%	Other	54.03%

Our analysis was conducted at the level of the MSCI market index, with in-market weights implicitly aligned to the MSCI's methodology. A complementary bottom-up methodology should be developed to ensure underlying constituents do no harm from an ESG perspective and go further to contribute positively to in-market sustainable development. This is discussed further in our proposed extensions below, and means that findings presented in this Annex are for illustrative purposes only.

Back-testing shows the potential for passive strategies to finance sustainable development through public markets. Figure 4 shows the relative performance of the ODA-eligible markets over a five-year horizon, highlighting that over this period the ODA-eligible markets *outperformed* the wider MSCI EFM Index. Five-year net performance for the MSCI EFM index was in the region of -1.25% over the period, while our market cap-weighted index of the ODA-eligible markets returned approximately 7%. We note that the MSCI All Company World Index (ACWI) overperformed due to the very strong performance of the US stock market, especially during 2021.

Figure 5 introduces our alternative weighting strategies. While none performs as strongly as our market cap-weighted ODA-eligible index, a population-weighted index of the ODA-eligible universe (yellow dotted line) offers comparable or superior returns to the MSCI EFM over one, three, and five-year horizons. Weighting the ODA-eligible universe by GDP (red dotted line) offers comparable returns to the MSCI EFM Index over five years, while weighting by the adjusted composite index of SDG need and readiness (blue dotted line) leads to modest underperformance relative to other indices presented in Figure 5. These are early-stage findings and subject to caveats discussed below;

Figure 4 – ODA-eligible markets vs the MSCI EFM index

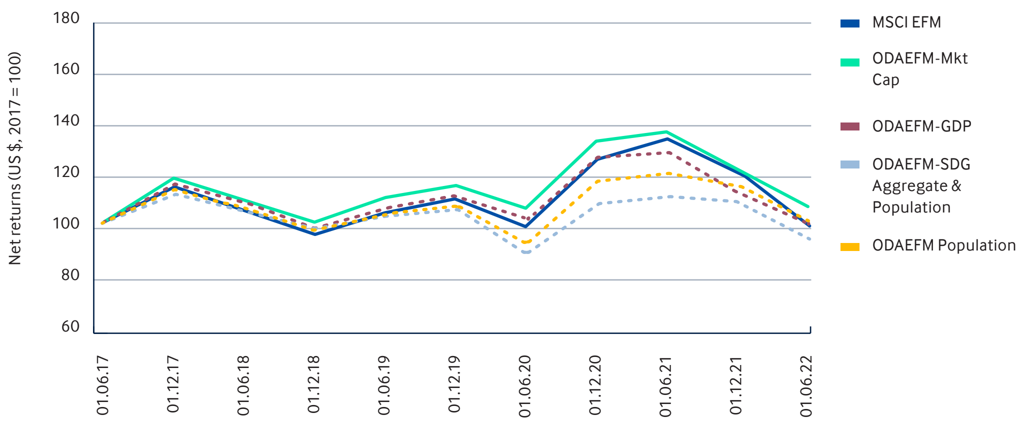


however, Figure 5 tends to suggest that allocators may not need to compromise on performance if they wish to invest in developing countries' sustainable development.

Table 2 provides further analytics. While performance of the ODA-eligible markets was broadly non-inferior over this period, liquidity is unsurprisingly reduced by excluding high-income emerging markets. Sharpe ratios are weaker for our ODA-eligible market indices under market capitalisation and GDP weightings, but were somewhat closer for the higher-performing population weighting. All weightings offer comparable correlation with the S&P 500, suggesting scope for some degree of diversification.

The above analysis should be considered in the context of several caveats. First, as with any index, past performance is no guide to future performance. Table 1 shows that China and India are key determinants of the performance of these and other emerging market indices. The outperformance of the population weighting strategy is particularly influenced by India's standout performance over the period. Both markets have significant momentum, but headwinds have begun to materialise in China since the start of the COVID-19 pandemic and there is no guarantee that Indian returns will be maintained going forward. Conversely, additional international allocations may themselves deepen integration into global

Figure 5 – Alternative weighting strategies for the ODA-eligible universe



capital markets, increasing correlation but also enhancing liquidity, reducing volatility, and potentially improving performance.

Second, while our weighting strategies allocate greater weight to ODA-eligible markets, *within*-market weighting of underlying companies remains unchanged. Therefore, our initial analysis says nothing about the sustainable development indices' potential to allocate more capital to companies that make proportionately greater contributions to economic and social progress in each country. Bottom-up weighting strategies developed by existing index providers could be applied to the ODA-eligible universe in the first instance, though purpose-built alternatives should also be explored. This could include screens and weights that reflect the share of revenues generated in ODA-eligible markets, commitment and momentum in relation to the SDGs, and minimum ESG compliance. Consultation with index providers highlighted data constraints at the company-level in frontier markets, and so the potential of a meso-solution at the sector or industry level.

Third, the analysis presented above covers only the five years to June 2022, and is based on six-monthly observations. More extensive back-testing over longer horizons and with higher frequency data would be beneficial, particularly given market specificities related to the COVID-19 pandemic.

Table 2 – Further analytics

Index	5yr Sharpe Ratio[a]	Standard Deviation[b]	Correlation with S&P 500[c]	Turnover (US$, bn)[d]
MSCI ACWI	0.8	17.1%	0.98	5,201
MSCI ACWI ex-US	0.4	17.1%	0.91	3,527
MSCI EFM	0.6	18.5%	0.78	2,352
ODAEFM Market Cap	0.3	19.4%	0.76	1,045
ODAEFM Population	0.4	18.4%	0.80	540
ODAEFM GDP	0.3	18.4%	0.76	975
ODAEFM Adjusted SDG Need/Readiness	0.2	18.0%	0.82	313

a As of 31/12/21
b 36 month window as of 31/12/21
c 36 month window as of 31/12/21
d Average monthly trading as of 31/12/21

APPENDIX C

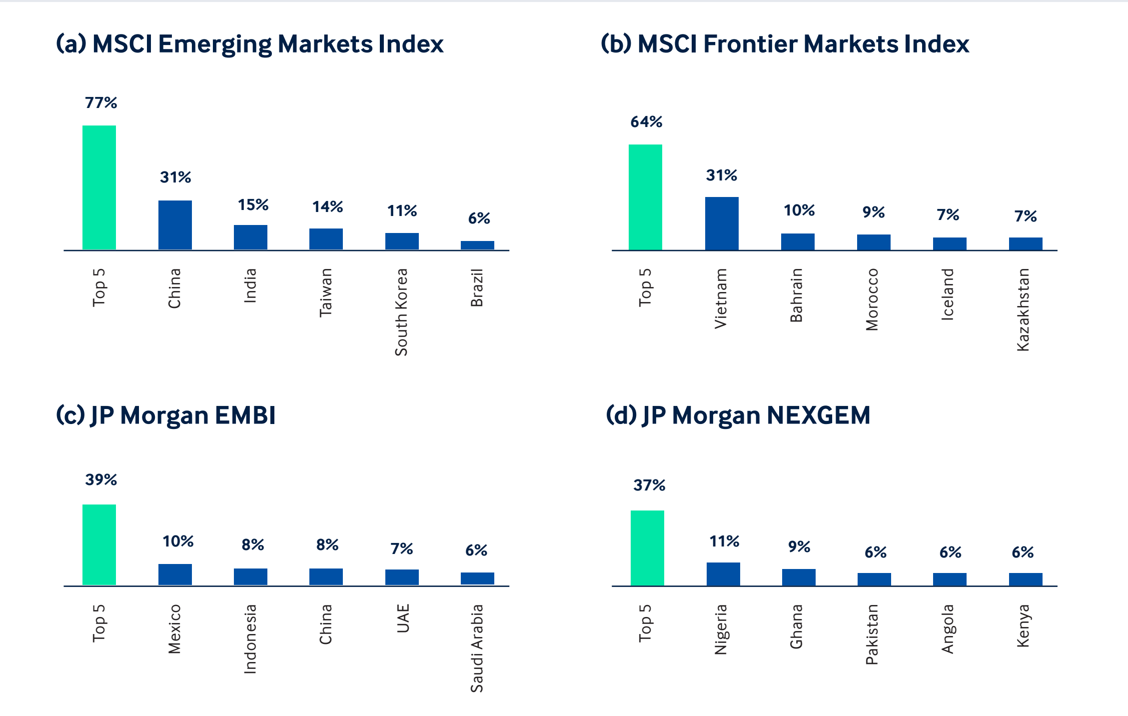
Issues and opportunities for existing indices.

CONCENTRATION

Weights underpinning major emerging and frontier market indices are concentrated among relatively few economies, particularly on the equity side. For example, Figure 6 shows that MSCI's flagship Emerging Markets Index allocates 77% to the top five markets, with China alone constituting 31% and four Asian markets together constituting more than 70%. The MSCI Frontier Market Index similarly allocates 31% to Vietnam, which represents approximately the same weight as the next four largest markets combined, and in turn these five markets represent almost twice the weight of all other markets combined. Fixed income indices are relatively less concentrated, with the flagship JP Morgan Emerging Market Bond Index (EMBI) allocating 39% to its top five markets and the JP Morgan Next Generation Markets (NEXGEM) Index allocating 31% to four African markets.

This concentration reflects several factors intended to protect investors' capital. For example, in MSCI's case country screening and weights reflect the sustainability of economic development, size and liquidity of the market, and accessibility for investors. Market accessibility is assessed on a largely qualitative basis, with consideration of openness to foreign ownership, ease of capital inflows/outflows, efficien-

Figure 6 – Index concentration



cy of operational frameworks, availability of investment instruments, and stability of the institutional framework. In this sense, the quantitative nature of the index itself "conceals the normative values and assumptions" involved in setting standards and defining the norms of international finance.[29]

Concentration also has potential to elevate portfolio risk for investors, relative to a balanced risk strategy less exposed to idiosyncratic shocks prevalent in emerging markets.[30] Similarly, concentration *within* markets among state-owned enterprises "that often have little concern for the rights of minority shareholders", and among cyclically-exposed commodity producers, has been seen by some as suboptimal for investors.[31]

Recognising concerns among its clients around concentration, at the time of writing MSCI was consulting on changes to its flagship frontier index. By (i) reducing the market cap threshold for inclusion, currently set at 99% of the market cap of all listed equities, to 99% of the frontier market universe; and by (ii) reducing the required number of eligible companies from two to one for a market to be included, MSCI proposed to shift more weight to smaller markets and include companies from five markets that are currently excluded. These new markets include ODA-eligible countries, such as Zimbabwe and Palestine. MSCI estimates that the combined impact would be to reduce country concentration significantly, with the Herfindahl-Hirschman Index for country concentration falling more by than one-quarter to below 1,200.[32]

STRATEGIC ALIGNMENT

Market participants also highlight a disconnect between index construction methodologies and portfolio objectives. Such disconnects include a historical shortage of indices that reflect ESG considerations, and more recently a dominance of environmental considerations and persistent shortcomings in socially-focused indices.[33] Sustainability indices have also been criticised for being reward-looking, and failing to capture momentum and additionality in a way that could serve clients seeking a positive impact from their investments.[34]

Possibly due to recognition of these challenges, major asset managers continue to benchmark against indices that do not tilt for sustainability. For example, despite the increasing availability of sustainability indices, Amundi's Emerging Markets ESG Improvers Fund and Pictet-Quest's Emerging Sustainable Equities Fund are benchmarked against MSCI's Emerging Markets Index. JP Morgan's Emerging Market Sustainable Equity Fund uses the same benchmark.

The reward-looking feature of major market cap- and liquidity-based indices similarly risks creating **a disconnect between index construction and strategy for investors seeking to access emerging and frontier markets' structural growth.**[35] Historic or even contemporary *levels* of market capitalisation and liquidity do not directly account for the *rate of change* in growing markets, sectors, and asset classes. However, this is more of an issue for passive investment strategies; active investors could even benefit if the index does not reflect future growth opportunities as it gives them a better chance to beat such a benchmark.

INCLUSIONS AND EXCLUSIONS

Index inclusion or exclusion can have a material impact on asset valuation, over and above any change in fundamentals. Price impacts are particularly acute for smaller cap and emerging market securities,[36] with impacts in emerging markets ranging from 2% to 7% for additions and up to 17% declines for exclusions.[37]

In part, these impacts can be explained by 'radar screen effects', with more visible assets attracting more capital,[38] and underpin a growing market of index arbitrageurs who anticipate index adjustments and take opposite positions.[39] Similar dynamics are observable at the level of entire markets. For example, index reclassification of emerging countries in 2019 resulted in a "seismic shift" of more than US $120 billion in active and passive fund flows.[40]

29 https://osf.io/preprints/socarxiv/x45j3/
30 https://jpm.pm-research.com/content/early/2022/06/17/jpm.2022.1.355
31 https://citywire.com/wealth-manager/news/why-emerging-market-indices-can-fall-wide-of-the-mark/a1353872
32 https://www.msci.com/documents/1296102/29559863/Consultation_FrontierMarkets.pdf/669ab8e1-2842-7539
75f1-d198ff2982d2?t=1663621292377
33 https://MOBILISTglobal.com/wp-content/uploads/2022/06/Drivers-of-Investment-Flows-to-Emerging-and-Frontier-Markets.pdf
34 Ibid
35 https://www.cnbc.com/2021/08/03/broad-emerging-market-indexes-are-broken-etf-manager-says.html
36 https://jii.pm-research.com/content/10/3/15.short
37 https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2995839
38 https://www.researchgate.net/profile/Burcu- Hacibedel/publication/228848656_Index_Changes_in_Emerging_Markets/links/0046352caa9dcc882e000000/Index-Changes-in-Emerging-Markets.pdf
39 https://www.solactive.com/wp-content/uploads/2018/04/Solactive-Index-Turnover-Costs.pdf
40 Robertson and Lam 2019 in https://osf.io/preprints/socarxiv/x45j3/

MARKET POWER

Index providers compete substantially on brand recognition,[43] creating barriers to entry and contributing to market concentration. For example, the three largest equity index providers in Europe – MSCI, FTSE Russell, and S&P Dow Jones Indices – account for more than 80% of passive equity fund assets;[44] a trend reflected globally.[45] MSCI reported more than 20% y-o-y growth in operating revenues to end-2021, and a 76% adjusted EBITDA margin in its Index business.[46]

Such margins in the context of the scale and maturity of the index provider industry, combined with evidence of relatively limited cross-price elasticity[47] and stubbornly high fees[48], are interpreted by some as **evidence of inadequate competition**.[49] Index providers in the US are at present not required to disclose license fees, which some clients and competitors of the big three providers assert undermines competition in the industry.

As Yves Perrier, then CEO of Amundi, put it in a 2019 interview with the Financial Times: "Index fees are a real problem. These providers are an oligopoly and the prices they charge are out of line with the value they add."[50] While new entrants have identified opportunities to compete on both price and product, with new flat fee structures and new technologies opening routes to 'mass customisation',[51] their progress in terms of market share has been limited to date.

43 https://www.law.nyu.edu/sites/default/files/Matteo%20Benetton%20Paper%20Final.pdf
44 https://www.etfstream.com/features/can-anyone-disrupt-the-dominance-of-the-big-three-index-providers/
45 https://www.tandfonline.com/doi/full/10.1080/09692290.2019.1699147
46 https://www.msci.com/documents/1296102/30782546/2021-Annual-Report.pdf
47 https://www.law.nyu.edu/sites/default/files/Matteo%20Benetton%20Paper%20Final.pdf
48 https://www.ft.com/content/29c9e079-a6df-4cbf-8c79-528426b3c7fb
49 https://www.law.nyu.edu/sites/default/files/Matteo%20Benetton%20Paper%20Final.pdf
50 https://www.ft.com/content/e886b2d2-e852-3071-85c1-c9a57113d8a5
51 https://www.etfstream.com/features/can-anyone-disrupt-the-dominance-of-the-big-three-index-providers/

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