BACKGROUND PAPER

Sustainable Finance: A Primer and Recent Developments

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Sustainable Finance: A Primer and Recent Developments

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I. INTRODUCTION TO SUSTAINABLE FINANCE

A. Historical Context

The development of innovative finance tools and instruments to address social and environmental problems is nothing new. Historically, such finance has focused on concessionary finance, including grants, and mutual finance to support the "social economy" or "social and solidarity economy". In many countries, the social economy has long played an important role in the provision of nonmarket goods and services outside of government or mainstream markets. For example, the cooperative and mutual sector represents an important element of many economies globally, employing more than 1.2 billion people (one in six of all employees) in more than three million organizations. In 2019, the largest 300 cooperatives had a turnover of more than $2 trillion,[1] of which 41 were in Asia.[2] The key sectors in which cooperatives and mutual organizations operate are work integration, agriculture, microfinance, and consumer groups. Most cooperatives and mutual organizations are small, but a number operate at significant scale. For example, Amul Dairy is the largest dairy producer in India.[3] Moreover, the larger social economy in the European Union (EU)[4] represents an important element of the overall economy, both in terms of its economic impact (13.6 million jobs, 8% of gross domestic product across the EU),[5] but also its wider social impact in terms of innovations designed to address intractable social, community, and environmental issues.[6] In the post–COVID-19 world, the social economy also offers an alternative economic model that connects actors from government, not-for-profit, and for-profit organizations; and may provide important insights into how to increase the resilience and heterogeneity of business ecosystems more generally and to reduce the risk of exogenous shocks to the economy as a whole.

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1 https://bccm.coop/what-is-a-co-operative/co-operatives-and-mutuals-around-the-world/.
2 https://monitor.coop/sites/default/files/publication-files/wcm2019-final-1671449250.pdf.
3 http://www.amuldairy.com.
4 The social economy in the EU consists of 2.8 million social enterprises, mutual and cooperative associations and foundations. https://s3platform.jrc.ec.europa.eu/documents/20182/313344/SEE-Action+Plan+for+Social+Economy.pdf.
5 https://s3platform.jrc.ec.europa.eu/documents/20182/313344/SEE-Action+Plan+for+Social+Economy.pdf.
6 DG CLIMA Climate and DG ENVIR Environment; DG EAC Education, Youth, Sport and Culture; DG SANTI Health and Food Safety; DG ENER Energy; DG FISMA Financial Stability, Financial Services and Capital Markets Union, and DG ECFIN Economics and Financial Affairs; DG CONNECT Communications Content, Networks, and Technology; and DG RTD Research and Innovation.

B. Terminology

Despite the long history - and continued growth -of the social economy globally, it is only relatively recently that a market of finance specifically aimed at creating social and environmental impact, as well as a financial return, has emerged. However, today, this market remains somewhat confused and under-institutionalized - lacking a consistent terminology, consolidated financial or impact performance data sets despite a plethora of competing reporting standards and principles (for example, the UN Principles for Responsible Investment [PRI],[7] the Global Reporting Initiative [GRI],[8] and the Social Accounting Standards Board [SASB].[9]) and limited regulation around disclosure (though see recent EU and UK regulatory models).[10] Variously, the finance that is deployed for social and environmental impacts has been categorized as grants (philanthropic finance);[11] venture philanthropy (long-term start-up grants plus other pro bono support);[12] mission and program-related finance (charitable asset finance);[13] development finance (from transnational development finance institutions [DFIs]);[14] ethical finance (that is based upon moral judgements of performance, often linked to faith systems);[15] social (impact) finance (that supports the social economy more widely, particularly in Europe);[16] green finance (that is focused on the climate crisis and associated issues of pollution);[17] and impact finance (that is focused specifically on measurable impact). Table 1 summarizes these types of finance with example organizations.

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[7] https://www.unpri.org/pri/what-are-the-principles-for-responsible-investment.
[8] https://www.globalreporting.org.
[9] https://www.sasb.org.
[10] https://ec.europa.eu/info/business-economy-euro/company-reporting-and-auditing/company-reporting/corporate-sustainability-reporting_en; https://www.gov.uk/government/news/uk-to-enshrine-mandatory-climate-disclosures-for-largest-companies-in-law
[11] https://www.philanthropy-impact.org.
[12] https://www.ubs.com/global/en/ubs-society/philanthropy/ubs-optimus-foundation.html?ef_id=Cj0KCQjwufn8BRCwARIsAKzP696fi6DAC5FUYCvMBO0NEQtdNFanJ0fwAgCLk1HEYaj8NCgkDOZJevEaAgBAEALw_wcB:G:s&s_kwcid=AL!410!3!476250982510!b!!g!!%2Bphilanthropy.
[13] https://web.cof.org/2013fall/docs/resources/Impact-Investing-Basics.pdf.
[14] https://www.adb.org.
[15] https://www.globalethicalfinance.org.
[16] https://www.goodfinance.org.uk/investors-advisors/social-finance; and https://www.reedsmith.com/en/capabilities/services/finance/social-impact-finance.
[17] https://www.greenfinanceinstitute.co.uk and https://greenfinanceplatform.org.

Table 1: Terminologies for Sustainable Finance

Type of Finance	Example Organization
Grants	Rockefeller Foundation
Venture Philanthropy	New Philanthropy Capital
Program-related investment	Ford Foundation
Mission-related investment	KL Felicitas Foundation
Development finance	Centers for Disease Control and Prevention
Ethical finance	Faith Invest
Social (impact) finance	RBC Wealth Management
Green finance	Resonance Fund
Impact finance	Bridges Fund Management
Socially responsible finance	Nutmeg

Source: Author's own research.

Despite this variety of definitions, some consistency of terminology has coalesced around the construct of "sustainable finance" in terms of a range of environmental, social, and governance (ESG) variables that are material in terms of investor decision-making around asset allocation strategies:

> *Sustainable finance generally refers to the process of taking due account of environmental, social, and governance (ESG) considerations when making investment decisions in the financial sector, leading to increased longer-term investments into sustainable economic activities and projects.*[18]

The market for sustainable finance can be divided into two subcategories: *negative* sustainable finance that is characterized by investments screened according to their material *risk* profile on the three ESG dimensions ("do no harm");[19] and *positive* sustainable finance that is characterized by investments identified according to their potential for significant, *additional*, social, or environmental impact[20] often aligned with the United Nations (UN) Sustainable Development Goals (SDGs).[21] For example, whereas the former would screen out tobacco companies or high

[18] https://ec.europa.eu/info/business-economy-euro/banking-and-finance/sustainable-finance/overview-sustainable-finance_en.

[19] This is categorized as an exclusion strategy. https://www.credit-suisse.com/media/assets/asset-management/docs/ch/investment-themes/cs-impact-1-esg-to-the-sdgs-2020-spread.pdf.

[20] This is categorized as an integration strategy. https://www.credit-suisse.com/media/assets/asset-management/docs/ch/investment-themes/cs-impact-1-esg-to-the-sdgs-2020-spread.pdf and https://www.credit-suisse.com/media/assets/microsite/docs/responsibleinvesting/the-double-delta-of-impact-investing.pdf.

[21] https://sdgs.un.org/goals.

carbon intensity companies from a portfolio, the latter would invest directly into health care innovations to address lung disease or green technology to replace petro-chemicals.[22]

C. Investor Preferences

A key driver behind the emergence of sustainable finance has been changing investor preferences, notably from the millennials who will benefit from the largest transfer of inherited wealth in human history over the two decades,[23] accounting for $68 trillion. Of these millennials, 45% stated that they wished to invest their funds to help others and considered social responsibility a key factor in making investment decisions.[24] Moreover, 90% of women investors also believe making a positive impact on society is important. In addition, institutional investors, such as pension funds and insurance firms, are recalibrating their long-term investment risk models to include social governance and, particularly, environmental factors as material for their investment portfolios.[25]

II. SUSTAINABLE FINANCE INVESTMENT STRATEGIES

Sustainable finance investment strategies are either negative/exclusionary or positive/integrated.

A. Negative (Exclusionary) Sustainable Finance

This category is typically risk screened against a range of non-financial performance metrics across ESG categories, that leads to a recalibration of the long-term risk profiles of, for example, high-carbon intensity companies. Strategically, such screening results in divestment from, or the avoidance of, ESG high risk investments. The most common risk screen is high carbon intensity, but other risks include failures in:

- *Internal organizational structures, practices, and processes*, such as effective internal accountability and transparent governance; strong worker relations; fair pay and safe working conditions; clear strategies to improve the inclusivity and diversity of the

[22] https://www.rbcwealthmanagement.com/gb/en/research-insights/the-growth-of-impact-investing-building-wealth-with-positive-outcomes/detail/?gclid=Cj0KCQjw5eX7BRDQARIsAMhYLP8jHs3GyRFi-Cy6Lq6cNqVCbEjALIDvJ745GkaWjl-U7T0979Kdjz0aAj43EALw_wcB.

[23] According to Forbes, Millennials will inherit over $68 trillion from their Baby Boomer parents by the year 2030. https://www.forbes.com/sites/jackkelly/2019/10/26/millennials-will-become-richest-generation-in-american-history-as-baby-boomers-transfer-over-their-wealth/#3dcc954b6c4b.

[24] https://privatebank.jpmorgan.com/gl/en/services/investing/sustainable-investing/impact-investing.

[25] https://www.institutionalassetmanager.co.uk/2020/05/19/285756/esg-will-be-industry-standard-within-five-years-say-institutional-investors.

workforce; committed investment in human capital and local communities; using recycling models to maximize the effective use of resources

- *External organizational effects and outcomes*, such as respect for human rights and strategies to tackle inequality; and minimizing pollution

An extension of passive screening that developed more recently is the more active use of voting rights to challenge corporate behaviour.[26]

B. Positive (Integrated) Sustainable Finance

This category typically aims to achieve a 'Double Delta'[27] of impact by providing both new, additional, capital and by focussing on high potential start-ups or high growth potential impact companies. Positive sustainable finance is often aligned with making an additional contribution towards one or more of the 17 UN SDGs (Figure 1). This is sometimes called Socially Responsible Investment.[28] To date, the main categories for SDG investing have been SDG 8 (decent work and economic growth), 12 (responsible consumption and production), and 13 (climate action) with the least prioritized SDGs including 1 (no poverty), 2 (zero hunger), and 10 (reduced inequalities).[29] Growing this market is of central importance to the achievement of the SDG targets by 2030, since there is currently an estimated annual shortfall of $3 trillion–$4 trillion in available finance.[30] Positive sustainable finance investment strategies focus on providing new capital into high impact companies.

[26] https://www.aberdeenstandard.com/en/uk/adviser/responsible-investing?gclid=Cj0KCQjwlvT8BRDeARIsAACRFiViyk2kUXQvp8PJWbmjhM53W_3bf20y88JkY2RMUbz8R7pTGU8idoAaAsdjEALw_wcB.

[27] https://www.credit-suisse.com/media/assets/microsite/docs/responsibleinvesting/the-double-delta-of-impact-investing.pdf

[28] https://hbr.org/2019/01/the-state-of-socially-responsible-investing.

[29] https://pwc.blogs.com/sustainability/2018/01/sdg-prioritisation-is-business-on-the-right-track.html.

[30] https://www.sustainablegoals.org.uk/filling-the-finance-gap/.

Figure 1: United Nations Sustainable Development Goals

Source: United Nations. https://sdgs.un.org/goals.

III. SUSTAINABLE FINANCE CATEGORIES

A. Environmental (Green) Finance

In terms of ESG categories, *environmental finance* is more commonly described as *'green finance'*. Green finance provides start-up or growth capital into innovative enterprises that address climate related issues (positive/integrated) or divests from companies that perpetuate the climate crisis (negative/exclusionary).

Negative - exclusionary - green finance typically focuses on moving investments from high carbon intensity to low carbon intensity companies (as divestment) or allocating capital to companies that are aiming to reduce their overall carbon footprint. A particular issue here is the long-term risk profile associated with investments in petrochemicals companies has been categorised as reflecting the mispriced balance sheet value of so-called 'stranded assets.' These are future extractions of existing oil and gas deposits that will not be able to be used without precipitating a total climate collapse. Carbontracker has estimated that this will result in the price of oil dropping below the

marginal price of production by 2050, making it unviable and significantly downgrading the value of petrochemical stocks today.[31]

Positive – integrated- green finance typically invests in companies that provide green technology, such as solar or carbon capture technologies to address the climate crisis. Green investments also focus on companies working on environmentally sustainable management of natural resources, biodiversity conservation, renewable energy, energy efficiency, the circular economy, clean transportation, and pollution prevention and control.[32] The positive green finance market is dominated by debt products, notably green bonds.[33] Broadly speaking there are six forms of green bond:[34]

(i) Corporate bonds issued by a corporate entity to finance asset acquisitions

(ii) Project bonds backed by single or multiple projects for which the investor has direct exposure to the risk of the project

(iii) Asset-backed securities collateralized by one or more specific projects, usually providing recourse only to the assets

(iv) Supranational, sovereign, sub-sovereign, or agency bonds issued by international financial institutions such as the World Bank or the European Investment Bank (EIB)

(v) Municipal bonds issued by a municipal government, region, or city, which also includes sovereign bonds

(vi) Finance sector bonds issued by a financial institution to raise capital to finance on–balance-sheet lending (such as loans) to green activities

Some carbon-intensive or high-polluting companies have raised green "transition" bonds to fund decarbonizing projects. For example, in 2020, Cadent Gas, a British firm, raised a €500 million green bond to fund works on reducing the leakages from its pipelines. In 2019, Enel, an Italian electricity firm, issued a green bond index that is linked to increasing the share of renewables in its generation capacity.[35] Related to this form of green finance has been the move towards divestment from carbon-intensive companies.[36]

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[31] https://carbontracker.org/can-you-see-stranded-assets-through-the-smog/

[32] https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/June-2019/Mapping-SDGs-to-Green-Social-and-Sustainability-Bonds06-2019-100619.pdf.

[33] Though equity issues in green technology companies are also used. https://www.nasdaq.com/solutions/green-equity-indexes.

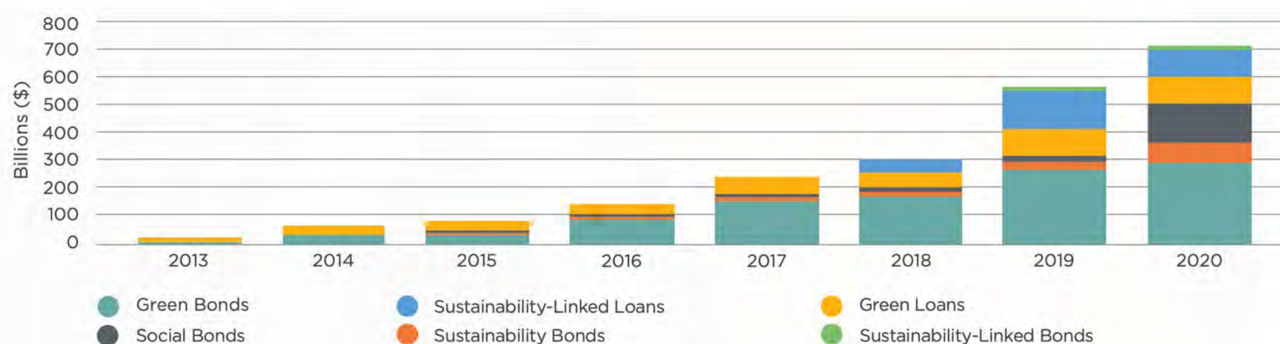
[34] https://www.oecd.org/environment/cc/Green%20bonds%20PP%20%5Bf3%5D%20%5Blr%5D.pdf.

[35] https://www.economist.com/finance-and-economics/2020/09/19/what-is-the-point-of-green-bonds.

[36] https://carbontracker.org.

Green bonds provide new flows of debt capital to support start-ups or high-growth green energy technologies, water management models, meat analogues, or carbon capture.[37] More recently, there has been a growing interest in blue bonds and blended finance models that are focused on the "ocean economy" and issues of biodiversity and marine sustainability.[38] Overall 'sustainable' debt issuance (including green bonds) reached $732 billion in 2020 – a 23% increase compared to the year before (see Figure 2).[39]

Figure 2: Sustainable Debt Issuance 2013-2020



Source: Sustainalytics (2021)

B. Social (Impact Investment) Finance

Second, *social finance* provides start-up or growth capital into innovative enterprises that address a social market failure in the provision of welfare in sectors such as health, education, and employment (positive/integrated) or divests from companies that increase inequality of perpetuate social welfare failures (negative/exclusionary). As a result, finance deployed intentionally for social impact is *sui generis* positive social finance. In this context, over the past 20 years, a new model of positive social finance has emerged: impact investment. The Global Impact Investing

[37] https://www.economist.com/finance-and-economics/2020/09/19/what-is-the-point-of-green-bonds.

[38] https://www.oecd-ilibrary.org/environment/reframing-financing-and-investment-for-a-sustainable-ocean-economy_c59ce972-en and https://www.weforum.org/agenda/2019/06/world-oceans-day-blue-bonds-can-help-guarantee-the-oceans-wealth/. With support from the World Bank, in 2018, the Republic of Seychelles launched the world's first sovereign Blue Bond raising a total of $15 million to advance the island's blue economy.

[39] https://connect.sustainalytics.com/ebook-how-sustainable-finance-shaping-banking

Network (GIIN),[40] a not-for-profit organization dedicated to building the infrastructure of the field via convening and research, defined impact investment as:

> *Impact investments are investments made with the intention to generate positive, measurable social and environmental impact alongside a financial return.*

More recently, the Global Steering Group for Impact Investment (GSGII),[41] a transnational coalition of 33 national advisory boards that supports the development of the impact investing field globally, has extended this definition:

> *Impact investment optimizes risk return and impact to benefit people and the planet. It does so by setting specific social and environmental objectives alongside financial ones and measuring their achievement.*

The emphasis in both definitions on measurement as an integral element of the impact investment model further confirms it as positive social finance that deploys capital to address social issues directly.

A more recent innovation in social finance has been the emergence of social bonds. Social bonds are any type of bond where the proceeds will be used exclusively to finance (or refinance) projects focused on water infrastructure, health or education sectors, affordable housing, work integration, food security, and access to services. Social bonds are designed directly to address or mitigate a specific social or environmental issue often involving a particular target population. In 2020, the International Capital Market Association (ICMA) published a set of Social Bond Principles,[42] with four core components to be calibrated to the stated social or environmental purpose of the bond: the use of finance, the processes for project evaluation, the management of finance, and the reporting impact.

[40] Established in 2009, the Global Impact Investing Network (GIIN) is a not-for-profit organization with 280 members across 41 countries that builds industrial infrastructure and supports activities, education, and research to help accelerate the development of the impact investment industry. https://thegiin.org.

[41] The GSGII was established in August 2015 as the successor to, and incorporating the work of, the Social Impact Investment Taskforce established under the UK presidency of the Group of Eight (G8). Currently, the GSGII's membership consists of 32 countries plus the EU. https://gsgii.org.

[42] https://www.icmagroup.org/green-social-and-sustainability-bonds/social-bond-principles-sbp/.

C. Governance (Stakeholder) Finance

Third, *governance finance* - which is sometimes elided with environmental or social finance -is distinctive in that it focuses on stakeholder finance that invests in companies that adhere to international standards of employee welfare (such as those set by the International Labour Organization),[43] or that have a strategic aim to incorporate elements of purpose[44] into their governance structures for example, by establishing employee representation on the management board (positive/integrated) or divests from those that do not (negative/exclusionary).

Governance finance relates to the effects of investment on a range of key stakeholders around the firm. In this regard, it has many overlaps with the impact objectives of green and social finance, both negative and positive. These also link to issues around stakeholder finance that have been conceptualized in terms of a wider set of debates around corporate "purpose".[45] However, the most distinctive features of positive stakeholder finance relate to organizational ownership and forms of legal incorporation.

In terms of stakeholder ownership, cooperative and mutual finance represent a significant driver of stakeholder impact.[46] This is a product of investment into an organizational structure, based upon equal membership, that is designed to address market failures or pattern of monopsony in markets. Cooperatives and mutual organizations play a key role in several impact sectors, including housing,[47] agriculture,[48] health,[49] work integration,[50] insurance,[51] and banking.[52] Many of these sectors are substantial. For example, the global market share of mutual and cooperative insurers stood at 26.7% (2017), in more than 90 countries, with assets worth $8.9 trillion. This market employs more than 1 million people and serves 960 million people as members or

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[43] https://www.ilo.org/global/lang--en/index.htm.

[44] https://www.hks.harvard.edu/sites/default/files/centers/mrcbg/files/Mayer_2.19.19.transcript.pdf. An good example is the B-Corps model: https://bcorporation.net.

[45] https://boardagenda.com/2020/04/07/no-more-business-as-usual-professor-colin-mayer-said-business-school/.

[46] Michie (2015).

[47] https://ldn.coop/wp-content/uploads/2015/01/Financing_Co-operative_and_Mutual_Housing-1.pdf. Also, note Big Society Capital's strategic focus on investing in the social housing sector and housing associations: https://bigsocietycapital.com/how-we-work/focus-areas/homes/.

[48] https://www.agweb.com/blog/straight-from-dc-agricultural-perspectives/agricultural-cooperatives-around-the-world.

[49] https://www.un.org/development/desa/cooperatives/wp-content/uploads/sites/25/2019/03/190326_ihco_EGM-nairobi.pdf.

[50] https://www.eurofound.europa.eu/publications/report/2019/cooperatives-and-social-enterprises-work-and-employment-in-selected-countries.

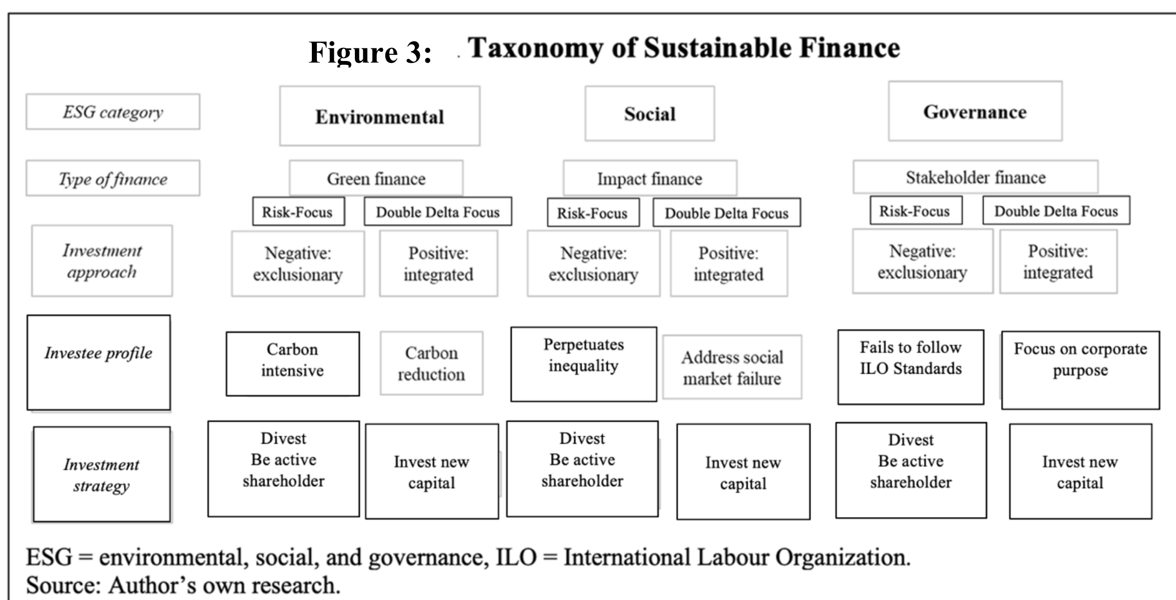
[51] https://www.thenews.coop/136824/sector/banking-and-insurance/co-operative-mutual-insurers-outperform-insurance-sector-market-share-growth/.

[52] https://economics.rabobank.com/contentassets/95274037ebc548bc99ae02abadf18489/cooperatiestudie-200910_tcm64-94102.pdf.

policyholders.[53] Similarly, the global cooperative banking sector had assets of €7.4 billion (2018).[54]

In terms of stakeholder forms of incorporation, several legal forms for social purpose organizations exists globally that are designed to attract stakeholder focused finance. These include benefit corporations (in the United States [US]),[55] community interest companies (in the United Kingdom [UK]),[56] and social cooperatives in Europe.[57] Each of these legal forms of incorporation have various disclosure and financial requirements that are consistent with being a legitimate social purpose organization. For example, community interest companies have an asset lock provisions which protects them from a hostile takeover to access the value of a real asset such as property.[58]

Figure 3 summarise the categories of sustainable finance as a taxonomy by ESG category and investment approach with indicative investee profiles and investment strategies.



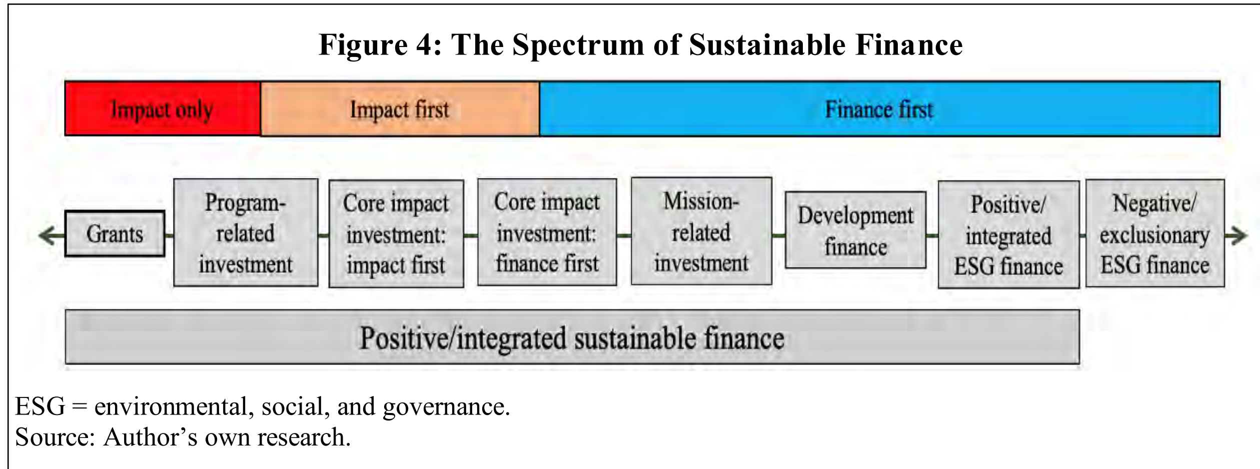
ESG = environmental, social, and governance, ILO = International Labour Organization.
Source: Author's own research.

[53] https://www.icmif.org/publications/financial-insights/global-mutual-and-cooperative-market-infographic-2016.
[54] McKillop et al. (2020).
[55] https://benefitcorp.net.
[56] https://www.gov.uk/government/organisations/office-of-the-regulator-of-community-interest-companies.
[57] https://ec.europa.eu/growth/sectors/social-economy/cooperatives/european-cooperative-society_en.
[58] In terms of attracting stakeholder finance, community interest companies also attract social investment tax relief https://www.gov.uk/guidance/venture-capital-schemes-apply-to-use-social-investment-tax-relief.

IV THE SPECTRUM OF SUSTAINABLE FINANCE: MARKET SIZE

An important and distinctive feature of the sustainable finance market is the variety of types of capital available to be deployed (and co-invested in blended structures) for sustainable impact. These range from grants, foundation assets deployed as program-related investment (PRI) or mission-related investment (MRI), sub-market and market return impact investments, development finance, green and social bonds, and market rate return screened investments in public and private equity and debt. Figure 4 sets out the spectrum of sustainable finance in terms of both the broad positive/integrated and negative/exclusionary ESG categories set out above.[59]

Figure 4: The Spectrum of Sustainable Finance



ESG = environmental, social, and governance.
Source: Author's own research.

Next, each element of the spectrum is considered, in turn, with respect to the approximate market size of each.

A. Positive/Integrated Environmental, Social, and Governance Finance: Market Size

1. Grants

Grants, which play an important role in structuring blended sustainable finance deals as concessionary capital have an expected return of -100% as they are never repaid. The market size figure - $75 billion - is approximated from 5% of total foundation assets globally. This is the legal

[59] See: https://www.bloomberg.com/graphics/2019-green-finance/.

requirement for charitable status in the US, though not elsewhere.[60] This figure also excludes government grants to social enterprises, although these may be quite substantial sums. For example, the Government of the UK has deployed in excess of £1 billion of public money to support the development of the social enterprise sector and impact investing infrastructure since 2010.[61]

2. Program-Related Investment and Mission-Related Investment

PRI and MRI form a part of a foundation's overall invested assets by using endowment capital to generate impact. PRIs typically take the form of debt capital to fund programmatic activities, often in concert with grants, and may make a financial return.[62] In the US, PRIs can be included in the annual 5% allocation of "grant" capital. [63] MRIs take the form of debt or equity and typically aim to further the foundation's mission and make a competitive financial return.[64] Potentially, the potential market size of MRI investments could equal the total assets of all foundations, or roughly $1.5 trillion globally.[65]

3. Impact Investing

Following the definition noted above, in the 2020 annual report, the GIIN estimated the core impact investing market size at $715 billion of assets under management in 2020.[66] However, the

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[60] Calculating the total value of philanthropic assets globally is difficult, since there is no single data set available. This figure is, therefore, an estimate based upon P. Johnson. 2018. *Global Philanthropy Report* (Hauser Institute for Civil Society) valuation of global foundation assets at $1.5 trillion, see https://cpl.hks.harvard.edu/files/cpl/files/global_philanthropy_report_final_april_2018.pdf. This is likely to a larger figure in 2020.

[61] This figure includes: the endowment of UnLtd (£100 million); grants from the Futurebuilders (£215 million) and Investment and Contract Readiness (£60 million) Funds; co-investments with Bridges Fund Management (>£20 million); unclaimed bank account assets to the Reclaim Fund (> £ 850 million) of which Big Society Capital has deployed > £600 million to 2019.

[62] In the USA, the IRS defines PRIs 'as investments in which: the primary purpose is to accomplish one or more of the foundation's exempt purposes; production of income or appreciation of property is not a significant purpose; influencing legislation or taking part in political campaigns on behalf of candidates is not a purpose. In determining whether a significant purpose of an investment is the production of income or the appreciation of property, it is relevant whether investors who engage in investments only for profit would be likely to make the investment on the same terms as the private foundation. If an investment incidentally produces significant income or capital appreciation, this is not, in the absence of other factors, conclusive evidence that a significant purpose is the production of income or the appreciation of property. To be program-related, the investments must significantly further the foundation's exempt activities. They must be investments that would not have been made except for their relationship to the exempt purposes. Examples include: low-interest or interest-free loans to needy students; high-risk investments in non-profit low-income housing projects,; low-interest loans to small businesses owned by members of economically disadvantaged groups, where commercial funds at reasonable interest rates are not readily available; investments in businesses in low-income areas (both domestic and foreign) under a plan to improve the economy of the area by providing employment or training for unemployed residents; investments in non-profit organizations combating community deterioration. See: https://www.irs.gov/charities-non-profits/private-foundations/program-related-investments.

[63] Government of the UK guidelines. https://www.gov.uk/government/publications/charities-and-investment-matters-a-guide-for-trustees-cc14/charities-and-investment-matters-a-guide-for-trustees.

[64] R. Henriques, A. Nath, C. Cote-Ackah, and K. Rosqueta. 2016. *Programme Related Investments: Is there a Bigger Opportunity for Mission Investing by Private Foundations?* The Centre for High Impact Philanthropy, University of Pennsylvania. https://www.impact.upenn.edu/wp-content/uploads/2016/04/160415PRIFINALAH-print.pdf.

[65] For pioneers in using MRI as 100% of assets: KL Felicitas Foundation (https://klfelicitasfoundation.org); FB Heron Foundation (https://www.heron.org); T100 (https://toniic.com/t100/); and the Ford Foundation's decision to engage in MRI (https://www.marketplace.org/2020/07/02/ford-foundation-darren-walker-charitable-organizations-philanthropy-economy-social-bonds/).

[66] https://thegiin.org/research/publication/impinv-survey-2020.

survey data will, likely, under-estimate the total market size as it is based on a sample of only 290 respondents. Of these assets, 37% was invested through private debt, which also accounted for well more than half (61%) of the number of investments made. Publicly traded debt accounted for nearly a quarter of the total volume of capital invested (16% of transactions), and private equity comprised 16% (11% of transactions). The overall average deal size was relatively small - at $5 million - across all asset classes. 76% of investments were directly into companies, projects, or real assets. By asset class, the average deal size was largest among investments in real assets ($28 million), followed by public equity ($22 million), private equity ($ 7 million), and publicly traded debt ($7 million). In terms of investors, the largest group was pension funds (18% of total investments). In terms of investments, energy was the largest sector (16% of total investments). 55% of all investment went into "mature" public and private companies. In terms of sectors, the GIIN (2020) data suggested that the categories of impact investments were evenly spread between energy (16% of all investments), financial services (12%), forestry (910%), food and agriculture (9%), and microfinance (8%).

According to the GIIN (2020) survey, 67% of its sample investors expected market-rate returns, whilst 18% aimed for close to market rate returns and 15% accepted below-market-rate returns (but close to capital preservation). This data suggests that impact investing can be either *impact first* (with sub-market returns) or *finance first* (with market returns) depending on the structure of the fund/deal and investor expectations.[67] In terms of expected financial returns, foundations, not-for-profit asset managers, and family offices were largely "impact first" and would accept some sub-market rate investments. On the other hand, pension funds, insurance companies, for-profit asset managers, and DFIs were "finance first" and generally expected market returns.

4. Development Finance

Development finance is increasingly being categorized as a form of sustainable finance.[68] This sector includes multinational agencies, such as the Asian Development Bank (ADB); Inter-

[67] The GIIN Annual Impact Investor Survey 2020 included data from 294 impact investors. In terms of returns, 67% of this sample suggested that their investments achieved market rate returns, 18% achieved below market rate returns (but close to the market rate) and 15% achieved below market rate returns (closer to capital preservation) see: https://thegiin.org/impact-investing/need-to-know/%23s2.

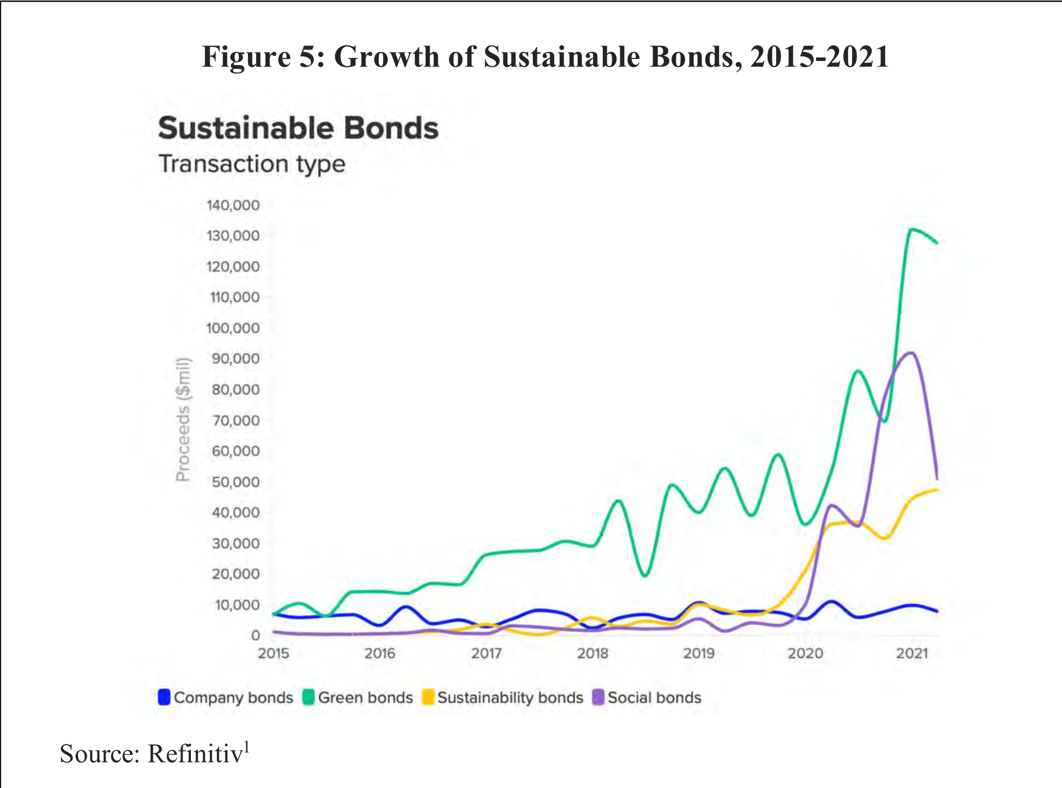
[68] In earlier estimates of the size of the impact investing market, development finance was typically excluded. The GIIN Annual Impact Investor Survey 2019. https://thegiin.org/assets/GIIN_2019%20Annual%20Impact%20Investor%20Survey_ExecSumm_webfile.pdf. However, the 2019 GIIN report estimated the market to be 239 billion, whereas the 2020 report estimated the size to be 404 billion. The large increase appears, at least partly, to be a consequence of the inclusion of some DFIs in the 2020 survey sample for the first time.

American Development Bank and the International Finance Corporation (IFC); regional agencies, such as the European Bank for Reconstruction and Development; and national agencies, such as Centers for Disease Control and Prevention (CDC) in the UK.[69] There is no single data set for all development finance, but the IFC (2019)[70] suggested that the 25 Harmonized Indicators for Private Sector Operations signatory DFIs could be seen as impact investors with total assets under management of $742 billion.

5. Positive/Integrated Sustainable Finance

The central element of the positive/integrated ESG finance market is sustainable bonds. The sustainable bond market has grown substantially since 2015 (Figure 5), driven primarily by green bonds. By the second half of 2021, sustainability bond issuance had reached $91bn an increase of 131% compared with the same period in 2020.[71]

Figure 5: Growth of Sustainable Bonds, 2015-2021



Source: Refinitiv[1]

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[69] CDC's positioning of its investments within an ESG framework. https://toolkit.cdcgroup.com.
[70] https://www.ifc.org/wps/wcm/connect/66e30dce-0cdd-4490-93e4-d5f895c5e3fc/The-Promise-of-Impact-Investing.pdf?MOD=AJPERES&CVID=mHZTSds.
[71] See: https://www.refinitiv.com/perspectives/market-insights/sustainable-finance-surges-in-popularity-during-h1-2021/

i. Green Bonds

By the first half of 2021, $227.8bn green bonds had been issued meaning that the total cumulative green bond volume was 1.4tn. This represents a 49% growth rate in the period 2016-2021.The projected forecast for full year 2021 was $400-$450bn.

In 2019, $257.7 billion of green bonds were issued globally- a growth of 51% on the 2018 total of $167.3 billion. Of these, Europe accounted for 45% while the Asia and Pacific market issued 25% with the People's Republic of China (PRC) the largest Asian issuer.[72]

In 2019, the largest cumulative issuers of green bonds were the US Federal National Mortgage Association ($22.8 billion), the German Reconstruction Credit Institute ($9.02 billion), the Dutch State Treasury Agency ($6.66 billion), France ($6.57 billion), and the Industrial and Commercial Bank of China ($5.85 billion) (footnote 75). Moreover, in 2019, a survey of 135 hedge funds in 13 countries with assets under management of $6.25 trillion, 84% reported "an increased interest in ESG-orientated funds and strategies over the last 12 months".[73] All the major global stock exchanges have listings for green bonds as public debt.[74]

ii. Social Bonds

The first social bond was issued by the Instituto de Credito in Spain in 2015. It focused on offering sub-market loans to small and medium-sized organizations in deprived areas with the aim of accelerating economic growth and creating local jobs. The 3-year social bond raised €1 billion from a range of international investors. Also, in 2015, this was followed by a second €1 billion Spanish social bond issued by Kutxabank to provide affordable housing in the Basque country.[75] In 2017, the IFC launched a Social Bond Program that offered investors an opportunity to allocate social bond investments that are focused on the SDGs with a triple A-rated credit risk. Finance from the bonds focused on supporting banking for women and inclusive business programs, which benefit underserved populations in emerging markets, including women and low-income communities with limited access to essential services, such as basic infrastructure and finance. By 2020, the IFC had issued 39 social bonds that raised $3.1 billion.[76]

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[72] https://www.climatebonds.net/resources/reports/2019-green-bond-market-summary.

[73] https://www.cnbc.com/2020/02/14/esg-investing-numbers-suggest-green-investing-mega-trend-is-here.html.

[74] https://www.forbes.com/sites/brendancoffey/2019/11/12/esg-stocks-are-having-a-fantastic-year/?sh=6fd53e352fbb; and https://www.climatebonds.net/green-bond-segments-stock-exchanges.

[75] https://www.gbm.hsbc.com/-/media/gbm/reports/insights/social-bonds.pdf.

[76] https://www.ifc.org/wps/wcm/connect/corp_ext_content/ifc_external_corporate_site/about+ifc_new/investor+relations/ir-products/socialbonds.

In 2020, the SDG Impact project, within the United Nations Development Programme (UNDP), launched a set of SDG Impact Standards for Bonds.[77] These standards contained six standards under four topic areas: strategic intent and impact goal setting, impact measurement and management, transparency and comparability, and context and governance.

By 2020, total issuance had reached $33.1 billion, up from $6.2 billion in 2019. This accounted for 28% of the total sustainable finance bond market.[78] However, as the social bond market grew, there has been an increasing demand for standards of impact reporting and disclosure.[79]

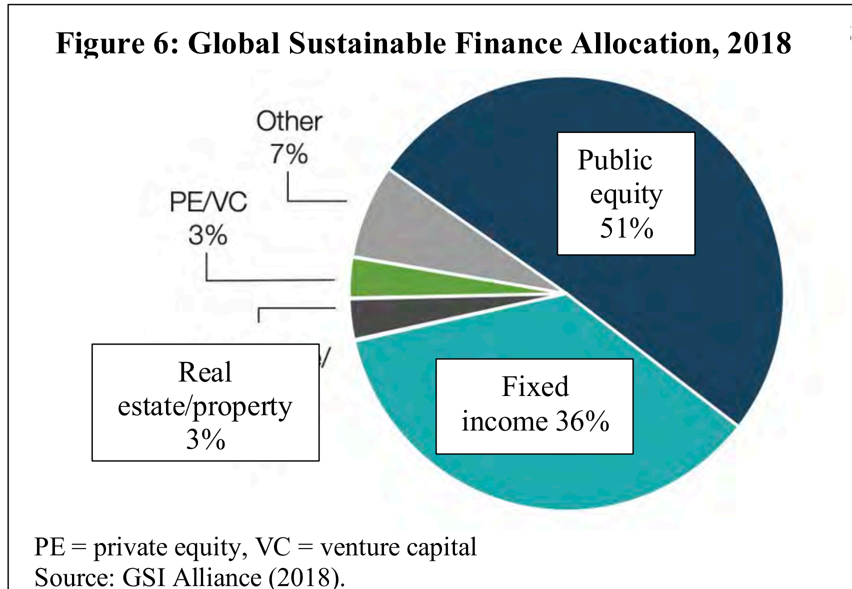
6. Negative/Exclusionary Sustainable Finance

By 2021, the global total of assets under management that followed some form of ESG screen[80] - including sector, corporate practices, norms-based analysis against global standards (International Labour Organization, United Nations Children's Fund [UNICEF], Organization for Economic Co-operation and Development), and the level of ESG integration in corporate strategy - amounted to $37.8 trillion - a growth of over 24% since 2018. It has been estimated that by 2025, ESG assets will reach $53 trillion or over a third of the projected $140.5 trillion global total.[81]

Data also suggests that the majority of ESG investment is into public equity and fixed income debt- categories that indicate a focus on mainstream businesses that are publicly listed. Following the logic of the Double Delta model, these ESG investments are not materially impactful (Figure 6).

[77] https://sdgimpact.undp.org/assets/SDG-Impact-Standards-for-Bonds_First-Public-Consultation-Draft.pdf.
[78] https://cib.bnpparibas.com/sustain/capital-markets-and-covid-19-have-social-bonds-come-of-age-_a-3-3503.html.
[79] https://www.sustainalytics.com/sustainable-finance/social-bonds/?utm_term=&utm_campaign=Leads-Search-20&utm_source=adwords&utm_medium=ppc&hsa_acc=4619360780&hsa_cam=11145778763&hsa_grp=108965194933&hsa_ad=465929335428&hsa_src=g&hsa_tgt=dsa-437115340933&hsa_kw=&hsa_mt=b&hsa_net=adwords&hsa_ver=3&gclid=Cj0KCQjwufn8BRCwARIsAKzP695DhC7NGecVbGtOT9i-GUr-J5f81BjR3oE_FH11KyEESpDqBOS96uoaAhQ7EALw_wcB.
[80] See: https://www.dbresearch.com/PROD/RPS_EN-PROD/PROD0000000000518186/What_are_exclusionary_trends_in_sustainable_invest.PDF?undefined&realload=5j7GoVKHGYdG6mBbmrHkWdv4hdTuOXLDdd8bSSJmJdt8wr2riZBfuM/OGUlDefoq
[81] See: https://www.bloomberg.com/professional/blog/esg-assets-may-hit-53-trillion-by-2025-a-third-of-global-aum/

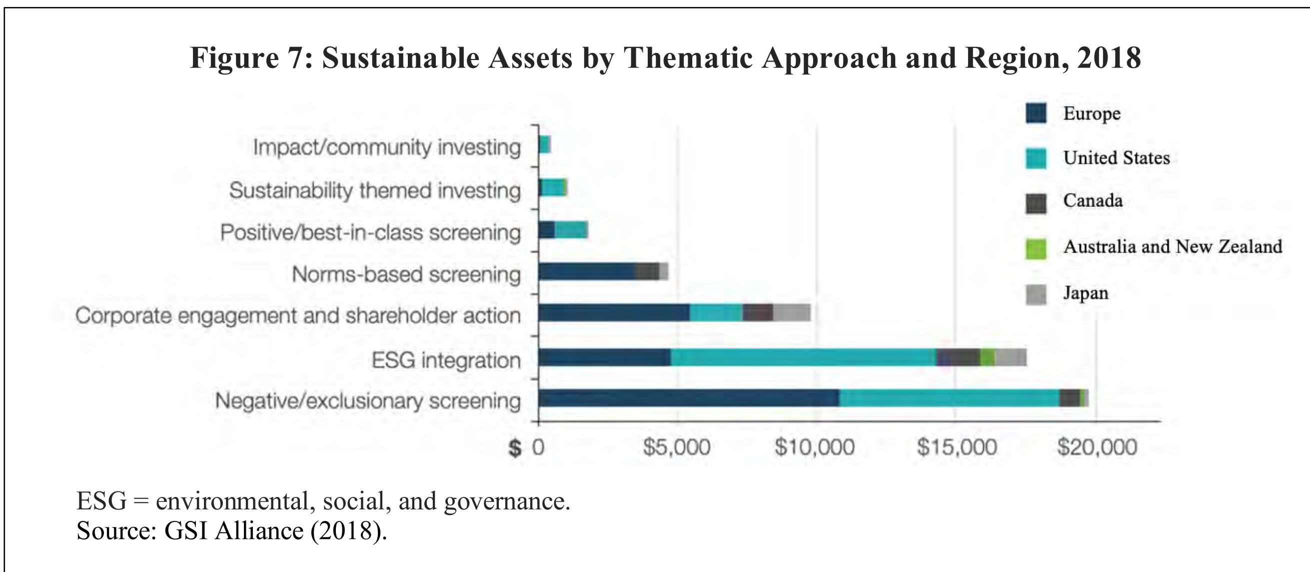
Figure 6: Global Sustainable Finance Allocation, 2018



PE = private equity, VC = venture capital
Source: GSI Alliance (2018).

In terms of geography, the European ESG market focused mainly on an exclusionary approach, whereas the US market focused more on ESG integration (Figure 7).

Figure 7: Sustainable Assets by Thematic Approach and Region, 2018



ESG = environmental, social, and governance.
Source: GSI Alliance (2018).

Figure 8 summarizes the market sizes across the spectrum of sustainable finance.

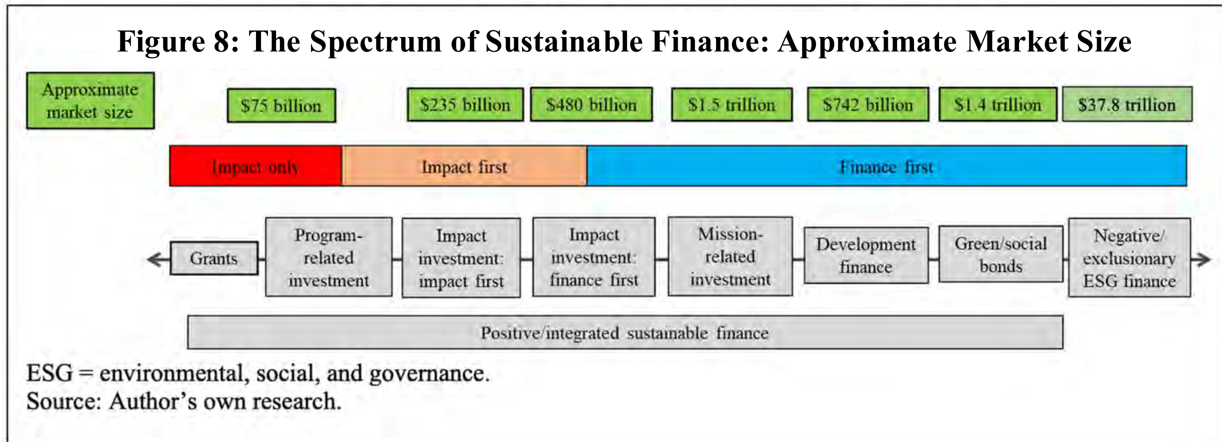


Figure 8: The Spectrum of Sustainable Finance: Approximate Market Size

ESG = environmental, social, and governance.
Source: Author's own research.

V. THE SPECTRUM OF SUSTAINABLE FINANCE: RETURNS

A. Positive/Integrated Environmental, Social, Governance Finance: Returns

In terms of returns on investment, a key feature of the spectrum of sustainable finance is that it includes finance with a wide range of return expectations. At one extreme, grants expect a zero return and, on the other, negative/exclusionary ESG funds can achieve above market returns. However, with the exception of the GIIN data on the two forms of impact investing (impact first and finance first), there are no consolidated data sets for the returns of other types of capital in the spectrum. As such, the returns presented here have been estimated from available sources and should be seen as indicative.

B. Grants and Program Related Investment

As 100% loss finance, grants play an important role both as start-up risk capital and as concessionary sustainable finance within blended finance structures and deals. The returns to PRI may vary between loss-making to market rate returns (more typical in the US) under the conditions that were noted above. For example, KL Felicitas Foundation, which aims to invest 100% of its assets as impact, reported a 2.5% per annum loss on its PRIs.[82]

C. Impact Investment

[82] https://www.thinknpc.org/wp-content/uploads/2018/06/In-pursuit-of-deep-impact_NPC_KLF-Digital-1.pdf.

In terms of impact investment returns, the GIIN 2020 survey separated out the investment data into either ‘developed market” or “emerging market” categories, and then by type of finance (as annualized, realized, and gross returns).[83] In developed markets, the average actual return with an expected market rate return was 16% from private equity, 13% from real assets, and 8% from private debt. In emerging markets, the average actual return with an expected market rate return was 18% from private equity, 10% from private debt, and 8% from real assets. While these returns look broadly in line with the typical market rate returns on mainstream private equity[84] and private debt,[85] important empirical questions remain concerning whether these returns are properly risk-adjusted, given the typically non-financialized impact risk variable in the overall capital structure.[86] Across the GIIN 2020 survey sample, more than 50% of respondents saw a severe or moderate financial risk in several categories of performance, including business execution and management risk (23%+54%), country and currency risk (18%+40%), macroeconomic risk (17%+49%), financing risk (13%+46%), and market demand and competition risk (9%+44%).

In developed markets, the average actual return with an expected below-market rate return was 10% from private equity and 7% from private debt. In emerging markets, the average actual return with an expected below-market rate return was 11% for private equity and 8% for private debt. In both below-market scenarios, real assets did not expect a sub-market return. The GIIN data also suggested that the majority of its sample investors’ financial returns were either “in line with” or “outperforming” expectations, with only 12% reporting that they were “underperforming”.

D. Mission-Related Investment

MRIs typically seek market returns.[87] However, against this assumption and aside from PRIs, KL Felicitas Foundation’s overall endowment returned only 2.75% per annum as MRI. This could be seen as indicative of a lower threshold for MRI returns.

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[83] The median age of inception of the investments in the sample was 2011.

[84] Average returns globally from 2009 to 2019 were 15.3%. https://www.marketwatch.com/story/private-equity-returns-have-gone-up-that-may-not-last-2020-06-18.

[85] The average return in private debt globally from 1998 to 2016 was between 10% and 15%. https://www.ipe.com/research-the-rise-of-private-debt/10012090.article. However, the COVID-19 pandemic will likely severely affect more recent returns. https://www.fnlondon.com/articles/private-debt-funds-set-for-worst-performance-since-the-global-financial-crisis-20200807.

[86] Interestingly, however, there are some data that suggest that impact finance outperforms the market. This may be for several reasons, including overall better risk management (ESG funds: https://www.ft.com/content/733ee6ff-446e-4f8b-86b2-19ef42da3824); exploiting new, growth markets (green finance: https://www.bloomberg.com/graphics/2019-green-finance/); and lack of correlation with market risk (microfinance: https://www.triodos.co.uk/ethical-investments/microfinance-fund/LU0842307588).

[87] As a benchmark, the average market returns over 10 years to June 2020 were S&P 500 14.7% and DOW Jones Industrial 15.04%. https://www.wealthsimple.com/en-us/learn/average-stock-market-return.

E. Development Finance

Generally, aside from direct grants, development finance seeks a market return. Development finance returns can be estimated from some of the larger players in the market. For example, the IFC recorded an average return on assets in a range of 0.1%–1.6% between 2015 and 2019,[88] whereas CDC returned an average 10.3% in 2012–2016.[89] Further, an analysis of the equity returns on IFC, the European Bank for Reconstruction and Development, and the Netherlands Development Finance Company (FMO) showed an average of 10% between 2003 and 2015.[90]

F. Green and Social Bonds

The data on the pricing of green bonds remains mixed.[91] But some analysis suggests that the pricing does not typically reflect any sort of risk premium.[92] As such, returns are typically close to conventional bonds which have been between zero and 2% over the past 5 years.[93] For example, in 2020, Barclays issued a £400 million, 6-year, green bond to support climate-related products and initiatives with an annual yield of 1.70%.[94]

While the available data is more limited for social bonds, they seem to follow a similar pricing profile to green bonds without any risk premium. For example, in 2020, Assura issued a £300 million, 10-year, social bond with an annual yield of 1.5%.[95]

G. Negative Environmental, Social, and Governance Finance[96]

In terms of the returns on negative/exclusionary ESG finance, the available data suggests that the top-performing stocks returned between 12% and 16% in 2018–2019 (Figure 9). This compares to a 29% growth in the S&P 500 for the same period.[97]

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[88] https://www.ifc.org/wps/wcm/connect/corp_ext_content/ifc_external_corporate_site/annual+report/financials.
[89] https://www.devex.com/news/financial-returns-likely-to-go-down-over-next-5-years-says-cdc-chair-92943.
[90] https://publications.iadb.org/publications/english/document/Comparative-Study-of-Equity-Investing-in-Development-Finance-Institutions.pdf.
[91] https://www.mdpi.com/1911-8074/13/9/193.
[92] https://blogs.cfainstitute.org/investor/2019/10/08/green-bonds-vs-traditional-bonds.
[93] https://www.climatebonds.net/files/reports/cbi_gb_pricing_2h2018_08052019.pdf.
[94] https://home.barclays/news/press-releases/2020/10/barclays-raises-p400m-through-second--green-bond--issue-/.
[95] https://www.investegate.co.uk/assura-plc/rns/pricing-of--300m-social-bond/202009081619503846Y/.
[96] https://www.institutionalinvestor.com/article/b1m8spzx5bp6g7/Private-Equity-Makes-ESG-Promises-But-Their-Impact-Is-Often-Superficial.
[97] https://markets.businessinsider.com/news/stocks/sp-500-2019-annual-return-for-year-best-since-2013-2019-12-1028790061?

Figure 9: Returns on Top Ten ESG Funds 2018-2019

	Fund name	12 month return (%)
1	Axa Global Factors Sustainable Equity	16.96
2	Liontrust Sustainable Future Global Growth	16.8
3	Hermes Impact Opportunities Equity	16.07
4	Liontrust Sustainable Future Absolute Growth	15.34
5	RobecoSAM Sustainable Water	14.09
6	Triodos Global Equities Impact Fund	13.89
7	Royal London Sustainable World	13.88
8	BMO Responsible Global Equity	13.78
9	Liontrust Sustainable Future Managed	13.2
10	CCLA COIF Charities Ethical Investment	11.89

Source: Financial Times Advisor (https://www.ftadviser.com/investments/2019/10/10/esg-investing-provides-strong-returns/).

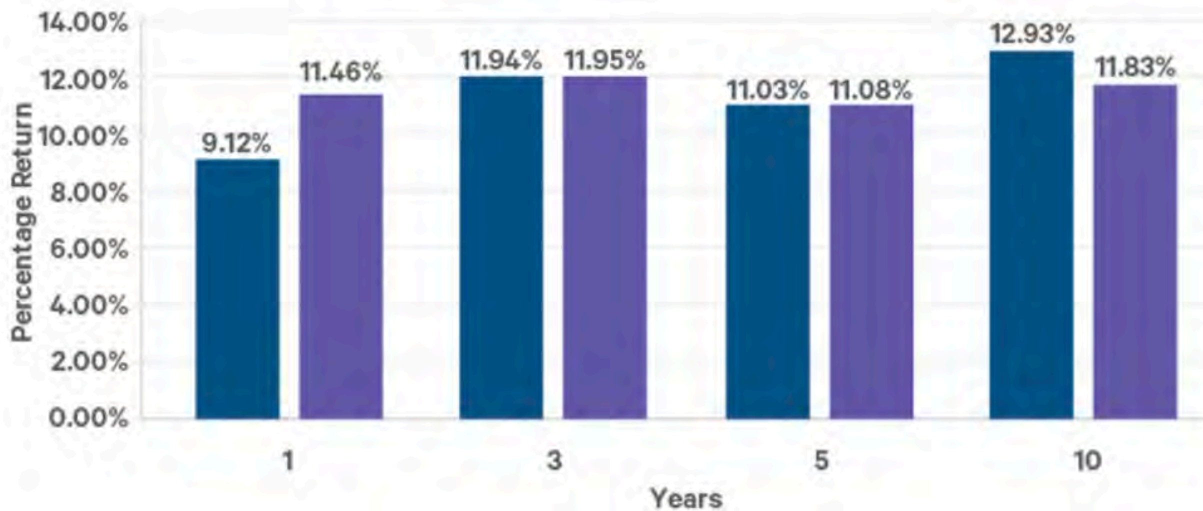
However, Barclays Bank analysis of the ESG performance of their funds between 2013 and 2020, showed rough parity between ESG and non-ESG equity returns, averaging about 18% annual growth (Figure 10).

Figure 10: Environmental, Social, and Governance−Non-Environmental, Social, and Governance Equity Performance

ESG = environmental, social, and governance.
Note: The sample period is from January 2013 to February 2020. The figure displays total returns (net of fees) where returns are averaged by month and fund type. Funds with assets under management larger than £100 million are included in the sample.
Source: EPFR, Barclay's Research (https://www.investmentbank.barclays.com/our-insights/3-point-perspective/esg-funds-looking-beyond-the-label.html?cid=paidsearch-).

Similarly, the MSCI ESG Leaders Indices generally performed well against the main index over a 10-year period (Figure 11).

Figure 11: Performance of MSCI World Index versus MSCI Environmental, Social, and Governance Leaders Indices Gross Annualized Returns, 2009-2019



ESG = environmental, social, and governance; MSCI = Morgan Stanley Capital International.
Source: MSCI, Davy Global Fund Management (https://www.davygfm.com/insights/esg-investing-series/the-returns-and-fundamentals-of-esg-integrated-investing.html).

Table 2 summarizes the spectrum of social finance in terms of market size and returns.

Table 2: Spectrum of Social Finance Returns

Type of Finance	Approximate Market Size ($)	Estimated Returns (%)
Grants	75 billion	-100
Program-related investment	75 billion	-2.5 to Market Rate
Impact investment: Impact first	134 billion	7–11
Impact investment: Finance first	270 billion	8–18
Mission-related investment	1.5 trillion	2.75–15.00
Development finance	742 billion	10
Positive/integrated ESG	1.4 trillion	0–2
Negative/exclusionary ESG	37.8 trillion	10–18

ESG = environmental, social, and governance.
Source: Author's own research.

Figure 12 sets out the spectrum of sustainable finance with approximate market size and estimated returns.

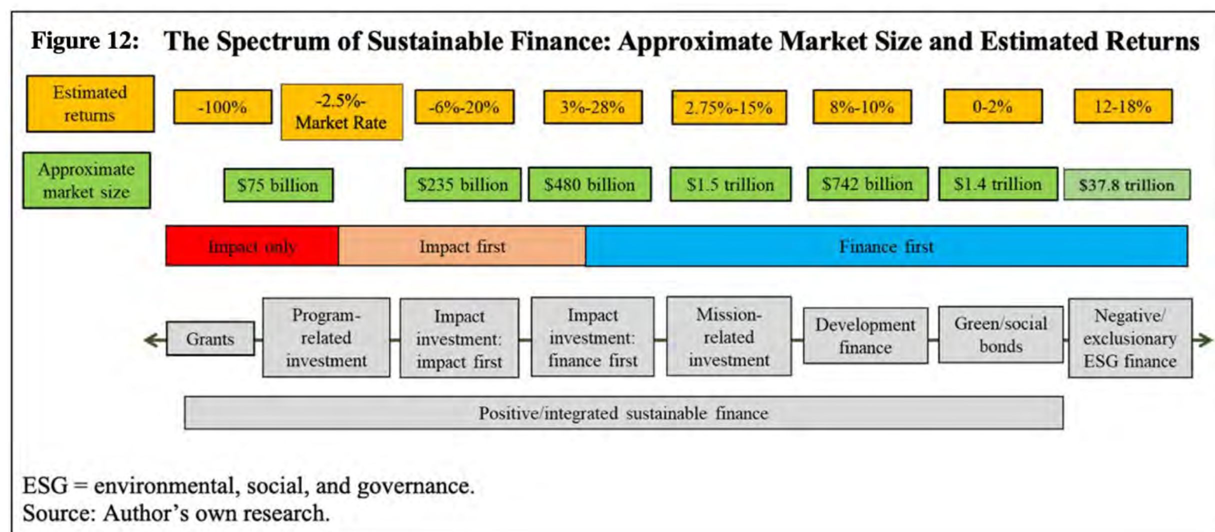


Figure 12: The Spectrum of Sustainable Finance: Approximate Market Size and Estimated Returns

ESG = environmental, social, and governance.
Source: Author's own research.

VI. MARKET INFRASTRUCTURE

A. Green and Social Bonds

Most mainstream investment banks have developed bespoke ESG equity and debt funds. For example, JP Morgan,[98] Barclays,[99] UBS,[100] and Credit Suisse[101] all offer a range of ESG or impact investing funds. In 2020, Credit Suisse launched the Environmental Impact Equity Fund.[102] The secondary market for ESG equity and green bonds is also developing.[103] Several green bond indexes have been established. The Solactive Green Bond Index[104] uses rules-based, market-weighted calculations to track the performance of its bonds. The S&P Green Bond Index[105] includes labelled green bonds by issuers who demonstrate a robust and audited performance disclosure framework. The Bloomberg Barclays MSCI Green Bond Index includes corporate, government, and securitized green bonds with an investment grade and fixed coupon rate.[106]

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[98] https://privatebank.jpmorgan.com/gl/en/services/investing/sustainable-investing/impact-investing.
[99] https://www.barclays.co.uk/smart-investor/investments/funds-etfs-and-investment-trusts/impact-investing-funds-and-etfs/.
[100] https://www.ubs.com/uk/en/asset-management/institutional-investors/investment-themes/sustainable-impact-investing.html.
[101] https://www.credit-suisse.com/uk/en/private-banking/secure-your-legacy/sustainable-investing.html.
[102] https://www.credit-suisse.com/pwp/am/downloads/marketing/br_lu2176897911_uk_csam_en_web.pdf.
[103] https://www.mdpi.com/1911-8074/13/9/193.
[104] https://www.solactive.com/?allgemein/lithium-reporting/?lang=DE000A1EY8J4&index=DE000SLA0FS4.
[105] https://www.spglobal.com/spdji/en/indices/fixed-income/sp-green-bond-index/#overview.
[106] https://www.msci.com/documents/1296102/11926825/Bloomberg+Barclays+MSCI+US+Aggregate+ESG+Choice+Bond+Index_Fact+Sheet.pdf/bff9fd82-396d-ab79-3b7d-cfdecd5d3dea

B. Impact Investment

With respect to the impact investment market, the infrastructure still lacks many of the components of a fully functioning financial market, such as agreed impact performance metrics, listings on debt or equity public markets, and retail investment instruments.[107] Specifically, the intermediary landscape of impact investment remains relatively underdeveloped.

Nevertheless, several pioneering organizations have played an important role in developing the market. The UK lead the way in building the institutional infrastructure as a consequence of consolidated government policy support since 2010.[108] Between 2010 and 2015, the UK Government supported the establishment of the world's first impact investing wholesale investment bank - Big Society Capital - the first bespoke fund manager - Bridges Ventures (now Bridges Fund Management), and the first bespoke consultancy - Social Finance.[109] In addition, the Government of the UK used public finance to set up several social venture funds such, as UnLtd, the Social Investment Business,[110] and Futurebuilders.[111] In 2010, with the support of the Ministry of Justice, Government of the UK launched the first social impact bond (SIB) focused on supporting ex-offenders in Peterborough Prison.[112] After this, the government introduced a range of publicly financed outcomes funds specifically designed to support the development of SIBs mobilizing more than £240 million. Finally, the UK also pioneered several other bespoke impact investing policy initiatives. Outside of the direct influence of the government, the UK has also seen other innovative, private, impact investing organizations emerge, most notably the first, specialist, impact investing bank—ClearlySo.[113]

Subsequent to these UK initiatives, other countries have adopted or are developing several of the innovations. These include exploring accessing dormant bank accounts to capitalize an impact investing wholesale bank in the Republic of Korea[114] and Japan[115], and widespread adoption of impact bonds.[116]

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[107] https://medium.com/impact-engine/mind-the-gaps-whats-missing-in-impact-investing-markets-525f9ea16491.
[108] Nicholls and Teasdale (2017; 2020).
[109] https://www.socialfinance.org.uk.
[110] https://www.sibgroup.org.uk.
[111] https://en.wikipedia.org/wiki/Futurebuilders_England. The Futurebuilders fund was later managed by the Social Investment Business.
[112] Nicholls and Tomkinson (2015).
[113] www.clearlyso.com.
[114] https://www.kif.re.kr/kif3/eng/search/total_search?SearchText1=dormant.
[115] https://www.responsible-investor.com/articles/jap-soc.
[116] https://golab.bsg.ox.ac.uk/knowledge-bank/indigo-data-and-visualisation/impact-bond-dataset-v2/.

VII. INNOVATIVE INSTRUMENTS[117]

An important feature of the sustainable finance market has been the development of innovative financial instruments and deal/fund structures. Central to these innovations has been the range of sustainable finance models set out in the sustainable finance spectrum from 100% loss grants to market rate return investments (Figure 11). The opportunities offered by this spectrum are twofold. First, sustainable finance models can drive the development of new instruments that would be unavailable to the mainstream when they do not conform to standard models of risk-adjusted returns. Second, the spectrum of sustainable finance offers opportunities for "blended" deal/fund structures that bring together multiple forms of impact investing, with different impact-return appetites, to leverage the capital of each individual investor further in co-investment models.

A. Liquidity and Exit

In common with the mainstream, sustainable investors can use equity and debt models; but, unlike the mainstream, they can also deploy impact first—concessionary priced instruments—as well as grants. The majority of impact investing capital in the 2020 GIIN survey was deployed as private debt (37%) and private equity (16%). However, public listings are also evident in the GIIN sample, including publicly traded debt at 24% and public equity at 10%.[118] Nevertheless, despite this evidence of the use of public equity, to date, there is no fully functioning "impact" stock exchange,[119] though there are placement intermediaries, such as ClearlySo in Europe, and the Impact Investing Exchange (IIX) in Asia.[120] Indeed, the lack of liquidity and difficulty of exit (initial public offerings are very rare in this sector)[121] was considered a "moderate" or "severe risk" by 68% of all the GIIN 2020 sample. In this context, innovation has tended to focus on alternative (and typically "responsible") strategies exit.[122]

[117]This section draws extensively on Patton-Power (2020:1). https://impactalpha.com/incentives-for-driving-impact-in-deal-and-fund-structures/; and Patton-Power (2020:2). https://impactalpha.com/10-ways-to-redesign-venture-finance-for-a-more-inclusive-post-covid-world/.

[118] These exits are typically in established sectors with a track record of impact investments achieving scale, such as microfinance, green technologies, and health interventions, though, for interesting innovations, see the Women's Livelihood Bond: https://iixglobal.com/wp-content/uploads/2019/02/IIX-Foundation_WLB-Final-Blueprint-Paper_FEB-2019.pdf and Retail Charity Bonds, https://allia.org.uk/about-us/#history-row.

[119] Though an abortive attempt at such an exchange was launched in 2007: https://www.ethex.org.uk/towards-a-social-stock-exchange_46.html.

[120] https://iixglobal.com. See also: https://www.svx.ca.

[121] https://www.csrwire.com/press_releases/39700-first-benefit-corporation-goes-public-laureate-education.

[122] https://privateequity.weil.com/thought-leadership/private-equity-and-impact-investing-rethinking-exit-opportunities/; and https://thegiin.org/research/publication/responsible-exits.

1. Revenue-Based Models

For example, revenue-based models create progressive liquidity via pre-agreed redemptions of equity or dividends paid on "growth" metrics, such as revenue, free cash flow, or net profitability. In this way, a private equity investment could be structured so that agreed cash dividends are paid based on free cash flow up to the point where the aggregate dividends paid reach an agreed multiple of the original investment. At this point, the investee enterprise could redeem the underlying shares at their original price or at an agreed multiple. This model reduces the downside risk to the private equity investor if a standard exit is unlikely to be available within a reasonable time frame. For the investee, this model has the advantage over debt in that it only requires payments when there is available capital, plus it does not introduce the risk of using assets as security. Another innovative exit strategy is via a mandatory share redemption agreement. Such redemptions can be structured in increments over the total investment period at a predetermined price and frequency based on cash flow.[123] In these ways, linking liquidity rights to financial performance can benefit both the impact investor and investee in terms of managing risk and optimizing the timescale of investment and exit. An alternative use of the revenue participation model has been to convert debt into equity.[124] This can be structured as debt linked to a right to purchase equity. In 2015, Barclay's launched a High Growth and Entrepreneurs Fund, backed by £100 million from the EIB. The fund aimed primarily at job creation in the UK and provided early-stage venture debt capital to growth-stage businesses with an option to buy equity. In 2016 Barclays increased the fund to £200 million.

B. Quasi-Equity

Another innovative instrument developed by impact investors is quasi-equity, which is a form of debt finance that combines some of the benefits of equity with a loan.[125] Quasi-equity models typically share the risk and reward of an investment between investors as another form of revenue participation focused on debt. Quasi-equity is usually structured as a loan where the financial return (effectively the interest rate or cost of capital) is calculated as a percentage of the investee's

[123] For example, in 2016, the Acumen Fund invested $460,000 in Gigante Central Wet Mill with a deal structured as a blend of debt and equity. Under the investment terms, Gigante Central Wet Mill deposited the cash flow above an agreed working capital amount into a reserve account. This account was then used to buy back Acumen Fund's equity stake at an agreed price equal to Acumen Fund's invested capital plus an agreed annual return. The account also paid off the debt with a 2-year grace period. https://privateequity.weil.com/thought-leadership/private-equity-and-impact-investing-rethinking-exit-opportunities/.

[124] For example, Adobe Capital (Mexico) has used revenue-based debt to allocate capital into growth impact enterprises since 2012. These agreements are convertible to equity based on the amount of debt outstanding. The value to entrepreneurs is that they provide access to less-dilutive risk capital which does not require follow-on debt refinancing. Contrary to traditional debt, these contracts typically offer flexible payment schedules and, sometimes, an initial grace period.

[125] https://knowhow.ncvo.org.uk/funding/social-investment-1/investment-types/quasi-equity-revenue-participation#.

future revenue streams. A quasi-equity investment can be a useful source of finance when conventional debt financing is too expensive (for example, where there is a high-risk premium) or too risky (for example, asset-backed finance) for a social enterprise or where share capital may not be possible because of the investee's legal structure (for example, a registered charity). Unlike a conventional loan, the cost of capital of quasi-equity is dependent on the financial performance of the organization. If future expected financial performance is not achieved, a lower or possibly zero financial return is paid to the investor. Conversely, if enterprise performance is better than expected, then a higher financial return may be payable. A quasi-equity investment may be structured so that its return is capped (for example, revenue participation payments cannot exceed twice the original investment size), or be limited in duration (for example, the right to revenue participation is extinguished after a specified time period).

1. Hackney Community Transport

Quasi-equity can also be used to reward impact performance when this is directly linked to financial performance. For example, in the UK, the Hackney Community Transport (HCT) group (a social enterprise bus company in London)[126] raised £4.145 million in a combination of a fixed loan (5% for 5 years £2.128 million) and a quasi-equity social loan (£1.917 million).[127] The social loan allowed investors to share in both the risks and the returns of HCT. If HCT did not reach an agreed threshold of growth, there would be zero returns to the investors, but the upside returns could exceed the 5% fixed loan since the contract specified an uncapped 1 percentage share of every £1 million increase in revenues generated over an agreed threshold. The social loan was defined as such because HCT's impact was a direct consequence of its financial performance: it used its surplus from running bus contracts to subsidize community transport for those who could not easily access transport and who often had mobility issues. Therefore, as it grew its core business, HCT would increase its impact in terms of its other (discounted or free) services.[128]

2. Acumen Fund

[126] http://hctgroup.org.

[127] There were four investors: Bridges Social Entrepreneurs Fund; Social Investment Business, Futurebuilders Fund; Big Issue Invest, Social Enterprise Loan Fund; and Rathbone Greenbank. The deal was brokered by ClearlySo.

[128] Hill (2011).

The Acumen Fund developed their own version of quasi-equity characterized as "patient capital".[129] Patient capital is typically a high-risk, long-term, and early-stage growth capital structured as debt or equity. Acumen focuses its investments primarily on access to health care, water, housing, alternative energy, or agricultural inputs with typical investments between $300,000 and $2.5 million over 7–10 years.

3. European Union

In the EU context, the EIB supported a quasi-equity investment in Heliatek, a world leader in organic photovoltaic and a manufacturer of solar films. As a part of a €80 million round of growth finance, the EIB contributed a €20 million loan, from its European Fund for Strategic Investments,[130] in conjunction with five other investors who raised €42 million in equity. There were also €18 million in subsidies from the State of Saxony and the European Regional Development Fund.[131]

4. Calvert Foundation

In 1995, in contrast to these fund-based models, the Calvert Foundation developed a retail product that offers individual investors a customizable debt impact investment—the Calvert Community Investment Note.[132] The notes can be purchased in increments of $1,000, and investors can choose the region and program focus of their investment. Further, the investor can choose the maturity of the note from 1 year to 15 years, and the interest rate from 0.5% to 3.5%. By 2020, the note had raised $478 million to be deployed to community development financial intermediaries and social enterprises in the US.

C. Guarantees

Often using grant capital,[133] equity or debt guarantees allow (typically foundation) funders to leverage their balance sheet by de-risking deals and, as a result, bring in other investors.[134] In addition, guarantees also lower the overall cost of capital to the investee below the risk-adjusted market rate. Another example is forgivable loan that functions as debt that can be converted to

[129] https://acumen.org/about/patient-capital/.
[130] https://www.eib.org/en/efsi/index.
[131] https://www.eib.org/en/press/all/2016-213-heliatek-raises-eur80-million-to-finance-large-manufacturing-expansion-and-support-worldwide-market-development.
[132] https://www.calvertimpactcapital.org/invest.
[133] As noted above, venture philanthropy also typically brings in pro bono technical support and networking as well as long-term grants.
[134] GIIN survey of US guarantees: https://thegiin.org/assets/GIIN_Issue_Brief_Guarantees_final%20for%20web.pdf.

grant. This can act as an incentive for enterprises to maintain their impact objectives ahead of profit maximization, for example, to maintain workforce levels under financial stress, and is often used by governments.[135] There are also examples of convertible grant that turn grant into equity.[136] This instrument can be used to fund very early-stage enterprises to develop their ideas before seeking investment capital. Typically, if a grantee succeeds in fundraising follow-on equity capital, then the grant-maker recovers its fund as an equity buy-out and can then recycle its capital to invest in new innovations. In contrast, recoverable grants explicitly aim to recycle capital typically when an enterprise reaches an agreed valuation, level of revenue, or net profit.[137] The GECES Working Group within the EU also discussed a number of these models.[138]

VIII. INNOVATIVE STRUCTURES

Related to these innovations in the instruments for sustainable finance are opportunities for innovative impact deal and fund structures supported by catalytic capital, specifically subordinated and first loss debt and guarantees.[139] Further, these structures typically bring in a range of investors with different risk-return (and impact) profiles as a form of blended finance.[140] The great opportunity offered by these blended funds is to leverage in commercial capital that typically looks for a market return into impact deals that would not provide such a return without the other subordinate investors. In this sense, the structuring of blended funds and deals should bring in additional commercial capital that, otherwise, would not be deployed for impact.

A. Blended Capital

In 2013, the UK Cabinet Office Report provided the first overview of the various emergent forms of blended funds described as "co-mingling".[141] The report identified three types of co-mingling fund: pari-passu, risk-reward, and but-for. With pari-passu funds, all investors come in on equal

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[135] For example, the use under the Paycheck Protection Program in the US: https://bluedotlaw.com/forgivable-loans/.

[136] https://philanthropy-impact.org/article/full-spectrum-finance-how-philanthropy-discovers-impact-beyond-donation-and-investments.

[137] https://echoinggreen.org/wp-content/uploads/2019/08/Echoing-Green-Recoverable-Grant-FAQ-UPDATED-2019.pdf.

[138] https://evpa.eu.com/news/2017/improving-access-to-funding-a-complementary-subject-paper-from-the-geces.

[139] https://www.macfound.org/programs/catalytic-capital-consortium/. The GIIN (2020) investor report stated that 78% of its sample had engaged with catalytic capital. Within this sample, the largest segment at 72% of respondents deployed some form of "flexible" debt, though only 49% described this as "subordinate".

[140] https://thegiin.org/blended-finance-working-group; and http://www.oecd.org/publications/making-blended-finance-work-for-the-sustainable-development-goals-9789264288768-en.htm;https://www.blendedvalue.org/blog-posts/blended-value-investing-an-initial-paper-from-the-world-economic-forum; and https://www.weforum.org/reports/blended-finance-toolkit.

[141] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/193697/2900897_HMGCO_Co-mingling_acc.pdf.

terms as limited partners, but these could include foundations, investment funds, individual investments, and donations deployed via a charitable trust. Risk mitigation can take the form of a cornerstone investment from a foundation, as well as shared risk across the whole portfolio.[142] Moreover, in these funds, impact investors can also act as path finders for more commercial capital to identify an attractive investment opportunity through an impact lens.[143] With risk-reward funds, foundations or other impact investors typically take a higher-risk position, but also receive an expected higher return. This should still leverage in extra commercial investment. Such structures may also include guarantees such as the African Agricultural Fund[144] that was structured around a blend of high-risk equity from foundations (Gatsby, Rockefeller, and Gates), subordinate/unsecured debt from a commercial bank (JP Morgan), and a 50% loan guarantee from the United States Agency for International Development that changed the risk-return profile of the commercial debt. This allowed the fund to make equity and quasi-equity investments into smallholder farmers. Finally, with but-for funds, foundations, governments, or international development agencies typically invest on subordinate terms to leverage larger volumes of commercial investment to deliver impact at scale. For example, the Eye Fund[145] loan fund blended three types of capital: equity and subordinate debt from foundations and individual impact investors with senior debt provided by commercial banks and DFIs. $1.48 million of equity and subordinated debt brought in $13 million in senior debt at nearly 13 times leverage. The fund provided direct loans to eye care organizations across the world.

B. Impact Bonds

As distinct from a green or social bond, an impact bond is a contingent future liability contract which is structured as a partnership aimed at improving social, developmental, or environmental outcomes for service users.[146] The usual partners in an impact bond are investors who provide upfront working capital, service providers who use the invested capital to deliver (often novel) services, an outcomes payer who agrees to repay investors their capital with a return linked to agreed outcomes being achieved, and a third-party assessor of the service performance and

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[142] Eg Esmee Fairnbairn Foundation in the Big Issue Invest Social Enterprise Investment Fund.
[143] As was the case with the Grameen Bank and BRAC pioneering microfinance, a market that is projected to be worth $174.4 billion by the year 2025. https://www.globenewswire.com/news-release/2020/04/02/2010777/0/en/Global-Microfinance-Industry.html.
[144] https://www.aatif.lu/home.html.
[145] https://gsgii.org/case_studies/eye-fund/.
[146] https://golab.bsg.ox.ac.uk/the-basics/.

outcomes who audits the outcomes. In addition, another third-party partner may be required to structure the impact bond contract.

Impact bonds are different from traditional contracts, such as fee-for-service or grant-based contracts as they are focused on the outcomes rather than the inputs and activities. For example, an impact bond that is seeking to support young people at school would be more interested in improvements in grades (outcomes) rather than the fact that the children were going to after-school classes or seeing a mentor (activities). Impact bonds encompass SIBs, development impact bonds (DIBs), and environmental impact bonds.

In 2010, the Government of the UK pioneered the first SIB that is focused on reducing re-offending rates in HM Peterborough Prison.[147] In 2015, the first DIB, focused on girls' education in northern India, was launched.[148] In 2018, the first environmental impact bond was launched.[149]

By 2020, 200 impact bonds had been launched globally, raising more than $450 million in investment.[150]

C. Impact Milestones

Beyond fund and deal structures, impact investors have also innovated in terms of deploying capital around impact milestones, for example in loans that are linked to outcomes, such as the social impact incentives designed by Roots of Impact. At the deal level, this could include integrating impact milestones with other performance incentives, such as releasing capital in tranches, transferring the ownership of shares (vesting), or other options for equity buyback by the enterprise. If impact milestones are not achieved, disincentives can be built into to the deal structure, including investor exit or loan default.

D. Outcomes Funds

At the fund level, the Bertha Centre at the University of Cape Town co-created a Green Outcomes Fund that operates in a similar way as a social impact incentive, but at a fund level. Participating

[147] https://www.socialfinance.org.uk/peterborough-social-impact-bond.
[148] http://instiglio.org/educategirlsdib/wp-content/uploads/2015/09/Educate-Girls-DIB-Sept-2015.pdf.
[149] https://www.goldmansachs.com/media-relations/press-releases/current/dc-water-environmental-impact-bond-fact-sheet.pdf.
[150] https://golab.bsg.ox.ac.uk/knowledge-bank/indigo-data-and-visualisation/impact-bond-dataset-v2/.

fund managers commit to investing their own capital into green enterprises to achieve predetermined social and environmental outcomes as well as a financial return. As they hit milestones, they can claim payment from the fund, which is capitalized by a mix of public and private grant capital. These outcome payments amount to a top-up payment because they are much smaller than the overall investments. Loans that are linked to outcomes allow outcome funders to leverage their capital to pay for a portion of the cost of impact. They are distinct from SIB and DIBs, where the full cost of outcomes are borne by the funder. Further, at the fund-manager level, impact performance can be linked to reward as a form of impact bonus as is already the case with some ESG funds.[151] Similarly, a form of impact "carry" could link fund managers' fees to impact performance.[152]

E. Cooperative Finance

Finally, in terms of the cooperative and mutual sector, the Fund for Employee Ownership has created an innovative fund that is focused on three strategies to change the ownership structure of companies: acquire, convert, and support strategy. The objective is to engage company owners with a transaction that resembles a standard buy out (acquire), but differs in terms of the change of ownership (convert). The investment model is patient capital.[153]

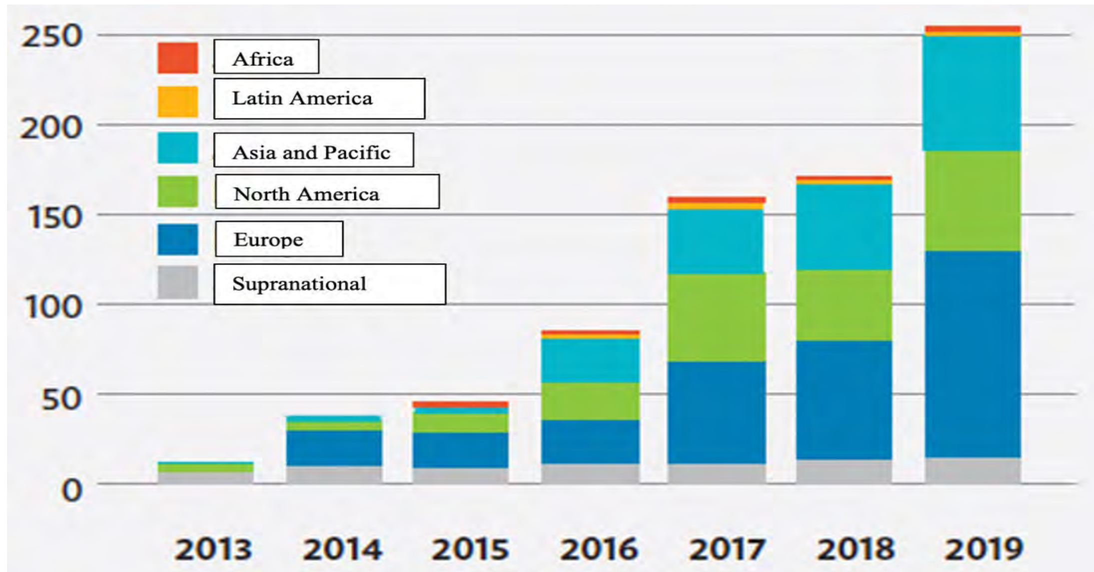
IX. ASIAN CONTEXT

A. Green Bonds

Investing in sustainable finance has been growing strongly in Asia since 2013, particularly in green bonds (Figure 13). Moreover, there is an opportunity for significant future green growth in Asia.[154]

[151] https://www.acre.com/thought-leadership/outcomes-aligned-incentive-structures-investment-management.
[152] Though this is, as yet a rare model. https://www.mdif.org/about/funds/.
[153] https://www.evgoh.com/tfeo/.
[154] https://www.adb.org/sites/default/files/publication/224391/ewp-508.pdf.

Figure 13: Global Green Bonds Issued by Region ($ billion)

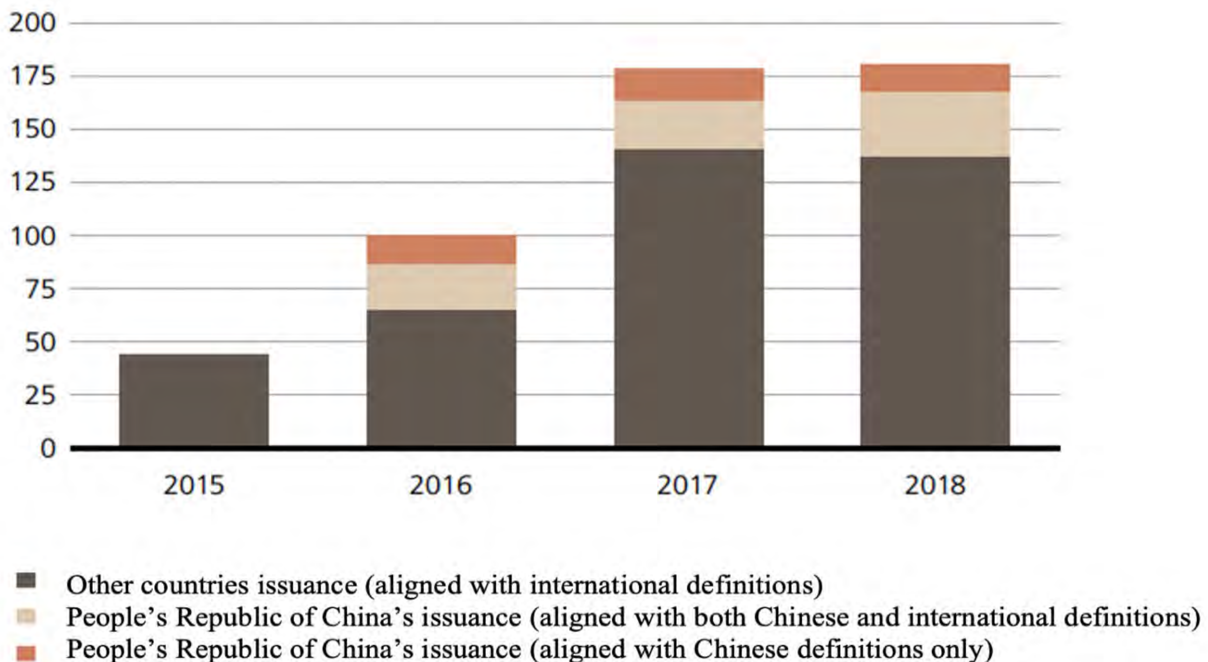


Source: Climate Policy Initiative (2020).

Until 2015, the sustainable finance market was dominated by Japan.[155] However, the most significant growth in sustainable finance has been in the People's Republic of China. By 2018, the PRC had issued 18% of all global green bonds (Figure 14).

[155] https://www.adb.org/publications/fostering-green-finance-sustainable-development-asia.

Figure 14: Chinese Green Bonds Issued ($ billion) 2015–2018



Source: UBS Global Wealth Management (https://www.ubs.com/global/en/wealth-management/chief-investment-office/market-insights/house-view/daily/2019/rise-of-si-in-asia.html).

Further, by 2019, twelve Asian exchanges were requiring some form of ESG disclosure from their listed companies.[156]

B. Social Bonds

In 2019, social bonds accounted for only 5% of the total Asia and Pacific issuance of sustainable bonds. However, during 2020, issuance grew by 41%, partly as a market response to funding the challenges of COVID-19.[157] For example, the Bank of China Macau issued a $638 million COVID-19 social bond—the first in the world to fund small and medium-sized enterprises that were affected by COVID-19. In the ROK, Kookmin Bank also issued a $500 million COVID-19 social bond. In addition, Indonesia listed COVID-19 in its use of proceeds when it raised US$4.3 billion of long-term debt funding. Asia's social bond market is being shaped by national guidelines

[156] These are: Shanghai Stock Exchange; Shenzhen Stock Exchange; Hong Kong Exchange; National Stock Exchange of India; Indonesia Stock Exchange; Japan Exchange Group; Korea Exchange; Bursa Malaysia; Philippine Stock Exchange; Singapore Stock Exchange; Stock Exchange of Thailand; Hi Chi Min Stock Exchange (Vietnam): https://www.ubs.com/global/en/wealth-management/chief-investment-office/market-insights/house-view/daily/2019/rise-of-si-in-asia.html.

[157] https://www.gbm.hsbc.com/insights/growth/social-bonds-on-the-front-line.

in the region as well as international standards. For example, since 2010, ADB has issued a series of themed bonds, focused on clean water, gender, and health, raising more than $2.7 billion. The Asia and Pacific region is now a global leader in social bond issuance.

In 2018, in a related innovation, IIX Asia launched a Women's Livelihood Bond[158] as an $8 million debt security designed to unlock capital for impact enterprises and microfinance institutions. The impact objective was to create new economic opportunities for women in Southeast Asia to help them transition from subsistence to sustainable livelihoods. In turn, the bond aimed to redefine the dominant socioeconomic narrative viewing in Asia that framed poor women as victims of poverty rather than drivers of development, change, and progress.[159] By 2020, the bond had provided 385,000 women entrepreneurs with access to credit, new market access, and affordable goods and services. A second $12 million bond was issued in 2020.[160]

C. Impact Investment

In 2017, in terms of Southeast Asia, the impact investment market was relatively small at $904 million of assets under management.[161] The average deals size was also very small at $0.7 million and more than 50% of investments went into financial services. Indeed, the GIIN 2020 survey only included nine investor organizations across the whole continent or roughly 3% of the sample. While this may reflect some sample bias, it suggests that, in terms of impact investment that is narrowly defined, Asia remains a very underdeveloped market. Partly, this may be explained by the dominance of impact finance from DFIs at $11.2 billion into the region.

Beyond Southeast Asia, although the PRC has been at the forefront of developing the green finance market in Asia, it has yet to engage seriously with impact investment. There has also been interest in developing an Asian "social" stock exchange.[162] In terms of other impact investment infrastructure in Asia, the Asian Venture Philanthropy Network was established in 2011 to build the impact investment market and, by 2020, had 615 member organizations in 16 markets across

[158] https://iixglobal.com/portfolio-item/iix-womens-livelihood-bond/.
[159] https://iixglobal.com/portfolio-item/iix-womens-livelihood-bond/.
[160] https://iixglobal.com/iixs-womens-livelihood-bond-2-successfully-closes-part-of-asia-pacifics-first-ever-multi-country-listed-gender-bond-series/.
[161] https://thegiin.org/research/publication/landscape-southeast-asia.
[162] https://www.adb.org/sites/default/files/publication/29306/impact-investors.pdf.

Asia.[163] Further, by 2020, four countries in the region had established national advisory boards for impact investment as a part of the wider Global Steering Group for Impact Investment Project.[164]

X. CONCLUSION

A. Opportunities

There are several important opportunities to accelerate the growth of the sustainable finance market. These can be categorized as building the supply-side, intermediation, demand-side, or infrastructure of the market. Across these categories, four thematic clusters emerge.

1. Post–COVID-19 Resilience

In terms of opportunities for future sustainable investment, the post–COVID landscape will require significant investment into resilience and recovery programs that are focused on key social impact sectors, such as health, education, and meaningful employment.[165] Addressing the continued shortfall in investment to achieve the SDGs also remains a key opportunity.

At the same time, the climate crisis will demand substantial new investment in adaptation (such as better flood and fire defences), mitigation (to reduce carbon intensity and pollution), and development (to devise new technologies of carbon capture).[166] These issues will be particularly pressing in countries already prone to flooding, such as Bangladesh, the Philippines, Thailand, and Viet Nam.[167]

In these contexts, the issuance of sovereign sustainable bonds offers a potential new source of impact capital at scale to address social[168] and environmental[169] issues.

2. New Sources of Sustainable Finance

There are six important opportunities to access new capital to grow the sustainable finance market substantially.

[163] https://avpn.asia/about-us/.
[164] https://gsgii.org/nab-countries/. The countries are Japan, Bangladesh, India, and the Republic of Korea.
[165] https://www.youtube.com/watch?v=EuKd6i-XBV0.
[166] https://www.nature.com/articles/d41586-019-02712-3.
[167] https://www.imf.org/external/pubs/ft/fandd/2018/09/southeast-asia-climate-change-and-greenhouse-gas-emissions-prakash.htm.
[168] https://www.ipe.com/sovereign-bonds-sustainable-sovereigns-will-pay-their-way/42332.article.
[169] https://www.ft.com/content/c02a8184-5c9d-45ce-b4bd-02b028de7f63.

First, in the case of foundation assets, there is a huge opportunity to leverage more capital for impact. Foundation assets are typically not invested for impact. For example, historically, the Rockefeller Foundation has invested only about $68 million (or 1.8% of its total endowment) in MRIs that are focused on renewables, clean energy and technology, and sustainable forestry. Moreover, only $85 million (or 2.2%) of the endowment is invested in negative/exclusionary ESG.[170] This leaves roughly 96% of assets invested in the mainstream (non-impact) markets. In a response to this in-balance between the impact focus of foundation assets and grant making, in 2017, the Ford Foundation made a strategic decision to commit $1 billion of its endowment to MRIs.[171] However, this was still only 8% of its total endowment of $12.4 billion. Total foundation assets are estimated to be $1.5 trillion. Assuming the same MRI investment as the Rockefeller Foundation, this would mean that 96% of these assets, or an additional $1.44 billion, could be made available for impact finance as MRIs.

Second, in terms of negative/exclusionary ESG finance, there is an opportunity to move this towards the Double Delta positive/integrated model to increase its impact. For example, if 50% of this investment were directed towards providing additional capital to fund the SDGs, then the current shortfall would disappear.[172]

Third, since 2016, there has been a 180% growth in the number of millionaires in Asia to 8.1 million in 2019.[173] These high-net worth investors offer an opportunity for significant new sustainable investment should they follow the trends in millennial investing.[174]

Fourth, there is also a promising role for faith-based finance to contribute more towards sustainable impact,[175] particularly Islamic finance.[176]

[170] https://www.rockefellerfoundation.org/wp-content/uploads/Rockefeller-Foundation-Social-Investing-Guidelines.pdf.pdf.
[171] https://www.fordfoundation.org/the-latest/news/ford-foundation-commits-1-billion-from-endowment-to-mission-related-investments/.
[172] https://www.bloomberg.com/graphics/2019-green-finance/.
[173] https://www.theasianbanker.com/updates-and-articles/china-shifts-distribution-of-wealth-upwards-across-asia-pacific.
[174] https://www.rockefellerfoundation.org/blog/social-impact-investing-china-tipping-point/. There is also some evidence that an ESG investing model developed by CASVI outperformed the PRC's benchmark index by over 4 percentage points annually over a 5-year period to 2019. https://www.pionline.com/esg/why-china-missing-out-trillions-sustainable-investment.
[175] http://faithinvest.org.
[176] http://documents1.worldbank.org/curated/en/591721554824346344/pdf/Islamic-Green-Finance-Development-Ecosystem-and-Prospects.pdf.

Fifth, development finance institutions and foundations could do more to deploy their grants and guarantees strategically to grow the market.[177] They could operate as outcomes payers in environmental and social impact bonds.

Finally, retail investors could use their influence as account holders and pension fund investors to influence mainstream institutions to invest their assets more sustainably.

3. Regulation

Following the example of Big Society Capital in the UK, as well as the ROK and Japan in Asia, regulation could be put in place to release dormant bank accounts to finance sustainable finance wholesalers. Similarly, government actors could use regulation to enforce disclosure of nonfinancial and impact data to improve the transparency and efficiency of the market for sustainable finance.[178]

4. Research

Finally, new flows of sustainable finance could support the development of consolidated impact data sets to improve the efficiency of capital allocation in the sustainable finance market, as well as sponsor the establishment of regional impact stock markets leveraging existing networks, such as Asian Venture Philanthropy Network and IIX. Table 3 sets out these opportunities in terms of building the sustainable finance market's supply-side, intermediation, demand-side, and other opportunities such as research.

Table 3 Opportunities to Grow Sustainable Investment by Investor

Investors	Supply-Side	Intermediation	Demand-Side	Other
Foundation assets	Deploy all endowment assets as MRI			
Negative/exclusionary finance	Deploy assets as positive/integrated ESG finance			
Foundations and high net worth individuals	Deploy grants to support early-stage enterprises and build infrastructure	Build new instruments	Deploy grants to build investment readiness, capacity to manage	Build networks of knowledge and link investors

[177] https://www.ifc.org/wps/wcm/connect/a8398ed6-55d0-4cc4-95aa-bcbabe39f79f/DFI+Blended+Concessional+Finance+for+Private+Sector+Operations_Summary+R....pdf?MOD=AJPERES&CVID=lYCLe0B.
[178] https://ec.europa.eu/info/business-economy-euro/company-reporting-and-auditing/company-reporting/non-financial-reporting_en.

	Deploy concessionary capital to leverage in mainstream investment Act as outcomes payer in impact bonds		investment, and early stage 'proof or concept'	
Faith-based finance	Deploy assets as positive/integrated ESG finance			
Impact investors	Deploy concessionary capital to leverage in mainstream investment Act as outcomes payer in impact bonds	Build funds and wholesale infrastructure		Build networks of knowledge and link investors
Development finance institutions	Deploy concessionary capital to leverage in mainstream investment Act as outcomes payer in impact bonds	Build funds and wholesale infrastructure	Deploy grants to build investment readiness, capacity to manage investment, and early stage 'proof or concept'	Build networks of knowledge and link investors
Governments	Deploy grants to support early-stage enterprises and build infrastructure Act as outcomes payer in impact bonds	Regulate impact standards and disclosure best practice	Deploy sovereign wealth to social and green bonds Use fiscal policy to build demand	Offer grants to build research in universities and elsewhere
Transnational bodies	Deploy grants to support early-stage enterprises and build infrastructure	Build impact standards and disclosure best practice	Advocate for sovereign wealth to invest in social and green bonds	Build research and robust evidence of sustainable investment models and impact
Retail investors	Lobby pension funds to divest from carbon intensive stock and invest in sustainable stocks		Support cooperative and mutual firms Buy ethical products	Use the media and/or social media to advocate for sustainable finance

ESG = environmental, social, and governance; MRI = mission-related investment.

Source: Author's own research.

C. Challenges

1. Market Efficiency

In terms of challenges, on the supply-side, a lack of investable deals in some sectors remains and building a pipeline of investees continues to be a challenge. While there are likely to be opportunities in green finance, the demand-side landscape of deals across the SDGs is less well defined. Several interventions are necessary, and grants and angel finance are needed to be included to support early-stage enterprises and grants to build investment readiness and the capacity to manage investment and growth.

In terms of the infrastructure of the market, there are currently high transaction costs in putting together many deals and funds because of the lack of a robust impact performance evidence base and data, as well as the complexity of blended transactions. All markets function best on abundant and robust performance data. However, sustainable investing lacks a "Bloomberg" for impact. As things currently stand, many sustainable investing fund managers, to some extent, are building their own performance data sets as they go along, learning from testing supply-side investor preferences and often building the demand-side in collaboration with others to find good deals[179] and build pipelines.[180]

2. Standards and Data

Related to the issue of the lack of financial performance data, the sustainable investing market also lacks agreed standards or regulatory structures for impact measurement or disclosure. However, various initiatives are actively addressing this issue and taking a leading role in driving a consensus on standards, particularly in a process of consolidation with related standards, such as the GRI, PRI, and SASB. In 2019, in collaboration with the Impact Management Project,[181] the UNDP has developed a set of standards for investing under the SDG Impact initiative. The first of these has

[179] For guidance: https://thegiin.org/managing-an-impact-investing-fund/.
[180] https://sancroft.com/2019/01/30/impact-investing-a-decade-on-what-is-missing-to-scale-it-up/.
[181] https://impactmanagementproject.com.

focused on private equity, with SDG bonds and enterprise standards to follow.[182] As data sets emerge from these standards, the transactions costs should drop.

3. Monetization

A separate strand of innovation on impact reporting standards has focused on how to monetize impact. Developing such methodologies offers the obvious attraction that it would allow not only for a comparative analysis of impact deals and funds with a common financial unit analysis but would also allow a composite impact "enterprise" value to be calculated by combining expected or historical financial and monetized impact performance together. The Social Return on Investment methodology pioneered such an approach that, more recently, has been taken forward by various initiatives such as the Impact Multiple of Money.[183]

4. Green-Washing

Perhaps surprisingly, in 2021, the top five ESG ranked firms were large corporations without a core impact focus.[184] These are:

[182] https://sdgimpact.undp.org/practice-standards.html.
[183] https://therisefund.com/measurement.
[184] https://www.alpha-sense.com/insights/top-rated-esg-stocks.

1. *NextEra Energy* - the largest electric utility by market cap in the US that has been consistently reducing its emissions through increased renewable energy use. Its CO2 emissions are 55% less than those of an average US utility. It has now set a goal of reducing CO2 emissions by 67% by 2025 from its 2005 base levels meaning that absolute CO2 emissions will reduce by 40% even while the firm's energy production will double during that time.
2. NVIDIA – a graphic cards manufacturer supplying chips to cryptocurrency miners. It has a stringent policy regarding not using conflict minerals in its products. The company also trains its workforce in anti-corruption and anti-bribery strategies.
3. Chr. Hansen – a Danish bioscience company that operates in the human nutrition space. It specializes in producing bacteria that reduce pesticide usage, increase crop yield, and curb food wastage, improving food security and reducing food waste.
4. Microsoft – committed towards carbon mitigation by becoming the first large technology company to target carbon negative status by 2030. It has created a $1 billion fund to reduce emissions and increase carbon capture.
5. Home Depot - the largest home improvement retailer in the US. It has a strict sourcing policy that prevents the purchase of conflict minerals and avoids exploiting the natural resources of developing countries. It plans to reduce its carbon emissions by 40% by 2030 and 50% by 2035.

Despite the substantial growth of green finance over recent years, material concerns remain around transparency, disclosure, and the potential for "greenwashing".[185] For example, the World Economic Forum reported that, while 63% of the companies in its ESG index had a policy in place to reduce their emissions, only 35% had specific reduction targets.[186] Further, according to the Bank for International Settlements, in a survey of >200 firms in 2015–2018, ESG investing was biased towards firms that tended to be cleaner in the first place.[187] More than 70% of issuers had a carbon intensity equivalent to, or lower than, a multinational consumer products firm, such as Procter and Gamble. In contrast, carbon-intensive or highly polluting companies rarely issued green bonds for fear of being accused of greenwashing. Moreover, many green bonds are simply

[185] https://www.economist.com/finance-and-economics/2019/12/07/climate-change-has-made-esg-a-force-in-investing.
[186] https://www.weforum.org/agenda/2020/01/sustainable-finance-starts-with-data/.
[187] https://www.bis.org/publ/othp31.pdf.

used to refinance already green projects without an additional reduction in carbon dioxide emissions). Also, such critiques have been raised against the wider sustainable finance sector.[188] The entry of the mainstream investment banks into the impact investing market, inevitably, will make it grow substantially over time, though some concerns remain over the potential for "impact- or green-washing".[189]

D. Summary

The market for sustainable finance is growing globally. In Asia, and particularly in the PRC, the sustainable finance market is accelerating too, largely driven by green bonds. The market includes a range of types of capital under the broad ESG heading. The spectrum of these types of capital ranges from grants to market or above market rate return investments. Sustainable finance can be deployed as negative/exclusionary investments that aim to "do no harm" or positive/integrated investments that can be deployed to create additional social or environmental impact typically aligned with the SDGs.

The availability of a variety of types of capital across the spectrum of sustainable finance has driven innovation in terms of new investment instruments—such as quasi-equity—and new deal or fund-level investment structures categorized by blended or catalytic capital structures.

However, the market for sustainable investment remains at an early stage of development. Most importantly, the regulatory and disclosure infrastructure remains incomplete and inconsistent across countries. As a result, robust and comparable impact performance data, which is necessary for the effective allocation of sustainable finance, is absent. The consequences are not only inefficient capital allocation in terms of optimizing both financial and social/environmental performance, but also the opportunity for impact- or green-washing. The lack of robust data also adds to capital allocation transaction costs.

In this context, local, national, regional, and transnational governance bodies have an opportunity to use policy to correct the market failures in the current sustainable finance market.

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[188] For example, critiques of ESG ratings systems. https://www.economist.com/finance-and-economics/2019/12/07/climate-change-has-made-esg-a-force-in-investing as well as warnings over "greenwashing" funds. https://www.ftadviser.com/investments/2020/07/16/be-critical-of-esg-credentials-to-avoid-greenwashing-funds/.

[189] https://www.bloomberg.com/news/articles/2020-04-09/-social-washing-is-becoming-growing-headache-for-esg-investors.

The need for further dramatic growth in the supply of sustainable finance, already evidenced by the shortfall in SDG funding, has been further amplified in the post-COVID19 world and the acceleration of the climate crisis. To achieve this, investors, investees, intermediaries, and policy makers will need to find ways to work effectively together with an increased sense of urgency.

KEY TAKEAWAYS

1. The terminology of finance for social and environmental impact is confused.
2. "Sustainable finance" encompasses social, environmental, and governance issues.
3. Negative sustainable finance screens out poorly performing social, environmental, and governance investments.
4. Positive sustainable finance makes an additional contribution to achieving the United Nations Sustainable Development Goals.
5. A significant market opportunity is available for Asia in sustainable finance in green technology and post–coronavirus disease (COVID-19) social infrastructure and rebuilding economic resilience.
6. Sovereign wealth funds can use social bonds to achieve impact at scale.
7. The spectrum of sustainable finance offers the opportunity to create innovative, catalytic, and blended finance models that leverage in additional finance from the mainstream into impact.
8. Material issues remain concerning incomplete market structures, particularly around issues of impact measurement standards, effective disclosure, and robust data.

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