

Research Report

ESG Equity Index Futures: Meeting the Increasing Needs for ESG Investment



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SUMMARY

ESG investment refers to the investment strategies that takes into account “Environment”, “Social” and “Governance” factors and seek positive returns and long-term impact on the environment, society and business. ESG investment would enable investors “doing good” (exhibiting social responsibility) without sacrificing financial returns or increasing risks. International cooperation initiatives such as the United Nations Principles for Responsible Investment and the Paris Agreement to address global climate change have driven the global growth trend of ESG investment. Among a wide range of asset classes for ESG investment, the asset allocation has been concentrated on equities and bonds. Underpinned by strong investor demand, the number of ESG indices, particularly ESG equity indices, rose sharply in recent years. These indices have a wide spectrum of strategies for adoption of ESG factors, which facilitate the development of ESG investment products such as exchange-traded funds (ETFs) tracking diverse ESG indices.

The growth of ESG investment products contributes to the rising demand for ESG risk management tools, including index futures. Introducing ESG equity index futures can be a starting point to facilitate ESG investment, particularly for home-market equity markets. ESG equity index futures can meet the needs of investors, including price discovery of ESG assets, hedging the positions in the underlying stocks of ESG indices as well as portfolio management and diversification. From global experience, the liquidity of the first home-market ESG equity index futures where the parent index has a deep and liquid futures product is expected to benefit from first-mover advantage and the deep liquidity of parent index futures.

Riding on the global trend of ESG investment, the potential demand for product innovation of ESG investment in Hong Kong, such as ESG equity indices and ETFs, is expected to increase. This will be further motivated by the strong institutional support from the public and private sectors. ESG equity investment, facilitated by the development of related ESG indices, is a good starting point to drive further growth. Suitable ESG local, regional and global market equity indices would likely attract investors. In Hong Kong, the ESG versions of Hang Seng Index (HSI), Hang Seng Chinese Enterprises Index (HSCEI) and a few ESG indices tracking Hong Kong-listed stocks have been developed in this home market where there is a deep and liquid market in the underlying stocks. In addition to serving the home market, Hong Kong as an international capital market also serves global investors in managing their regional and global investment portfolios, as well as Mainland investors in their global asset allocation. As ESG investment continues to grow in Hong Kong, ESG risk management tools, including ESG index futures, should be launched to meet investors’ needs. The potential launch of futures and other derivatives on local, regional or global ESG indices, in particular with stocks in the Mainland and Hong Kong markets, is expected to serve the purpose.

The continuous proliferation of ESG products, including indices and related derivatives such as futures and options, contributes to the formation of an ESG investment ecosystem in Hong Kong. This would facilitate the further growth of green and sustainable finance and ESG investment in the Hong Kong market and the world.

1. WHAT IS “ESG” AND ESG INVESTMENT?

ESG stands for “Environment”, “Social” and “Governance”. ESG investment refers to the investment strategies that takes into account these non-financial factors and seek positive returns and long-term impact on the environment, society and business. This is sometimes called “socially responsible investment” or “sustainable investment”.

ESG investment (or socially responsible investment) emerged in as early as the 1960s. At that time, investors used negative screening to exclude companies supporting apartheid in South Africa and shareholder resolutions to discourage the production of chemical weapons in the US¹. The first socially responsible mutual fund was launched in the US in 1971 and more such mutual funds were launched in 1980s to address the concerns about the environmental and climate change in the wake of Bhopal, Chernobyl and Exxon Valdez disasters; the US Sustainable Investment Forum was founded in 1984 to support these developments². To meet the rising demand for socially responsible investment, the first ESG index³, Domini Social Index was launched in 1990 to track the performance of US companies selected based on social and environmental criteria. As more ESG indices were launched, investment products tracking ESG indices began to develop.

The development of ESG investment is also driven by the global cooperation across countries. This include the launch of the United Nations Principles for Responsible Investment (UNPRI) in 2006. The UNPRI provides guidelines to incorporate ESG issues into investment practices. Following that, with joint efforts of countries across the world, the United Nations Sustainable Development Goals (UNSDGs) were launched in 2015 and the Paris Agreement was reached within the United Nations Framework Convention on Climate Change (UNFCCC) in the same year to address global climate change. The UNSDGs cover three broad areas (economic, social and environmental developments) and comprise 17 global goals and 169 targets to be reached by 2030⁴.

The investment decision-making process taking into account of ESG factors may involve positive/negative screening of securities, the choice of investment themes or active engagement in corporate affairs of investment targets. However, there are no universal standards for ESG investment in the global market. This has resulted in the proliferation of ESG scoring/rating systems produced by various asset managers, index providers and specialist entities to meet the different needs of institutional investors, and the launch of a wide range of ESG indices.

ESG investment is on the rise in the global market as investors are increasingly conscious and care about long-term sustainable development. Stock exchanges play an important role to support the development of ESG investment, providing ESG investment products and services and facilitating the formulation of benchmark indices for ESG investment.

1.1 Global growth trend of ESG investment

ESG investment has grown remarkably in recent years and has become a source of growth in asset management. The assets under management (AUM) of ESG investment rose by 122% from US\$18.3 trillion in 2014 to US\$40.5 trillion in 2020 while that of other types of investment rose by only 36% in the same period from US\$44.9 trillion to US\$61.2 trillion. Alongside, the

¹ See “Socially responsible investing”, *Britannica*, viewed on 30 July 2020.

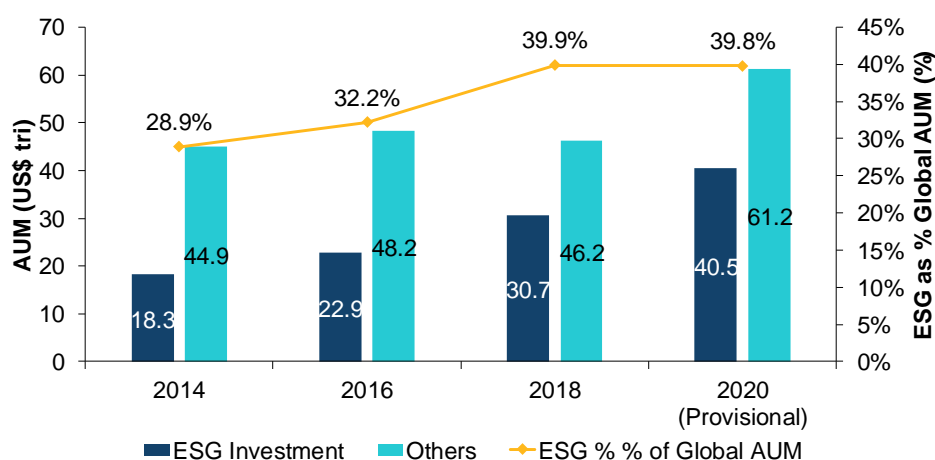
² Source: “Governance process for evaluating sustainable investing: A guide for non-profit fiduciaries”, published on the website of Russell Investments, June 2014.

³ Source: “MSCI KLD 400 Social Index – MSCI”, MSCI’s website, viewed on 14 September 2020.

⁴ Source: “The SDG investment case”, published on the website of “Principles for Responsible Investment” (PRI), 12 October 2017. PRI is an investor initiative in partnership with United Nations’ related organisations.

share of ESG investment rose from 28.9% of global AUM in 2014 to 39.8% in 2020. (See Figure 1)

Figure 1. AUM of global ESG and other investment (2014 – 2020)



Source: Global ESG AUM is obtained from “Global sustainable investment review”, 2016 and 2018 issues, published on the website of Global Sustainable Investment Alliance for the data in 2014-2018 and “Global ESG-data driven assets hit \$40.5 trillion”, published on the website of Pensions and Investments, 2 July 2020 for the provisional data in 2020. Global total AUM is obtained from “Global asset management 2020: Protect, adapt, and innovate”, Boston Consulting Group’s website (bcg.com), May 2020 for the data in 2014-2018 and “Global AuM to exceed \$100 trillion by 2020”, published on the website of PricewaterhouseCoopers, viewed on 28 January 2021, for the provisional data in 2020.

Contributors to ESG investment include not only ESG investment products newly developed specifically for the purpose, but also the consideration of ESG factors in investment decision-making by existing investment products. In Hong Kong, a new fund or existing fund is classified as a green fund or ESG fund if it complies with the related requirements set out by the Securities and Futures Commission (SFC)⁵. The list of green/ESG funds is shown on a dedicated webpage of the SFC’s website. As of end-2020, there were 37 green/ESG funds in Hong Kong⁶. To support ESG investment, Hong Kong Exchanges and Clearing Limited (HKEX) formally launched Asia’s first multi-asset sustainable investment product platform, Sustainable and Green Exchange (STAGE) on 1 December 2020, which offers a repository of green/ESG investment products⁷. As of end-January 2021, the product repository of STAGE displayed information of 40 bonds (including green, social, sustainable or sustainability-linked bonds) and 2 ESG exchange traded funds (ETFs), which are listed and traded on HKEX⁸.

The ESG investor base is expected to continue to grow. In respect of institutional investors, an increasing number of asset owners, investment managers and intermediaries have become signatories to the UNPRI, demonstrating their commitments to integrate ESG factors into their investment policies. The number of signatories rose from 1,013 institutions in 2014 to 3,575 institutions by the end of 2020 — the majority were in Europe (1,181 institutions) and the US (573 institutions) (see Figure 2). Nevertheless, the number of UNPRI signatories rose rapidly in Asian markets, including Mainland China and Hong Kong. These include the Hong Kong Monetary Authority (HKMA) and AIA Group Limited in Hong Kong and Ping An Insurance and China Life Asset Management Company Limited in Mainland China.

⁵ See *Circular to Management Companies of SFC-authorized Unit Trusts and Mutual Funds – Green or ESG Funds*, issued by the SFC, 11 April 2019.

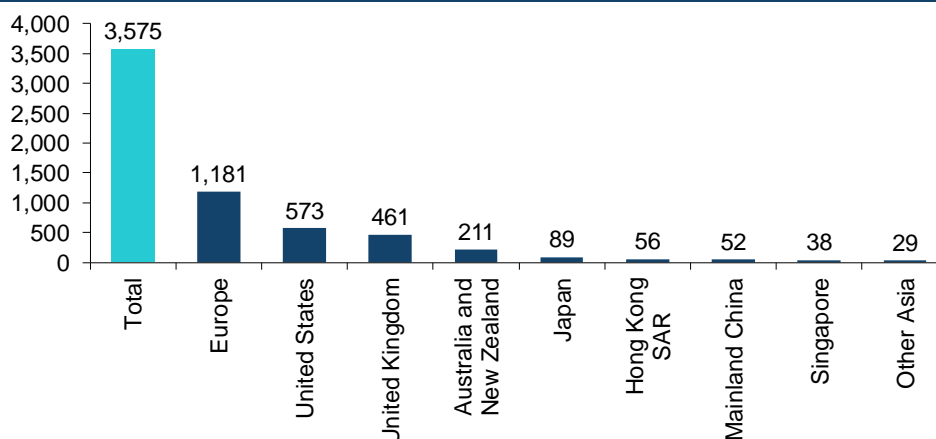
⁶ Source: “List of green and ESG funds”, the SFC’s website, viewed on 31 December 2020.

⁷ See “HKEX launches STAGE, its sustainable and green exchange”, news release on HKEX’s website, 1 December 2020.

⁸ Listed sustainable bonds are dominated by debt securities issued to professional investors only. These bonds can be traded on-exchange, but are usually traded off-exchange. See “Frequently Asked Questions: Chapter 37 of the Main Board Listing Rules – Debt Issues to Professional Investors Only”, published on HKEX’s website, September 2020.

In respect of individual investors, a survey of individual investors in the US⁹ found an increasing interest of individual investors in ESG investment — the percentage of investors interested in ESG investment rose from 71% of respondents in 2015, to 75% in 2017 and further to 85% in 2019; and the percentage was even higher for millennials (95% in 2019). Another survey in the United Kingdom (UK) showed that the net inflows into responsible investment retail funds in the UK grew significantly to £7.1 billion during the first three quarters of 2020, which was about four times the amount (£1.9 billion) during the first three quarters of 2019¹⁰.

Figure 2. Number of UNPRI signatories in selected markets (end-2020)



Note: A signatory can either be an asset owner, an investment manager or a service provider. The number of signatories in Europe is the total number of signatories in members countries of the European Union.

Source: "Signatory directory", webpage on the website of UNPRI, viewed on 31 December 2020.

1.2 Factors supporting the further growth of ESG investment

Against the backdrop of growing ESG investor base, there exists a broad spectrum of practices, perspectives and experiences at different stages of development in ESG investment across different markets. A study¹¹ summarised the characteristics of ESG investors in Asia at different stages and highlighted the different investment approaches and return expectations at different ESG adoption level (see Table 1).

⁹ "Sustainable signals: Individual investor interest driven by impact, conviction and choice", Morgan Stanley's website, 12 September 2019.

¹⁰ Source: "Record £7.1 billion flows into responsible investment funds in 2020 so far", published on the website of the UK's Investment Association, 5 November 2020.

¹¹ "Driving ESG Investing in Asia: The imperative for growth", prepared by Asian Venture Philanthropy Network and Oliver Wyman, published on the website of Oliver Wyman, June 2018.

Characteristics	Early stage	Intermediate stage	Advanced stage
ESG adoption level	Low	Medium	High
Investment approach	Negative screening (i.e. exclusion of non-ESG compliant assets)	Positive and negative screening, ESG integration and thematic investing	Positive and negative screening, ESG integration, thematic investing and corporate engagement
Return expectation	Trade-off between financial returns and ESG impact	No trade-off, financial returns and ESG impact are achievable in parallel	ESG adoption enhances financial performance
Guiding principles	Limited, some consideration of external resources	Internal frameworks combined with external information as overlay	Sophisticated analytical models and frameworks built in-house
Challenges	Mindset, knowledge, awareness	Performance track record, education	Supply of investment managers and products

Source: "Driving ESG Investing in Asia: The imperative for growth", prepared by Asian Venture Philanthropy Network and Oliver Wyman, published on the website of Oliver Wyman, June 2018.

The observations below shed light on the potential drivers for further growth of ESG investment.

First, investors' investment approach will become more sophisticated as the ESG adoption level becomes higher. This evolves from simply negative screening (e.g. excluding energy companies with heavy pollution and companies producing weapons or tobacco) in the early stage, to positive screening and thematic investing as well (e.g. increasing weights of companies with positive ESG impact or selecting a particular sector or business activities in an aspect of "E", "S" or "G"), and further on to corporate engagement (e.g. using proxy voting to improve the ESG impact of companies). Diverse investment approaches would meet the diverse demand of investors at different stages to support sustainable development.

Second, ESG investors may expect that financial returns could be enhanced by ESG adoption. An empirical study¹² on ESG index performance (referred to as the "ESG Index Study") found that the investment return of ESG indices in many cases were similar to that of their parent indices for different investment horizons and under different market conditions, and some with better returns at times. Moreover, a research¹³ examining the results of over 100 empirical studies found that 89% of these studies' results showed outperformance of returns for companies with high ratings on ESG factors.

Third, in addition to potentially better financial returns, ESG investment may have lower risk compared to traditional investment. An empirical study¹⁴ found that the systematic risk and company-specific risk were lower for companies with higher ESG ratings among the constituents of MSCI World Index during January 2007 to May 2017. These companies usually had higher profitability and dividend yield as well as better risk management practices compared to their industry peers. These will in turn support the higher valuation and lower cost of capital of high ESG-rated companies. Therefore, investing in these companies may contribute to lowering the risk of investment portfolios.

Given the adoption of ESG investment strategies, the risk-return performances of ESG indices may be different from those of their parent indices with traditional investment strategies. The

¹² HKEX research report, "Performance of ESG equity indices versus traditional equity indices", published on the HKEX's website, 26 November 2020.

¹³ Fulton, M., B. Kahn and C. Sharples, "Sustainable investing: Establishing long-term value and performance", published on the Deutsche Bank's website, June 2012.

¹⁴ Giese, G. L. Lee, D. Melas, Z. Nagy and L. Nishikawa. (2019) "Foundations of ESG Investing: How ESG Affects Equity Valuation, Risk, and Performance", *Journal of Portfolio Management*, Vol. 45, pp.69-83.

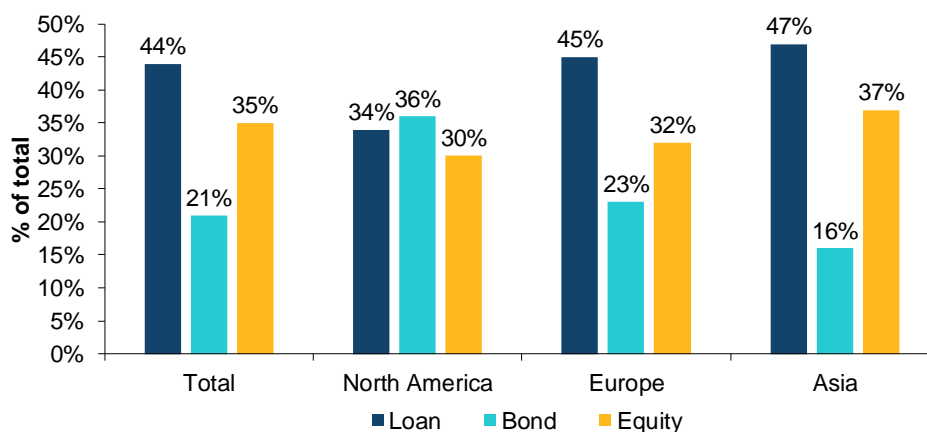
ESG Index Study found that some ESG indices had better return and/or lower volatility than their parent indices at times. This may imply that individual ESG indices may have their own specific characteristics contributing to their outperformance relative to their parent indices, which might not be common across the whole spectrum of ESG indices. These characteristics may depend on three main factors — the ESG impact on corporate financial performance, investor valuation of ESG investments and investor preference of different investment strategies.

ESG investment would enable investors “doing good” (exhibiting social responsibility) without sacrificing financial returns or increasing risks. To meet the demand of investors at different stages of ESG investment, a wide spectrum of ESG investment products should be provided to the market.

2. MEANS OF ESG INVESTMENT

There are a wide range of asset classes for ESG investment. These include equities, bonds, real estate, venture capital/private equity, alternative investments/hedge funds, money market and commodities¹⁵. Among these, the asset allocation has concentrated on equities and bonds — in 2018, equities accounted for 51% of ESG investment AUM and bonds accounted for 36%¹⁶. It was forecasted that the total investment needs for climate change mitigation will reach US\$100 trillion to US\$150 trillion by 2050, representing an average annual investment of US\$3 trillion to US\$5 trillion¹⁷. Of these, equities and bonds are expected to account for about 56% of total investment needs (35% for equities and 21% for bonds) (see Figure 3).

Figure 3. Distribution of investment needs by 2050 for climate change mitigation by type of financial instrument



Source: Boston Consulting Group and Global Financial Markets Association, "Climate finance markets and the real economy", published on the website of Securities Industry and Financial Markets Association, December 2020.

In fact, ESG adoption appears to be more common in equity investments than in fixed-income investments. A survey of global financial professionals in 2018 looked into the percentage of investment analyses integrating each of “E”, “S” and “G” issues. The percentage was found to be higher for equity investment analyses than fixed-income investment analyses across “E”, “S” and “G” issues (see Figure 4). This may be partly attributable to more publicly available ESG information for equities than for fixed-income securities. That is why ESG index

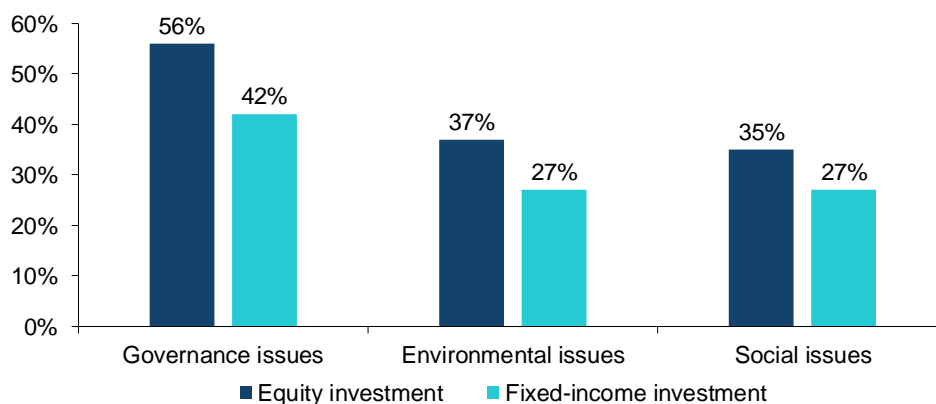
¹⁵ See “Global sustainable investment review”, 2014 issue, published on the website of Global Sustainable Investment Alliance.

¹⁶ Source: Global ESG AUM is obtained from “Global sustainable investment review”, 2018 issues, published on the website of Global Sustainable Investment Alliance.

¹⁷ Source: Boston Consulting Group and Global Financial Markets Association, "Climate finance markets and the real economy", published on the website of Securities Industry and Financial Markets Association, December 2020.

development is faster for equity investments than for fixed-income investments (see Section 3).

Figure 4. Percentage of surveyed analysts often/always integrate material ESG issues into their equity or fixed-income investment analyses



Note: The survey was conducted during 2017 to 2018, with a sample of 1,100 financial professionals globally.

Source: CFA Institute and UNPRI. "Guidance and case studies for ESG integration: Equities and fixed income", published on the website of UNPRI, 13 September 2018.

The number of ESG equity indices rose by 60% year-on-year in June 2018. By June 2019, ESG equity and fixed-income indices numbered to about 42,000 indices, increased by 14% from June 2018¹⁸. The statistics hinted at the growing investor demand for ESG investments, which would rely on ESG benchmark indices.

For ESG equity investment, an asset manager may adopt ESG factors in several ways: (1) applying some deviation from a traditional equity index through positive/negative screening of index constituents based on their ESG scores; (2) tracking an ESG equity index; or (3) integrating ESG factors into traditional fundamental analysis of potential targets and undertaking active engagement in corporate affairs of investment targets¹⁹. In other words, an ESG equity index appeared to be a good starting point for ESG investment, which can be tracked by passive managers and be used as a benchmark for active managers for selecting equities from an investment universe with a lower initial ESG risk profile or a better ESG performance than the parent index.

Investment funds, including mutual funds and ETFs, have been a main tool for ESG investment. The investment processes of these funds involve positive screening (the inclusion of ESG-compliant targets) and/or negative screening (the exclusion of non-ESG-compliant targets). For example, the investment in companies engaging in controversial businesses of weapons had drawn the concerns of an increasing number of active ESG institutional investors. In view of this, the Swiss Sustainable Finance initiative launched in 2019 sent an open letter to major global index providers to call for the exclusion of controversial weapons from mainstream indices²⁰. Besides, it was reported that more than 138 major financial

¹⁸ Source: "Index Industry Association Survey Reveals 3.7 Million Indexes Globally" and "Index Industry Association's Third Annual Survey Finds 2.96 Million Indexes Globally", published on the website of Index Industry Association, 14 November 2018 and 15 October 2019 respectively. The industry surveys did not report the exact number of ESG indices but the survey of June 2018 reported that ESG indices accounted for 1% of 3.727 million indices (about 37,270 indices). The number of ESG indices in June 2019 was calculated from the year-on-year growth rate in June 2019 and the estimated number of ESG indices in June 2018.

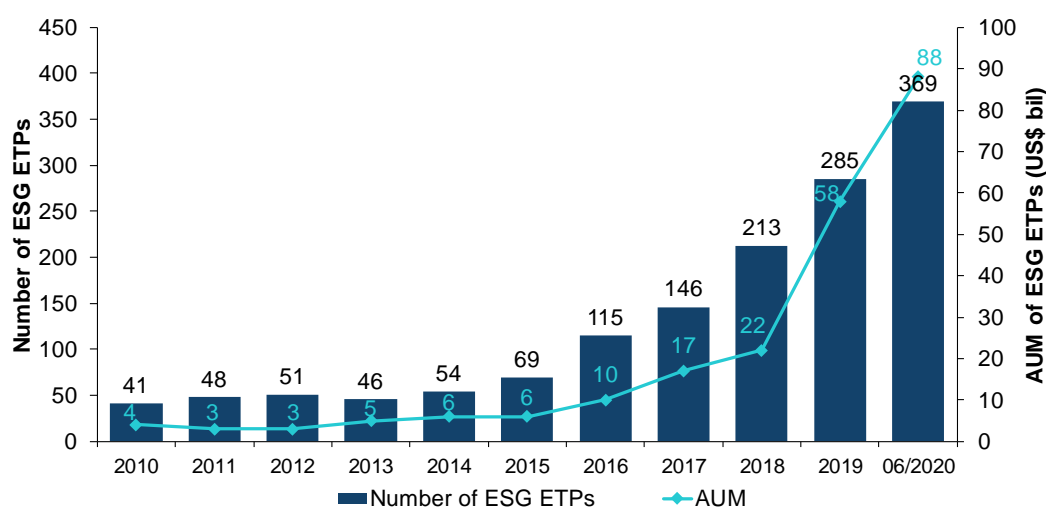
¹⁹ See "Active management and ESG are a perfect match", *Financial Times* (FT.com), 13 November 2019.

²⁰ There were 174 signatories to this initiative, consisting of asset owners, managers and service providers mainly from Europe, representing an AUM of US\$9.7 trillion as of 9 January 2020. (Source: "SSF Engagement Initiatives", the website of Swiss Sustainable Finance, viewed on 29 April 2020.)

institutions have exited from new investments in coal in 2020²¹. In addition to screening of investment targets, active investment managers may also exercise their influence on ESG-related business decisions through proxy voting and other shareholder engagements²². The proliferation of ESG investment strategies is expected to continue. According to an open letter issued by Blackrock in 2021²³, the pandemic has forced the society as a whole to reckon more deeply with the existential threat of climate change and companies, governments and investors have become more committed to achieving carbon neutrality by 2050.

On the other hand, the rise of passive investment through exchange-traded product (ETPs) such as ETFs has spread to ESG investment as well. Core ESG indices and thematic ESG indices have been developed to support passive ESG investments. Core ESG indices are best-in-class indices with top ESG performers as the constituents, and have a broad market coverage and a similar risk and return profile as their parent indices. Thematic ESG indices are indices with targeted exposures to specific ESG themes (e.g. clean energy and water)²⁴. ESG ETPs tracking ESG indices have become increasingly popular — the number of ESG ETPs rose from 206 in 2018 to 276 in 2019 and further to 369 products in June 2020; the AUM of ESG ETPs was more than doubled from US\$22 billion in 2018 to US\$58 billion in 2019 and rose further to US\$88 billion by June 2020 (see Figure 5). The growth momentum of ESG index investment is expected to continue. A global index provider expected the AUM tracking ESG indices to be doubled in 2020 and that it will surpass the AUM tracking traditional indices in the coming decades²⁵.

Figure 5. Number and AUM of ESG ETPs (2010 – Jun 2020)



Note: ESG ETPs comprise core ESG products and theme-based ETPs (examples of ESG themes are clean/alternative energies and gender diversity).

Source: "ETFGI reports assets invested in ESG (Environmental, Social, and Governance) ETFs and ETPs listed globally reached a new record of 88 billion US dollars at end of June 2020", *etfgi.com*, 22 July 2020.

²¹ Source: "IEEFA: Southeast Asian banks need to reduce coal risks", published on the website of Institute for Energy Economics and Financial Analysis (IEEFA), 9 September 2020.

²² See "The Investment Stewardship Ecosystem", published on the website of Harvard Law School Forum on Corporate Governance, 24 July 2018.

²³ "Larry Fink's 2021 letter to CEOs", published on Blackrock's website, 26 January 2021.

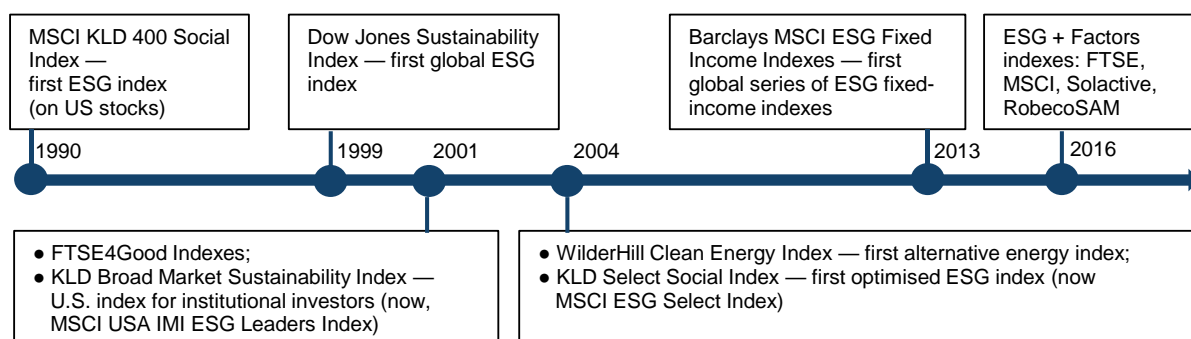
²⁴ See "Core ESG" and "Thematic ESG", the website of S&P Dow Jones Indices, viewed on 28 April 2020.

²⁵ See "MSCI says ESG indexes will be bigger than traditional gauges", *Bloomberg* (Bloomberg.com), 14 February 2020.

3. THE SIGNIFICANCE OF ESG INDICES IN ESG INVESTMENT

The growth of ESG investment is accompanied by the development of ESG indices, particularly ESG equity indices. The first ESG index was launched in 1990, which was tracking a home market index of US stocks (see Figure 6). This was followed by the first global ESG equity index launched in 1999, a more sophisticated home market ESG equity index in 2001 and the first sectoral ESG equity index in 2004. Subsequently, the development of ESG indices was expanded into fixed-income market in 2013 and ESG thematic/factor equity indices in 2016. By now, a wide spectrum of ESG indices covering global, regional and local markets have been developed to fit into different investment strategies adopted by ESG investors. These indices serve as benchmarks and as the underlyings of passive ESG investment tools like ETFs, contributing to a further growth in the allocation of investment portfolio assets into ESG products. This growth contributes to the rising demand for ESG risk management tools.

Figure 6. Evolution of ESG indices



Source: “An Evolution in ESG Indexing”, published on the website of Blackrock’s iShares, viewed on 31 December 2020.

3.1 ESG portfolio and risk management tools — ESG equity index futures

Index futures are common tools used by investors for managing their investment portfolios, particularly for risk management. ESG equity index futures are developed concomitantly with growing ESG equity investments. They play an important role in price discovery and hedging as index futures in general, as well as portfolio diversification into ESG:

- **Price discovery:** Arbitrage trading will be activated upon any significant price difference between the ESG index futures and the underlying ESG index, contributing to cash-futures price convergence. Moreover, index futures will be settled at the level of the underlying index on the expiry date. The price interaction between the ESG index futures and the underlying ESG index will contribute to price discovery of the underlying assets.
- **Hedging:** ESG equity index futures track the performance of the underlying ESG equity index closely. Active and passive investors invested in products like ETFs to track the underlying ESG equity index may use the ESG equity index futures to hedge against their positions in the underlying stocks, in the same way as for investment in traditional equity indices.
- **Portfolio management and diversification:** ESG equity index futures may be used to replicate the performance of the ESG equity index. Such strategy is adopted in investment tools like synthetic ETFs, which replicate an equity index through long positions of equity index futures. This applies to the case of ESG equity index futures as well. Compared to full replication to trade all index constituents, this reduces the market impact and transaction costs on rebalancing the portfolio. Active asset managers may overweigh or underweigh certain constituents of the ESG equity index to pursue better returns.

Not surprisingly, the first ESG index futures launched on 15 October 2018 was on equities. The underlying ESG equity index is the OMXS30 ESG Responsible Index (OMXS30ESG) on the Swedish market, which is the ESG version of the OMX Stockholm 30 Index (OMXS30). There are three contract months for the ESG index futures — spot month and the following two consecutive calendar months, providing for hedging the short-term fluctuations of the underlying ESG index. The risk-return pattern of OMXS30ESG was slightly different from that of the OMXS30 for the horizon up to December 2020 — the period returns were lower throughout the different investment horizons while the annualised historical volatilities were similar (see Table 2).

Investment horizon	Period return			Annualised historical volatility		
	OMXS30ESG	OMXS30	Difference	OMXS30ESG	OMXS30	Difference
1-year	5.27%	5.81%	-0.54%	28.80%	28.37%	0.43%
2-year	32.17%	33.08%	-0.91%	14.21%	14.09%	0.12%
3-year	16.66%	18.88%	-2.22%	14.99%	15.07%	-0.08%
4-year	20.53%	23.57%	-3.04%	10.10%	10.16%	-0.06%
5-year	26.59%	29.58%	-2.99%	21.07%	21.22%	-0.15%
6-year	24.09%	28.01%	-3.92%	19.61%	20.19%	-0.58%
7-year	36.43%	40.65%	-4.22%	13.41%	13.70%	-0.29%
8-year	65.50%	69.70%	-4.20%	12.98%	13.12%	-0.14%
9-year	87.45%	89.78%	-2.33%	18.89%	19.14%	-0.25%

Source: Fact sheets of OMXS30 and OMXS30ESG.

3.2 World exchanges' offering of ESG equity index futures

Since 2018, an increasing number of futures products on home-market ESG equity indices have been launched in Europe and the US to track ESG indices on the European, US and Japanese markets. The market scope has been expanded to regional and global markets (see Table 3). These ESG equity indices are mainly the ESG versions of their parent indices. The liquidity of ESG equity index futures appeared to be better for home-market ESG indices and regional ESG indices — Stoxx Europe 600 ESG-X futures had the highest average daily trading volume (ADV) of 4,481 contracts during 2020 and OMXS30ESG futures (4,070 contracts) and E-mini S&P 500 ESG Index futures (532 contracts) are actively traded. The contract specifications of these three index futures are summarised in Table 4.

Launch date	Product	Exchange	Underlying market	ADV (contracts) (2020)
15 Oct 2018	OMXS30 ESG Responsible Index Futures	Nasdaq Stockholm	Sweden	4,070
18 Feb 2019	STOXX Europe 600 ESG-X Futures	Eurex	Europe	4,481
	STOXX Europe Climate Impact Index Futures			4
	EURO STOXX 50 Low Carbon Index Futures			13
21 Oct 2019	STOXX Europe ESG Leaders Select 30 Futures	Eurex	Europe	27
4 Nov 2019	MSCI EM ESG Leaders Index Futures	ICE US	Emerging market	59
	MSCI USA ESG Leaders Index Futures		US	1
	MSCI World ESG Leaders Index Futures		World	51
	MSCI Europe ESG Leaders Index Futures		Europe	0
	MSCI EAFE ESG Leaders Index Futures		Developed markets outside US and Canada	0

Table 3. List of selected ESG equity index futures				
Launch date	Product	Exchange	Underlying market	ADV (contracts) (2020)
18 Nov 2019	E-mini S&P 500 ESG Index Futures	CME	US	532
10 Feb 2020	STOXX USA ESG-X Index Futures	Eurex	US	0
2 Mar 2020	MSCI World ESG Screened Index Futures	Eurex	World	0
	MSCI USA ESG Screened Index Futures		US	0
	MSCI EM ESG Screened Index Futures		Emerging market	0
	MSCI EAFE ESG Screened Index Futures		Developed markets outside US and Canada	0
	MSCI Japan ESG Screened Index Futures		Japan	0.03
8 Jun 2020	FTSE4Good TIP Taiwan ESG Index Futures	Taiwan Futures Exchange (TAIFEX)	Taiwan	684
17 Jun 2020	Euronext Eurozone ESG Large 80 Index Futures	Euronext	Europe	1
9 Nov 2020	Euro STOXX 50 ESG Index Futures	Eurex	Europe	21
	DAX 50 ESG Index Futures		Germany	2
25 Jan 2021	FTSE Emerging ESG Index Futures	Singapore Exchange (SGX)	Emerging market	—
	FTSE Emerging Asia ESG Index Futures		Emerging Asia	—
	FTSE Asia ex Japan ESG Index Futures		Asia	—
	FTSE Blossom Japan Index Futures		Japan	—

Note: The list of ESG equity index futures in the table is non-exhaustive.

Source: Product information of futures from websites of CME, Eurex, Euronext, ICE, NASDAQ, SGX and TAIFEX, viewed on 5 February 2021; turnover data from Bloomberg.

Table 4. Contract specifications of selected ESG equity index futures			
Index futures	OMXS 30 ESG Responsible Index futures	Stoxx Europe 600 ESG-X Index futures	E-mini S&P 500 ESG Index futures
Underlying market	Sweden	Europe	US
Parent Index	OMX Stockholm 30 Index	Stoxx Europe 600 Index	S&P 500 Index
Exchange	Nasdaq Stockholm	Eurex	CME
Currency	Swedish Krone (SEK)	Euro (EUR)	US Dollar (USD)
Contract size	Index value X SEK100	Index value X EUR100	Index value X US\$500
Contract month	3 nearest consecutive months	3 nearest consecutive quarterly months	5 nearest consecutive quarterly months
Expiration date	The third Friday in the expiration month	The third Friday in the expiration month	The third Friday in the expiration month
Daily settlement price	The futures' closing price	Volume-weighted average price (VWAP)* of the minute before 17:30 CET for spot month contract and the average bid/ask spread of the order book for other maturities	30-second VWAP between 4:14:30 p.m. and 4:15:00 p.m. ET
Final settlement price	VWAP on the expiration date	The average price calculated between 11:50 and 12:00 CET on the expiration date	Based on the opening price of each component stock in the index on the expiration date

* VWAP is a measure of average price calculated as the ratio of the value traded to total volume traded over a particular time horizon.

Source: Websites of respective exchanges, viewed on 31 December 2020.

Two of these three relatively liquid ESG index futures have a larger contract size than the futures of their parent indices. The average daily nominal value of open interest (OI) of these ESG index futures during 2020 were lower than those of their parent index futures, with a ratio ranging from 0.2% to 17% (see Table 5).

Table 5. Average daily OI of selected futures of ESG indices and their parent indices (2020)

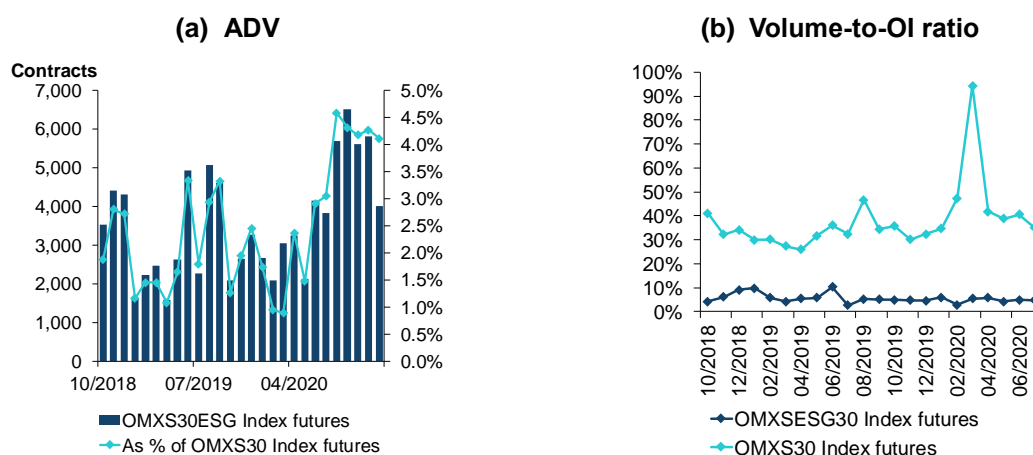
Index futures	ESG index futures			Parent index futures			Ratio of (A)/(B)
	Contract multiplier (per index point)	Average daily OI		Contract multiplier (per index point)	Average daily OI		
		Contracts	Nominal amount (A)		Contracts	Nominal amount (B)	
OMXS30ESG Index futures	SEK100	63,957	SEK10.9 billion	SEK100	367,989	SEK65.6 billion	16.6%
Stoxx Europe 600 ESG-X Index futures	EUR100	46,916	EUR0.6 billion	EUR50	478,897	EUR8.8 billion	7.3%
E-mini S&P 500 ESG Index futures	US\$500	7,157	US\$1.0 billion	US\$50	2,885,986	US\$455.2 billion	0.2%

Note: Daily nominal amount is calculated as day-end OI times day-end index level times contract size.

Source: Bloomberg for day-end OI of futures and index levels.

The OMXS30ESG Index futures in the Swedish market is not only the first home-market ESG index futures, but also the first ESG index futures introduced in the world. The monthly ADV of OMXS30ESG Index futures fluctuated between 1,600 and 6,600 contracts during the period of October 2018 to December 2020, which was less than 5% of that of the parent index futures (see Figure 7a). Besides, its monthly volume-to-OI ratio²⁶ was always much lower than that of its parent index futures (see Figure 7b).

Figure 7. Monthly ADV and volume-to-OI ratio of OMXS30ESG Index futures (Oct 2018 – Dec 2020)



Source: Bloomberg.

The relatively high liquidity of Stoxx Europe 600 ESG-X Index futures can be attributable to the first-mover advantage (as it was the first pan-European ESG index futures) and the high liquidity of the futures of its parent index, Stoxx Europe 600 Index. Stoxx Europe 600 Index futures was the 4th most actively traded equity index futures on Eurex in 2020, following Euro Stoxx 50 Index futures, Euro Stoxx Bank Index futures and DAX Index futures²⁷. Compared to the indices underlying the top three equity index futures, Stoxx Europe 600 Index has a much

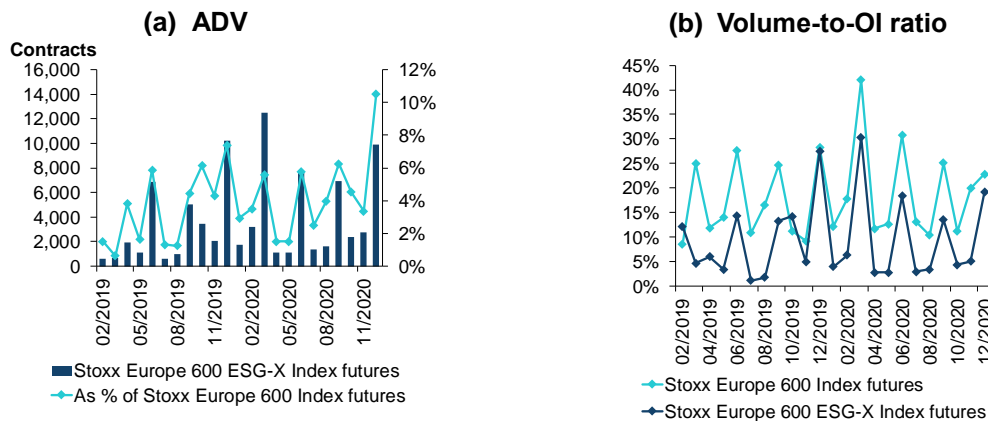
²⁶ Volume-to-OI ratio in a month is calculated by dividing the ADV in the month by month-end OI.

²⁷ Source: Monthly statistics of Eurex, December 2020.

larger number of constituents and provides a wider range of sector exposure — 600 constituents compared to 50 for Euro Stoxx 50 Index and 30 for DAX Index, while Euro Stoxx Banks Index comprises only financial stocks. An extensive and diverse composition of constituents of the Stoxx Europe 600 Index would avoid abrupt changes of investment style as a result of ESG stock-screening during the ESG index construction process.

Nevertheless, the trading volume of Stoxx Europe 600 ESG-X Index futures was still relatively small compared to its parent index futures. The ratio of its monthly ADV to that of its parent index futures reached the highest of 10.5% in December 2020 (see Figure 8a). Its monthly volume-to-OI ratio, although lower than that of its parent index futures for most of the time up to December 2020, were close to or even surpassed the latter at times (see Figure 8b).

Figure 8. Monthly ADV and volume-to-OI ratio of Stoxx Europe 600 ESG-X Index futures (Feb 2019 – Dec 2020)

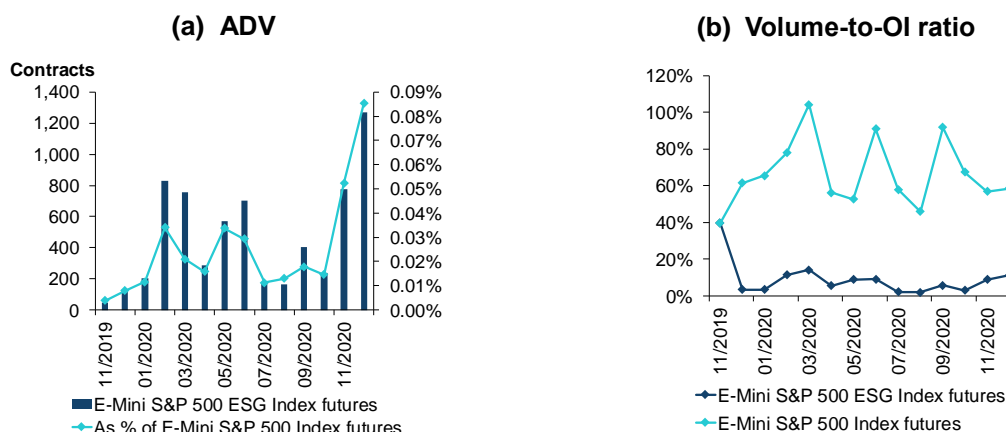


Source: Bloomberg.

On Eurex, there are also futures on ESG indices tracking stocks listed outside Europe. These include futures of the MSCI Japan ESG Screened Index, a Japanese ESG equity index, launched in March 2020. However, the trading of this futures was not active during 2020. A possible reason for inactive trading of this futures is the difference in trading time zone between the index futures and the underlying index constituents.

Further experience of ESG index futures in the US market also support the belief that the liquidity of parent index futures is an important driver for the liquidity of ESG index futures in the same market. In the US, futures of the S&P 500 Index’s ESG version (S&P 500 ESG Index) was launched in November 2019. The index futures of the parent index (S&P 500 Index) has been one of the most actively traded index futures on the CME in the US market. The E-Mini S&P 500 ESG Index futures recorded much growth in average daily trading volume in the months of 2020 relative to its launch month, though contracted at times (see Figure 9a). However, similar to the ESG index futures in Europe, the volume-to-OI ratio was still low compared to its parent index futures (see Figure 9b).

Figure 9. Monthly ADV and volume-to-OI ratio of E-mini S&P 500 ESG Index futures (Nov 2019 – Dec 2020)



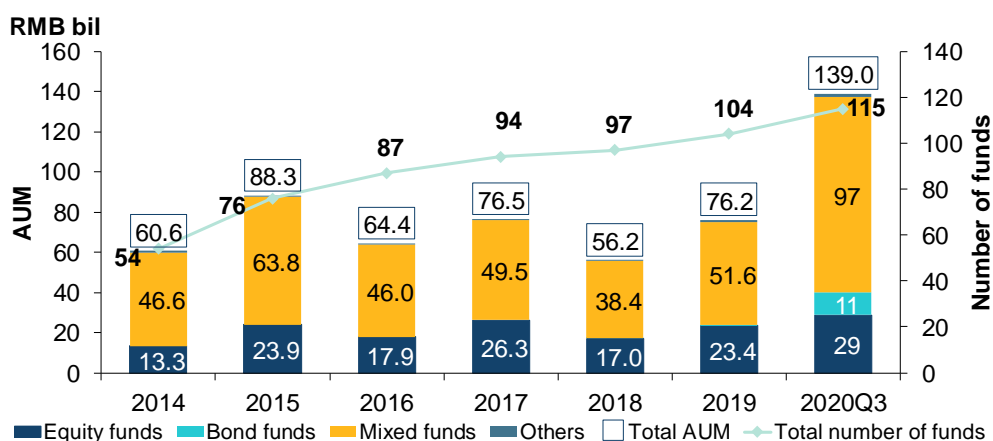
Source: Bloomberg.

In addition to Europe and the US, there is also an increasing potential demand for ESG index futures in Asia, including in Mainland China. As of October 2019, there were 43 ESG indices covering Mainland A shares, compiled by the Shanghai Stock Exchange, the Shenzhen Stock Exchange and China Securities Index Company Limited (CSIC)²⁸. There are two types of stock selection approach for these indices: (1) inclusion or screening of stocks using “E”, “S” and/or “G” criteria; and (2) selecting stocks of specific thematic sectors/business activities. The ESG versions of the CSI 300 Index were launched on 30 April 2020 by CSIC²⁹. In fact, the CSI 300 Index is the parent index for the construction of 27 out of the 43 ESG equity indices in the Mainland. The CSI 300 Index is also the performance benchmark for a large proportion of ESG investment funds in the Mainland — 33 out of 115 ESG investment funds (4 ETFs, 17 listed open-ended funds (LOFs) and 94 other investment funds) as of end-2020Q3³⁰. The majority of the ESG funds over the years had been mixed funds (in equities and bonds) and equity funds (see Figure 10). Investors of products tracking these ESG equity indices or ESG investment funds may use CSI300 Index futures for risk management. The uptrend of the number of ESG investment funds in the Mainland reflects the rising investor demand for ESG investment. This will induce the demand for risk management tools for ESG investment, such as futures of an ESG equity index.

²⁸ Source: “China sustainable investment review 2019”, published on the website of SynTao Green Finance (a consultancy of green finance and an external reviewer of green bonds in the Mainland), December 2019.

²⁹ Source: “The announcement about the launch of 5 indices including CSI300 ESG Benchmark Index” (〈關於發佈滬深 300 ESG 基準指數等 5 條指數的公告〉), the website of CSIC, 8 April 2020.

³⁰ Source: Wind.

Figure 10. AUM of Mainland ESG investment funds by fund type (2014 – 2020Q3)

Note: ESG investment funds are classified by Wind.

Source: Wind.

Introducing ESG equity index futures can be a starting point to facilitate ESG investment, particularly for home-market equity markets. From global experience, the liquidity of the first home-market ESG equity index futures where the parent index has a deep and liquid futures product is expected to benefit from first-mover advantage and the deep liquidity of parent index futures.

Apart from home-market ESG index futures, futures on certain regional and global ESG indices compiled by global index providers are made available on a number of exchanges. These include Eurex's futures on MSCI's ESG indices covering developed markets and emerging markets respectively and the Singapore Exchange's FTSE Russell ESG index futures on emerging markets (see Table 3 above). As ESG investment continue to grow globally, the investment flows tracking home-market, regional and global ESG indices are expected to increase and the demand for risk management tools, such as futures, on these indices will rise further.

4. THE IMPLICATIONS FOR HONG KONG

ESG investment is getting increasingly popular in Hong Kong, as in other markets in the world. According to an annual investor survey³¹, 42% of Hong Kong investors had already invested or wanted to invest in sustainable funds in 2019.

Green and sustainable finance and investment in Hong Kong is proactively supported by the collaborative efforts of related authorities. The SFC issued a Strategic Framework for Green Finance in September 2018, which includes enhancing the ESG disclosure of listed companies and providing guidance to facilitate disclosure and reporting of green or ESG investment products³². It subsequently issued a circular on the enhanced disclosures for green or ESG funds in April 2019³³. The Stock Exchange of Hong Kong (SEHK), the subsidiary of HKEX operating the securities market in Hong Kong, published the enhancements of ESG Reporting Guide (ESG Guide) and related Listing Rules for listed

³¹ Schroders, "Global Investor Study", 2019 issue, published on Schroders' website.

³² See *Strategic Framework for Green Finance*, issued by the SFC, 21 September 2018.

³³ *Circular to management companies of SFC-authorized unit trusts and mutual funds Green or ESG funds*, issued by the SFC, 11 April 2019.

companies in December 2019 after market consultation, which took effect on 1 July 2020³⁴. The SFC, HKEX and other related authorities established the Green and Sustainable Finance Cross-Agency Steering Group (“Steering Group”)³⁵ in May 2020. The Steering Group aims to coordinate the management of climate and environmental risks to the financial sector, accelerate the growth of green and sustainable finance in Hong Kong and support the Government’s climate strategies. The Steering Group launched a strategic plan in December 2020 highlighting six key focus areas to support the development of green and sustainable finance in Hong Kong³⁶. Besides, the STAGE platform launched by HKEX in December 2020 serves the information disclosure of green and sustainable investment products and educational resources to promote of ESG investment.

The development of green and sustainable finance is also strongly supported by market institutions in Hong Kong. The Hong Kong Green Finance Association (HKGFA) was founded in September 2018 to mobilise both public and private sectors’ resources and talents in developing green finance policies, to promote green finance business and product innovation within financial institutions. The members include a number of financial institutions, non-financial companies and service providers in the private sector. There are seven working groups covering the aspects in banking, insurance, bonds, ESG disclosure and integration, policies, collaboration with Mainland China and Belt and Road Initiative³⁷. In September 2020, the HKGFA launched the Greater Bay Area Green Finance Alliance (GBA-GFA), in collaboration with institutions in the Greater Bay Area, to promote green finance in, and facilitate the greening of, the Greater Bay Area³⁸.

With strong institutional support, ESG finance and investment could flourish in Hong Kong, taking into consideration the implications learned from global experience discussed in the above sections:

- (1) Starting with ESG equity investment** — The integration of ESG criteria into investment analyses has been more developed for equity investment in the global market. Compared to the bond market, the Hong Kong listed equity market has very active participation from local and overseas retail and institutional investors³⁹, and would therefore provide a good nursing ground for ESG investment.
- (2) ESG indices would be good investment vehicles** — These will provide ESG investment benchmarks and facilitate the development of index-tracking ESG products
- (3) Exploring suitable ESG equity indices** — Home-market ESG equity indices on parent indices with actively traded underlying securities and related index products such as ETFs would expectedly be appealing to investors. As Hong Kong is an international capital market, popular regional and global ESG equity indices should also be explored.

³⁴ Source: “Exchange publishes ESG Guide consultation conclusions and its ESG disclosure review findings”, news release on HKEX’s website, 18 December 2019.

³⁵ Group members comprise the HKMA, the SFC, the Environment Bureau, the Financial Services and Treasury Bureau, HKEX, the Insurance Authority and the Mandatory Provident Fund Schemes Authority. Source: “Joint statement on the establishment of the Green and Sustainable Finance Cross-Agency Steering Group”, press releases on the HKMA’s website, 5 May 2020.

³⁶ See “Cross-Agency Steering Group Launches its Strategic Plan to Strengthen Hong Kong’s Financial Ecosystem to Support a Greener and More Sustainable Future”, press release on the HKMA’s website, 17 December 2020.

³⁷ See HKGFA’s website.

³⁸ The GBA-GFA is a collaboration between the Hong Kong Green Finance Association (HKGFA), the Green Finance Committee of Guangdong Society for Finance and Banking (GDGFC), the Green Finance Committee of Financial Society of Shenzhen Special Economic Zone (SZGFC), and the Macau Association of Banks. See “Greater Bay Area Green Finance Alliance officially launched today”, published on HKGFA’s website, 5 September 2020.

³⁹ See HKEX’s Cash Market Transaction Survey 2019, published on HKEX’s website, 25 November 2020. The majority of turnover on HKEX cash market has been contributed by trading in equities and ETFs (77.8% of total market turnover in 2019, source: HKEX Fact Book 2019).

(4) The availability of related risk management tools is important — As the ecosystem of ESG investment products progressively develops in Hong Kong, related risk management tools need to be made available to meet the needs of issuers and investors for hedging and portfolio management.

In fact, the Hong Kong market has kicked off the development of ESG equity indices. Hang Seng Indexes Company Limited (HSIC) launched the first two ESG indices on the Hong Kong market in May 2019. These are the ESG versions of the two flagship indices, Hang Seng Index (HSI) and Hang Seng China Enterprises Index (HSCEI) — the HSI ESG Index and the HSCEI ESG Index. The two ESG indices adopt the Sustainability Performance Scores compiled by the Hong Kong Quality Assurance Agency (HKQAA), with the weightings of index constituents tilted to improve the overall ESG performance of the indices⁴⁰. Currently, there are five ESG equity indices tracking Hong Kong listed stocks, including one index tracking both Mainland and Hong Kong stocks listed in Hong Kong (see Table 6). These indices will pick constituent stocks of companies with good ESG performance or increase the relative weightings to stocks of these companies. As a matter of fact, despite the market turmoil in early 2020, the Hang Seng ESG 50 Index rose by 0.7% for the full year of 2020, compared to the decline of 3.4% for the HSI⁴¹.

Index	Launch date	Number of constituents	Scope of constituents	Selection criteria of constituents
HSI ESG Index	14 May 2019	50	All constituents of HSI	Same as HSI (weighting tilts based on HKQAA's Sustainability Performance Scores)
HSCEI ESG Index	14 May 2019	50	All constituents of HSCEI	Same as HSCEI (weighting tilts based on HKQAA's Sustainability Performance Scores)
Hang Seng Corporate Sustainability Benchmark Index	5 Sep 2011	Variable	Constituents of the Hang Seng Composite Index with at least one year's history of listing	Top 20% of constituents with the highest HKQAA's Sustainability Performance Scores
Hang Seng Corporate Sustainability Index	26 Jul 2010	30	Constituents of the Hang Seng Composite Index (meeting requirements of market value and turnover)	Top 30 constituents with the highest HKQAA's Sustainability Performance Scores
Hang Seng ESG 50 Index	20 Jul 2020	50	Constituents of the Hang Seng Composite Index	Top 50 constituents with the highest HKQAA's Sustainability Performance Scores

Source: "Index methodologies" and "Factsheets" of the respective indices, published on the HSIC's website, viewed on 31 December 2020.

These home-market ESG indices may serve as the underlying indices for passive ESG investment tools such as ETFs and as the performance benchmark of ESG investment funds investing in the Hong Kong market. The availability of more home-market ESG indices would help attract and support more active and passive ESG investment flows to the Hong Kong market. This will inevitably increase the demand for risk management and portfolio management tools, such as futures, for ESG investments using the ESG indices in this home market where there is a deep and liquid market in the underlying stocks.

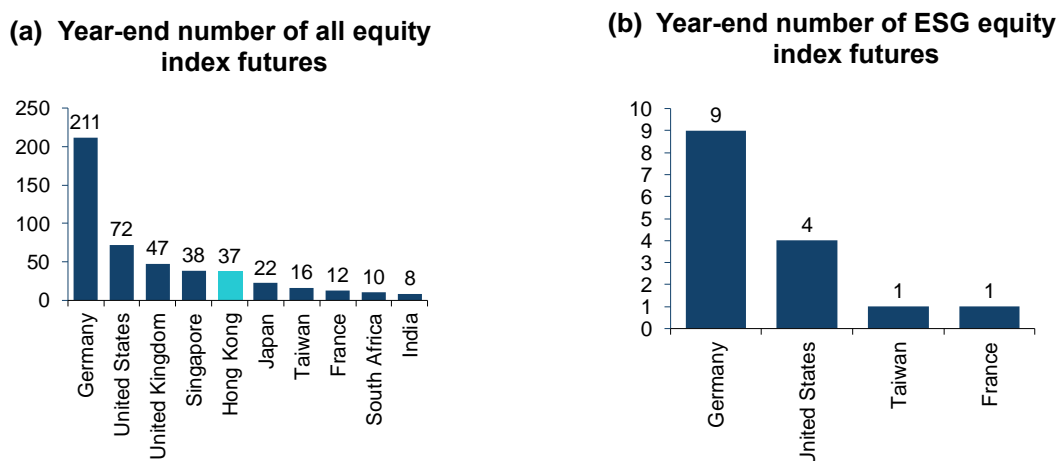
⁴⁰ See "Index methodology for managing the HSI ESG Index; HSCEI ESG Index", published on HSIC's website (hsi.com.hk), September 2019.

⁴¹ Source: "2020 year-end report", published on the HSIC's website, 31 December 2020.

In addition to serving the home market, Hong Kong as an international capital market also serves global investors in managing their regional and global investment portfolios⁴², as well as Mainland investors in their global asset allocation⁴³. In particular, the Hong Kong market has been a gateway for investing in Mainland companies. By way of the Hong Kong market, global investors are not only able to invest in H shares, red chips and other Mainland private enterprises listed in Hong Kong, but also in A shares listed in the Mainland market through the Stock Connect schemes. The same applies to ESG investments of global and Mainland investors through the Hong Kong market. To enhance the role of the Hong Kong market in serving local, regional and global ESG investments which probably would track related ESG indices, the availability of the corresponding risk management tools like ESG index futures would be a significant supporting factor.

The Hong Kong market is among the world's top 10 markets with the largest number of equity index futures. In terms of number of equity index futures, Hong Kong ranked 5th with 37 equity index futures as of end-2020 (see Figure 11a), but there are no ESG equity index futures contracts yet (see Figure 11b). In comparison, Germany and the US ranked first and second respectively and they are also the leading markets in terms of the number of ESG equity index futures. However, the trading volume of ESG equity index futures on global markets was still very low compared to that of all equity index futures (see Figures 11c and 11d). It is expected that more ESG equity index futures will be launched in global markets, including Hong Kong, but it may take some time for trading activities of these index futures to gain momentum.

Figure 11. Leading markets by number and trading volume of equity index futures (2020)

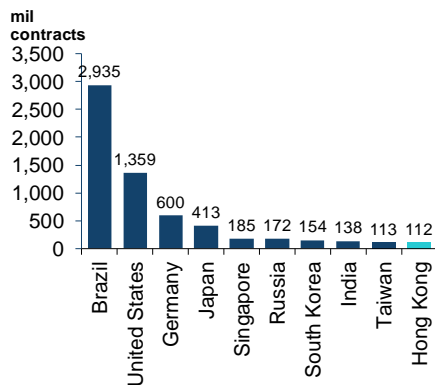


⁴² Overseas investors contributed 43% of total turnover value in the HKEX securities market in 2019 (source: *HKEX Cash Market Transaction Survey 2019*, published on HKEX's website, 25 November 2020), and 29% of total turnover volume in the HKEX derivatives market (source: *HKEX Derivatives Market Transaction Survey 2018/19*, published on HKEX's website, 30 March 2020).

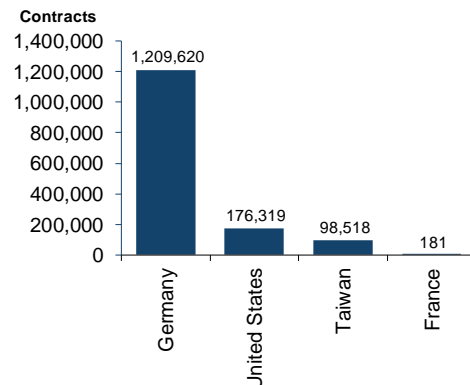
⁴³ In 2020, Southbound trading of Hong Kong listed stocks by Mainland investors through the Stock Connect schemes constituted 9.4% of the total market trading value on the HKEX Main Board (source: HKEX).

Figure 11. Leading markets by number and trading volume of equity index futures (2020)

(c) Trading volume of all equity index futures



(d) Trading volume of ESG equity index futures



Note: The source data in statistics of Futures Industry Association (FIA) do not display products without trading and may not be exhaustive and granular.

Source: FIA's monthly statistics.

Riding on the global trend of ESG investment, the potential demand for product innovation of ESG investment in Hong Kong, such as ESG equity indices and ETFs, is expected to increase. As ESG investment continues to grow in Hong Kong, ESG risk management tools, including ESG index futures, should be launched to meet the investors' needs. The continuous proliferation of ESG products, including indices and related derivatives such as futures and options, would facilitate the further growth of ESG investment in the Hong Kong market and enhance the role of the Hong Kong market in supporting regional and global ESG investment.

5. CONCLUSION

The global growth trend of ESG investment has been driven by cooperation initiatives among world countries on sustainable development and increasing investor demand. This leads to the active development of ESG indices in support and investment products tracking these indices, particularly for equities. Alongside, the demand for risk management tools for ESG investment, including ESG index futures and other derivatives, are expected to grow in order to meet the needs of related hedging and portfolio management.

In Hong Kong, the growth of ESG investment is also catching up in recent years, with strong institutional support. To further drive this growth, the provision of a wide range of ESG investment products is important. ESG equity indices can be a good starting point to facilitate ESG product innovation in Hong Kong. The development of ESG equity index futures and other related derivatives will be complementary to these ESG index products to attract more capital into ESG investment. This will contribute to the formation of an ESG investment ecosystem in Hong Kong, and help mobilising resources in supporting the further growth of green and sustainable finance and ESG investment in Hong Kong and the world.

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