imas
INVESTMENT MANAGEMENT
ASSOCIATION OF SINGAPORE

IMAS DIGEST

JUL. 2023 | ISSUE 8

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FOREWORD

"Looking back on the last quarter, we have much to celebrate. Our programmes and events have been a resounding success, bringing together professionals from across the industry and providing opportunities for networking and learning."

Thomas Kaegi,
Chairman, IMAS Development Committee

Dear IMAS Members,

I am delighted to address you as the newly appointed Chairman of the IMAS Development Committee. First and foremost, I would like to express our heartfelt appreciation to the former Chairman of the IMAS Development Committee, Rajeev De Mello, for his outstanding contributions to IMAS and the investment management industry over the last 15 years. As I step into this role, I am committed to building upon his work and driving IMAS towards greater heights.

Looking back on the last quarter, we have much to celebrate. Our programmes and events have been a resounding success, bringing together professionals from across the industry and providing opportunities for networking and learning.

One of the key highlights is the inaugural Generation AI Executive Roundtable where industry leaders discussed the potential of generative artificial intelligence. The Roundtable led to the cumulation of use cases for generative AI that would lead to improved efficiency of workflow and tasks, reduction in costs and increase in value-addition and alpha generation.

Another critical topic the Committee addressed during the last quarter was the "Perils & Pitfalls of Greenwashing." This session shed light on the importance of maintaining ethical practices in sustainability efforts, ensuring that our industry upholds its commitment to environmental responsibility.

In addition to events, we launched new training programs on iLearn aimed at further enhancing your professional capabilities. The collaboration with the Singapore Green Finance Centre led to the creation of the

Climate Change Management eLearning curriculum, empowering participants to better understand key climate change concepts, principles, and risk management issues relevant to the organisation's activities. For the third year running, we also launched the IMAS - Sustainability, Ethics, Rules & Regulations Bundle, which provides comprehensive training on sustainable practices, ethical conduct, and regulatory compliance, for members to fulfil their Core Continuous Professional Development training needs.

I am pleased to announce the addition of new members to the IMAS Development Committee and look forward to working with Dhananjay Phadnis from FIL Investment Management (Singapore) Limited, David Poh from Amundi Asset Management, and Stefan Haab from Pictet Asset Management, alongside the rest of the Committee members to bring fresh perspectives and ideas to our discussions.

At the same time, I would like to extend our heartfelt appreciation to Shin Lee, CEO of Pictet Asset Management, who has stepped down from the Committee. Shin, thank you for your invaluable contributions and dedication to the committee's work.

Moving forward, the Development Committee will prioritize membership engagement, advocacy, education, and conferences/events. We will continue to place a particular focus on the annual Investment Managers' Outlook survey, which provides valuable insights into industry sentiment and trends for the coming year.

Looking ahead, we have an exciting array of events planned to meet your specific needs. Our upcoming AGM in September will provide the platform for all IMAS members to come together, review our achievements, and chart the course for the future.

Furthermore, the Committee is conceptualizing customized events such as CIO/COO Roundtables to discuss digital assets, tokenization of funds, distributed ledger technology (DLT), ESG (Nature-based solutions, carbon credits, greenwashing, ethical and impact investing), funds innovation (Variable Capital Companies), cybersecurity and resiliency, as well as cash/liquidity solutions in Singapore.

Thank you for your continuous support and participation in IMAS. As we embark on this journey together, I encourage each of you to actively engage with IMAS and participate in our initiatives. Your contributions, and ideas are vital to our collective success. Together, we will shape the future of asset management in Singapore and continue to lead with excellence.

I look forward to working closely with all of you in the coming months, as we navigate new horizons and embrace the opportunities that lie ahead.

Warm regards,

Thomas Kaegi,

Chairman, IMAS Development Committee

A warm welcome
to our new members!

Regular Members:

Singapore University of Social Sciences

Virtus Global Partners Pte Ltd

Associate Members:

Calastone Singapore Pte Ltd

Criat Pte. Ltd.

Associate Fintech Members:

2RSQ Services Ltd

BlueOnion Pte. Ltd.

CALENDAR OF EVENTS IN Q2 2023

IMAS Digital Innovation Committee –
EXECUTIVE ROUNDTABLE ON GENERATIVE AI
Wednesay, 10 May 2023

IMAS iLearn –
LAUNCH OF CLIMATE CHANGE MANAGEMENT
Wednesday, 17 May 2023

IMAS Lunchtime Talk –
FINTECH ROUNDTABLE
Thursday, 18 May 2023

IMAS Lunchtime Talk –
THE PERILS AND PITFALLS OF GREENWASHING
Thursday, 1 June 2023

IMAS Lunchtime Roundtable –
NAVIGATING THE NEW FRONTIER OF DIGITAL ASSETS FOR ASSET MANAGERS
Tuesday, 6 June 2023

IMAS Human Capital Committee –
LAUNCH OF PILOT MENTORSHIP PROGRAMME FOR ASSET MANAGEMENT PROFESSIONALS
Tuesday,13 June 2023

IMAS Regulatory Committee –
IMAS 16TH REGULATORY ROUNDTABLE

IMAS iLearn –
RELAUNCH OF SUSTAINABILITY, ETHICS, RULES & REGULATIONS BUNDLE
Wednesday,14 June 2023

UPCOMING EVENTS

IMAS ASSET OWNERS / FUND MANAGERS' CIO ROUNDTABLE
Wednesday,
30 August 2023 (TBC)

PANEL DISCUSSION ON LIQUIDITY RISK
August/September 2023

ANNUAL GENERAL MEETING
Wednesday,
27 September 2023

ADVANCING THE DIGITAL FRONTIER

As part of our commitment to digital transformation, IMAS organised a series of digital events this quarter including:

i) Executive Roundtable on Generative AI

ii) Lunchtime Talk: Fintech Roundtable

iii) Lunchtime Roundtable: Navigating the New Frontier of Digital Assets for Asset Managers

IMAS Digital Innovation Committee - EXECUTIVE ROUNDTABLE ON GENERATIVE AI

Wednesay, 10 May 2023

Attended by senior executives from selected investment firms and institutions, asset managers came together to explore opportunities for generative AI-adoption across their business. The advent of generative AI is increasingly impacting our work and life. It is imperative for the investment industry to explore and examine the changes brought about by generative AI in a collaborative manner.

The roundtable gave light to the pain points and concerns of the fund houses, and showed that many are still watchful and cautious of the drawbacks of generative AI. General takeaways on issues such as the hallucination of data have been summarised on our website linked here.

IMAS Lunchtime Talk - FINTECH ROUNDTABLE

Thursday, 18 May 2023

As the digitalisation of the investment industry continues apace, IMAS' Fintech Roundtable engaged fintech members in an interactive session to garner suggestions and discuss upcoming digital initiatives and areas of collaboration. Supported by John Fahey, Programme Manager at Fidelity International and a Member of the IMAS Digital Innovation Committee, some of the key initiatives brought up during the session included the Fintech Repository and the possibility of a collective due diligence for fintechs. Our fintech members have also raised the idea of a reverse mentorship. Industry players who are interested in being mentored by fintechs with exciting solutions can contact IMAS.

The Fintech Repository aims to provide our fintech members with the platform to articulate their tech capabilities to the broad buy-side audience, and match their solutions to the problem statements of the asset management industry. This platform serves as an alternative marketing channel to create greater branding awareness amongst the investment community. For interested fintechs, please click here to view our brochure or contact digital@imas.org.sg.

ADVANCING THE DIGITAL FRONTIER

IMAS Lunchtime Roundtable - NAVIGATING THE NEW FRONTIER OF DIGITAL ASSETS FOR ASSET MANAGERS

Tuesday, 6 June 2023

Digital assets are continuing to attract ever-increasing interest not only from the public but also from traditional financial institutions. To discuss pertinent challenges in digital assets, IMAS held the ***IMAS Lunchtime Roundtable: Navigating the New Frontiers of Digital Assets for Asset Managers***. Some key takeaways have been included below.

We are grateful for the participation of our panelists and moderator.

Panelists:

- **Bediss Cherif**, Chief Product Officer, Kaiko
- **Samuel Lim**, Partner, Rajah & Tann
- **Jansen Chow**, Co-Head, Asset Recovery and Investigations, Rajah & Tann

Moderator:

- **John Fahey**, Programme Manager, Fidelity International, and a Member of the IMAS Digital Innovation Committee

IMAS remains committed to driving digital transformation by embracing innovation and collaboration. Through these initiatives, IMAS reinforces its role as a catalyst for change and a driving force behind the digital transformation of the asset management industry in Singapore.

IMAS is constantly canvasing topics for future roundtables, fintechs interested in collaborating can contact IMAS at digital@imas.org.sg.

TAKEAWAY 1:

Digital assets and blockchain technology are here to stay and will continue to grow.

TAKEAWAY 2:

Increasingly, regulators globally are calling for tougher measures in the digital asset space. Regulations in the traditional assets space are being ported over to the digital assets space.

TAKEAWAY 3:

There is a need to take measures to mitigate risks such as operational risks arising from the lack of recording and verification, insolvency risks arising from tracing issues, regulatory risks stemming from uncertainty and rapidly changing regulations, and market risks.

BUILDING A SUSTAINABLE FUTURE

In response to the growing demand and adoption of ESG investing, IMAS has taken proactive steps to promote knowledge exchange amongst industry professionals and stakeholders through a series of workshops and masterclasses.

IMAS Lunchtime Talk - THE PERILS AND PITFALLS OF GREENWASHING

Thursday, 1 June 2023

On 1 June 2023, IMAS facilitated a panel discussion on "The Perils and Pitfalls of Greenwashing". Greenwashing is a key regulatory concern. While a conduct risk, it can also be an inadvertent risk due to non-standardized sustainability data and lack of familiarity with the sustainable investing landscape. This session discussed how best firms can mitigate this risk, put in place clear disclosures on limitations and take necessary actions to improve clarity for end investors.

Attended by a diverse mix of industry participants, we are thankful to our panelists and moderator.

Panelists:

- **Jenn-Hui Tan**, Global Head of Stewardship and Sustainable Investing, Fidelity International
- **Michael Tang**, Head, Sustainable Development Office, SGX RegCo
- **Anjali Viswamohanan**, Director of Policy, AIGCC

Moderator:

- **Anthony Lim**, Chief Risk Officer, Aviva Investors

TAKEAWAY 1:

Greenwashing increasingly takes on a different definition due to what is represented in the media.

TAKEAWAY 2:

To guard against greenwashing risk, investors can make use of these five pillars: (1) Screen your green, (2) In good and green faith, (3) Walk your green talk, (4) Observe the changing shades of green, and (5) Be alert to green duties.

TAKEAWAY 3:

To reduce greenwashing risk, it is recommended for firms to be transparent and authentic, and to rethink the way they generate impact.

TAKEAWAY 4:

To help achieve better information and transparency to reduce the risk of greenwashing, regulators strive to have standardised matrices, consolidated frameworks and ratings and taxonomies as consultation systems.

BUILDING A SUSTAINABLE FUTURE

As part of IMAS' sustainability journey, IMAS has embarked on a collaborative venture with Singapore Green Finance Centre (SGFC) to release a series of sustainable finance training modules on the IMAS iLearn platform, with the aim of bridging Asia's ESG gap. The series of courses take reference from the Sustainable Finance Technical Skills and Competencies (SF TSCs) outlined by the Institute of Banking and Finance Singapore (IBF) and MAS. The first module, ***Climate Change Management***, will be instructed by **Prof Winston Chow**, Associate Professor of Urban Climate at SMU's College of Integrative Studies.

IMAS iLearn - LAUNCH OF CLIMATE CHANGE MANAGEMENT MODULE

Wednesday, 17 May 2023

Given the industry's interest in transition finance and the need to further understand biodiversity and carbonization, this module addresses timely issues such as climate change and climate reporting frameworks. Topics such as **International Agreements and Frameworks on Climate Change**, **Risks Arising from Climate Change** and **Ways to Lower Climate Risks** will be covered in this 4-hour eLearning module.

We strongly encourage front and back office personnels to take on this course to further your understanding of climate change on an intermediate level. This course is recognised under the Standards Training Scheme (STS) and is eligible for STS claims subject to all eligibility criteria being met. Please refer to www.ibf.org.sg for more information.

As the demand for ESG investing continues to grow, IMAS stands ready to support industry professionals, investors, and stakeholders on their journey towards a more sustainable and responsible investment future.

Climate Change Management is available for registration now.

About the Singapore Green Finance Centre (SGFC)

The Singapore Management University, in collaboration with Imperial College London, established Singapore's first centre of excellence in 2020 to support and transform businesses in Singapore and the Asian region in the areas of Sustainability, Climate and Green Finance. The Singapore Green Finance Centre does this through high-impact research, outstanding educational programmes, and new talent development.

The Centre, supported by leading global financial institutions and the Monetary Authority of Singapore, aims to mobilise a growing community of practitioners who are armed with knowledge, hungry for action, and biased towards solutions.

CLIMATE CHANGE MANAGEMENT

Developed by Singapore Green Finance Centre, referencing to IBF's Sustainable Finance Technical Skills & Competencies framework.

COURSE OUTLINE

MODULE 1

Basic Climate Science Concept

MODULE 2

International Agreements and Frameworks on Climate Change

MODULE 3

Concepts of Climate Reporting Frameworks, Guidelines

MODULE 4

Risks Arising from Climate Changes

MODULE 5

What Can Be Done to Lower Climate Risks?

LEARNING OUTCOMES

Participants will be able to:

- Gain disciplinary and multidisciplinary knowledge
- Understand global knowledge
- Be aware of global citizenship

STS-ELIGIBLE

This course is recognised under the Standards Training Scheme (STS) and is eligible for STS claims subject to all eligibility criteria being met. STS claims may only be made for recognised programmes with specified validity period. Please refer to www.ibf.org.sg for more information.

Visit our website to find out more!

ABOUT THE TRAINER

Winston Chow *is an Associate Professor of Urban Climate and Lee Kong Chian Research Fellow based at the SMU College of Integrative Studies. He has been a Principal Investigator for the multi-institute Cooling Singapore initiative since 2017, and currently leads interdisciplinary research on how Singapore's urban climate risks will change as its climate warms. His previous research projects focused on: Urban heat island science, Impacts and mitigation and Climate change vulnerability in subtropical cities.*

He has authored close to 50 peer-reviewed academic journal articles and book chapters on his research to date. Dr. Chow is also Associate Editor for the journal Climate Risk Management, and an Editorial Board member for Landscape and Urban Planning and PLOS Sustainability and Transformation.

RESKILLING AND UPSKILLING THE INVESTMENT INDUSTRY

As part of its core mission, IMAS is dedicated to providing opportunities for reskilling and upskilling of the industry, ensuring that Singapore remains globally competitive and equipped to navigate the dynamic landscape of the financial sector.

IMAS iLearn – RELAUNCH OF SUSTAINABILITY, ETHICS, RULES & REGULATIONS BUNDLE

Wednesday, 14 June 2023

Tailored for investment management professionals in Singapore, IMAS is pleased to announce the relaunch of the **Sustainability, Ethics, Rules & Regulations Bundle** on iLearn for the third consecutive year. The bundle offers Core CPD courses at a discounted rate and up to 70% FTS Funding (capped at $500 per participant) by IBF is also available for those eligible.

This relaunch includes new selections such as the **AML/CFT and Cayman Island Regulatory Regime**, targeted particularly at investment professionals going into private assets and alternatives, and require in-depth knowledge of the Cayman Island regime to better understand customer due diligence and risk assessment.

A new ESG course focusing on **Sustainable Investing in Practice** has also been added. This is an introductory course that explores the risks and opportunities that underpin sustainable investing, as well as the practical implications of key concepts such as active ownership and net-zero investing.

Recognizing the importance of staying up-to-date with industry trends and best practices, existing modules have also been refreshed:

Advertising and Marketing for Retail Fund Management Companies:
The updated module delves deeper into various advertising and marketing techniques, including digital marketing, branding, and investor communication. By incorporating new case studies, professionals gain practical insights into real-world scenarios, allowing them to apply best practices in their marketing efforts.

Guidelines on Liquidity Risk Management Practices for FMCs:
The updated module provides a more in-depth exploration of liquidity risk assessment, stress testing, and contingency planning. Through the inclusion of new case studies, investment professionals can analyze real-life liquidity risk management challenges and develop effective strategies to mitigate risks.

VISIT ILEARN AND REGISTER TODAY!

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Up to 70% FTS Funding (capped at $500 per participant) by IBF is also available for those eligible.

IMAS Sustainability, Ethics, Rules & Regulations Bundle

6 HOUR BUNDLE FOR YOUR CORE CPD NEEDS

SELECT YOUR 6 HOURS FROM THIS RANGE OF MODULES BELOW:

- **Sustainable Investing in Practice - An Introduction (1-hr)** [NEW]
- Anti- Money Laundering and Countering the Financing of Terrorism (AML/CFT) in Singapore (1-hr)
- **Anti-Money Laundering, Countering the Financing of Terrorism (AML/CFT) and the Cayman Island Regulatory Regime (1-hr)** [NEW]
- Corporate Governance for Fund Managers and the Senior Management Individual Accountability Regime (1-hr)
- Introduction to MAS Regulation for Fund Managers (1-hr)
- **Guidelines on Liquidity Risk Management Practices for FMCs (1-hr)**
  ★ [Content refreshed as of Jun 2023 to include more in-depth details and new case studies]
- **Advertising and Marketing for Retail Fund Management Companies (1-hr)**
  ★ [Content refreshed as of Jun 2023 to include more in-depth details and new case studies]
- Market Abuse in Singapore (1-hr)
- Guidelines on Individual Accountability and Conduct (1-hr)
- Registration and Compliance Considerations for Variable Capital Companies (VCC) (1-hr)
- Ethics in the Financial Industry (1-hr)
- Strengthening Cyber Resilience Singapore (1-hr)

MAS Guidelines and Information Paper on Environmental Risk Management (EnRM) for Asset Managers and MAS Disclosure and Reporting Guidelines for Retail ESG Funds is still undergoing content refresh and will be available for sign up in the bundle after accreditation

VISIT OUR WEBSITE TO FIND OUT MORE!

RESKILLING AND UPSKILLING THE INVESTMENT INDUSTRY

IMAS Human Capital Committee - LAUNCH OF MENTORSHIP PROGRAMME FOR ASSET MANAGEMENT PROFESSIONALS

Tuesday, 13 June 2023

We are excited to announce the launch of IMAS' pilot Mentorship Programme, developed under the auspice of IMAS Human Capital Committee. This initiative creates a platform for professionals with up to 5 years of experience within the asset management industry to learn from senior industry practitioners.

The Mentorship Programme pairs mentors with their mentees on a 1-1 basis, fostering an environment for meaningful knowledge exchange and guidance. Click here to view the full profile of the mentors.

If you are keen to be mentored, please contact IMAS at enquiries@imas.org.sg.

UPHOLDING STRONG GOVERNANCE AND COMPLIANCE

Wednesday, 14 June 2023

Under the auspices of the IMAS Regulatory Committee, the 16th IMAS Regulatory Roundtable gave members a chance to deepen their understanding on the revised guidelines on Business Continuity Management (BCM) released by MAS in June 2022. This timely event was sponsored by Deloitte & Touche Enterprise Risk Services Pte Ltd and was highly unique as Deloitte's BCM team helped participants demystify the guidelines not only by giving a comprehensive presentation, but also through a process of gamification.

Participants were divided into breakout groups to take on different roles in a fictitious organisation as they identified plausible scenarios that would disrupt the firm's business, mapped critical services and developed a BCM audit plan. This format was very well-received by participants and we hope to bring our members more innovative ways of staying up-to-date with the current regulations. Full materials from the presentation are available on our website.

IMAS is pleased to collaborate with Neurowyzr, a Singapore-based deep neuroscience and brain capital company to offer a suite of brain capital solutions for the investment management industry.

attayn CORPORATE

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A digital tool that employs gamification of deep neuroscience tests to deliver objective, holistic and proactive insights to employees and organisations to measure function of the brain.

Click here to learn more.

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2 NEUROSCIENCE OF LEADERSHIP FOR THE FINANCIAL SERVICE SECTOR

This in-person programme is designed to provide professionals from the Financial Services industry with a deeper understanding into neuroplasticity and mental resilience, on an individual and organizational level.

Click here to learn more.

ESG DISCLOSURE LINKED TO ENHANCED RISK-REWARD IN SINGAPORE

This analysis is by Bloomberg Intelligence Director of ESG Research EMEA & APAC Adeline Diab and Bloomberg Intelligence ESG analyst Conrad Tan. It appeared first on the Bloomberg Terminal.

The 10 MSCI Singapore firms with the best ESG disclosure have delivered an average return that was 8 percentage points higher than the bottom 10 companies over the past three years while exhibiting lower volatility. Size could play a part; the top disclosure scores are skewed toward big caps. New rules making more ESG disclosures mandatory could drive improvements. Singapore Exchange, which doubles as a regulator, leads by example with the most improved disclosure since 2019, while Sea Ltd lags. By sector, real estate falls behind due to weak disclosure on key environmental and governance issues.

HIGHER ESG DISCLOSURE COULD BE LINKED TO RETURNS IN SINGAPORE

The 10 companies with the best ESG disclosure generated higher returns than the bottom 10 companies in the MSCI Singapore over the past three years, with an average excess return of 17.3% vs. the index. As a group, firms with better disclosures also appeared less volatile over various time frames.

AVERAGE EXCESS RETURN OF 17.3% OVER INDEX

The 10 MSCI Singapore companies with the best ESG disclosures, ranked with BI's ESG scores, had an average excess total return of 17.3% above the index over the past three years (to March 14, 2023). That was nearly double the 9.3% average excess total return for the bottom 10. The median excess total return for the top 10 was 14.1% versus minus 2.0% for the bottom 10.

The average and median excess total returns for the top 10 were also superior over the past 12 and 24 months. This may partly reflect interest-rate sensitivity of different sectors during a period of rising interest rates, with banks such as DBS Group generally outperforming real-estate and tech firms.

Excess Total Returns Compared

Excess return vs. MSCI Singapore	3 years	2 years	1 year
Average			
Top 5 companies by disclosure	30.9%	15.3%	6.8%
Bottom 5 companies by disclosure	23.7%	-2.4%	-1.8%
Top 10 companies by disclosure	17.3%	19.9%	12.1%
Bottom 10 companies by disclosure	9.3%	1.5%	-1.2%
Median			
Top 5 companies by disclosure	22.6%	18.8%	0.3%
Bottom 5 companies by disclosure	13.9%	6.9%	0.3%
Top 10 companies by disclosure	14.1%	16.0%	4.2%
Bottom 10 companies by disclosure	-2.0%	6.5%	-0.2%

Note: Average and median excess total returns for each group versus the MSCI Singapore index are calculated over the periods shown to 14 March 2023. Index members Grab Holdings and Jardine Cycle & Carriage were excluded as the companies have not yet been assigned the relevant ESG disclosure scores.

Bloomberg

Source: Bloomberg Intelligence

LINK WITH LOWER VOLATILITY

Share volatility may also be linked to the quality of ESG disclosure. The five MSCI Singapore companies with the lowest disclosure scores show greater volatility, with average 30-day volatility of 30.3%, more than double the 14.3% for the top five companies. The gap persists when measured over longer periods, and when the top 10 firms are compared to the bottom 10.

The difference may be partly due to size; of the 20 index members analyzed, we observed a slight tilt toward better disclosures by large-cap companies. The 10 firms with above-median ESG disclosure scores account for 57% of index members' total market capitalization, and the top five for 38%. This excludes Grab Holdings and Jardine Cycle & Carriage, which haven't been assigned disclosure scores.

Average Volatility Comparison

Average volatility	30-day	60-day	90-day	180-day	1-year	2-year	3-year
Top 5 companies by disclosure	14.3%	14.8%	15.5%	17.7%	17.2%	17.6%	22.8%
Bottom 5 companies by disclosure	30.3%	28.2%	32.6%	30.7%	32.2%	29.3%	32.0%
Top 10 companies by disclosure	23.2%	20.6%	19.6%	19.9%	20.4%	21.2%	26.5%
Bottom 10 companies by disclosure	24.9%	23.3%	27.0%	26.5%	26.5%	24.4%	28.0%

Note: Volatilities are calculated over the periods shown to 14 March 2023. Index members Grab Holdings and Jardine Cycle & Carriage were excluded as the companies have not yet been assigned the relevant ESG disclosure scores.

Source: Bloomberg Intelligence

REGULATORS TIGHTEN THE SCREWS

Stricter ESG disclosure rules could pressure companies to improve. Singapore has made climate reporting mandatory for listed firms on a "comply or explain" basis for reports published starting in 2023; this will later be tightened to just "comply" for some industries including financials and energy. Regulators have also announced new rules requiring listed firms to disclose the breakdown of pay to their CEOs and directors, and introduced a nine-year hard limit for independent directors on boards of Singapore-listed firms starting in 2025.

For banks, insurers and asset managers, the Monetary Authority of Singapore introduced guidelines on environmental risk management that took effect in June 2022. We expect the new rules to enhance ESG disclosure among MSCI Singapore members.

New ESG Disclosure Rules for Singapore Companies

- All SGX-listed companies must provide climate reporting on a 'comply or explain' basis in their sustainability reports starting from the financial year (FY) commencing 2022
- From FY2023, climate reporting will be mandatory (just 'comply') for the financial, agriculture, food and forest products, and energy industries
- From FY2024, climate reporting will also be mandatory for the materials, buildings and transportation industries
- From January 2025, all SGX-listed companies must disclose the exact amount and breakdown of remuneration paid to their directors and CEO in annual reports
- From June 2022, banks, insurers and asset managers should disclose their approach to managing environmental risk, including quantitative metrics such as exposures to sectors with higher environmental risk, at least yearly
- Disclosures should be in accordance with well-regarded international reporting frameworks such as recommendations by the Financial Stability Board's Task Force on Climate-related Financial Disclosures (TCFD)

Bloomberg

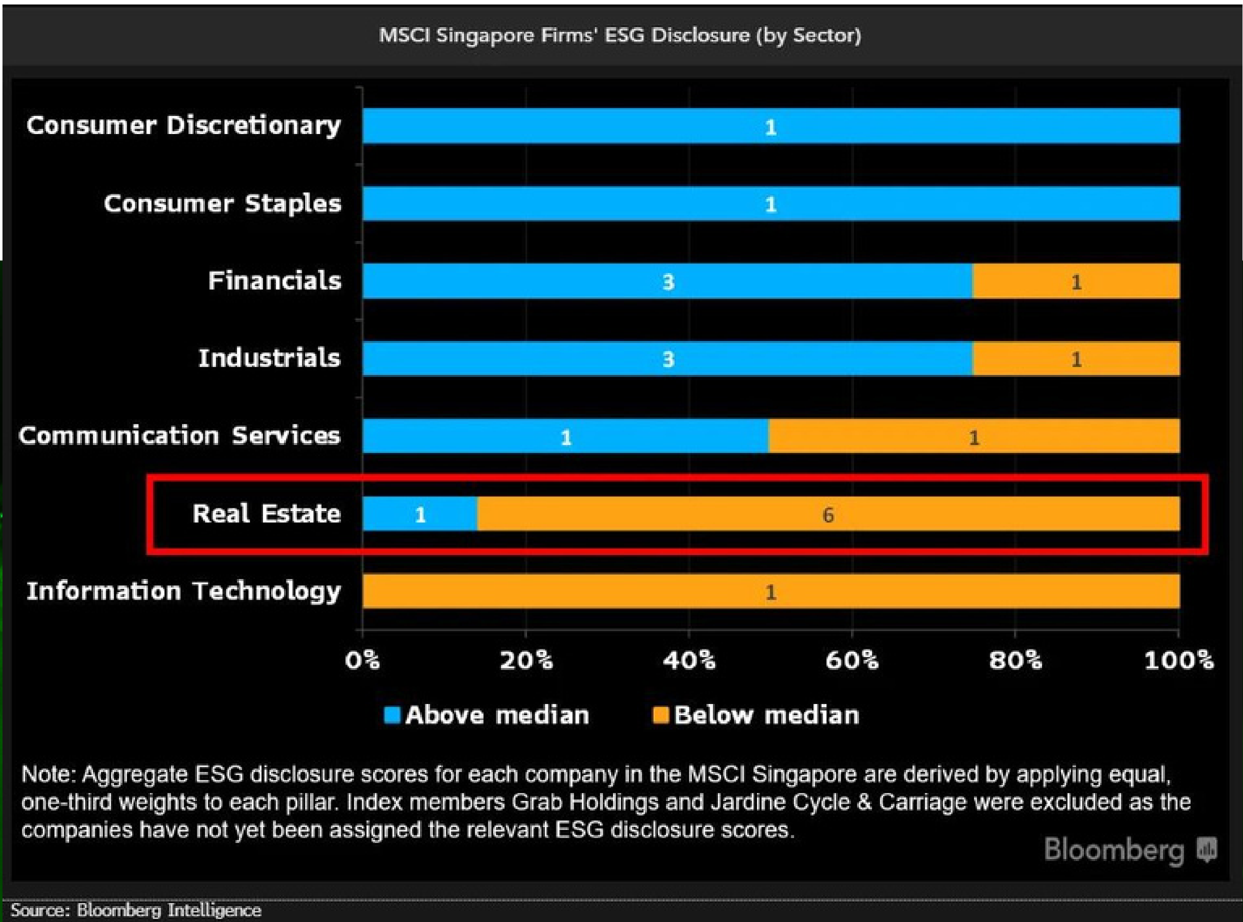
Source: Singapore Exchange (SGX), Monetary Authority of Singapore, Bloomberg Intelligence

MSCI SINGAPORE REAL ESTATE COMPANIES SHOW WEAK ESG DISCLOSURE

Real estate lags other MSCI Singapore sectors in ESG disclosure, with just one out of seven firms showing an above-median disclosure score. Disclosure on energy management, water management, climate exposure and pay for performance — key environmental and governance issues — remains weak, highlighting opportunities for targeted efforts to improve.

WHICH SECTOR LAGS? REAL ESTATE, 16% OF INDEX MARKET CAP

Real estate stands out with six of the seven companies showing below-median ESG disclosure due to lagging environmental and governance disclosure. Energy management, water management and climate exposure are key issues for the sector, and many firms have yet to show adequate disclosure such as climate scenario analysis of their assets. Mapletree Logistics Trust, CapitaLand Integrated Commercial Trust and Mapletree Pan Asia Commercial Trust also lack governance disclosures that enable investors to assess how well executive pay is aligned with financial performance, compared with City Developments, which has the best overall disclosure in the sector. New rules announced in January 2023 requiring Singapore-listed firms to disclose the breakdown of CEO and directors' pay starting in 2025 may help.



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FUND MANAGEMENT

SPECIAL TOPIC:

RENEWABLE ENERGY - SOLAR

The "Green Transition”

The shift to renewables is sparking increased interest for alternative energy sources, from solar to wind, to geothermal avenues. This update examines the feasibility of solar as a viable substitute for fossil-based fuels, its adoption rate, and the related investment opportunities.

If every rooftop on the planet were installed with a solar panel, this would generate a total of 27 petawatt hours of electricity per year, more than the combined electricity consumption of the world in 2018 [1].

But is this practicable? as it would involve a total surface area of 0.2 million square kilometres - an area almost equal to the size of the UK [2]. This is an extreme example, but it does not discount the possibility of solar being a viable renewable energy source to supplement and eventually overtake the capacity from traditional energy sources.

1 Source: research paper from SFI Research Centre for Energy, Climate and Marine in University College Cork (UCC), 2021

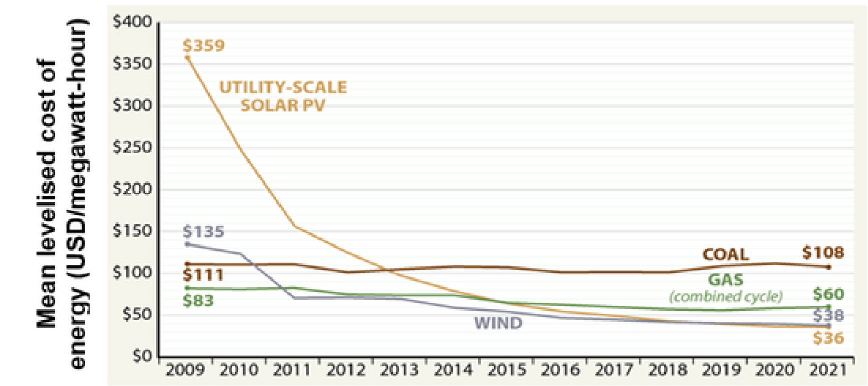
2 Source: Forbes, 2021

The journey so far and the current environment

As is the case with new technologies, early adoption usually involves steep implementation cost. With solar, in the early years, government subsidies were needed to make economic sense. But with time, and as solar became widespread, economies of scale kicked in and the installation cost of solar declined to be more competitive.

The influx of cost competitive producers in China, who now dominate the solar photovoltaic (PV) panels market, has also brought the costs down. Solar is now more cost competitive compared to other traditional energy sources like coal and gas (see Figure 1) and can be installed effortlessly without the need for subsidies.

Figure 1: Historic average Levelised Cost of Energy (LCOE) - per megawatt-hour, unsubsidised values, 2009 to 2021

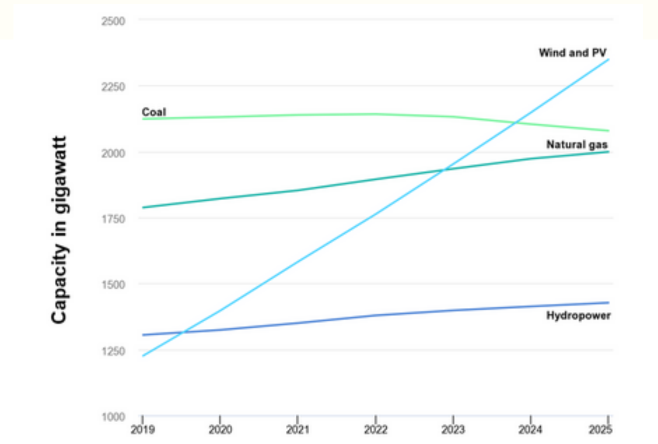


Source: Lazard, 2021

Supportive government policies, like the 2022 “Inflation Reduction Act” in the US, which aims to cut emissions and slow global warming, may further accelerate the adoption of renewables like solar. The Act looks to cut US emissions by hastening the deployment of clean electricity and vehicles, where wind along with solar have been identified as having a critical role to play in the transition.

The timeline to reduce reliance on traditional energy sources like natural gas, has also been accelerated by the Russia-Ukraine conflict. This will raise the appetite for alternative sources like solar, even further. The International Energy Agency (IEA)’s Renewables 2020 report estimates that wind and solar is expected to displace coal as the largest energy source globally by 2024 [3] (see Figure 2).

Figure 2: Wind and solar capacity (in gigawatts) expected to overtake gas and coal as the largest energy source by 2024



Source: International Energy Agency, 2020

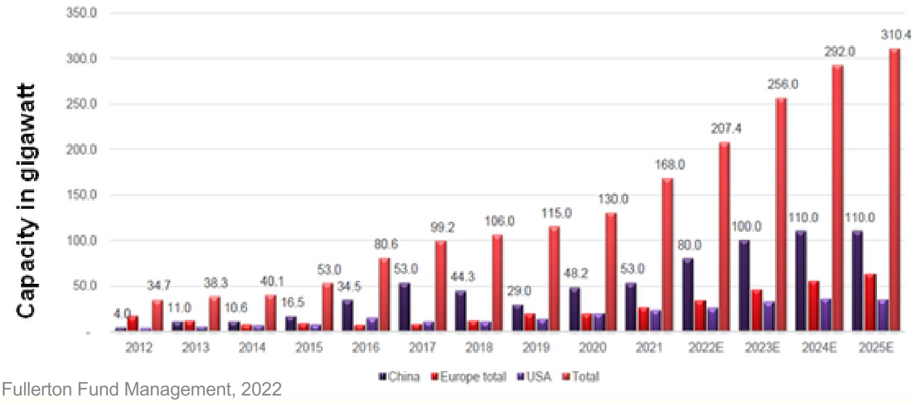
[3] Source: International Energy Agency Renewables 2020 report, November 2020

The solar industry today - dynamics and key players

China is the key supplier in this industry - being the largest manufacturer of solar PV panels globally. Its sheer scale means it produces these panels at lower cost levels that few can match. That said, the cost of solar PV modules have still increased by over 20% [4] from 2020 to 2022, as the costs of raw materials - polysilicon, has risen significantly. However, this is still not expected to slow the adoption of solar as the cost of other energy sources, like gas and coal have risen much further.

Fullerton expects total solar capacity installation to grow by over 20% per annum from 2021 to 2023, and to exceed 250 gigawatts in 2023, compared to 168 gigawatts recorded in 2021. This is based on Fullerton's analysis in selected key markets, driven by the estimated demand in locations like China, the EU (notably from Germany), and the US (see Figure 3).

Figure 3: Global solar capacity installation (in gigawatts)



Soure: Fullerton Fund Management, 2022

While rising demand for solar may potentially translate to all-round opportunities for manufacturers, selectivity is still key. This is because almost every sub-component solar manufacturer has been ramping up capital expenditure. This may result in overcapacity and reduced operating margins in most solar sub-segments. There is however less competition in the inverters segment as this is a more concentrated sector with fewer players. As such, operating margins here is expected to be more stable. Inverters are devices that convert Direct Current (DC) electricity to Alternating Current (AC) electricity and is the most important piece of equipment in the solar energy system.

On solar farms, there are distinct opportunities across different geographical locations. There are more attractive opportunities for US and European solar farms versus Chinese and Indian solar farms. There is stronger demand in the Developed Markets and greater ability to pass on the higher cost there. There is less flexibility to increase prices in China, while India's market is overly competitive, thus reducing profitability.

Our conclusion

The green energy shift is spawning opportunities in the renewables space in areas like solar. This is an industry with sustainable growth ahead as economies transition to cleaner energy. Increased demand for solar as this becomes cheaper given rising adoption, means it is here to stay. While the longer-term outlook appears sanguine, there are still cyclical factors, and considerations to continually evaluate, in order to potentially pick selective winners in this space.

[4] Source: Infolink, August 2022

The green investment path towards decarbonisation in Asia

By Kristian Atkinson, Portfolio Manager

Toni Liang, Investment Graduate, Fixed Income

Key points

- Emerging Asian economies have lagged behind in the shift to low carbon technologies. Asia Pacific produces about half of the world's carbon dioxide, with China and India the first and third-largest emitters respectively.

- Governments and regulators in the Asia Pacific region are proactively defining green assets in financial markets and tailoring their own regulatory frameworks based on existing international structures.

- Standardisation of disclosure rules is key. Hong Kong and Singapore have partially adopted disclosure requirements in line with the Task Force on Climate-related Financial Disclosures (TCFD) recommendations.

- Power generation is the biggest contributor to green-house gas (GHG) emissions in Asian emerging market (EM) countries. However, there are encouraging trends at a corporate level that leading players in China and India are driving renewable energy capacity expansion, aided by effective government policy support. This is key for Asian emerging markets (EM) to achieve their net-zero targets.

- At Fidelity, we monitor candidates with strong potential towards delivering emission-reduction targets and ultimately direct capital towards those that we believe can provide positive environmental effects.

Evolution of regulatory frameworks

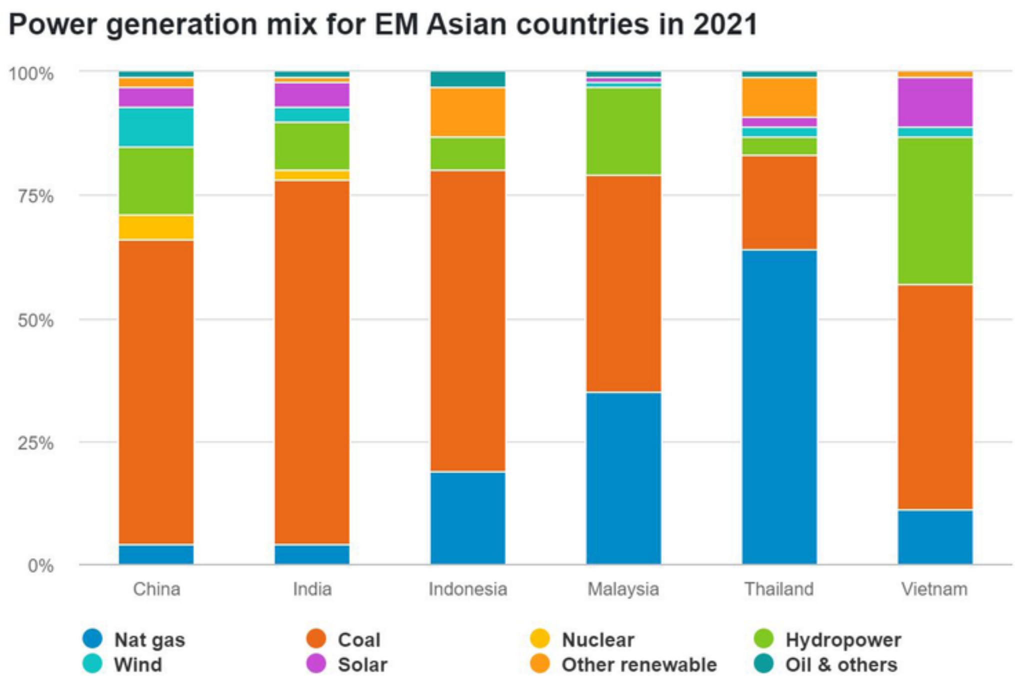
Defining principles and standardising disclosure rules provide an investment path towards greener economies. Over the past two years, environmental, social and governance (ESG) awareness has been evolving across the region, with greater environmental considerations, in tandem with national policy initiatives and increasing scrutiny of issuers.

China, India and ASEAN countries have been enhancing issuers' access to green financing via both private and public channels, by standardising their green bond principles. Singapore is one of the leading players in the region with the launch of its green bond framework and the second version of its green and transition taxonomy.

Standardisation of disclosure rules is key, with individual frameworks in various stages of development. Advanced countries like Hong Kong and Singapore have partially adopted disclosure requirements in line with the Task Force on Climate-related Financial Disclosures (TCFD) recommendations, with specific definitions provided by local regulators. However, there is no explicit mention around the disclosure of emission reduction targets and no required disclosure on scope 3 emissions.

Industry actions toward net-zero targets - renewable energy

Power generation is the biggest contributor to green-house gas (GHG) emissions in Asian emerging market (EM) countries as fossil fuels account for over 70 per cent of energy mix. The transition to renewable energy is therefore key for these economies in hitting their net-zero commitments. It is also capital intensive and therefore requires support from debt markets. Fortunately, governments recognise this and the sector is therefore well-supported by policies and many countries have been delivering significant progress towards their net-zero targets.



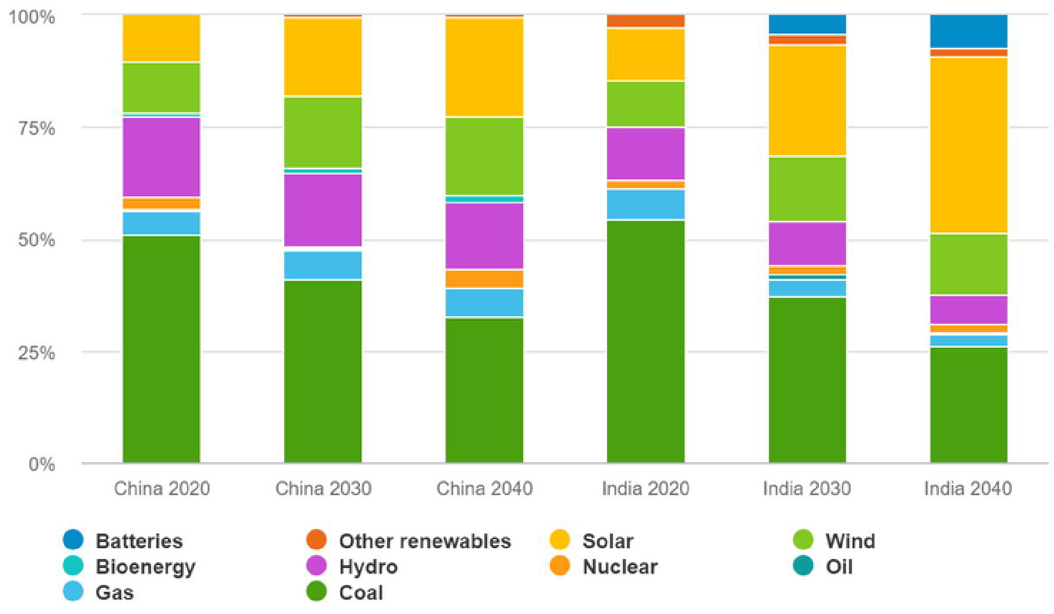
Source: BP Statistical Review 2022

China and India are expected to drive renewable capacity expansion. Historically, China has the strongest track record of delivering capacity targets, hitting its 2020 installation goals by adding 463 gigawatts (GW) within six years. The adoption of Feed-in Tariff (FiT) for wind and solar power has supported the sector's early-stage expansion. Although the tariff has tapered off like in many developed economies as the market and technology mature, a more commercialised system (carbon emission trading system) has been introduced since 2021 to further standardise carbon emissions.

India has increased its renewable capacity by 68GW (72 per cent of total newly installed capacity) between 2016-2022, mainly in wind and solar power. The country has also benefited from a series of supportive schemes, including purchasing obligation and dispatch priorities and is expected to continue to sponsor its 2030 renewable energy capacity targets. Among ASEAN countries, Vietnam has been implementing fixed tariffs and dispatch priority for over a decade, which has led to record high renewable energy capacity expansion over the past three years.

The high level of incentives has been critical for renewable energy capacity growth, which is likely to scale up in countries where wind and solar power are not yet cost-competitive. Meanwhile, major state-owned entities in the utility sector are expected to take the lead in developing new capacity, benefiting from their strong funding access and market position.

Installed capacity in China and India 2020, and projections up to 2040 in the Stated Policies Scenario



Source: IEA, as of 2022

[Learn more about our sustainable investing approach]

5 Tech-driven megatrends

transforming modern society

Successive waves of new technologies have emerged since the commercialization of computers began in the 1960s. These innovations have become a foundation of the modern economy. Miniaturization allowed computers to shrink from the size of a factory floor to a laptop and then to smart devices. Computing power has grown even as the costs of processing and memory have declined. Network technologies and public key cryptography have fostered the emergence of the internet, the World Wide Web and the cloud. Mobile technologies have provided us smartphones and other smart devices that offer “anytime, anywhere” connectivity to access, upload and download content. Database design has progressed to allow for more robust inquiries on ever growing amounts of data at ever increasing speeds. Artificial intelligence (AI) algorithms predict our behaviors and personalize our displays to foster engagement, and machines can now learn and improve upon their own behaviors and outcomes through deep learning.

As these new technologies emerged, they impacted modern society, generating a set of five megatrends over time.

1. Democratization of access to the commercial transaction rails
2. Growing reliance on intangible assets to drive business value
3. Expanding power of the crowd
4. Quantification of behaviors to shape commercial outcomes
5. Institutionalization of the individual participant

Each megatrend represents a foundational shift in the way that modern society now operates. This type of profound change does not happen all at once, but rather incrementally. Each successive cycle of tech-driven innovation altered behaviors by a degree or transformed, creating unique capabilities and driving a shift in expectations. It is only with the distance of time that the collective impact of these changes can be appreciated. Many of these trends have been building for 60 or more years. Where we are today already marks a significant shift away from how modern society operated when the megatrend first emerged.

Taking stock of where we are today is critical because a fourth tech-driven innovation cycle is beginning. New technologies are slowly gaining momentum. Digital currencies and cryptocurrency-backed payment networks, layer 1 blockchain development platforms, programmable tokens with self-executing smart contracts, oracle networks, ZK (zeroknowledge) scaling solutions and even newer innovations are running 24/7/365 (24 hours a day, 7 days a week, 365 days a year) proofs-of-concept in an ecosystem already valued at more than US$1.0 trillion.[1]

The capabilities that these new technologies can deliver are becoming better understood, and the ways that individual users and institutions might utilize the new offerings can be anticipated. **Each megatrend can be extrapolated to frame how the next set of changes may alter modern society and behaviors.** Indeed, based on the nature of both the emerging technologies and already-accomplished behavioral shifts, it is reasonable to expect that the unfolding fourth tech-driven innovation cycle may represent the realized fulfillment of each megatrend.

While each megatrend has developed along a unique trajectory and worked slowly over time to alter behaviors and expectations, one common thread runs through them all: The role of the individual participant has been strengthened and modern society's institutions and enterprises have been forced to rethink their value proposition and their engagement model to remain competitive and relevant. The gaps that used to favor institutions—including commercial enterprises—over individual participants are reducing, and the ability of many individual participants to use tech channels to band together and pursue long-term goals are allowing them to amplify their own voices and powers.

Understanding that these shifts in behaviors and expectations have been building for 60 years helps to underscore where the next tech-driven innovation cycle may take us and our full paper 5 Tech-Driven Megatrends Transforming Modern Society provides an in-depth examination and lays out a vision that can inform our partners and customers, as well as Franklin Templeton itself, on how to evolve our offerings for the future.

1 Source: CoinMarketCap.

This document was prepared for the IMAS newsletter only. Not for further distribution.

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INVESTMENT MANAGEMENT
ASSOCIATION OF SINGAPORE

IMAS DIGEST

JUL. 2023 | ISSUE 8

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