BENCHMARKS
Fallbacks for derivatives linked to key IBORs take effect

INTERVIEW
Kepos Capital's Bob Litterman on climate risk

CAPITAL
Banks adopt benchmarking for standardised approaches

IQ

ISDA® Quarterly

Vol 7, Issue 1: February 2021 | www.isda.org

*GOING GREEN

As the world shifts to a green economy, the derivatives market will play an important role in the transition

A Flying Start

In a year that began with the inauguration of a new US administration, the start of a post-Brexit relationship between the European Union and the UK and an ongoing global pandemic, the derivatives agenda might not be at the top of everyone's watchlist. But two big developments took place in January that will have significant, ongoing impacts on derivatives markets.

The first is new fallbacks for derivatives linked to certain key interbank offered rates (IBORs), which came into effect on January 25. It means that, from now on, a fallback based on a consistent and transparent methodology will automatically apply if an IBOR permanently ceases to exist or, for LIBOR, is deemed to be non-representative of its underlying market. This introduces a vital, viable safety net for the derivatives market, and significantly reduces the risk of disruption in the event a cessation occurs before IBOR transition efforts are complete. At the point the fallbacks took effect, more than 12,000 entities globally had adhered to an ISDA protocol that allows firms to incorporate the new fallbacks into existing IBOR derivatives contracts (see pages 26-28).

The other big development is the launch of a digital ISDA Master Agreement on ISDA Create, the online documentation negotiation platform. For the first time, market participants will be able to access and negotiate the ISDA Master Agreement, a cornerstone of the derivatives market, in digital form, bringing with it increased efficiencies and resource savings for firms (see page 7). This is an important step on the path to greater standardisation, digitisation and automation, and other initiatives will emerge in the months ahead, including ISDA's first natively digital definitional booklet and a user platform that will allow market participants to access ISDA documentation in electronic form.

The rest of 2021 will see an equally busy agenda, with the implementation of phase five of the initial margin requirements for non-cleared derivatives, finalisation of the latest Basel measures in individual jurisdictions, and further development of environmental, social and governance (ESG) markets. We take a dive into that latter topic in this issue of **IQ**. Our cover story looks at the development of the ESG space and explores the important role that derivatives will play (see pages 12-17).

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CONTENTS

REGULARS

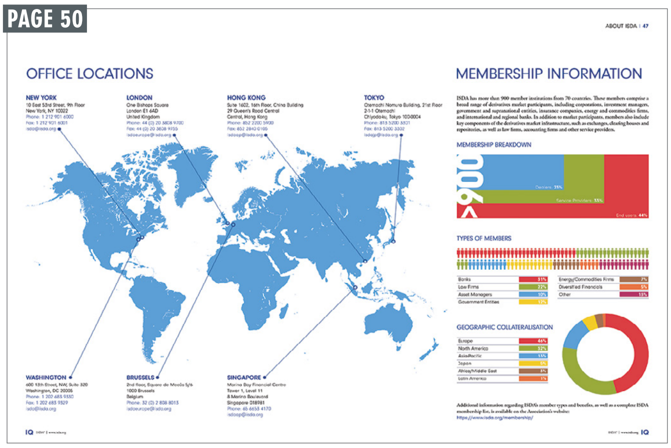
03 Foreword

06 Letter from the CEO
Benchmark reform, Brexit, initial margin requirements and ongoing challenges posed by the coronavirus pandemic will keep the derivatives industry busy in 2021

07 In Brief
- ISDA Master Agreement Goes Digital on ISDA Create
- Kinetix and Linklaters Selected for User Platform
- SEF Trading Spikes After Brexit Transition Ends
- Report Recommends Reduction in Procyclical IM
- EC Calls on Industry to Reduce UK Clearing Post-Brexit
- COVID Crisis Highlights Need to Reduce Trading Book Procyclicality
- Pandemic Adds to Basel III Implementation Challenge

PAGE 36

PAGE 50



ALSO IN THIS ISSUE

26 Fallbacks Take Effect
New fallbacks for derivatives linked to key interbank offered rates came into effect at the end of January, marking a major step in reducing the systemic impact of an IBOR permanently ceasing or, in the case of LIBOR, being deemed non-representative

30 Promoting Consistency
A number of banks are using ISDA's Standardised Approach Benchmarking initiative to make sure their method for calculating trading book risk capital is consistent

34 Transformational Change
The new 2021 ISDA Interest Rate Derivatives Definitions will bring major benefits to derivatives market participants, including a web-based user interface that will make the definitions much easier to navigate

36 ISDA in Focus
With just seven months to go until the implementation of phase-five initial margin requirements, Tara McCloskey of MetLife Investment Management discusses the firm's preparations

40 An International Focus
Sir Bernard Eder, an international judge at the Singapore International Commercial Court, talks to **IQ** about how the court has continued to operate during the pandemic

44 Net Positive
Following the passing of legislation on the enforceability of close-out netting in India, Sanjeev Sanyal, principal economic adviser to the government of India, talks to **IQ** about the outlook for India's capital markets

48 Quiet Reformation
Habib Motani, consultant at Clifford Chance, explores ISDA's ongoing work to promote netting certainty in emerging markets

50 ISDA Office Locations

52 ISDA Board

54 ISDA Conferences

Volume 7, Issue 1: February 2021

THE COVER PACKAGE

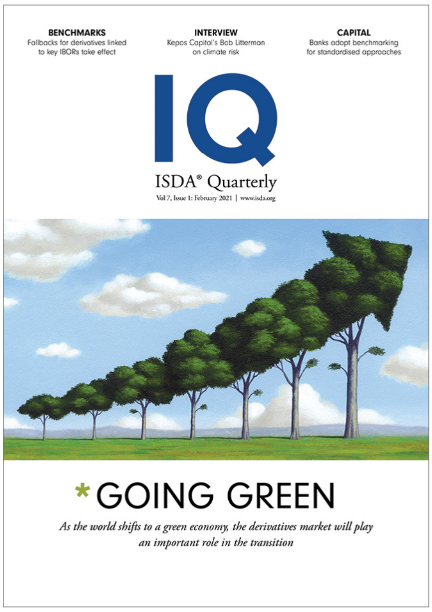
GOING GREEN

11 Introduction

12 Scaling a Market
As countries around the world step up their efforts to reduce carbon emissions, the derivatives market will be critically important in managing risks and facilitating the transition to a green economy

18 Call to Action
In September 2020, the Commodity Futures Trading Commission published a major report on managing climate risk in the US financial system. Bob Litterman, founding partner at Kepos Capital and chair of the climate-related market risk subcommittee of the CFTC's market risk advisory committee, discusses the report's findings and recommendations

21 Innovating in ESG
The universe of ESG-related derivatives includes a wide range of standardised and bespoke instruments that are used to manage many different types of risk




PAGE 18

"Not pricing climate risk is the root cause of climate change. Financial markets are incredibly efficient at directing capital towards profit opportunities, but those opportunities depend on the incentives embedded in the prices they face"

Bob Litterman, Kepos Capital

Ready for the Challenge

Benchmark reform, Brexit, initial margin requirements and ongoing challenges posed by the coronavirus pandemic will keep the derivatives industry busy in 2021, writes ***Scott O'Malia***

Last year was unique in so many ways, with all of us having to adapt to living and working in the midst of a global pandemic. Despite the many challenges this posed, real progress was made on several key industry priorities, notably benchmark reform. While the arrival of vaccines should hopefully bring some semblance of normality, 2021 brings with it a succession of big deadlines that will continue to test the industry to the limit.

Given end-2021 is expected to be set as the end point for most LIBOR settings, benchmark transition will continue to be a top priority. The good news is that some important steps have already been taken. In October 2020, ISDA launched the IBOR Fallbacks Supplement and protocol, enabling market participants to incorporate robust fallbacks into new and existing derivatives trades from the effective date of January 25, 2021. This will go a long way to reducing the systemic impact of a key interbank offered rate becoming unavailable.

> "Given end-2021 is expected to be set as the end point for most LIBOR settings, benchmark transition will continue to be a top priority"

However, several challenges remain – for example, dealing with 'tough legacy' exposures and encouraging greater liquidity in alternative reference rates. As we approach the end-2021 deadline, ISDA will continue to support the industry by seeking clarity on areas of uncertainty, developing standards and documentation where necessary, and producing educational materials and events to promote transition.

Benchmarks won't be the only big-ticket item. Following a one-year deferral at the peak of the coronavirus crisis, phase five of the initial margin (IM) requirements for non-cleared derivatives will come into force on September 1, bringing more than 3,600 counterparty relationships into scope. That's far in excess of the numbers captured in previous phases, and will put an immense strain on the industry's ability to comply.

ISDA has developed a number of solutions to help firms meet the requirements, including documentation and user guides, the ISDA Standard Initial Margin Model and ISDA Create, an online documentation negotiation tool. We are also working on initiatives to drive best practice and improve operational processes in the collateral management space. Ultimately, though, time will be the key factor. If firms haven't begun their regulatory IM compliance projects, they need to start now – this is something that will take months, not weeks or days.

Phases five and six of the IM requirements weren't the only rules to see a one-year deferral during the coronavirus pandemic – the final Basel III measures were also postponed until January 2023. That means 2021 will be critical for the development of local rules to implement the Fundamental Review of the Trading Book and revised credit valuation adjustment standards. ISDA will continue to support industry implementation with fact-based advocacy, quantitative analysis and mutualised solutions like the ISDA Standardised Approach Benchmarking initiative, which promotes consistent implementation of the standardised approaches for calculating capital requirements.

This year will also see increased focus on environmental, social and governance (ESG) issues, the impact of Brexit and engagement with the new administration in the US. On Brexit and broader global coordination, we will continue to advocate for an effective cross-border framework for derivatives. For example, we believe trading venue equivalence between the EU and UK is needed to avoid fragmentation following the end of the Brexit transition period – a point we will continue to raise with EU and UK authorities.

On ESG, we are focusing on a variety of areas, including the promotion of consistent standards, taxonomies and practices to enable operational efficiency and consistent measurement of ESG progress. ISDA documentation and definitions are already being used to document ESG derivatives transactions, and we will adapt and/or add to these if needed.

On top of all this, we will be pushing forward with our various initiatives to promote greater automation and efficiency in derivatives markets. Central to that effort has been the development of standards to enable the digitisation of documentation and automation of post-trade operations – for instance, through the launch of the Common Domain Model (CDM), ISDA Create and the ISDA Clause Library.

This drive for efficiency will remain a key priority for ISDA. During 2021, we will continue doing what we've always done – deliver industry solutions to reduce costs and make it easier for our members to do business.

Scott O'Malia
ISDA Chief Executive Officer

ISDA Master Agreement Goes Digital on ISDA Create

ISDA and Linklaters have made the ISDA Master Agreement digitally available for the first time on ISDA Create, bringing greater efficiency, transparency and automation to the negotiation process and enabling firms to capture key relationship data for risk management and other purposes.

ISDA Create allows users to produce and agree documentation completely online, as well as digitally catch, process and store legal data from these documents. Originally launched in January 2019 to help firms negotiate initial margin documentation to comply with global margin requirements, the platform was extended last year to other documents, including generic amendment agreements to ISDA published documents and an interest rate reform bilateral template package to facilitate the transition to risk-free rates.

The latest extension includes the 1992 ISDA Master Agreement (Multicurrency – Cross Border) and the ISDA 2002 Master Agreement. Using ISDA Create will bring complete real-time transparency to the negotiation process and enable relationship data to be shared accurately and consistently across the organisation. This will make it easier for firms to quickly identify relationships affected by market events or regulatory changes and analyse the impact without needing to manually trawl through paper documents and PDFs.

"It has long been ISDA's core mission to develop industry standards and legal documentation to support safe and efficient use of derivatives, and to update those documents to reflect market events and regulatory changes, from benchmark reform to margin requirements. Making our documentation and other products and services available in digital formats is a further extension of that and reflects developments in technology and increasing demand from derivatives users for greater automation, interconnectivity and efficiency," says Scott O'Malia, ISDA's chief executive.

The ISDA Clause Library, which provides standardised drafting options for certain ISDA Master Agreement provisions, has also been added to ISDA Create. This will introduce greater consistency in how firms agree provisions when negotiating a Master Agreement, making the process more efficient.

The inclusion of the ISDA Master Agreement and ISDA Clause Library on ISDA Create is part of a broader initiative by ISDA to standardise and digitise its definitions and legal documentation, and to enable that data to flow directly through to trading, operational and risk management systems in a consistent way.

"More than 30 years ago, the launch of the ISDA Master Agreement brought greater standardisation and efficiency to the derivatives market. We're now taking another big step towards improved efficiency by digitising this foundational document. Bringing the ISDA Master Agreement and the ISDA Clause Library onto ISDA Create means market participants can, for the first time, negotiate the various provisions of this agreement online and electronically consume the resultant legal data automatically," says Katherine Tew Darras, general counsel at ISDA. IQ

Kinetix and Linklaters Selected for User Platform

ISDA has selected Kinetix Trading Solutions and Linklaters to develop a user platform that will allow market participants to access ISDA documentation in electronic form with enhanced navigation and other features.

Kinetix, a financial technology company, and Linklaters >Nakhoda were selected following a request for quotation issued in June 2020 for the development of a user-friendly, state-of-the-art platform that will enable industry participants to more easily navigate and use ISDA's documentation.

The forthcoming 2021 ISDA Interest Rate Derivatives Definitions and the ISDA 2002 Master Agreement will be the first documents to be delivered through the new platform. Other documentation will be made available in electronic form via the platform over time, in line with ISDA's strategy to facilitate greater automation and efficiency in derivatives markets.

The 2021 ISDA Interest Rate Derivatives Definitions are due for launch later this year, and will be ISDA's first natively digital definitional booklet. By publishing them via the user platform rather than in traditional paper and PDF form, ISDA will be able to amend and restate the definitions in full each time they are updated, avoiding the need for parties to manually assemble the definitional booklet and various supplements in order to determine the terms of each trade at the time of execution.

Users will also be able to quickly and easily compare different versions of the definitions as they evolve over time, use hyperlinked terms within the text to move to other parts of the document, and download or print. IQ

SEF Trading Spikes After Brexit Transition Ends

Trading of euro- and sterling-denominated interest rate derivatives (IRD) on US swap execution facilities (SEFs) rose sharply in January after the Brexit transition period ended on December 31, 2020 without an equivalence arrangement in place for European Union (EU) and UK derivatives trading venues.

Average weekly traded notional in euro-denominated IRD on SEFs during the first four full weeks of the year was $882.2 billion, up from $246.2 billion in the first four weeks of 2020, according to ISDA SwapsInfo.org, which is based on derivatives subject to US regulations reported to the Depository Trust & Clearing Corporation and Bloomberg swap data repositories. For sterling-denominated IRD, the average was $567.6 billion for the first four weeks of 2021, up from $395.9 billion in the first four weeks of 2020.

> "Brexit will impact the functioning of markets and will inevitably result in some fragmentation of liquidity"
> **Fabrizio Planta, ESMA**

Following the end of the Brexit transition period, a barrier exists for EU and UK firms that want to trade derivatives with each other that are subject to the EU and UK derivatives trading obligations (DTOs), because the EU DTO requires transactions to be executed on an EU-recognised trading venue, and the UK DTO requires execution to take place on a UK-recognised venue. Without equivalence between EU and UK trading venues, in-scope trades between EU and UK counterparties can only take place on US SEFs, which are recognised by both jurisdictions.

In a statement on November 25, the European Securities and Markets Authority (ESMA) confirmed the EU DTO would apply without changes after the Brexit transition period. While acknowledging this would create challenges, it insisted this would not create risks to the stability of the financial system.

"Brexit will impact the functioning of markets and will inevitably result in some fragmentation of liquidity. While this is unfortunate, I believe it is an unavoidable consequence of the decision of the UK to leave the EU," said Fabrizio Planta, head of markets and data reporting department at ESMA, speaking at ISDA's European public policy event on December 2.

However, others have warned this could have severe consequences for liquidity and pricing. Speaking in a keynote address at the same event, Robert Ophèle, chairman of France's Autorité des Marchés Financiers, noted that even though some trading platforms had established EU venues ahead of the end of the transition period, it does not mean liquidity in all instruments will concentrate in Europe.

"For these instruments, there is therefore a huge probability that European firms' ability to tap deep liquidity pools for derivatives pricing will be impaired, despite the relocation to the US of part of their trades and, consequently, also of their clearing," said Ophèle, adding that he hoped the EU DTO could be re-scoped by product and/or be territorially adjusted.

In response to the challenges, the UK Financial Conduct Authority (FCA) announced on December 31 that it would allow firms subject to the UK DTO to trade with or on behalf of EU clients subject to the EU DTO on EU venues, so long as those clients have no means of accessing SEFs and the EU venue used has the necessary regulatory status to do business in the UK. This approach will be kept under review and a decision on whether to change it will be made by March 31.

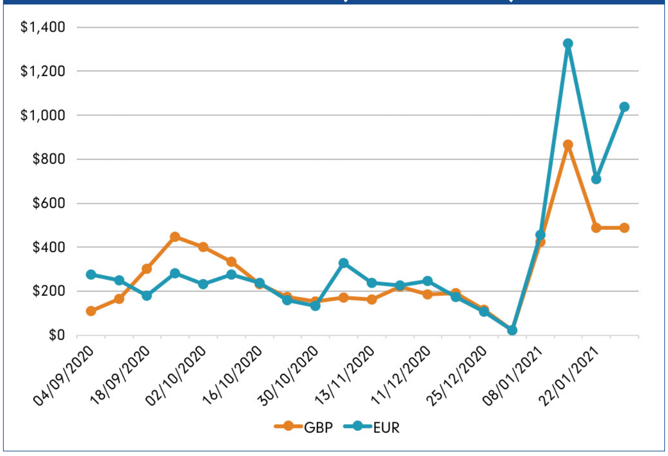
While the FCA's temporary modification of the UK DTO helps EU clients wishing to conduct business with or through UK firms in products subject to the EU DTO, the approach only addresses part of the problem, says Roger Cogan, head of European public policy at ISDA.

"EU and UK authorities have it in their power to resolve the other major issues faced by firms in their jurisdiction, including the inability for EU and UK dealers to trade with each other in products subject to the DTO on EU or UK venues, the inability of UK branches of EU-nexus firms to trade with third-country clients or other UK branches of EU firms, and the inability of UK-nexus firms to use EU venues to trade with third-country clients in contracts subject to the UK DTO. They should find each other's jurisdictions equivalent, preventing this balkanisation of the market and negative pricing and liquidity impacts for firms in their own jurisdictions," says Cogan.

Speaking at the ISDA event on December 2, Gilles Hervé, policy officer at the European Commission, said European authorities had listened to the challenges and would monitor the situation, but reiterated the view that changes were unlikely.

"We always knew that Brexit would have consequences on financial markets and on market participants. The idea is to reduce the consequences to the best extent, but we are living in a complicated world where the things that could be seen as pragmatic are mixed with political decisions," said Hervé. IQ

SEF IRD TRADED NOTIONAL (US$ BILLIONS) 2020-2021



Source: DTCC/Bloomberg swap data repositories

Report Recommends Reduction in Procyclical IM

Central counterparties (CCPs) generally dealt well with the market volatility triggered by COVID-19 in March and April 2020, but there was a significant increase in both variation margin (VM) and initial margin (IM), analysis by the ISDA Clearing Member Committee has found.

In a paper published on January 6, *COVID-19 and CCP Risk Management Frameworks*, ISDA explores the impact of the pandemic on CCPs and makes recommendations to reduce the procyclicality in IM. The analysis is based on responses to questionnaires sent to all major CCPs and calls held with several between April and August 2020.

While there were three small member and some client defaults and close-outs in the US and Europe, none affected market stability or the capacity of clearing members to meet their financial obligations. Other than these defaults, no CCP reported near misses or issues with members paying margin.

The stability of CCPs during the most volatile market period since 2008 reflects the resilience of the system, high levels of capital among clearing members and quick intervention by central banks to bolster liquidity during the crisis, the study found.

While VM reflects the profits and losses of members and redistributes liquidity so a large increase was unavoidable given the extreme market volatility, procyclical IM drains liquidity from the market at greater levels during times of stress. The increases seen globally during the period of volatility last year are therefore concerning, the report notes.

The ISDA Clearing Member Committee recommends that anti-procyclicality tools should be calibrated to ensure margin increases in response to volatility are less extreme in future. The committee also recommends greater transparency of CCP models to enable predictability of margin levels during benign and stressed markets for clearing participants.

"The only way to reduce procyclicality is to call for more margin in benign times. That might make clearing more expensive, but there needs to be sufficient margin in the system throughout the cycle. This is a big discussion area for 2021 so the industry and regulators need to find the right balance between the cost of clearing and financial stability," says Ulrich Karl, head of clearing services at ISDA. IQ

| Read the ISDA paper here: bit.ly/2MS0hae

EC Calls on Industry to Reduce UK Clearing Post-Brexit

The 18-month temporary equivalence granted to UK central counterparties (CCPs) by the EU will not be extended, and EU market participants should work now to tackle any problems preventing them from reducing their exposure to UK clearing houses, according to a European Commission (EC) official speaking at ISDA's European public policy virtual event on December 2.

"We expect the industry to list the technical problems and find solutions to these problems, not use technical problems as an excuse, as a wall of technical problems that could be unsurmountable and that would make the commission in the position to be forced to renew an equivalence decision, because yes, this is the last one. This is the last 18 months that we are providing the industry," said Gilles Hervé, policy officer at the EC.

In September 2020, the EC adopted a time-limited equivalence decision for UK CCPs, explicitly stating that market participants should use the time to reduce their reliance on these infrastructures.

> "We expect the industry to list the technical problems and find solutions to these problems"
>
> **Gilles Hervé, European Commission**

Speaking on the same panel, Emma Tan, vice president of regulatory affairs at JP Morgan, said the industry had "got the message" that there would be no extension of the temporary equivalence, but noted there are a variety of factors that influence a client's decision on where to clear.

"Clients and firms will always want to clear at places that provide them with the best prices, the deepest liquidity and the greatest netting efficiencies, and that is going to drive a lot of decisions," she said.

Any initiative by the industry to collectively move clearing from the UK to the EU could fall foul of antitrust authorities, she added. In addition, there are potential systemic risks associated with moving cleared legacy portfolios from the UK to the EU.

"That would obviously require the close out of positions on UK CCPs and reopening them on EU CCPs, and that in itself would bring pricing and volatility concerns if the whole industry was trying to do that at the same time," she said.

In response, Hervé said regulators would work with market participants to find solutions to the issues, but noted EU CCPs already provide good liquidity and pricing for euro-denominated interest rate swaps – something clearing members should be making clear to their clients.

"I think it is something for financial intermediaries to sell to their clients. Of course, the clients, they don't want to think too much about the post-trade and about clearing – they want to do things the way they used to do. But I think if they are sold something interesting, then they might be attracted to it," he said IQ

COVID Crisis Highlights Need to Reduce Trading Book Procyclicality

Analysis of the impact of market volatility in March and April 2020 on trading book capital requirements has demonstrated the importance of reducing procyclicality in the final Basel III standards due for implementation in January 2023.

An analysis of 20 banks compiled by ISDA, the Global Financial Markets Association and the Institute of International Finance showed a sharp increase in trading book risk-weighted assets (RWAs) during the first quarter of 2020, at the height of the COVID-19 crisis. For credit valuation adjustment, RWAs increased by more than 45%, while counterparty credit risk and market risk RWAs rose by 20% and 22%, respectively.

"Procyclical capital requirements threaten to choke off banks' support for the real economy at a time when it is needed most. During the COVID crisis, some regulators stepped in to mitigate these procyclical effects where possible, but the experience underscores the importance of reducing procyclicality in the revised trading book capital standards," said Scott O'Malia, ISDA's chief executive, during his opening remarks at the ISDA Trading Book Capital virtual event on November 19, sponsored by EY.

> "Consistency in the timing and content of the requirements must remain a priority as we move through the legislative process"
> **Scott O'Malia, ISDA**

For market risk, part of the issue was caused by an increase in the number of value-at-risk (VaR) backtesting exemptions, caused by severe market volatility due to the coronavirus pandemic. Under the current Basel 2.5 regime, banks are required to add a multiplier to their capital calculations if actual or hypothetical P&L over the course of a single trading day exceeds VaR estimates more than four times in a year, with the multiplier increasing as the number of exceptions continues to climb. As a result of the crisis, regulators in several jurisdictions moved quickly to smooth the volatility induced procyclical effect of the multiplier – for example, by freezing it for a temporary period.

The new trading book capital requirements, now due to be implemented by January 1, 2023, are designed to be less procyclical. With legislative proposals on the new requirements expected in the US, EU and UK this year, O'Malia stressed the importance of consistency and risk appropriateness.

"Consistency in the timing and content of the requirements must remain a priority as we move through the legislative process. When regulators diverge from globally agreed standards, it introduces additional complexity and can lead to distortions in cost and risk management for internationally active firms," said O'Malia. IQ

Pandemic Adds to Basel III Implementation Challenge

The continued spread of the coronavirus pandemic will create additional challenges for banks in their efforts to implement the final Basel III measures, prompting questions over whether further flexibility from regulators might be necessary.

Noting that banks have a number of implementation initiatives under way simultaneously, Shaun Abueita, partner, financial services and risk consulting at EY, said firms face a complex juggling act.

"Understanding those overlaps and interdependencies and managing implementation and delivery to avoid duplication of effort and inefficiency and regrettable spend is a difficult implementation challenge," he said, speaking at the ISDA Trading Book Capital virtual event on November 19.

Global regulators acted quickly to provide regulatory relief in response to the rapid spread of COVID-19 in March and April 2020, including a one-year delay to the final Basel III measures, which include the Fundamental Review of the Trading Book and the revised credit valuation adjustment (CVA) framework.

Speaking on a separate panel, Frédéric Hervo, director for international affairs at France's Autorité de contrôle prudentiel et de résolution, said regulators are striving to meet that new deadline.

"Even with an extra year, this deadline is certainly challenging, taking into account that the banks have to be prepared. But we so far have no indication that this deadline is no longer the target for EU implementation, and everyone is working hard to reach this target," he said.

In a keynote address at the event, Norah Barger, senior adviser, director of supervision and regulation at the Federal Reserve Board, said US prudential regulatory agencies would issue a notice of proposed rulemaking for the remaining Basel III measures this year. This will be followed by a US-specific hypothetical portfolio exercise and lengthy comment period, with the aim of implementing the rules at the start of 2023.

"The path of the pandemic can obviously affect any part of this, and it leads to a lot of the uncertainty that we will have around timing. And it is of course not just the pandemic, but also what happens in terms of the general economy because of the pandemic," said Barger. IQ

THE COVER PACKAGE

Going Green

As the world focuses on tackling climate change, derivatives will play an important role in transitioning to a green economy

There is no doubt that tackling climate change will be one of the greatest challenges of our age. Governments around the world have recognised the need to reduce carbon emissions, with a common target to reach net-zero emissions by 2050 to protect the future of the planet.

This will require the contribution of many different sectors, but the financial world will be critical in mobilising the funding needed to transition to a green economy. Issuance of green bonds to finance sustainable projects has been rising rapidly and this will continue as the pace of change accelerates.

The derivatives market also has a vital role to play in enabling issuers and investors to manage the risks associated with this transition. Conventional derivatives can be used to hedge green instruments, but a new wave of sustainability-linked derivatives and exchange-traded environmental, social and governance (ESG) derivatives has also developed in recent years, alongside emissions trading derivatives, renewable energy and renewable fuels derivatives, and catastrophe and weather derivatives.

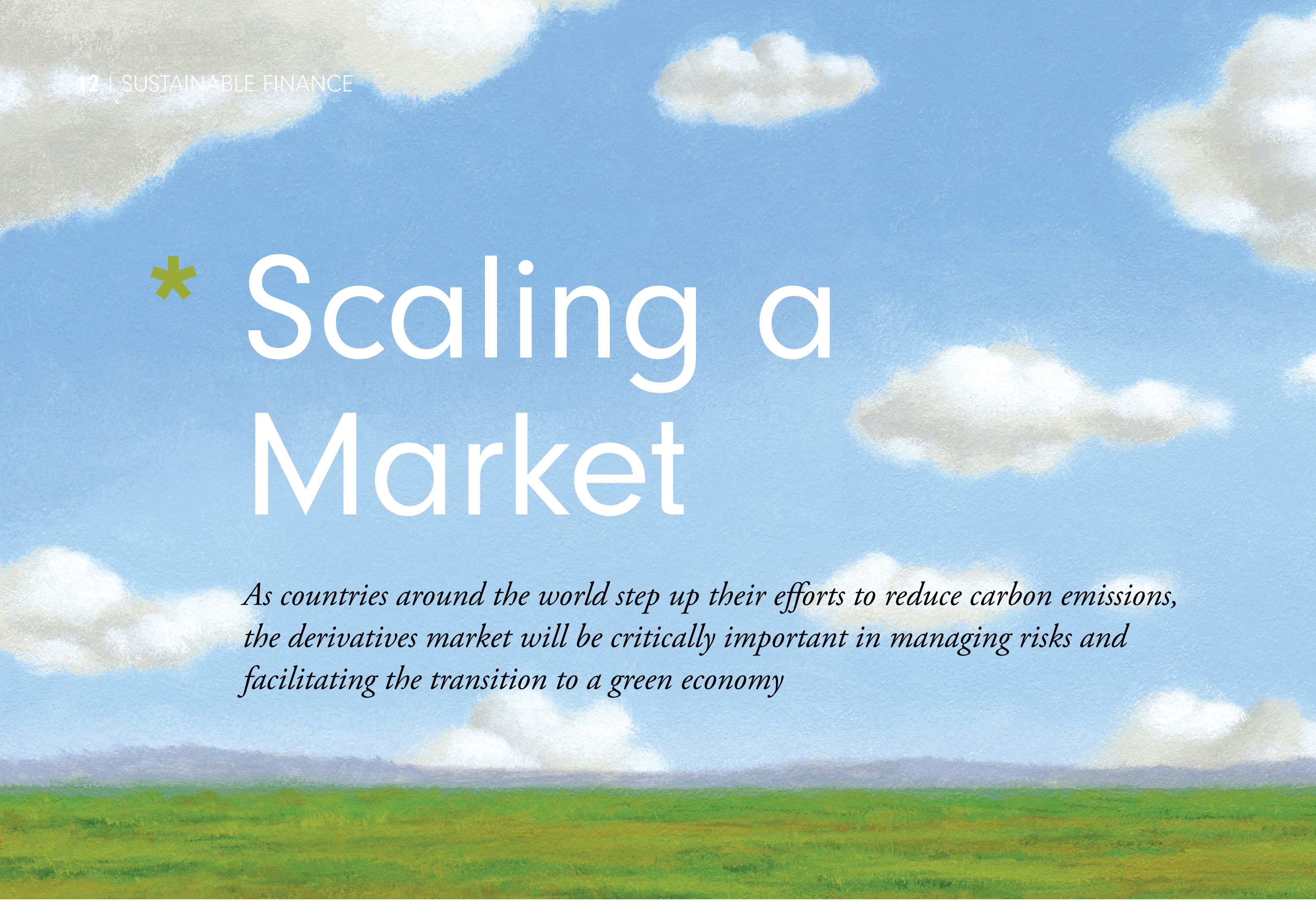
This issue of **IQ** explores recent developments at both the policy and industry levels. While ESG markets are growing quickly, a survey of ISDA members suggests a consensus on global ESG standards and metrics is necessary to ensure consistency, alongside greater clarity on regulatory, capital and accounting standards.

Regulators are increasingly engaged in these and other issues. In September 2020, the US Commodity Futures Trading Commission (CFTC) published a major report on managing climate risk that listed 53 recommendations, with the most urgent being to establish a price for carbon. The incentives to reduce emissions are currently too low and the pricing of carbon is the only way to reverse this, says Bob Litterman, founding partner at Kepos Capital and chair of the CFTC committee that produced the report (see pages 18-20).

A further report published by ISDA in January outlines the range of product structures and transaction types that make up the universe of ESG-related derivatives (see pages 21-25). Given the urgency of climate change and the need for concerted action, supporting the development of sustainable finance will be a priority for ISDA and the derivatives industry in 2021 and beyond.

"It is important that everyone in society helps to get this transition right, and the derivatives market has a major role to play"

Eric Litvack, chairman, ISDA



* Scaling a Market

As countries around the world step up their efforts to reduce carbon emissions, the derivatives market will be critically important in managing risks and facilitating the transition to a green economy

In the annual Reith Lectures, broadcast by the BBC in December 2020, former Bank of England governor Mark Carney set out to explore the trade-off between financial value and human value through the prism of three crises – the financial crisis, the COVID-19 crisis and the climate crisis. The challenge of shifting economies to net-zero carbon emissions over the coming years, he concluded, will need to involve every company in every sector in every country in the world.

€225 BILLION:

Amount of the EU's coronavirus recovery package that will be raised through green bonds

"Building a sustainable future will be capital intensive after a long period when there's been too little investment. It will be job heavy when unemployment is soaring. It will be global when we're being pulled to the local. It's what the world needs for its future and it's what we need right now," Carney declared.

With major economies around the world still in the grip of the coronavirus pandemic and a new administration taking office in the US, Carney's call to action was a timely reminder of what it will take to realise the global transition to a green, carbon-neutral economy over the coming decades. Every industry, every entity and every individual will need to play its part. This includes the derivatives market, which will perform a number of vital roles – including allowing market participants to hedge their exposures to environmental, social and governance (ESG) assets. Derivatives are also essential in facilitating the allocation of capital towards sustainable investments, as well as enabling price discovery and fostering market transparency.

"It is important that everyone in society helps to get this transition right, and the derivatives market has a major role to play in facilitating the financing of the transition. There is consensus on the need for coordinated action on climate change among most countries and policy-makers around the world, and ISDA is ready to help the derivatives market to forge a critical evolutionary path when it comes to sustainable finance," says Eric Litvack, chairman of ISDA.

Towards net zero

The inauguration of Joe Biden as US president marks a significant turning point in the global journey to net-zero carbon emissions. The new administration has put climate change at the heart of its agenda and has taken immediate steps to rejoin the 2015 Paris Climate Agreement. Elsewhere, momentum has been building for some time, with countries around the world setting ambitious targets to reduce emissions and with policy-makers working to support the evolution of sustainable finance.

For example, the European Union's (EU) Sustainable Europe Investment Plan, which is the investment pillar of its Green Deal, is set to mobilise at least €1 trillion in sustainable investments over the next decade. A €750 billion recovery package known as NextGenerationEU was also put in place last year to help repair the economic and social damage caused by the coronavirus pandemic. With a vision of a greener future, 30% of that budget – amounting to roughly €225 billion – will be raised through green bonds. European Commission (EC) president Ursula von der Leyen has pledged to reduce emissions by at least 55% by 2030, putting it on track to reach net zero by 2050.

Europe is not alone. Over the past two years, more

Illustration: James Fryer

than 100 countries around the globe, including the UK, Japan and South Korea, have pledged to bring greenhouse gas emissions to net zero by 2050. This means emissions in those countries will be cut drastically over the next 30 years, and any emissions must be balanced by schemes that offset the equivalent amount of greenhouse gases, such as tree planting or carbon capture technologies.

The financial sector will be critically important in meeting these targets, both by reducing its own emissions and by financing the broader transition. Green bonds that raise funds for projects delivering environmental benefits have been growing in recent years, with global issuance exceeding $250 billion in 2019, representing around 3.5% of total global bond issuance, according to Dealogic. Assets under management at investment funds with ESG mandates have roughly tripled since 2015, with a little more than half of those funds domiciled in the euro area, according to the European Central Bank. Given the ambitious targets countries have set themselves, the demand for sustainable financial products is likely to continue growing in the years to come.

"The financial sector is responding to the challenge of climate change and emissions reduction in myriad ways: by supporting 'green capital' issuance, developing green investment products, offering risk management solutions to hedge risk, and providing financing that enables green power initiatives to scale. The rapid growth of sustainable finance will require the full support of policy-makers,

"It is important that everyone in society helps to get this transition right, and the derivatives market has a major role to play in facilitating the financing of the transition"

Eric Litvack, ISDA

> "Capital will flow very precisely in the direction that the incentives give – where you can make profits – and capital won't flow where those incentives don't direct it. That's why all the participants in financial markets unanimously agree that we've got to price carbon"

Bob Litterman, Kepos Capital

regulators and the derivatives industry to ensure the market operates safely and efficiently and the risks are properly managed," says Steven Kennedy, global head of public policy at ISDA.

Developing policies

As with any nascent, fast-growing financial market, effective oversight will be key to the long-term success and viability of sustainable finance. The EC adopted an action plan on financing sustainable growth in 2018 that has formed the basis of its work in this area. Its building blocks include the creation of a clear and detailed EU taxonomy to classify sustainable finance activities, the incorporation of sustainability into risk management practices, the creation of new categories of low-carbon benchmarks and the strengthening of sustainability disclosures. The EC is expected to launch a more comprehensive and ambitious strategy in March to accelerate the pace of transition to a low carbon economy.

"The idea is really that we want to mobilise every level and every actor in finance, from the investee companies and the issuers to the financial market participants, retail investors and institutional investors. In every decision that is being taken by these actors in financial markets, ESG considerations should play a role and that is what we want to achieve with the various initiatives we have already launched," said Sven Gentner, head of unit for asset management in the EC's directorate-general for financial stability, financial services and capital markets union.

Speaking at a virtual conference hosted by ISDA on ESG and derivatives in September 2020, Gentner highlighted the benefits of the EU taxonomy. This is intended to act as a basic language to define what is sustainable, enabling financial market practitioners to identify projects and investments that are in line with the EU's sustainability goals. In addition, new disclosure obligations will pave the way towards greater transparency on sustainability through the Taxonomy Regulation, the EU Disclosures Regulation and the Non-Financial Reporting Directive, which is being reviewed to enhance the quality of ESG information that companies are expected to disclose.

ISDA has worked with other trade associations to respond to multiple consultations as the EU taxonomy and disclosure requirements have evolved over the past year. These responses have consistently made the case that financial market participants need to be able to use derivatives in an ESG context, as their use can increase liquidity and the supply of credit to the market.

ISDA's policy work on sustainable finance extends beyond Europe, however. In December 2020, ISDA replied to the International Financial Reporting Standards Foundation's consultation paper on sustainability reporting, welcoming the prospect of global standards that build on existing practices and take regional and sectoral characteristics into consideration.

"There are many different sustainable finance initiatives being pursued by policy-makers around the world to support the transition to a greener economy and there is certainly a risk of fragmentation, so we would very much support and welcome a globally coordinated international approach to disclosures and other key policy objectives," says Stevi Iosif, director of European public policy at ISDA.

Pricing carbon

One important international development in recent months has been the work of the Taskforce on Scaling

Voluntary Carbon Markets, which is sponsored by the Institute of International Finance and was launched in September 2020 by Mark Carney, now United Nations special envoy for climate action and UK prime minister Boris Johnson's finance adviser for the COP26 conference. As efforts to reduce emissions gather pace around the world, the taskforce estimates the voluntary carbon market will need to grow by more than 15 times by 2030 to support the rising demand for voluntary offsetting.

The taskforce moved quickly to establish a roadmap for the development of a well-functioning, transparent and resilient voluntary carbon market, publishing a consultation document in November 2020. The paper makes a series of recommendations covering the principles, infrastructure and other components needed for an effective voluntary carbon market, and a final blueprint was published on January 27.

One of the taskforce's recommendations is to create carbon spot and futures contracts, with the aim of more efficiently matching suppliers' products with buyers' preferences. Critically, this would provide a daily reference carbon price for a standardised product.

In the US, a landmark paper, *Managing Climate Risk in the US Financial System*, published in September 2020 by the climate-related market risk subcommittee of the Commodity Futures Trading Commission's (CFTC) market risk advisory committee, also recognised the critical importance of carbon trading. Financial markets will only be able to efficiently channel resources to activities that reduce emissions if a price on carbon is in place at a level that reflects the true social cost of emissions, the paper noted. Establishing a price on carbon was listed as the most urgent of the report's 53 recommendations to mitigate the risks to financial markets posed by climate change.

"Capital will flow very precisely in the direction that the incentives give – where you can make profits – and capital won't flow where those incentives don't direct it. That's why all the participants in financial markets unanimously agree that we've got to price carbon. We've got to create appropriate incentives to reduce emissions and we've got to do it immediately," said Bob Litterman, chairman of the climate-related market risk subcommittee and founding partner at Kepos Capital, in a recent edition of ISDA's podcast, *The Swap*.

In recent months, officials in the US have clearly recognised the critical role the financial services industry will play in tackling climate change. At a recent global summit, John Kerry, the former secretary of state appointed by president Biden as the first special presidential envoy for climate, said the US government intends to significantly increase the flow of funding to adaptation efforts.

Meanwhile, the Federal Reserve has now joined the Network of Central Banks and Supervisors for Greening the Financial System (NGFS). Established in 2017, the NGFS provides a forum for public-sector entities to share best practices and contribute to the development of environmental and climate risk management. The addition of the Fed, the European Securities and Markets Authority and six other new members in December 2020 brings participation in the NGFS to 83 central banks and supervisors and 13 observers, representing around 75% of global emissions.

Speaking at the ISDA event in September, Morgan Després, deputy head of the financial stability department at the Banque de France and head of the NGFS secretariat, explained that the creation of the NGFS was triggered by a recognition that climate risk is not always properly priced and managed. The official sector needs to collaborate to develop the necessary supervisory practices and tools to address this, he said.

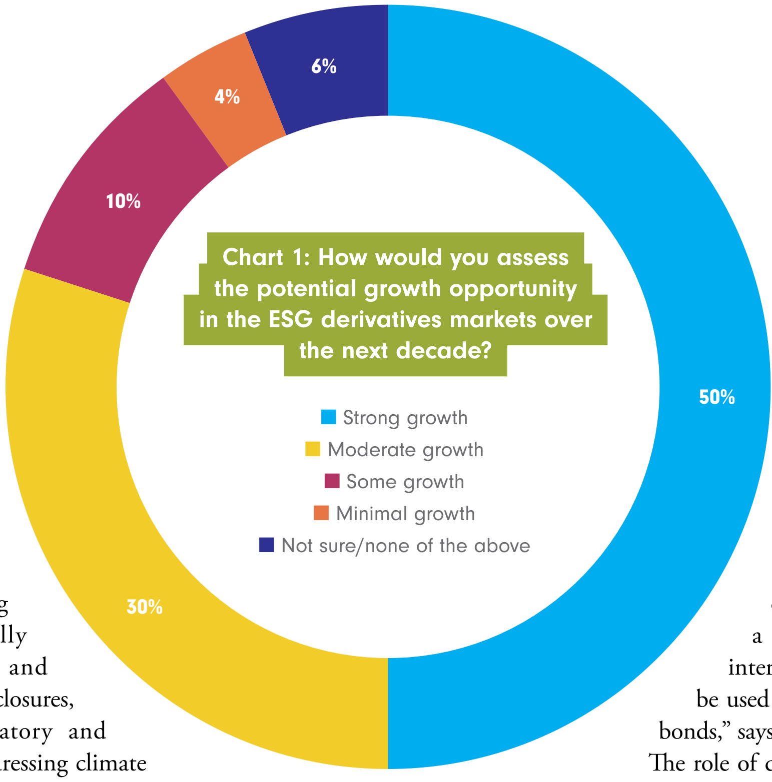
> "Climate risk has a number of specificities. It's not a random risk – not something you can forecast or predict with a very great level of certainty"
>
> **Morgan Després, Banque de France**

"Climate risk has a number of specificities. It's not a random risk – not something you can forecast or predict with a very great level of certainty. As we usually say, it's foreseeable but not predictable. It's not something that is linear – you have tipping points, and so it's quite difficult to capture that. You cannot just copy and paste the current risk methodologies and use them for climate risk analysis. You also need to have a forward-looking approach to your risk, because it's going to develop over a longer time horizon," Després explained.

In July 2020, the Financial Stability Board (FSB) →

published a stocktake of financial authorities' experience in including physical and transition climate risks as part of their financial stability monitoring. The paper notes that climate-related risks may affect how the global financial system responds to shocks. In its 2021 work programme, the FSB committed to exploring ways to promote globally comparable, high-quality and auditable standards of ESG disclosures, as well as reviewing regulatory and supervisory approaches to addressing climate risks at financial institutions.

Chart 1: How would you assess the potential growth opportunity in the ESG derivatives markets over the next decade?

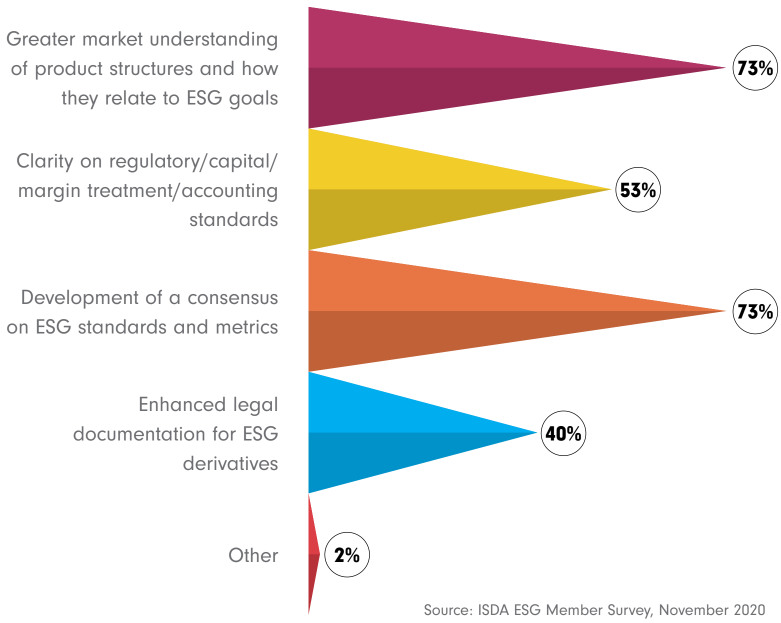


Source: ISDA ESG Member Survey, November 2020

The role of derivatives

Given the critical role of the financial sector in facilitating the transition to a more sustainable, carbon-neutral economy, derivatives are set to play an important part. One element of this is the hedging of interest rate, foreign exchange and credit risks resulting from the issuance of trillions of dollars of capital that will be required to finance the transition. Hedging exposures to green bonds will, for the most part, be achieved using conventional products like interest rate swaps and credit default swaps, but a variety of other derivatives have developed in recent years (see pages 21-25).

Chart 2: Which factors do you think will be most important to the growth and liquidity of ESG-related derivatives?



Source: ISDA ESG Member Survey, November 2020

"Clearly, there is a massive need for investment in the coming years and there will be room for the development of new and more specific types of derivatives but, broadly, the existing derivatives market is already fit for purpose to support this financing. Just as you can use a standard shovel to dig an irrigation canal or a screwdriver to build a wind generator, conventional interest rate swaps can and should be used to hedge the issuance of green bonds," says Litvack.

The role of derivatives in managing climate risk is highlighted in the CFTC report and explored in greater detail in a July 2020 paper, *Derivatives in Sustainable Finance: Enabling the Green Transition*, published by the Centre for European Policy Studies (CEPS) and the European Capital Markets Institute (ECMI). A further paper published by ISDA in January 2021 provides an overview of ESG-related derivatives products and transactions that have emerged in recent years, including a new breed of bespoke sustainability-linked derivatives, ESG exchange-traded derivatives, emissions trading derivatives and renewable energy derivatives (see pages 21-25).

As the CEPS-ECMI report noted, derivatives enable businesses to better manage their risks and also enhance transparency through the provision of forward information on the underlying commodities, securities or assets, contributing to long-term sustainability objectives. While conventional derivatives will be used to hedge interest rate and other risks arising from the financing of the transition to a green economy, there is also demand for ESG-related derivatives products that link returns with sustainability performance and impact.

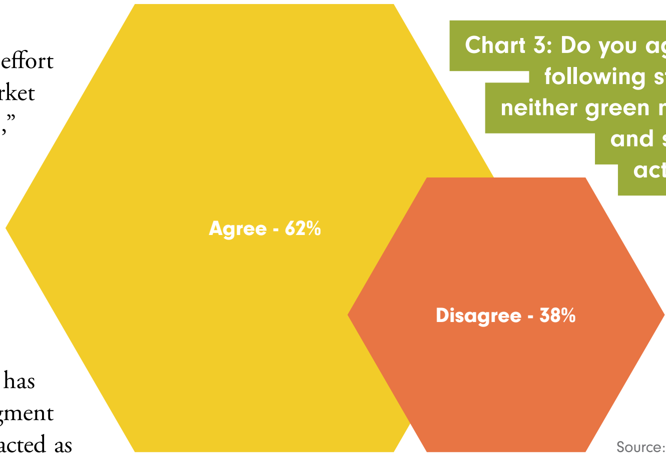
Such sustainability-linked derivatives come in varying forms, with differing key performance indicators (KPIs) that are typically tailored to the bespoke needs of the issuer. One of the earliest examples was a 'sustainability improvement derivative', executed by Dutch bank ING in August 2019 to hedge the interest rate risk of a $1 billion five-year floating rate revolving credit facility. The derivative adds a positive or negative spread to the fixed rate set at the inception of the swap based on the issuer's ESG performance.

"ESG has clearly become much more mainstream in recent years, and the sustainability improvement derivative was an extension of the work we had done with sustainability improvement loans. Setting effective KPIs that go out to three or more years is really important if these structures are to have a real impact on the sustainability of a company. There have now been lots of different types of transactions and we welcome the EU's effort to bring greater standardisation to the market with the taxonomy and other initiatives," says Bernard Coopman, global head of the client solutions group at ING.

Bespoke sustainability-linked derivatives have developed alongside exchange-traded derivatives in recent years, with multiple exchanges launching new contracts linked to ESG benchmarks.

"The demand for ESG derivatives has increased more rapidly than any other segment over the past year, and the pandemic has acted as a catalyst for investors to think more about socially responsible investing and to move faster in that direction. The demand we have seen has been mainly in Scandinavia and Europe, but there is no doubt that president Biden's focus on climate change in the US will filter down to asset managers and investors and further accelerate the growth in this segment," says Zubin Ramdarshan, head of equity and index product research and development at Eurex.

Chart 3: Do you agree or disagree with the following statement: derivatives are neither green nor brown and regulation and supervision of derivatives activities should reflect this?



Source: ISDA ESG Member Survey, November 2020

Developing documentation

Given the growing focus on sustainable finance across the globe and the likely acceleration of issuance in the months and years ahead, ISDA has been working to identify the industry's priorities in this area. In November 2020, more than 200 members were surveyed on issues ranging from legal documentation to capital requirements, so that resources can be effectively allocated to meet their needs.

Respondents clearly indicated they expect the ESG derivatives markets to grow significantly over the next decade (see Chart 1) and identified certain factors that would be important to support that growth. These include greater understanding of product structures and how they relate to ESG goals, clarity on regulatory, capital, margin and accounting standards, and the development of consensus on ESG standards and metrics (see Chart 2). On the important issue of classification, 62% of respondents agreed with ISDA's view that derivatives are neither green nor brown and the future path of regulation should reflect this (see Chart 3).

"By surveying our members, we were able to clearly identify their priorities and expectations. There is certainly growing interest in ESG derivatives and market participants have highlighted standardisation and understanding of products as priorities. The market is still at a relatively early stage of development, with different KPIs across different products, but we will work with policy-makers and market participants to support effective risk mitigation, product innovation and standardisation," says ISDA's Kennedy.

The survey also indicated widespread support for a range of new ESG documentation projects, including ESG derivatives, renewable energy certificates (RECs) and emissions allowance transactions. This would involve creating or amending definitions to reference specific contracts or indices beyond those already covered in existing documentation templates.

ISDA templates have been used for many years to support trading of certain types of environmental derivatives, including those referenced to weather and natural catastrophe transactions, but substantial work has taken place in recent months to extend this. Templates have already been expanded to include RECs, and ISDA will further develop its suite of documentation to meet member demand in the months ahead.

"There is a distinction in ESG derivatives between transactions that reference a green underlying such as a renewable energy certificate and transactions based on ESG indices or share baskets. The survey highlighted demand for the development of documentation to improve efficiency in both areas and this is where we will focus our efforts in 2021," says Peter Werner, senior counsel at ISDA. IQ

FURTHER READING

- *Derivatives in Sustainable Finance: Enabling the Green Transition*, Centre for European Policy Studies, European Capital Markets Institute, July 2020: bit.ly/393XEuJ
- Financial Stability Board Stocktake of Financial Authorities' Experience in Including Physical and Transition Climate Risks as Part of Their Financial Stability Monitoring, July 2020: bit.ly/39pmlwg
- *Managing Climate Risk in the US Financial System*, Climate-related Market Risk Subcommittee, Market Risk Advisory Committee of the US Commodity Futures Trading Commission, September 2020: bit.ly/2NurOPx
- *Taskforce on Scaling Voluntary Carbon Markets Consultation Document*, Institute of International Finance, November 2020: bit.ly/361yTgl
- *Financial Stability Board Work Programme for 2021*, January 2021: bit.ly/3pnYacF
- *Overview of ESG-related Derivatives Products and Transactions*, ISDA, January 2021: bit.ly/3c1gpAU
- *The Swap* podcast episode 6, Derivatives and Sustainable Finance, January 2021: bit.ly/3pGxrlx

* Call to Action

In September 2020, the Commodity Futures Trading Commission published a major report on managing climate risk in the US financial system. ***Bob Litterman****, founding partner at Kepos Capital and chair of the climate-related market risk subcommittee of the CFTC's market risk advisory committee, discusses the report's findings and recommendations*

IQ: You led the development of the report, *Managing Climate Risk in the US Financial System*, published in September 2020. What were its most important findings?

Bob Litterman (BL): Climate change poses a major risk to the stability of the US financial system and its ability to sustain the American economy. The subcommittee found that climate change is already affecting or is anticipated to impact nearly every facet of the economy, including infrastructure, agriculture, and residential and commercial property, as well as human health and labour productivity. Over time, if significant action is not taken to check rising global average temperatures, then climate change impacts could impair the productive capacity of the economy and undermine its ability to generate employment, income and opportunity. Even under optimistic emissions reduction scenarios, the US, along with countries around the world, will have to continue to cope with some measure of climate-change-related impacts.

IQ: What might those climate-change-related impacts be?

BL: There are many impacts we know about, and then I'm sure there will be many we haven't yet thought about. The important ones we're aware of are driven by the rising global average temperature, which is heating up the oceans. The oceans are rising because of melting ice in Antarctica and Greenland in particular, and the warming of the ocean expands water itself. Ultimately, there is going to be a substantial sea level rise, which will be a major problem for low lying areas, such as the Florida coast. More generally, the warming temperature will mean more places around the world become less habitable because of the heat. Equally, storms, hurricanes and cyclones are becoming more powerful and are causing destruction to the landscape and economy. These are just some of the impacts we know about, but there are likely to be all kinds of complications that we haven't yet thought about as warming continues over the next 50 years.

IQ: One of the report's key recommendations is that the US should establish a price on carbon. Why is this so important and how would it be achieved?

BL: The subcommittee made clear that putting a price on carbon – the first of 53 recommendations – should be the most important and urgent recommendation in the report. Not pricing climate risk is the root cause of climate change. Financial markets are incredibly efficient at directing capital towards profit opportunities, but those opportunities depend on the incentives embedded in the prices they face. Today, the incentives to reduce emissions are much too small, where they exist at all. Because of this fundamental flaw in the global economic system, emissions continue to grow over time, creating changes in the climate that are already affecting financial markets, and which also create unacceptable risk to the wellbeing of future generations. So long as those incentives point in the wrong direction, capital will continue to flow in the wrong direction, increasing emissions will continue to pollute the atmosphere, and climate risk will continue to increase – and at an accelerating rate.

Right now, risk is increasing alarmingly because we are not pricing it. One of the key lessons of risk management is that time is a scarce resource. If you have enough time, you can fix almost any problem. It is when you run out of time that a risk can become a catastrophe. We saw this with the COVID-19 pandemic, and we may yet see it on a much larger scale with climate change. Every year of delay pushes the ultimate temperature increase to a higher level and for a longer interval of time, both of which increase the risk.

Pricing climate risk will create a phase change in the economy, with capital flowing in the direction of reducing emissions as quickly as possible to net zero. With respect to how this can be achieved, the subcommittee also made clear that this requires congressional action. It is beyond the capability of financial market participants or their regulators to change incentives on their own. There are many carbon pricing proposals currently being considered in the US Congress. A bipartisan approach, such as the one sponsored by the Climate Leadership Council, of which I

"Over time, if significant action is not taken to check rising global average temperatures, then climate change impacts could impair the productive capacity of the economy and undermine its ability to generate employment, income and opportunity"

am co-chair along with Kathryn Murdoch, may be a focus in the new Congress.

IQ: In Europe, 30% of the €750 billion coronavirus recovery fund will be raised through green bonds. Should similar targets be set in the US to accelerate the growth of environmental, social and governance (ESG) investing?

BL: The climate risk subcommittee noted that there is an important role for fiscal policy to help fund the low-carbon technologies of the future, to build the infrastructure needed for the net-zero economy and to support job creation in communities affected by the net-zero transition, as well as for many other needs. I do not have a view about whether green bonds should be used to finance a stimulus package – perhaps it would be slightly less expensive that way – but I would note that ESG investing is growing extremely rapidly without government support. This makes sense because ESG factors that impact the return distributions of securities should be considered in investment decisions, just as they should be for any climate-related factors that impact risk and return.

IQ: What role can the derivatives market play in the development of sustainable finance?

BL: In general, derivatives can increase price discovery, liquidity and transparency. With respect to sustainable finance, derivatives markets can play two roles. First, they can facilitate hedging and transfer of climate and other sustainable development risks. Second, they can help to reveal information about financial market expectations – for example, about forward emissions pricing, climate-related damages and/or impacts such as temperature and/or sea levels.

The Commodity Futures Trading Commission (CFTC) report suggests that derivatives markets can be part of the solution. Refinements or modifications could be made to existing instruments to reduce derivatives market participants' risk exposure. For example, commodity derivatives exchanges could address climate and sustainability issues by incorporating sustainability elements into existing contracts and developing new derivatives contracts to hedge climate-related risks. New products may include weather, ESG and renewable generation and electricity derivatives. However, development of new derivatives will require the relevant climate-related data to be transparent, reliable and trusted by market participants. This also applies to a wide range of asset classes that can direct capital to climate-related opportunities and help manage climate risk.

IQ: What challenges need to be overcome to support the development of an effective ESG derivatives market?

BL: Standardisation of taxonomy and definitions needs to progress first. Then we need underlying instruments such as bonds linked to well-defined, objective outcomes and sustainable finance goals. Then derivatives instruments can be structured around those instruments, analogous to the way real-return swaps are linked to US Treasury inflation-protected securities and nominal Treasury bonds.

IQ: How important is it to develop ESG standards that provide consistency and certainty for market participants and how do we achieve this?

BL: The CFTC climate risk report notes that lack of trust in the market and concerns over the potential for 'greenwashing' (misleading claims about the extent to which a financial product or service is truly climate friendly or environmentally sustainable) may be holding the market back.

The report notes that barriers to ESG investing can be addressed through a variety of initiatives. For example, a wide range of government efforts – through credit guarantees and other means of attracting private capital by reducing the risks of low-carbon investments – catalyse capital flows toward innovation and deployment of net-zero emissions technologies. A new, unified federal umbrella could help coordinate and expand these government programmes and leverage institutional capital to maximise impact, as well as align the various federal programmes. Climate finance labs, regulatory sandboxes and other initiatives can also drive innovation by improving dialogue and learning for both regulators and market innovators, alongside business accelerators, grants and competitions that provide awards in specific areas of need.

Nonetheless, it is important to develop standards. As the CFTC report recommends, financial regulators, in coordination with the private sector, should support the development of US-appropriate standardised and consistent classification systems or taxonomies. The US should consider the establishment of a standards-developing organisation composed of public- and private-sector members. Recognising that this guidance will be specific to the US, this effort should include international engagement to ensure coordination across global definitions to the extent practicable.

IQ: What do you think should be the top priorities for policy-makers and market participants in the development of ESG investing and hedging in the years to come?

BL: Beyond pricing climate risk, which would in itself direct capital flows toward the net-zero economy, one top priority involves addressing the misperception among mainstream investors that sustainable or ESG investments necessarily involve a trade-off in financial returns relative to traditional investment strategies. As noted in the CFTC report, clarifying existing regulations on fiduciary duty – including, for example, those concerning retirement and pension plans – to confirm the appropriateness of making investment decisions using climate-related factors and, more broadly, ESG factors that impact risk-return can help to unlock the flow of capital to sustainable activities and investments. The market for products widely considered to be 'green' or 'sustainable' remains small relative to the needs of institutional investors. Government policy uncertainty remains a barrier. IQ

Listen to Bob Litterman in conversation with ISDA chief executive Scott O'Malia in episode 6 of ISDA's podcast, *The Swap*: bit.ly/3tqvL8y

"Not pricing climate risk is the root cause of climate change. Financial markets are incredibly efficient at directing capital towards profit opportunities, but those opportunities depend on the incentives embedded in the prices they face"

* Innovating in ESG

The universe of ESG-related derivatives includes a wide range of standardised and bespoke instruments that are used to manage many different types of risk

> "Derivatives markets can play an essential role in facilitating the transition to a sustainable economy by enabling more capital to be channelled towards sustainable investments"

As the costs and challenges of climate change continue to mount, so too has the need to mobilise capital to drive climate innovation. The financial services sector will be an essential partner in meeting this need by providing funding and managing the risks associated with sustainable investments.

Derivatives markets can play an important role in facilitating the transition to a sustainable economy by enabling more capital to be channelled towards sustainable investments, helping market participants hedge risk related to environmental, social and governance (ESG) factors and facilitating transparency, price discovery and market efficiency. A variety of derivatives structures and transaction types have already emerged, including sustainability-linked derivatives, ESG-related credit default swap (CDS) indices, exchange-traded derivatives on listed ESG-related equity indices, emissions trading derivatives, renewable energy and renewable fuels derivatives, and catastrophe and weather derivatives.

Sustainability-linked derivatives

Sustainability-linked derivatives typically add an ESG pricing component to conventional hedging instruments, such as interest rate swaps, cross-currency swaps or forwards. These transactions are highly customisable and use various key performance indicators (KPIs) to determine sustainability goals.

Some transactions can reduce one counterparty's payment in the event it achieves a certain pre-agreed sustainability target, providing a financial incentive for improved ESG performance. Other transactions facilitate a user's ability to support sustainability outcomes through a derivatives transaction. If a company cannot meet its ESG target, it will have to compensate by supporting climate action sustainability projects.

Table 1 provides examples of recently issued sustainability-linked derivatives, which focus on individual client approaches to sustainability.

ESG-related credit derivatives

Market participants can use CDS to manage the credit risk of a counterparty's financial results or viability being threatened by climate change. In that respect, CDS can serve two different purposes: to hedge future potential losses that would be realised following a catastrophic event that leads to bankruptcies or defaults; and to hedge the risk of changes in the market value of ESG/sustainability-

"Sustainability-linked derivatives typically add an ESG pricing component to conventional hedging instruments, such as interest rate swaps, cross-currency swaps or forwards"

→ linked bonds or loans resulting from market expectations of future potential losses or damages and other market factors.

ESG screening can be applied to the reference entities of CDS contracts. In May 2020, IHS Markit launched the iTraxx MSCI ESG Screened Europe Index, which is a broad European corporate CDS index derived using ESG criteria. The index includes a basket of CDS contracts on companies that meet various sectoral, controversy and ESG risk criteria.

ESG-related exchange-traded derivatives

With more capital flowing into ESG strategies, global exchanges have launched a series of new equity index futures and options contracts tied to ESG benchmarks. ESG futures and options enable institutional managers to hedge their ESG investments, implement ESG investment strategies efficiently, and manage cash inflows and outflows of their ESG funds. Using ESG futures and options also allows funds to meet target allocation in a more cash-efficient way than investing directly in the underlying stocks.

ESG index derivatives reference ESG indices, which are based on parent benchmarks that define the universe of companies from which the constituents of an ESG index are selected. ESG indices can be based on an exclusion methodology that allows investors to eliminate certain types of exposures, while retaining similar risk-return characteristics to the parent benchmark. Some examples of exclusions are companies considered to be non-compliant with certain ESG standards or organisations involved in controversial business lines. Alternatively, ESG indices can be constructed to gain exposure to high ESG ratings, a specific ESG theme, or to generate a positive environmental or social impact.

Emissions trading

Emissions trading is a market-based approach to reducing pollution, designed to set a geographic limit on the amount of (primarily) carbon dioxide that can be emitted into the atmosphere by specific sectors of the economy.

Emissions trading includes two key components: a limit (or cap) on pollution and tradable allowances that authorise allowance holders to emit a specific quantity of the pollutant. The limit declines on an annual basis, with the intention of reducing the overall amount of emissions.

Market participants can trade emission allowances (including offset credits) and derivatives based on emission allowances. Emission allowances can be purchased through centrally organised auctions or from other companies that have more than they need for compliance. Secondary trading can be executed on exchanges or in over-the-counter (OTC) markets.

Derivatives based on carbon allowances and carbon offsets enable companies subject to carbon cap-and-trade programmes to meet obligations and manage their risk in a cost-effective way. Policy-makers rely on price signals from these instruments to gauge the effectiveness of their programmes and ensure desired outcomes.

Market participants use ISDA templates for emission allowances (ie, the ISDA US Emissions Annex and the ISDA EU Emissions Annex) to trade swaps, options and forwards. ISDA also offers EU emissions forms for the trading of carbon dioxide allowances. The ISDA US Emissions Annex covers sulphur dioxide and nitrogen oxide emissions (under the federal scheme) and carbon dioxide (under the Regional Greenhouse Gas Initiative).

Renewable energy and renewable fuels

Renewable energy and renewable fuel derivatives support the transition to a sustainable economy by enabling market participants to hedge against the risks associated with fluctuations in renewable energy production and encouraging more capital to be directed to sustainable projects.

Various derivatives instruments have been created to trade renewable energy and renewable fuels, including power purchase agreements (PPAs), renewable energy certificates (RECs) futures, wind index futures, renewable identification numbers (RINs) futures and low carbon fuel standard (LCFS) futures.

PPAs are legal contracts for the purchase of power and associated RECs between a specific renewable energy generator (the seller) and a purchaser of renewable electricity (the buyer). The renewable electricity is mainly generated by solar and wind sources.

PPAs can be used to reduce market price volatility for buyers. At the same time, they provide a guarantee to developers that the buyer will purchase power generated from renewable energy assets and, therefore, enable new renewable electricity projects to be developed. Even though PPAs do not require companies to reduce their overall greenhouse gas emissions, these instruments can help catalyse a shift to clean energy sources by financing projects.

RECs are market-based instruments that represent the property rights to the environmental, social and other non-power attributes of renewable electricity generation. They are issued when one megawatt hour of electricity is generated and delivered to the electricity grid from a renewable energy resource.

RECs are traded on the REC spot or futures markets, and are used to 'green' a specific buyer's electricity consumption – ie, a buyer consumes grid electricity made up of various sources (natural gas, coal, nuclear and/or renewable) and covers the non-renewable elements of this consumption with an equivalent amount of RECs. ISDA has published a template for trading in a wide range of US RECs as a supplement to the existing ISDA North American Power Annex.

Wind index futures are financial instruments that enable trading firms and companies operating in the energy industry to hedge against the risks associated with fluctuations in wind energy production.

RINs are credits that are used for compliance in the renewable fuel standard (RFS) programme in the US, which sets renewable fuel blending standards for fuel producers. Obligated parties under the RFS must comply with the programme by producing and blending the minimum percentage of renewable fuels into their transportation fuels, or by purchasing enough RINs to equal their obligation. →

TABLE 1: SUSTAINABILITY-LINKED IRS AND FX DERIVATIVES

Issuer	Deal Information	Sustainability-linked Characteristics
	Interest Rate Derivatives	
SBM Offshore, a global supplier of floating production solutions to the offshore energy industry	In August 2019, ING executed the world's first sustainability improvement derivative (SID), designed to hedge the interest rate risk of SBM's $1 billion five-year floating rate revolving credit facility. SBM pays a fixed rate on the swap and receives a floating rate.	The SID adds a positive or negative spread to the fixed rate set at the inception of the swap based on SBM's environmental, social and governance (ESG) performance, which is scored by Sustainalytics. At the beginning of every year during the life of the swap, ING sets a target ESG score for SBM. If this score has been met, a discount of 5-10 basis points (bp) is applied to the fixed rate paid by SBM. If SBM hasn't met its targeted ESG score, it has to pay a 5-10bp penalty.
Italo - Nuovo Trasporto Viaggiatori, a private rail operator	In January 2020, Natixis structured a €1.1 billion sustainability-linked syndicated loan. The loan comprised a €200 million revolving credit facility to provide general corporate funding and a €900 million green loan to finance and refinance the company's low-carbon rolling stock.	As part of the loan transaction, the company also executed a sustainability-linked interest rate swap (IRS) that included an incentive mechanism aligned with the sustainable performance indicators outlined in the financing agreement.
Siemens Gamesa, a supplier of wind power solutions	In March 2020, HSBC executed an IRS that converted a €250 million tranche of a floating-rate syndicated loan, which was arranged in December 2019, into fixed-rate funding.	The fixed rate of the swap will not vary if Siemens Gamesa's ESG rating changes, but any change during the life of the swap will prompt charitable giving. If Siemens Gamesa's ESG rating improves, HSBC will donate annually to projects of non-profit organisations. If the rating declines, Siemens Gamesa will donate. This incentive structure differs from some other ESG-linked derivatives hedges where the ESG target impacts the cost of the hedge.
Goodman Interlink Limited, a global logistics property group	In November 2020, Credit Agricole CIB executed a green IRS, totalling HK$590 million.	A preferential fixed rate paid by the borrower was linked to the underlying facility's green classification. The company's fixed rate steps up to non-preferential if the green condition fails. The green condition is satisfied if the company maintains two requirements: (1) silver certification from the US Leadership in Energy and Environmental Design, the most widely used green building rating system in the world; and (2) gold certification of the building environmental assessment method (BEAM) from the BEAM Society Limited, an organisation specialising in green certification for Hong Kong buildings.
New World Development, a real-estate owner and developer	In November 2020, DBS Hong Kong completed an IRS linked to the United Nations Sustainable Development Goals (UNSDGs). This derivative transaction is designed to provide a hedge against the interest rate risk related to the New World Development (NWD) five-year HK$1 billion sustainability-linked loan from DBS, which closed in November 2019.	If the company successfully generates at least eight business-to-business integration opportunities that contribute to the UNSDGs adopted by the New World Sustainability Vision 2030, it is eligible to receive sponsorship from DBS to support social innovation projects. NWD's social innovation initiatives include Impact Kommons, a UNSDG-focused start-up accelerator and business-integration programme, of which DBS is a social impact partner.

Table continued on Page 25

→ The LCFS is a greenhouse gas reduction programme focusing on the transportation sector in California that incentivises low-carbon fuels and other alternative transportation methods. Each year, different fuel types are given carbon intensity (CI) scores. Fuel producers that are below their annual CI benchmark are awarded credits, while producers that are above the benchmark must procure LCFS credits to remain in compliance.

Catastrophe and Weather Derivatives

Catastrophe derivatives are financial instruments through which natural disaster risk can be transferred between counterparties. Catastrophe swaps are customisable OTC derivatives that enable a bearer of risk to obtain protection from massive potential losses resulting from a major natural disaster, such as a hurricane or earthquake, by transferring some of its catastrophe exposure to investors in return for a premium payment. It can therefore be thought of as the financial equivalent of a reinsurance contract or securitisation, but it avoids the structural complexities and costs associated with facultative agreements or full catastrophe bond issuance.

Catastrophe swaps allow countries to transfer some of their disaster risk exposure to insurance and capital markets without increasing their sovereign debt. A country pays a premium and in return receives a payout if a specified disaster event occurs. These instruments are pre-arranged in advance of a disaster happening and can be designed to provide a quick payout within days or weeks of an event occurring.

Weather derivatives are financial products that derive their values from weather-related variables such as temperature, precipitation, wind and stream flow. Weather derivatives are typically used by market participants to hedge or mitigate the risks associated with adverse or unexpected weather conditions. The main players in these derivatives, apart from farmers, are utilities, insurance companies and some banks.

The payout on a weather derivatives contract is typically based on an index that measures a particular aspect of weather. For example, temperature-related derivatives are usually based on the number of heating degree days or cooling degree days over the contract period (typically a month or a winter or summer season) at a specified location.

Precipitation-related weather derivatives are based on the number of critical precipitation days (those during which precipitation exceeds a specified reference level) that occur during the contract period. Hurricane derivatives are based on factors such as the number of named hurricanes, wind speed and hurricane radius.

This market is a mix of insurance-linked products, some hybrid solutions, exchange-traded derivatives and bespoke OTC transactions. Customised OTC derivatives allow market participants, such as holiday resorts or ice cream manufacturers, to structure transactions that suit their specific needs. OTC weather derivatives have become more complex as they combine several variables, such as weather and commodities.

ISDA offers templates for weather swaps, which specifically cover temperature transactions (cooling/heating degree days). A separate ISDA template covers US wind events for the purposes of natural catastrophe trading. IQ

This article is an edited version of an ISDA paper published in January 2021, *Overview of ESG-related Derivatives Products and Transactions*. The full paper is available at: bit.ly/2YpGUbb

"Renewable energy and renewable fuel derivatives support the transition to a sustainable economy by enabling market participants to hedge against the risks associated with fluctuations in renewable energy production and encouraging more capital to be directed to sustainable projects"

TABLE 1: SUSTAINABILITY-LINKED IRS AND FX DERIVATIVES

Issuer	Deal Information	Sustainability-linked Characteristics
		FX Derivatives
Enel, an Italian power and gas company	In September 2019, Société Générale executed a sustainable-development-goal-linked cross-currency swap tied to a €1.5 billion bond. The swap enables Enel to hedge its exposure against the euro/dollar exchange rate and interest rate risk created by the different denomination of the bond repayments (US dollars) and the source of repayments (euros).	As part of the transaction, Enel received a discounted rate based on its commitment to sustainability performance. Société Générale provided the discount as part of its commitment to positive impact finance and based on Enel's positive contribution to one of the pillars of sustainable development (economic, environmental and social) and mitigation of any potential negative impacts to any of the pillars. Enel's bond is linked to the company's ability to increase its installed renewable electricity generation capacity from 45.9% to 55% by December 2021. Should Enel not be able to achieve this objective, the interest on the bond will rise by 25bp to 2.9%. This will be carried over to the accompanying cross-currency swap, which will be rebooked if the bond coupon changes.
Siemens Gamesa, a supplier of wind power solutions	In October 2019, BNP Paribas executed a €174 million foreign exchange (FX) hedging contract. The transaction aims to hedge Siemens Gamesa's FX exposure from selling offshore wind turbines in Taiwan and to contribute to the UNSDG targets related to climate action and affordable and clean energy.	Depending on whether Siemens Gamesa reaches its sustainability targets, BNP Paribas will reinvest any premium into reforestation projects. If Siemens Gamesa misses its annual minimum ESG score, it must pay a sustainability premium, which BNP Paribas will reinvest in reforestation projects. The premium is calculated using a metric assigned by third-party sustainable finance specialists RobecoSAM.
Olam International, a major food and agri-business company	In June 2020, Deutsche Bank executed an FX derivative linked to ESG key performance indicators (KPIs). A one-year US dollar/Thai baht FX forward enables Olam to hedge its FX risk arising from exporting agriculture products from farms in Thailand to the rest of world.	The transaction allows Olam International to lock in a discount when it meets pre-defined ESG targets, which support the UNSDGs. The transaction KPIs will contribute to 10 of the 17 UNSDGs, including alleviating poverty (UNSDG 1); alleviating hunger (UNSDG 2); improving gender quality (UNSDG 5); improving clean water and sanitation (UNSDG 6); reducing inequalities (UNSDG 10); increasing responsible consumption and production (UNSDG 12); contributing to climate action (UNSDG 13); protecting life below water (UNSDG 14); protecting life on land (UNSDG 15); and increasing partnerships for the goals (UNSDG 17).
Primetals Technologies, an engineering and plant construction company	In October 2020, Deutsche Bank entered into an FX transaction that links currency options to sustainability goals. This agreement enables Primetals Technologies to hedge its currency risk with FX options over a four-year period.	If Primetals Technologies fails to meet the agreed sustainability targets, it must pay a predefined sum to a contractually defined non-governmental organisation. The currency hedge is linked to several sustainability targets, including the proportion of total sales of projects that aim to reduce greenhouse gas emissions for customers, and revenues relative to research and development expenditure that result in improved resource efficiency. Another metric is the promotion of a safe and healthy work environment for all staff at Primetals Technologies. Independent consultants will monitor and certify whether the targets are adhered to for the entire life of the option.
Hysan Development, a Hong Kong property developer	In October 2020, BNP Paribas executed a $125 million approximately15-year sustainability-linked hedge.	Under the terms of the transaction, Hysan commits to remain as a constituent member of the Hang Seng Corporate Sustainability Benchmark Index, which ranks the top 20% of Hong Kong companies based on their sustainability performance on broad metrics, for the period between 2021-2024. The company also commits to reduce its energy consumption by 20% by December 31, 2024. If Hysan is not successful in reaching the two goals, it will contribute to an impact-driven charity approved by BNP Paribas.
Enel, an Italian power and gas company	In October 2020, Enel issued £500 million of sustainability-linked bonds. Along with this issuance, Enel also executed a sustainability-linked cross-currency swap with JP Morgan Chase to hedge against the sterling/euro exchange rate and interest rate risk.	The bonds are linked to the company's ability to reach at least 60% renewable generation within its total installed capacity by December 31, 2022. The achievement of the target will be certified by an auditor's specific assurance report. The interest rate on the bonds will remain unchanged to maturity, unless Enel fails to achieve the sustainability performance target. If the target is not achieved, a step-up mechanism will be applied, increasing the rate by 25bp as of the first interest period after publication of the assurance report of the auditor. Enel and JPMorgan will pay interest to each other on the borrowed money every six months on the cross-currency swap. That interest cost can rise if either side does not keep to its environmentally friendly targets. JP Morgan has pledged to help arrange $200 billion of funding this year for climate-change action and the UNSDGs, which include activities such as underwriting green bonds.

Fallbacks Take Effect

New fallbacks for derivatives linked to key interbank offered rates came into effect at the end of January, marking a major step in reducing the systemic impact of an IBOR permanently ceasing or, in the case of LIBOR, being deemed non-representative

After more than four years of work involving ISDA, regulators and market participants, new fallbacks for derivatives linked to key interbank offered rates (IBORs) took effect on January 25, ensuring a viable safety net is in place in the event an IBOR becomes permanently unavailable while firms continue to have exposure to that rate.

The new, more robust fallbacks eliminate the uncertainty that would have previously occurred had a key IBOR become unusable, significantly reducing systemic risk. These fallbacks will kick in if an IBOR ceases to exist or, in the case of LIBOR, the UK Financial Conduct Authority (FCA) determines that the rate is no longer representative of the underlying market.

"Having a fallback based on a clear, consistent and transparent methodology will significantly reduce the risk of market disruption if a key IBOR ceases to exist or LIBOR is deemed to be non-representative before transition efforts are complete," says Scott O'Malia, ISDA's chief executive.

> "Having a fallback based on a clear, consistent and transparent methodology will significantly reduce the risk of market disruption if a key IBOR ceases to exist or LIBOR is deemed to be non-representative before transition efforts are complete"
>
> **Scott O'Malia, ISDA**

The January 25 effective date follows the October 23 launch of the IBOR Fallbacks Supplement and IBOR Fallbacks Protocol. The supplement incorporates the fallbacks into all new covered IBOR derivatives referencing the 2006 ISDA Definitions, unless parties specifically agree to exclude them. The IBOR Fallbacks Protocol, meanwhile, includes the fallbacks into legacy non-cleared derivatives trades with other counterparties that also choose to adhere to the protocol.

Market participants could alternatively choose to insert the new fallbacks into legacy non-cleared trades via bilateral negotiation, and ISDA has published templates to help with this. However, in a statement published in July 2020, the ISDA board of directors emphasised that the protocol "is the most efficient way for participants in the vast majority of non-cleared derivatives markets to mitigate against the risks associated with the discontinuation of a key IBOR". As of the January 25 effective date, more than 12,000 entities across nearly 80 jurisdictions had adhered to the protocol.

According to analysis by the FCA, over 85% of non-cleared interest rate derivatives in the UK referenced to sterling LIBOR now have effective fallbacks in place because both counterparties have adhered to the protocol. Once cleared derivatives and futures are included, the FCA reckons approximately 97% of sterling interest rate derivatives are covered by fallbacks.

Replacing unworkable fallbacks

These changes are necessary because previous fallbacks would not have worked in the event an IBOR becomes permanently

LIBOR Currency	IBOR	IBOR Administrator	Alternative RFR	Alternative RFR Administrator
Australian Dollar	Bank Bill Swap Rate (BBSW)	Australian Securities Exchange	Reserve Bank of Australia Interbank Overnight Cash Rate (AONIA)	Reserve Bank of Australia
Canadian Dollar	Canadian Dollar Offered Rate (CDOR)	Refinitiv	Canadian Overnight Repo Rate Average (CORRA)	Bank of Canada
Euro	LIBOR Euro Interbank Offered Rate (EURIBOR)	ICE Benchmark Administration (IBA) European Money Markets Institute	Euro Short-term Rate (€STR)	European Central Bank
Hong Kong Dollar	Hong Kong Interbank Offered Rate (HIBOR)	Treasury Markets Association (TMA)	Hong Kong Dollar Overnight Index Average (HONIA)	TMA
Yen	LIBOR Tokyo Interbank Offered Rate (TIBOR)	IBA Japanese Bankers Association TIBOR Administration	Tokyo Overnight Average Rate (TONA)	Bank of Japan
Singapore Dollar	Singapore Dollar Swap Offer Rate (SOR)	ABS Benchmarks Administration Co	Singapore Overnight Rate Average (SORA)*	Monetary Authority of Singapore
Swiss Franc	LIBOR	IBA	Swiss Average Rate Overnight (SARON)	SIX Swiss Exchange
Thai Baht	Thai Baht Interest Rate Fixing (THBFIX)	Bank of Thailand	Thai Overnight Repurchase Rate (THOR)*	Bank of Thailand
Sterling	LIBOR	IBA	Sterling Overnight Index Average (SONIA)	Bank of England
US Dollar	LIBOR	IBA	Secured Overnight Financing Rate (SOFR)	Federal Reserve Bank of New York

* SORA is the identified alternative for SOR, and THOR is the identified alternative for THBFIX. However, these alternatives are not the fallbacks. Instead, ABS Co will calculate and publish a fallback rate (an adjusted SOR) that will be implemented as the contractual fallback for SOR, and the Bank of Thailand will calculate and publish a fallback rate (an adjusted THBFIX) for THBFIX. Both SOR and THBFIX use US dollar LIBOR as an input, so the adjusted SOR and THBFIX calculations will instead use the fallback for US dollar LIBOR

unavailable – a scenario expected to occur for most LIBOR settings at the end of 2021. Under the previous fallback arrangements, the calculation agent would be required to call dealers for estimates of where an IBOR would have been had it been published – something dealers almost certainly won't do if an IBOR permanently ceases or (for LIBOR) is deemed non-representative. Even if quotes are available in some cases in the near term, it is unlikely they will be forthcoming for the entire life of all outstanding trades.

"The previous fallbacks just weren't fit for purpose in the event an IBOR permanently ceased or LIBOR was determined to be non-representative. This would have left market participants in the chaotic and uncertain situation of not knowing how to value their contracts, with the possibility of different outcomes for different trades. As a result, the Financial Stability Board Official Sector Steering Group asked ISDA in 2016 to develop a consistent fallback methodology to enhance the contractual robustness of derivatives referencing key IBORs," says Ann Battle, head of benchmark reform at ISDA.

New methodology

Under the new methodology, the fallbacks are based on the risk-free rates (RFRs) identified by the relevant public-/private sector working group in each currency (see Table). However, these RFRs are adjusted to reflect structural differences between IBORs and RFRs – IBORs are available in multiple tenors and incorporate a credit risk premium and other factors, while RFRs are overnight rates. The adjustment is intended to reduce the chance of contracts originally based on IBOR diverging too far from counterparties' original expectations after the fallbacks take effect.

Following multiple industry consultations, it was determined that the fallback for each IBOR setting will be based on the relevant RFR compounded in arrears to address the differences in tenor, plus a spread calculated using a historical median approach over a five-year lookback period to account for the credit risk premium and other factors. Bloomberg was subsequently selected to publish the RFRs compounded in arrears, the spread adjustments and the all-in fallback rates, with publication starting in July 2020.

The actual fallback rate that will eventually apply depends on a variety of factors, including the timing of any cessation or non-representativeness announcement. According to Bloomberg's IBOR Fallback Rate Adjustments Rule Book, the spread adjustment for a particular fallback will be fixed at the point the relevant IBOR benchmark administrator, the administrator's regulator or other →

→ defined authority announces that an IBOR setting will cease (or, in the case of LIBOR, the FCA announces a setting is or will be deemed non-representative).

Consultation

This could occur soon for LIBOR. On December 4, 2020, ICE Benchmark Administration (IBA), the administrator of LIBOR, published a consultation on its intention to cease publication of all euro, sterling, Swiss franc and yen LIBOR settings and one-week and two-month US dollar LIBOR immediately after publication on December 31, 2021. The consultation also proposes to stop the remaining US dollar LIBOR settings following publication on June 30, 2023. The consultation closed on January 25, but the results had not been published by the time IQ went to press.

Speaking at a webinar hosted by ISDA on December 4, Edwin Schooling Latter, director of markets and wholesale policy at the FCA, suggested an announcement on the future of all five currencies could be made at the same time, following the consultation.

"The consultation will cover all five currencies and will close by the end of January. This should make it possible to determine and make announcements on the future path for all five currencies simultaneously, even if the proposed cessation date is different – end-December 2021 for four currencies, and end-June 2023 for some US dollar settings," he said. He added that the FCA is confident US dollar LIBOR would remain representative until the June 2023 date.

Under this scenario, an announcement for the five LIBOR currencies at the same time would trigger a fixing of the fallback spread adjustment for all euro, sterling, Swiss franc, US dollar and yen LIBOR tenors, irrespective of the difference in cessation dates.

"An announcement relating to all US dollar LIBOR tenors would trigger a fixing of the spread for all tenors. The fact that different US dollar LIBOR tenors would have different end dates would not impact when the spread is fixed," said Deepak Sitlani, partner at Linklaters, speaking at the same ISDA webinar. "I should stress that this is very much fact dependent. So, for example, if there were an earlier announcement or an announcement did not cover all tenors, the time at which the spread would be fixed may be different."

While the LIBOR spread adjustments would be fixed at the time of any FCA announcement, the fallbacks would apply at the point each LIBOR setting ceases or becomes non-representative – although there could be some nuances for US dollar LIBOR.

If it is confirmed that one-week and two-month US dollar LIBOR will end on December 31, 2021, with the remaining US dollar settings ceasing at end-June 2023, then all US dollar LIBOR settings would continue to be published until the end of 2021. After that point, one-week and two-month US dollar LIBOR would cease, but the new fallbacks would not immediately take effect. Instead, the rate for one-week and two-month US dollar LIBOR would be computed by each calculation agent using linear interpolation – for instance, the one-week rate would be calculated by interpolating between overnight and one-month US dollar LIBOR. The fallbacks for all US dollar LIBOR settings would then take effect after the end of June 2023, assuming the remaining US dollar LIBOR tenors cease to be published as proposed.

Safety net

Many derivatives participants are working to transition their portfolios to alternative reference rates before that point, however. That's because the new fallbacks were never intended to be a primary means of transition – they are instead a broad, one-size-fits-all safety net intended to mitigate the systemic impact of an IBOR cessation in the worst-case scenario.

"Once robust fallbacks are in place, regulators have emphasised that market participants may be able to better tailor the economic terms of their contracts by actively transitioning their portfolios to alternative rates before any cessation event," says ISDA's O'Malia.

Time is short until the end of 2021, when all euro, sterling, Swiss franc and yen LIBOR settings and one-week and two-month US dollar LIBOR are expected to cease publication. A lot remains to be done in that time, including tackling tough legacy exposures, primarily in the cash markets, for which there is no contractual solution like the IBOR Fallbacks Protocol. However, with robust, workable fallbacks taking effect, firms have been able to mitigate much of the risk of an IBOR ceasing to exist while they still have derivatives exposure linked to that rate.

"Thousands of entities have now adopted the new fallbacks for derivatives, recognising the need for a workable back-up for their entire portfolio. In doing so, the systemic risk of an IBOR becoming permanently unavailable or, for LIBOR, non-representative has been significantly reduced. With viable fallbacks in place, firms can now spend the remaining time to end-2021 refining their positions through voluntary transition," says ISDA's O'Malia. IQ

Watch a short introductory animation on benchmark fallbacks: bit.ly/3t6MYna

For more information on benchmark transition, visit: www.isda.org/fallbacks

Explanatory video, *Introduction to Benchmark Fallbacks*: bit.ly/3t6MYna

Introducing
THE SWAP

In November, ISDA launched a new podcast series, The Swap, covering some of the biggest issues in financial markets and derivatives

LATEST EPISODE!

Brexit: Moving to Strategic Rivalry

Episode 7 – February 1, 2021 - Listen in full: **bit.ly/2MCiJUB**

What has the end of the Brexit transition period meant for derivatives markets? Donald Ricketts, head of financial services at FleishmanHillard, gives his thoughts.

"We have to be totally honest when it comes to the economic sphere – there is going to be strategic rivalry" **Donald Ricketts**

Goodbye LIBOR

Episode 1 – November 3, 2020 - Listen in full: **bit.ly/2O5ruah**

With the clock ticking until the end of 2021, Edwin Schooling Latter, director in markets and wholesale policy at the UK Financial Conduct Authority, considers the progress that has been made in shifting from LIBOR.

The Milestones to LIBOR Transition

Episode 2 – November 3, 2020 - Listen in full: **bit.ly/2YH6wjQ**

Shifting to alternative reference rates is one of the biggest structural changes the financial markets have ever faced. Frances Hinden, vice president for treasury operations at Shell, and Tom Wipf, vice chairman of institutional securities at Morgan Stanley, describe the major milestones that must be met.

Building Momentum in Alternative Rates

Episode 3 – November 3, 2020 - Listen in full: **bit.ly/2O1ksmN**

LIBOR is on its way out – but what will replace it? Jack Hattem, managing director in global fixed income at BlackRock, and Subadra Rajappa, head of US rates strategy at Société Générale, give a traders' perspective on the benchmarks that are being introduced to replace the IBORs.

What Next for US Financial Markets Regulation?

Episode 4 – November 30, 2020 - Listen in full: **bit.ly/2YIH6T5**

Following the election of president Joe Biden, Paul Atkins, chief executive of Patomak Global Partners, and Fred Hatfield, director, Intercontinental Exchange, consider what the election result might mean for the future of financial regulation in the US.

2021: Benchmarks, Biden and Brexit

Episode 5 – December 15, 2020 - Listen in full: **bit.ly/3q0K81f**

After a year that saw a global pandemic, a US election and ongoing negotiations over a post-Brexit trade deal between the EU and UK, D. E. Shaw's Darcy Bradbury and Société Générale's Eric Litvack look back on 2020 and consider what 2021 has in store.

Derivatives and Sustainable Finance

Episode 6 – January 6, 2021 - Listen in full: **bit.ly/3jggNx3**

As sustainable finance rises up the agenda around the world, ambitious targets are being set to support the transition to a green economy. Bob Litterman, founding partner of Kepos Capital, shares his perspective.

All episodes of **The Swap**, are available on the ISDA website, Apple Podcasts, Spotify and other podcast platforms

Promoting Consistency

Basel III trading book capital requirements will see greater use of standardised approaches than ever before. As a result, a number of banks are using ISDA's benchmarking initiative to make sure their approach is consistent with industry standards and meets the expectations of regulators

Basel III has been more than a decade in the making, from the very earliest agreement to strengthen capital requirements in 2009, to the decision in March 2020 to delay implementation of the final parts of the package as a result of the coronavirus pandemic. Throughout many years of drafting and the increasing technical complexity of the framework, the overarching objective to set consistent and risk-appropriate capital requirements has remained paramount.

Achieving consistent implementation of risk-based capital requirements across jurisdictions and institutions requires strong commitment from both market participants and regulators. Nowhere is this more evident than in the recent evolution of standardised approaches to calculating trading book capital requirements. As the use of internal models is scaled back under Basel III, standardised approaches are set to become more widely used, underscoring the importance of benchmarking exercises to ensure consistent and accurate implementation.

"The global financial crisis revealed how the variability of capital models led to different outcomes in capital levels, so standardisation of modelling options became a key principle in the development of the Basel III trading book capital requirements. Standardised approaches have evolved from a simple look-up table to calculate capital requirements to more risk-sensitive models that can be used as a credible alternative to internal models," says Panayiotis Dionysopoulos, head of capital at ISDA.

> "The global financial crisis revealed how the variability of capital models led to different outcomes in capital levels, so standardisation of modelling options became a key principle in the development of the Basel III trading book capital requirements"
>
> **Panayiotis Dionysopoulos, ISDA**

Standardised approach 2.0

The final components of Basel III now due for implementation by January 1, 2023 include the Fundamental Review of the Trading Book (FRTB) and revisions to the credit valuation adjustment (CVA) framework. In both cases, standardised approaches will be more widely used than ever. In the revised CVA framework, the option to use internal models has been removed entirely, leaving banks to choose between the standardised approach and the basic approach, while the FRTB places much greater emphasis on standardised methodologies.

The new standardised approaches to trading book risk capital are no longer basic formulae that can be used as a simpler alternative to internal models. Whether calculating capital for market risk, CVA risk or counterparty credit risk, a Basel III standardised approach is a much more complex calculation framework that requires significant time, resources and expertise to implement. The transition to these new standardised approaches is taking place over the course of a relatively short time

"While FRTB-SA is a standardised approach, it is much more complicated than previous standardised approaches and we realised early on that there would be benefit in benchmarking across industry participants"

Holger van Bargen, Deutsche Bank

frame – just a few years – and banks recognise the need to work proactively with the rest of the industry to ensure implementation is both accurate and consistent.

Some form of benchmarking is the best way to deliver this consistency. Regulators including the European Banking Authority have deployed benchmarking for many years to make sure internal-models-based approaches lead to comparable outcomes across institutions and jurisdictions. For the benchmarking of the new standardised approaches, an industry-led exercise was established to help banks interpret the rules and develop their approaches.

In 2018, the ISDA Standardised Approach (SA) Benchmarking initiative was launched to support accurate and consistent implementation of standardised approaches under Basel III. Now in its third phase, the exercise focused initially on the FRTB, but with the standardised approach to counterparty credit risk (SA-CCR) and CVA risk frameworks following close behind. So far, 55 banks, including 23 global systemically important institutions, have participated in the benchmarking exercise.

"While FRTB-SA is a standardised approach, it is much more complicated than previous standardised approaches and we realised early on that there would be benefit in benchmarking across industry participants. ISDA SA Benchmarking provides the opportunity to increase industry understanding of regulation, influence future policy-making and reduce costs through coordinated implementation," says Holger van Bargen, head of theoretical backtesting and quantitative development in risk methodology at Deutsche Bank.

Testing implementation

The ISDA SA Benchmarking initiative comprises two distinct components – the unit test and the hypothetical portfolio exercise.

55

Number of banks that have participated in the ISDA SA Benchmarking initiative

The unit test gives banks a prescribed set of input sensitivities, bucketing and other reference data that they run through their standardised approach engine. The results are then compared to ISDA's golden source results and any differences are flagged for further investigation.

"If you have a prescribed set of inputs and formulae, then you will get a prescribed set of results. Where the results don't match, we will help the banks to investigate and fix the bugs in their implementation. Every entity we have engaged with has benefitted from the unit test because it gives a very clear early indicator of any issues that need to be addressed, saving costs and resources later on," says Dionysopoulos.

After the unit test has been completed, the hypothetical portfolio exercise is a more detailed, time-consuming process in which banks carry out the end-to-end capital calculation with a set of hypothetical trades and submit them to ISDA to run the benchmarking. A final report is prepared at the end of this process to analyse the results and explain any variances.

"The final report at the end of the hypothetical portfolio exercise includes the median capital charges across the participating banks and each bank can see how its results compare to the wider bank distribution. This gives banks a clear idea of whether or not their implementation is in line with the industry. If there is a wider dispersion than expected, this could mean either that banks have taken a different interpretation of a regulatory matter, or there is a natural dispersion of the regulatory sensitivities computed by the banks due to differences in pricing models or parameters," says Lorenzo Gianferrari-Pini, executive director, market risk methodology at UBS.

Given the technical complexity of the new standardised approaches, participation in the benchmarking exercise goes hand-in-hand with regular working group discussions, as well as surveys that are carried out where necessary to gather feedback on specific →

> "The platform provided by ISDA assists market participants to share their understanding of the technical requirements, which will encourage a consistent build across market participants"
>
> **Faizel Jeena, South African Reserve Bank**

→ issues. With less than two years to go until the implementation deadline, it is becoming increasingly important for banks to make sure they are on track and aligned with the required standards. For those that have participated already, the benchmarking exercise has provided a valuable opportunity to validate their work.

"We made a strategic decision several years ago to update our market risk infrastructure and to use a standardised approach under the FRTB rather than internal models. ISDA SA Benchmarking allowed us to carry out a very effective sanity check on our implementation and we used it as an early warning system for potential issues," says Patricia Enzi, head of market risk analysis at Zürcher Kantonalbank.

Enhanced oversight

While banks might be the most obvious beneficiaries of any industry benchmarking initiative, 16 regulators have also had some involvement in the exercise so far, using it to monitor implementation among banks in their jurisdictions and inform their own decision-making processes.

"The platform provided by ISDA assists market participants to share their understanding of the technical requirements, which will encourage a consistent build

VIEW FROM THE OFFICIAL SECTOR

David Phillips, head of traded risk measurement at the UK Prudential Regulation Authority, gives his perspective on ISDA Standardised Approach (SA) Benchmarking

IQ: What is your experience of the ISDA SA Benchmarking initiative, having been involved from the very beginning?

David Phillips (DP): I have been very impressed with what has been achieved so far and the rapid expansion in scope and number of firms involved in each successive phase. When we first began discussing the idea with ISDA, we had in mind a more limited exercise. However, the time and energy invested by ISDA – and the industry working group – has helped to maximise the overall value of the exercise. Two areas in particular I would highlight are the development of a consistent data model to allow intermediate results to be shared, and the use of industry surveys to provide insight into the variability in key model inputs.

IQ: What would you say are the main challenges associated with the implementation of the Fundamental Review of the Trading Book standardised approach (FRTB-SA) and other standardised approaches?

DP: The FRTB-SA is in many ways similar to a first-generation value-at-risk model, albeit one that is entirely specified – and calibrated – by regulators and is designed to incorporate additional prudence in a number of areas. Therefore, it is more sophisticated than the existing standardised approach. All firms will need to apply the FRTB-SA to all of their positions, even those for which they have internal model approval, and therefore its implementation will need to be robust and performant.

IQ: How important is it that the FRTB-SA is implemented consistently across the industry and how can this consistency be achieved?

DP: A consistent implementation of the rules is always important. In this case, the FRTB-SA has an expanded role in the new rules, and this has increased regulators' interest in ensuring consistency. Firstly, it is a component in the floor on internal model capital requirements to be introduced in Basel 3.1. Secondly, it is a fallback when trading desks fail the internal model tests. Finally, it is a common benchmark model that can be used to compare firms.

IQ: Given many banks operate in multiple jurisdictions, how important is cooperation at the Basel level to maximise efficiencies?

DP: International cooperation will always be important, and the Basel Committee on Banking Supervision is a key cornerstone of this. On benchmarking, there has been good discussion between across market participants. This is particularly important when one considers a transaction between two counterparties, which should result in a largely consistent capital requirement when applying the standardised approach," says Faizel Jeena, head of the risk support department in the Prudential Authority at the South African Reserve Bank.

Having ISDA leverage its membership and quantitative expertise to deliver benchmarking has been particularly valuable for regulators, Jeena adds. "It certainly is a benefit to have ISDA coordinate this exercise and provide the industry outcomes for inspection and subsequent discussions related to participant-wide performance and levels of readiness. The unit tests and hypothetical portfolios allow for unified testing protocols with standardised inputs and outputs for comparability. As a regulator, this allows for a standardised comparison across market participants and the seamless identification of outliers."

While nearly half the institutions that have participated so far are global systemically important banks, benchmarking is just as valuable for smaller entities, many of which will almost certainly rely on the standardised approach rather than using internal models. For banks that do not operate significant trading books, developing, testing and maintaining a standardised model may involve disproportionate costs and resources, so a popular option is to buy an off-the-shelf solution from a technology vendor.

Given the large number of banks around the world that may be using technology vendors to support their capital calculations, ISDA has made its unit tests available for vendors to licence for use in their own products. So far, eight vendors – ActiveViam, Avera AI (Area 120 at Google), AxiomSL, Calypso, Finastra, FIS, MSCI and Murex – have licensed the ISDA SA unit tests. The licensing programme operates in the same way as for the ISDA Standard Initial Margin Model (ISDA SIMM), with vendors certifying to ISDA that their software generates outputs that conform to the expected results of the relevant unit tests.

"Just as it has been for the ISDA SIMM, the vendor licensing programme is an absolutely crucial component of deploying ISDA SA Benchmarking as the industry standard. By licensing it to vendors, we can essentially reach many more banks and ensure a consistent implementation is achieved across the industry, from the largest to the smallest entities," says Dionysopoulos.

As the final Basel III standards are transposed into law and banks scale up their preparations for implementation in 2023, the value of benchmarking will become increasingly apparent. As the scope expands from the FRTB to SA-CCR and CVA, it is expected that more entities will look to leverage its benefits.

"Without some form of benchmarking, there is definitely a higher operational risk of divergence from industry standards. If a firm were to take a specific interpretation of the rules, it would face significant challenges to identify any deviation from industry consensus and to understand the impact without benchmarking. It is quite clear that implementation needs to be thoroughly tested before the deadline, and using the framework that ISDA has developed and maintained centrally is the most efficient way of doing this," says Deutsche Bank's van Bargen. IQ

regulators, although it is important to note that this particular initiative is outside of the auspices of Basel.

IQ: How does the ISDA SA Benchmarking initiative help to achieve consistent and accurate implementation of the FRTB-SA?

DP: In a number of ways. Most obviously, by providing a golden source against which banks can compare the output from their implementation for a wide range of pre-specified risk profiles. Given the same inputs, banks should generate very similar (if not the same) outputs. And this is largely what we have seen from the finalised benchmarking results. The process of coming to a collective agreement on the golden source also identified a number of potential issues with the rules, which could then be clarified with regulators. But, of course, differences can also come from different inputs, and investigating the sources and degree of variability has been another major contribution.

IQ: Why is ISDA well-placed to offer this initiative to the industry and regulators?

DP: ISDA maintains good contacts with those banks with the most significant trading books and therefore those most affected by the FRTB. It has been able to bring those banks together to form effective industry working groups and provide the organisational impetus and thought leadership to steer this forward. This has helped to ensure that each phase of the benchmarking initiative has achieved improvements relative to earlier phases. ISDA has also maintained good working relationships with the expanded set of international regulators now interested in this process.

IQ: How important is it that this initiative is widely used and extended to other areas? Where should the priorities be?

DP: There are a number of new standardised approaches being introduced in the near term. In addition to the FRTB-SA, there is also the new standardised approach to counterparty credit risk (SA-CCR) and the revised credit valuation adjustment capital charges. Given the success of industry benchmarking for the FRTB-SA – both for banks and for regulators – we are keen to see the exercise expanded to incorporate testing of these additional measures. For SA-CCR, we have seen the results from the pilot phase and look forward to the outcome from the first full exercise in 2021. An interesting area for future development would be to investigate to what extent the capabilities developed through this exercise can be translated to the benchmarking of internal models.

Transformational Change

ISDA is preparing to launch the 2021 ISDA Interest Rate Derivatives Definitions later this year. The upgrade will bring major benefits to derivatives market participants, including a web-based user interface that will make the definitions much easier to navigate, write ISDA's ***Jonathan Martin*** *and* ***Rick Sandilands***

The global interest rate derivatives market has grown significantly over the past 15 years. Average daily volume reached \$6.5 trillion in 2019, up from \$1.7 trillion in 2006, according to the Bank for International Settlements triennial survey. ISDA's interest rate derivatives definitional booklets, first produced in 1987, have been a cornerstone of this liquid, growing market, enabling both standardisation and flexibility.

The current iteration of the definitional booklet was published in 2006. During 15 years of use, it has supported the market through the global financial crisis and the regulatory reforms that followed, changes in market practice, market closures in response to the coronavirus pandemic, and the industry transition from paper-based contracts to electronically generated confirmations. A lot has changed since 2006, when the first iPhone was still a year away from general release. Fifteen years on, a major upgrade to the 2006 ISDA Definitions is long overdue.

As a result, ISDA will launch the 2021 ISDA Interest Rate Derivatives Definitions later this year. The upgrade will introduce a number of innovations and updates that will be important to traders, lawyers, operations personnel, IT departments, risk management functions, and many other areas of the cleared and non-cleared derivatives market and its infrastructure.

Consolidate and digitise

The 2006 ISDA Definitions, like all definitional booklets, were published as a physical paper booklet. Part of the reason they have enjoyed such longevity is that they have been amended from time to time to reflect market developments by means of supplements, typically published in PDF form on the ISDA website. The latest example was Supplement 70, which introduced fallbacks for derivatives linked to certain interbank offered rates (IBORs).

While the addition of 70 supplements has kept the 2006 Definitions relevant and current, this has also made them gradually more unwieldy and difficult to read. For example, counterparties entering into a swap under the 2006 Definitions on January 1, 2015 would have needed to read through 45 supplements to understand the terms of their trade. If those counterparties executed an identical swap five years later, they would need to trawl through an additional 17 supplements to determine if any important changes had been made to the terms.

The 2021 Definitions will consolidate all 70 supplements as previous updates have done, but rather than perpetuate this practice, the new definitional booklet will be published in a purely electronic format with a new web-based user interface. This will allow the 2021 Definitions to be amended and restated in their entirety whenever they are updated, rather than requiring publication of a new, separate supplement every time.

Users will be able to navigate straight to the version of the definitions that prevailed at the trade date and to past and future versions in blackline. In the case of the 2015 and 2020 swaps example, determining any differences between the two sets of terms will be far easier.

The user interface will also provide advanced searches, hyperlinks to user guides and multimedia content and bookmarking, and will be accessible from smart phones as well as desktop computers. Taken together, these advances will reduce operational risk and provide significant time efficiencies.

Amend and update

Other important developments will ensure the definitions better reflect modern market practices, take account of various structural changes introduced as a result of regulatory reforms, and implement lessons learned from navigating periods of market stress over the past 15 years.

One major area of reform relates to the methodologies for determining a cash settlement amount following early termination or the exercise of a swaption, as existing methodologies do not reflect the shift in market convention to overnight index swap discounting and the increased use of collateral. The new cash settlement methodologies fall into two main categories – a mid-market valuation approach and a replacement value approach. Each approach is divided into sub-categories, representing the valuation methodologies currently used by market practitioners under various scenarios. Older cash settlement methodologies contained in the 2006 Definitions that remain relevant are being retained, with drafting updates to make them easier to understand. Those that are defunct will not be carried over.

The cash settlement provisions are also being structured to help make reference bank polls more standardised and robust. Firms will use standard quotation templates and have to conform to a prescribed methodology. In addition, the minimum number of quotations required for a dealer poll to be deemed successful will be reduced to two. By increasing the chance that the dealer poll is successful, parties will be less likely to have to rely on a calculation agent's determination of the cash settlement amount.

Standardisation

Another major area of change relates to the definition of interest rate benchmarks used to determine the floating amount. Under the 2006 Definitions, these floating rate options are written as blocks of narrative text with no standard naming convention or format. That has led to inconsistencies in the names of floating rate options and their operative provisions, which increases complexity.

The 2021 Definitions will set out these floating rate options in a matrix format, with standardised fields representing the required attributes of the floating rate. A common naming convention will be introduced so users can determine certain key attributes of the rate just by looking at the floating rate option name. This will enable firms to build their systems confident that names for future, yet-to-be published rates will, wherever possible, follow a set pattern.

Floating rate options under the 2021 Definitions will also be publication-source agnostic – multiple floating rate options will no longer be produced for a single rate in order to represent all or a subset of alternative publication sources. Instead, a single floating rate option will reference the primary source of the benchmark level, such as the administrator or central bank. This will streamline the definitions, help to facilitate fungibility for clearing and minimise disputes.

In addition, ISDA will use this opportunity to update floating rate option names that reference outdated administrators and publication sources. For example, the reference to British Bankers' Association will be removed from the LIBOR floating rate options.

> "The 2021 Definitions will consolidate all 70 supplements as previous updates have done, but rather than perpetuate this practice, the new definitional booklet will be published in a purely electronic format with a new web-based user interface"

Improving robustness

Alongside these technical updates, the new definitions will incorporate lessons learned from recent market disruptions and closures. For example, certain market closures during the coronavirus crisis were announced on non-business days, which caused problems because the 2006 Definitions shifted affected payment dates to the next preceding good business day (ie, in the past). The 2021 Definitions will introduce the concept of unscheduled holidays, which will push relevant dates under the definitions (such as payment dates) to the next good business day rather than the next preceding day if insufficient notice of a market closure is given.

While the IBOR fallbacks will be carried over to the 2021 Definitions in almost identical form, working group members are discussing generic fallbacks for application to other floating rate options that do not have specific fallbacks, based on ISDA's 2018 Benchmark Supplement.

The 2021 Definitions are also being structured in a more technology friendly way. Matrices and formulae will replace narrative where possible to ensure the definitions are easier to code. In addition, certain sections of the 2021 Definitions will be included in the Common Domain Model, which establishes a standard digital representation of events that occur throughout the derivatives lifecycle, paving the way for interoperability and the use of smart contracts.

This project is a significant update of a flagship definitional booklet. While this will undoubtedly be a big lift for firms to implement, it is a once-in-a-decade opportunity to modernise and future proof the definitions for the challenges the interest rate derivatives markets will face in the years ahead. IQ

Jonathan Martin is director, market infrastructure and technology, and Rick Sandilands is senior counsel for Europe at ISDA

Aiming for Phase Five

*With just seven months to go until the implementation of phase-five initial margin requirements, Tara Kruse, global head of infrastructure, data and non-cleared margin at ISDA, talks to **Tara McCloskey**, global operations business management and strategy at MetLife Investment Management, about the firm's preparations*

Ever since the phased application of margin requirements for non-centrally cleared derivatives began in September 2016, it was clear implementation would become increasingly more challenging as the years rolled by. While the first phase captured only those entities with non-cleared derivatives notional outstanding exceeding €3 trillion – effectively the largest dealers – the threshold plunges to €50 billion for phase five and just €8 billion for phase six.

This means that an estimated 314 counterparties will need to be ready to exchange initial margin (IM) for their non-cleared derivatives exposures by the phase-five deadline of September 1, 2021, and approximately 775 counterparties will need to be ready for phase six on September 1, 2022. That equates to a total of 9,059 counterparty relationships, 40% of which will be caught by phase five and 60% by phase six.

Given the impact of the coronavirus pandemic, the Basel Committee on Banking Supervision and the International Organization of Securities Commissions announced a one-year delay for phases five and six in April 2020. The additional year was critical in making sure financial institutions had the necessary bandwidth to manage the crisis, but the new deadlines are now drawing close. The numbers of counterparties and counterparty relationships affected by phases five and six are far in excess of those caught by the first four phases. With just seven months to go, those entities that expect to be caught by phase five should already be actively preparing.

Tara McCloskey,
MetLife Investment Management

Preparations would typically start with the identification of in-scope entities by calculating the firm's average aggregate notional amount of non-cleared derivatives. Further steps include making disclosures to counterparties, exchanging information on compliance, establishing custodial relationships and negotiating documentation. Preparation must begin long before the expected go-live date, ideally a year in advance.

The good news is that ISDA recognised the challenge of the final implementation phases from the outset, and developed the technology, resources and guidance that firms need for a smooth and effective implementation. The industry's experience of the first four phases means the estimated 1,089 entities that are expected to fall within the scope of the final two phases have a proven playbook to work from.

For example, the ISDA Standard Initial Margin Model (ISDA SIMM) provides a common methodology for the calculation of IM and is available to phase-five and phase-six entities to licence free of charge. ISDA Create is another important industry tool that enables counterparties to electronically negotiate the documentation required for IM compliance. This is particularly valuable at a time when many practitioners continue to work remotely due to coronavirus restrictions.

MetLife Investment Management has been preparing for the phase-five deadline for some time and has participated actively in ISDA's working groups. Tara McCloskey, global operations business management and strategy at MetLife, shares her perspective on the challenges the firm has encountered and how they have been overcome.

Tara Kruse (TK): What challenges have you identified so far in the implementation of phase-five IM requirements and how are you preparing for the September 2021 deadline?

Tara McCloskey (TM): The biggest challenge is designing a comprehensive solution to comply with the global requirements for IM and implementing other competing regulatory initiatives at the same time. As a global company, it has been challenging implementing a single solution to fulfil all the requirements across the different regions. Regulations can vary from country to country, and this has tested our ability to implement a single operating model and governance framework and select a global custodian. Over the years, our team has become very well versed in implementing regulatory projects. However, we have a very tight schedule for technology testing and releases this year. While the one-year relief was a welcome respite, it has created a big bang in 2021 for phase-five participants. We will be very busy with IM implementation, LIBOR transition and continual Brexit challenges all being worked on in parallel. It will require a huge lift from all our internal and external partners to make sure we execute and deliver on these initiatives this year.

"The biggest challenge is designing a comprehensive solution to comply with the global requirements for IM and implementing other competing regulatory initiatives at the same time"

TK: How important is the setting up of custodian relationships ahead of the September deadline? How do you anticipate this will work for MetLife with multiple legal entities and presumably multiple custodian relationships?

TM: One of our top priorities is to have our custodial relationships and documentation completed by September and we will be ready. We are committed to creating consistent solutions for all entities and clients and leveraging global custodians. Varying regulatory regimes have made this challenging, but we have tried to build a core operating model and supplement where necessary to accommodate those requirements. We have begun the know-your-customer and documentation process with our counterparties' custodians as well. This will allow us to begin our onboarding process once the necessary legal documents are signed. We are mindful of the timelines that custodians have communicated and are working with a sense of urgency over the next few months. I am hopeful that industry experience gained in past phases will help us achieve a smooth implementation.

TK: The non-cleared margin rules impact multiple areas of a firm's operations, from trading and risk management to legal and compliance. How are you working with different parts of your firm on this project?

TM: When we started out on this project in 2017, we sensed that implementation would be like none we had experienced in the past. We realised it wasn't just about credit support annexes (CSAs) and collateral like other margin and clearing regulations but would involve lots of different teams. Those teams need very clear hand-offs and coordination on a daily basis for us to have accurate calculations of risk and margin. In order for this to happen, we had to look at our end-of-day processes and make things more efficient to be able to meet the daily cut-offs for trade capture, risk calculation, Common Risk Interchange Format file generation and ultimately margin call and exchange in three regions. There will always be competing priorities, and it is something we are used to in derivatives. We have an amazing team that is very flexible and able to work together to get it done. We have a tight project timeline and use Agile project management with three different streams: legal, analytics and collateral. Each stream operates independently until about six months prior to implementation, when they need to converge for testing and go-live.

TK: Having sufficient eligible collateral readily available while also meeting investment performance goals is a challenge. What operational and technological arrangements are you putting in place to manage and optimise collateral?

TM: One of the most essential elements to being able to manage and optimise collateral is data. Good data management includes the flow of data, real-time capture of data and the ability to access it quickly. There are plenty of industry tools available that we intend to leverage, including ISDA Create. But unless you have good data, they offer minimal benefit. Some of these tools will help to capture settlement information, digitised CSA terms and margin messaging. But others may need to be developed in-house, such as notification of real-time changes in inventory due to portfolio management decisions, real-time derivatives trade data and collateral inventory data.

In addition, you need a robust collateral management system that is integrated with these industry tools. In anticipation of implementing the non-cleared margin rules, we transitioned to a new collateral management system a few years ago that integrates with the other tools, allowing for a seamless flow of data. Optimal collateral usage is not something new but a continuation of increased demand for collateral that began with implementation of the variation margin rules. To help achieve this, we centralised all collateral management under one team. This facilitates the deployment of collateral quickly and efficiently as it is consolidated on one common operating platform. We also use optimisation tools that allow us to access the full eligibility of our CSA schedules and deliver collateral economically.

> "We are mindful of the timelines that custodians have communicated and are working with a sense of urgency over the next few months. I am hopeful that industry experience gained in past phases will help us achieve a smooth implementation"

TK: After putting in place the systems and processes to meet margin requirements for non-cleared derivatives, is there an opportunity to extend this to other areas to realise greater operational and risk management efficiencies?

TM: We have always looked at collateral management in a holistic way. All margining is centralised in one team for derivatives and securities financing transactions and we realise the benefits across products where applicable. However, this regulation has made us sharpen our pencils and innovate to improve other upstream processes. We also had to transition some processes and tasks to be performed in our regional locations because of the speed at which collateral and risk need to be calculated and exchanged. We are developing our collateral management and risk expertise in those regions to meet local service-level agreements and regulations. We have also had to consider what industry tools we leverage versus what is built in-house.

TK: How has your preparation for phase-five IM benefitted from your involvement with ISDA?

TM: Now more than ever, ISDA is a vital organisation to our industry as we are all slightly disconnected from our normal derivatives community. Not having the ability to meet regularly with our industry peers or attend conferences has slowed the flow of information for some buy-side participants. ISDA has provided an invaluable communications platform through the website, working groups and regular periodicals.

Each stream of our project has benefitted from being part of ISDA's non-cleared margin working groups, whether it has been the legal, SIMM model implementation or collateral groups. We have been able to leverage ISDA in helping us to understand our requirements in each of our jurisdictions. We have used the *Getting Ready for Initial Margin: The Steps to Take* guide, the in-scope products chart and various other toolkits. We appreciate all that ISDA does to create a global derivatives community and represent all market participants. IQ

Access ISDA's resources and guides to support IM implementation online: www.isda.org/category/margin

ISDA® Safe, Efficient Markets

What is the ISDA® CDM?

The ISDA Common Domain Model (ISDA CDM™) is a blueprint for how derivatives are traded and managed across the trade lifecycle. Having a single, common digital representation of derivatives trade events and actions will enhance consistency and facilitate interoperability across firms and platforms, providing a bedrock upon which new technologies can be applied.

WHY THE ISDA CDM?

Catalyst

- Over time, each firm has established its own systems and its own unique set of representations for events and processes that occur during the life of a derivatives trade.
- There is no commercial advantage to organizations maintaining their own representations. It results in firms having to continually reconcile their trades to make sure they have the same information – a big drain on resources. It also curtails the potential for greater automation, and results in increased operational risk.
- New technologies offer the potential for greater automation and efficiency, reducing complexity and costs. But effective automation can only be built on standardization.

Opportunity

- Derivatives market participants are looking at ways to reduce costs and improve the efficiency of back-office processes.
- An opportunity exists to create standards that support innovation and promote the adoption of new technologies.
- ISDA has a 30-year track record in developing industry standards.

BENEFITS OF THE ISDA CDM

- **Enhancing interoperability, reducing reconciliation and promoting straight-through-processing:** The ISDA CDM enables a consistent hierarchical representation across trades, portfolios and events, providing enhanced risk management and trade processing capabilities.
- **Creating an environment for innovation in financial markets:** The ISDA CDM creates a foundation for long-term process transformation using emerging technologies like cloud, distributed ledger and artificial intelligence. The ISDA CDM is available in machine-readable and machine-executable formats and languages that can be consumed by those technologies.
- **Delivering better regulatory oversight:** The ISDA CDM promotes transparency and alignment between regulators and market participants, ensuring regulatory goals can be met more efficiently.

Want more information? Contact Us: ISDA Market Infrastructure & Technology -
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An International Focus

*The Singapore International Commercial Court was established in 2015 as a forum for the resolution of international commercial disputes, including those involving derivatives. **Sir Bernard Eder**, one of the court's international judges and a former judge at the High Court of England and Wales, talks to* **IQ** *about the court's first five years and how it has continued to operate during the pandemic*

IQ: Can you describe the role of the Singapore International Commercial Court (SICC)?

Sir Bernard Eder (BE): The SICC was launched on January 5, 2015 as a division of the Singapore High Court. It aims to provide an internationally accepted framework for the resolution of international commercial disputes at a trusted neutral venue, in accordance with substantive principles of international commercial law. It is therefore a national court, with all its coercive powers, but with a division set up specially to serve the international business community in resolving disputes in an efficient and cost-effective manner. The SICC was the result of extensive study of international best practices for commercial disputes, headed by a high-level working group, with the aim of developing provisions sensitive to the unique needs of international commercial users and the commercial bar.

It was launched to meet a perceived demand gap, and what the SICC aims to provide is a tailored alternative to arbitration – a place where businesses that operate internationally can seek a court judgment with the confidence that it will be a high-quality decision delivered in an efficient and impartial manner by judges of repute and with relevant industry knowledge.

The SICC is a key part of Singapore's plan to position itself as an international dispute resolution forum, alongside the other options of the Singapore International Arbitration Centre (SIAC) and the Singapore International Mediation Centre (SIMC). It also taps into the strong international reputation that Singapore has for the rule of law, which is defined by judicial independence, competence and efficiency, and the eradication of corruption.

In short, the SICC offers court-based adjudication of international commercial disputes, even when such disputes have no connection with Singapore and are not governed by Singapore law. As such, it provides an alternative to international arbitration in a court setting with a difference – where each case will be adjudicated by

"The SICC enables efficient court-based adjudication of international commercial disputes in a trusted, neutral forum in Asia. It may be a court in Singapore, but it should not be viewed as a national court"

experienced specialist commercial judges, with international judges from both civil law and common law traditions sitting with Singapore judges, and where parties may be represented by foreign lawyers in matters where there is no substantial connection to Singapore.

As a division of the Singapore High Court, there is a right of appeal to the Singapore Court of Appeal unless parties contract otherwise. This compares favourably with international arbitration where parties only have one shot to have their rights determined.

IQ: Are you seeing increased interest from international parties choosing Singapore as a forum for dispute resolution? Why might parties opt for the SICC?

BE: The awareness and reputation of the SICC and the jurisprudence it has built over its first five years strongly indicate its selection as the jurisdiction for contracts involving transnational parties, although there is inevitably a time lag for disputes to arise from these contracts and for such disputes to come to the court after settlement attempts have failed.

Another indication of increased interest is the frequency of the SICC being discussed at meetings and conferences, as well as articles written by both academics and practitioners. Parties might consider using the SICC as the dispute resolution forum for the following reasons.

The SICC enables efficient court-based adjudication of international commercial disputes in a trusted, neutral forum in Asia. It may be a court in Singapore, but it should not be viewed as a national court. We also have a panel of experienced judges, comprising specialist commercial judges from Singapore and international judges from both civil law and common law traditions. There are now 16 international judges from seven jurisdictions (Australia, Canada, France, Hong Kong, India, the UK and the US), who sit alongside experienced judges from Singapore. Three of these 16 international judges were former heads of their respective judiciaries in Australia, Canada and the UK.

Parties may be represented by foreign counsel of their choice in certain matters that have no substantial connection with Singapore. Foreign lawyers will be granted a right of audience before the SICC, so long as they satisfy the registration requirements. They may appear and make submissions in any relevant proceedings, give advice, prepare documents and provide any other assistance, including proceedings in the Court of Appeal if an appeal is eventually filed. This allows parties to work with counsel they are comfortable with, expanding the range of options available to them. As of December 2020, 87 foreign lawyers from 13 jurisdictions, including Queen's counsel and senior counsel, had registered with the SICC.

Another factor is the ease of joining related parties to a dispute – highly relevant in multi-party or multi-contract matters. An international commercial court, if structured correctly, is also apt for resolving disputes where there are multiple connected parties or where there is a string of upstream or downstream contracts.

Finally, there is availability of appeal, plus a broad enforcement-of-judgments footprint – treaties and arrangements cover close to 40 jurisdictions, including the major financial centres. For other jurisdictions, enforcement would be by action on a judgment debt.

A unique feature of the SICC is procedural flexibility, as it adopts international best practices for commercial disputes. Its procedures may be tailored to suit parties' preferences in several aspects, such as determination of foreign law (by submissions), document production, confidentiality and rules of evidence. Also, costs are at the discretion of the court. This makes the SICC an uncommon common law court, and some practitioners have commented that it is arbitration in →

→ litigation – with the advantages of international arbitration over traditional litigation, plus the advantages of published judgments, the right of appeal, and the hearing of disputes involving multiple parties that require third and related parties to be joined to the proceedings. The charges at the SICC, especially for large sums involved, are also competitive vis-à-vis international arbitration.

A group of disputes that will benefit from adjudication by the SICC are those arising from contracts where certain model clauses or laws are applied worldwide, and the interpretation of these clauses, as well as publication of those judgments, allow for the development of a standard interpretation. This is very much the situation in disputes arising from clauses in the ISDA Master Agreement. A good example is my own decision in the SICC in Macquarie Bank Limited versus Graceland Industry, which was concerned with the calculation of the close-out amount specified in clause 14 of the ISDA Master Agreement.

Published judgments with clear grounds of decision allow for commercial certainty – law firms advising their clients on their obligations under the ISDA Master Agreement can refer to such authoritative decisions. Similarly, in construction, there is widespread use of significant standard-form contracts with wide cross-cultural appeal, such as Fédération Internationale Des Ingénieurs – Conseils contracts. This enhances the benefits of developing a coherent jurisprudence, which would be lacking should such disputes be resolved through arbitration, as awards arising from them are confidential.

One measure of success of any court is its judgments and decisions. The SICC has released 79 judgments to date, involving parties of 33 nationalities with claims ranging from S$1.2 million ($903,000) to S$1 billion. These judgments are available to the public, and many of them have been praised or received favourable assessments by leading commentators around the world.

IQ: What measures have been taken to make Singapore a viable and attractive option for foreign counterparties when choosing a forum for dispute resolution?

"Closer collaboration between international commercial courts is a glimpse at a rare opportunity to achieve consistency and certainty across jurisdictions. Businesses want to know what laws govern their dealings and what rights and duties they have"

BE: In the 2018 international arbitration survey jointly conducted by Queen Mary University of London and White & Case LLP, respondents rated Singapore the third most preferred venue for dispute resolution. This is unsurprising as Singapore has become a major hub in Asia for both financial and legal services, serviced by an integrated communications network to the rest of the world. Its status was burnished with the signing of the Singapore Convention on Mediation in August 2019.

The SICC is a key part of Singapore's plan to position itself as an international dispute resolution forum, alongside the other options of the SIAC and the SIMC. Singapore has established a strong international reputation for the rule of law, which is defined by judicial independence, competence and efficiency, and the eradication of corruption. In the World Justice Project Rule of Law Index 2020, Singapore was ranked 12th in the world, and the first among Asian countries. Among the different factors, it was ranked first for order and security and third for the absence of corruption and regulatory enforcement.

IQ: What are the challenges involved in adjudicating on disputes involving complex financial instruments like derivatives?

BE: Such cases are uniquely suitable for a court like the SICC. The main disputants would have the ability to bring third and fourth parties into the same proceedings to prevent inconsistent findings, even if the third and subsequent parties do not agree. The SICC would have the power to customise litigation to suit the dispute and is well able to case manage such complex disputes – for example, through consolidation of proceedings or issues, or having cases or issues heard sequentially but all before the same tribunal. Time and costs would be minimised by streamlining the expert evidence and agreed issues and

> "There is no doubt that virtual hearings require careful preparation in advance to ensure they can take place in an efficient way, always mindful of the critical need to ensure the case is conducted fairly for all parties"

facts common to different aspects of the proceedings. The SICC's coercive powers are available against any party trying to apply dilatory tactics. All of this would result in an efficient, cost-effective resolution of the multiple disputes spawned by such complex matters.

IQ: How important is international cooperation among commercial courts?

BE: In May 2017, senior judges from 25 jurisdictions met in London for the inaugural Standing International Forum of Commercial Courts (SIFoCC), and for a second time in September 2018. This signalled a clear intention by commercial courts that they are eager to work together to support commerce and international business. The intention was to establish collaboration between the jurisdictions to achieve cross-border recognition and enforcement of court judgments.

One of the key achievements of SIFoCC was the Multilateral Memorandum on Enforcement of Commercial Judgments for Money, published in June 2019, which describes how an overseas commercial judgment for money can be most simply and practically enforced in other jurisdictions.

Closer collaboration between international commercial courts is a glimpse at a rare opportunity to achieve consistency and certainty across jurisdictions. Businesses want to know what laws govern their dealings and what rights and duties they have, which is often a difficult feat when transactions occur across borders. With such harmonisation of commercial law or approaches, businesses that operate internationally will know, with clarity, their rights and duties, regardless of where the transactions occur, resulting in lower costs of operations and greater certainty and confidence.

This then allows the SICC, and international commercial courts in general, to present a tailored alternative to other modes of dispute resolution, including arbitration or mediation, in appropriate circumstances.

IQ: How are commercial courts having to respond to the coronavirus pandemic? What challenges have the courts faced, and do you think any of the measures introduced in response to the virus will become permanent?

BE: The COVID-19 pandemic has had an important impact on the conduct of hearings in the SICC, as well as in other courts in Singapore and around the world. Except for the period between April 7, 2020 and June 1, 2020, when the courts in Singapore heard only essential and urgent matters, the majority of hearings have proceeded since June 2, 2020 using remote communication technology such as Zoom. In the SICC, this has worked very well – and has enabled the court to continue its work as an important forum for the resolution of international disputes during these unprecedented times.

In fact, even before the onset of the pandemic, the SICC had embraced virtual hearings. Since 2019, there have been some 25 cases in which at least one case management conference or hearing at the SICC was conducted at least partially through video conference (VC) and three cases or originating summons hearings conducted at least in part via VC.

Needless to say, the conduct of virtual hearings is not without some logistical difficulties. Access to fast and secure internet is obviously a prerequisite. It is also imperative that all concerned – including the court, counsel and any witnesses – have ready access to relevant documents in their different locations. Different time zones can also present a challenge. For example, since London is eight hours behind Singapore time, a virtual hearing in which I was one of the judges started at 1.30am London time.

Last year, I was engaged in a full eight-day SICC trial conducted remotely with the assistance of the SICC registry. I was sitting in my home in London with counsel joining from their respective offices and witnesses giving evidence (some through interpreters) from Malaysia and elsewhere. From my perspective, it has worked extremely well with no hitches.

There is no doubt that virtual hearings require careful preparation in advance to ensure they can take place in an efficient way, always mindful of the critical need to ensure the case is conducted fairly for all parties. With the assistance of the SICC registry, the experience of the SICC in conducting virtual hearings has led the way in international dispute resolution. Even after the pandemic ends, it seems likely that, where appropriate, the practice of conducting virtual hearings will continue. IQ

Net Positive

In September 2020, India passed the Bilateral Netting of Qualified Financial Instruments Act 2020, which ensures the enforceability of close-out netting. ***Sanjeev Sanyal****, principal economic adviser to the government of India and co-chair of the G-20 Framework Working Group, talks to* **IQ** *about the importance of bilateral netting, the impact of the pandemic and the outlook for India's capital markets*

IQ: How has India's financial market fared during the coronavirus pandemic and what steps have the Ministry of Finance and regulators taken to respond to its impact?

Sanjeev Sanyal (SS): The COVID-19 pandemic has been the biggest shock to the global economy since the Great Depression of the 1930s and the Second World War. Not surprisingly, it also caused disruption in the Indian economy and, for a while, financial markets were very volatile. The Reserve Bank of India (RBI) worked hard to ensure there was adequate liquidity in the system throughout the episode, while the Securities and Exchange Board of India ensured markets functioned smoothly despite the volatility. I am pleased to say that our policy responses, as well as the Group of 20's (G-20) coordinated action plan, have borne fruit. The Indian stock market has reached record highs and we are witnessing record investment inflows into India. The economy is also gathering steam after contracting sharply in the second quarter of 2020 due to the lockdown.

IQ: Last September, the Bilateral Netting of Qualified Financial Instruments Act 2020 passed India's parliament. Why is the enforceability of close-out netting so important?

SS: The enforceability of bilateral netting is important for India as it frees up capital in the financial system and simultaneously creates the necessary conditions for the development of a liquid credit default swap (CDS) market and vibrant corporate bond activity. India has a unique imbalance in having a vibrant equities market and a fairly large government bond market, but stunted corporate bond activity.

Corporate bonds are by their nature illiquid because the vast majority of companies don't issue enough debt to create liquidity. Unlike the equity market, where shares of companies are fungible with one another, a bond issued today is fundamentally different from one that is issued tomorrow, which means you never have enough stock of a bond to be liquid. The way this market gets liquidity is through the CDS market. You have to have CDS in order for there to be a corporate bond market, but a CDS market will never evolve without bilateral netting. Having netting in place frees up resources because firms only have to hold capital on a net rather than a gross basis. This is very important for CDS because capital requirements increase very rapidly without netting.

Basel III capital requirements are designed with the presumption that netting legislation is already in force. Most developed financial systems have bilateral netting in place, but we previously only had multilateral netting in India. As we introduced Basel III without netting, it became clear that very large amounts of

"The COVID-19 pandemic has been the biggest shock to the global economy since the Great Depression of the 1930s and the Second World War. Not surprisingly, it also caused disruption in the Indian economy"

IQ: Are the Ministry of Finance and regulators planning further measures to support the development of the derivatives market?

SS: The Indian government and regulators will move forward steadily but carefully. We will watch how recent changes impact the evolution of the market and respond accordingly. While we do want Indian markets to enjoy the full range of financial instruments, we also do not want the derivatives market to become excessively large relative to the underlying bond market, as happened in international markets prior to the 2008 financial crisis. Hence, expect Indian policy-makers and regulators to move forward step-by-step using a feedback loop. Obviously, we will keep a close watch on international best practices and trends to formulate our approach.

By and large, we have implemented Basel III in India, but there are certain issues the Financial Stability Board and other international groups are looking at, including the procyclicality of ratings. While Basel standards use ratings as a measure of how much capital is needed, we have seen that when an external shock forces ratings downgrades, banks are required to hold more capital at exactly the time when they need to extend support to the economy. While the financial system was stabilised by fiscal and monetary intervention during the COVID-19 crisis, this procyclicality in ratings is a serious issue that is being discussed at the highest levels internationally.

capital would be tied up, so the need for bilateral netting became more acute.

I raised this issue in India several years ago and the legislation was in discussion and development since then. We consulted with our own banks and then we talked to the Bank for International Settlements, ISDA and others to get a sense of international best practices. We drafted legislation that was discussed with the RBI and other institutions and then went through various iterations to come up with something that was workable. The Bilateral Netting of Qualified Financial Instruments Act passed in September 2020 and is a historic reform as it opens up a whole new source of funding for investment activity.

IQ: How do you expect the new legislation will help to support the development of the local financial markets?

SS: The enforceability of bilateral netting is usually presumed for the introduction of Basel capital requirements. However, India went ahead with the imposition of stringent Basel-based capital requirements without confirming the enforceability of bilateral netting (although the enforceability of multilateral netting was put in place). This meant that capital requirements spiralled too quickly for the development of an efficient corporate risk market. By correcting this, we are easing a major constraint in this space.

IQ: How have the G-20 financial reforms been implemented in India and have they contributed to greater resilience during the COVID volatility?

SS: Financial reforms guided by the G-20 since 2009 have indeed helped to keep the global financial system functioning despite major disruptions in 2020. This is no small achievement given the scale of the shock, but the G-20 Framework Working Group continues to monitor the situation closely. In particular, the procyclicality of credit ratings is an important issue under discussion.

While India is committed to implementing the G-20 reforms, the real big policy changes over the past decade in →

→ India do not relate to the derivatives market specifically but to the wider system – for example, the introduction of an Insolvency and Bankruptcy Code, and bringing previously unsupervised segments of the financial system more tightly under the RBI's umbrella. This has helped clean up the balance sheets of the banks and non-bank financial companies.

IQ: What impact will the global transition from interbank offered rates (IBORs) to alternative reference rates have in India?

SS: The global transition from IBORs will not really affect India's domestic system but will impact external contracts. The number of affected contracts is not unmanageable but is still significant. Obviously, the RBI, the Ministry of Finance and the Indian Banks' Association are working together to ensure a smooth transition at the end of 2021. To put it simply, there are two broad approaches – the New York approach of simply legislating a replacement of the reference rate, and the London approach of allowing legacy contracts to use an artificially generated LIBOR. There is the further complication when a contract already specifies another alternative in case of a breakdown in LIBOR. Since our issues relate to external contracts, for most cases, we will follow what is being done in the relevant jurisdiction, and we are closely following developments.

IQ: How could advanced technologies such as distributed ledger and smart contracts benefit India's capital markets? What needs to be done to maximise their potential benefit?

SS: Such advanced technologies can be introduced where appropriate. However, one should not get dazzled by technology and lose sight of the fundamentals. The need for sensible regulation and supervision remains, and the single biggest test of technology is whether or not it is improving transparency and simplicity. If it is leading to unnecessary opacity and complexity, then it should be treated with care.

I could see a use for distributed ledger technology in financial markets, but it's actually a more basic technology than many people imagine – essentially, it's a way of keeping track of information that is needed.

IQ: How will India's capital markets, including derivatives, develop over the coming years, and what do you see as the greatest challenges and opportunities?

SS: We are looking to develop a vibrant corporate debt market as it is an obvious lacuna in our financial system. The introduction of bilateral netting is a major step in that direction. We will be watching the evolution of this market and remain ready to take more steps if necessary to encourage it. We also hope to see India included in global bond indices at some point in 2021. Important decisions have already been announced to enable this and we are now working with international investors on the mechanics, including settlement, tax and know-your-customer compliance requirements. IQ

NETTING IN INDIA: ISDA'S TAKE

If asked to name one single thing a country could do to bolster the safety and efficiency of its derivatives market, our answer at ISDA would be the same every time: implement legislation to ensure the enforceability of close-out netting. That is why the fact that India has now joined the ranks of countries that have taken that step is such good news. At a stroke, this creates more certainty for financial institutions and encourages greater participation in the local market by both foreign and domestic firms.

The benefits for India's financial markets are huge. By allowing each pair of counterparties to compress their various obligations into a single payment due by one to the other, netting mitigates the credit risk associated with derivatives and means a default is less likely to be disruptive to the financial system. Without close-out netting, firms would need to manage their credit risk on a gross basis, dramatically reducing liquidity and credit capacity.

A legally enforceable netting regime will also enable more efficient use of capital by financial institutions active in India. Regulators the world over recognise close-out netting as risk reducing when it comes to setting regulatory capital requirements, so long as there is a high degree of legal certainty over the enforceability of close-out netting under applicable laws, including the law of the jurisdiction in which the counterparty is incorporated. The existence of a clean netting opinion is therefore a critical criterion for global banks when deciding their level of involvement in a particular country. India's Ministry of Finance (MOF) and the Reserve Bank of India have also acknowledged the considerable impact this will have for major banks operating in India's derivatives market.

In a letter sent to the MOF in September 2020, ISDA and two other trade associations stressed how important it is that banks have the capacity to provide liquidity and extend credit to the real economy – a fact made more urgent by the coronavirus pandemic and related economic slowdown. We consequently urged the MOF to bring the netting bill before parliament.

The passing of that bill is a huge achievement, and the stage is now set for India's derivatives market to thrive. ISDA will continue to work with authorities across the globe to help them draft legislation on the enforceability of close-out netting. So far, we have published netting opinions on roughly 80 countries, and that number continues to climb. We strongly believe that certainty on close-out netting creates the foundations for strong, safe and efficient derivatives markets, in turn leading to a robust and vibrant ecosystem for capital markets funding and hedging.

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ISDA SwapsInfo brings greater transparency to the over-the-counter (OTC) derivatives markets. It transforms publicly available data on OTC derivatives trading volumes and exposures into information that is easy to chart, analyze and download. ISDA SwapsInfo covers interest rate derivatives (IRD) and credit derivatives markets.

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Daily, weekly and quarterly traded notional and trade count by product taxonomy.

Notional Outstanding

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Daily, weekly and quarterly traded notional and trade count by product taxonomy.

Market Risk Activity

Traded notional and trade count for single-name and index credit default swaps (CDS) that result in a change in market risk position.

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SwapsInfo.org

ISDA® Safe, Efficient Markets

Quiet Reformation

Enforceability of close-out netting is the single most important legal requirement for safe and efficient derivatives markets. ***Habib Motani****, consultant at Clifford Chance and former head of its global derivatives practice, explores ISDA's ongoing work to promote netting certainty in emerging markets*

Over the past 10 years, ISDA and the derivatives market have focused a great deal of attention on the implementation of post-crisis reforms, including mandatory clearing, margin requirements and capital regulations, as well as the operational opportunities created by technology.

It is easy to forget that, from the outset of ISDA's existence, substantial effort was required in promoting law reforms – particularly those that enable the recognition of close-out netting. This underpins much of the risk and regulatory capital management that has today become second nature to financial institutions around the world. It is also easy not to appreciate that this law reform work continues today, especially in emerging markets, and remains an important part of ISDA's mission. Countries in which ISDA has recently undertaken this work include Croatia, Russia and Ukraine.

Governments in all jurisdictions naturally aspire to achieve economic growth and stability and, while many things contribute to achieving this, access to competitive funding and liquidity is critical. This is helped by having a robust banking sector, with sound local banks and non-local financial institutions actively participating in providing liquidity.

Effective close-out netting helps facilitate this in several ways. Most importantly, by allowing each pair of counterparties to compress their various obligations into a single payment due by one to the other, netting mitigates credit risk and means a default is less likely to be harmful to the health of the overall market.

Netting benefits

Statistics published by the Bank for International Settlements (BIS) show that close-out netting significantly reduces the risk of outstanding derivatives transactions. According to the BIS, gross credit exposure, a measure that adjusts the market values of outstanding over-the-counter derivatives transactions for legally enforceable netting agreements, was $3.2 trillion at the end of June 2020, just 21% of the gross market value.

Mitigating the credit risk faced by local banks helps reduce their regulatory capital usage, unlocking capacity to serve local customers. Effective close-out netting also attracts foreign banks by facilitating their dealings with local counterparties, helping to increase liquidity and competition. Likewise, exporters that face foreign exchange, interest rate and/or commodity risks as a result of their business are more able to access hedge providers in the international market to manage their risks cost-effectively.

Global standard-setters have recognised close-out netting as risk reducing, both when it comes to setting regulatory capital requirements and developing effective resolution regimes (for example, the Financial Stability Board's *Key Attributes of Effective Resolution Regimes for Financial Institutions*). This has encouraged increasing numbers of regulators in emerging markets to investigate and consider reforms for their jurisdictions.

The ISDA Master Agreement carries several risk mitigation mechanisms – in particular, its so-called three pillars. These are: the single agreement concept (Section 1 (c)); the condition precedent, which makes each party's obligations to perform conditional on no event of default having occurred in relation to the other party (Section 2 (a) (iii)); and the close-out netting provision (Section 6). Prior to the insolvency of a defaulting party, there is often confidence in the effectiveness of these provisions. After insolvency, the picture can be very different.

Many systems of insolvency law take the approach of freezing the insolvent firm's assets and liabilities at the start of the process and applying insolvency procedures to those assets and liabilities as they were at that point in time. The start of insolvency is often set as the time of initiation of insolvency proceedings. As a result, actions taken after that point can cause difficulties. For example, if the initiation of insolvency proceedings is itself the event of default that leads to the delivery of a close-out notice, the notice may be regarded as having been given after the start of insolvency.

As well as the freezing of assets and liabilities at the start of insolvency proceedings, the insolvency laws of many jurisdictions contain clawback rules, suspect period rules and zero-hour rules – all of which have the potential to affect payments and deliveries made under transactions governed by an ISDA Master Agreement in the period leading up to insolvency.

In some cases, insolvency authorities

may view the close-out process as deviating from their insolvency distribution rules. That's because the close-out process is seen as potentially giving an advantage to the non-defaulting counterparty over other creditors of the insolvent entity. An important part of ISDA's work is to explain the risk management and financial stability benefits of running derivatives books on a net basis, as it reduces overall risk in the system.

Jurisdiction engagement

The starting point for ISDA's law reform work is to identify jurisdictions of interest. This is very much driven by ISDA member feedback. ISDA will then ascertain the current legal position in such a jurisdiction through discussions with members and informal contacts with local banks and law firms. In some cases, a local law firm will provide ISDA with a short summary of the current legal framework. ISDA will then attempt to engage with local policy-makers and regulatory authorities, as well as any relevant local trade associations.

Where there are concerns over the enforceability of close-out netting, an important goal for ISDA is to identify the potential for legislative change. A key tool in these discussions is ISDA's Model Netting Act (MNA). As ISDA's guide to the Model Netting Act explains, the MNA is a model for netting legislation and a guide for policy-makers and educators on the basic principles that should underlie a comprehensive statutory regime for close-out netting.

The MNA was originally published in 1996 and was updated in 2002, 2006 and 2018. The 2018 edition reflects recent developments in financial markets, including the adoption of financial resolution regimes, the introduction of mandatory margin requirements and the continued growth of Islamic finance derivatives. The MNA reflects the *Principles on the Operation of Close-Out Netting Provisions*, published in 2013 by the International Institute for the Unification of Private Law (UNIDROIT) – in fact, the eight core UNIDROIT netting principles are reproduced in the appendix to ISDA's guide to the MNA.

The legislative changes outlined in the MNA include the recognition of close-out netting, of the single agreement concept and of the limitation on a non-defaulting party's obligations to the net amount obligation, supporting the three pillars of the ISDA Master Agreement. The insolvency-related provisions in the MNA also address the potential application of preference and suspect period rules. In addition, the MNA includes a provision for the recognition of the governing law of a netting agreement to ensure the agreement is construed in accordance with its contractually selected governing law.

The most recent edition of the MNA also addresses the collateralisation and resolution powers given to resolution authorities. In the latter case, the MNA proposes that resolution regulations should be framed to respect close-out netting, and resolution authorities should apply their resolution powers after giving effect to the relevant netting.

The provisions on collateralisation have been included as a result of regulatory reforms mandating the use of margin. Variation margin is frequently taken on a title transfer basis, meaning the collateral enforcement mechanism being relied on is close-out netting that takes the value of collateral into account. The definition of netting agreement in the MNA therefore expressly incudes collateral arrangements relating to or forming part of the netting agreement. Collateral arrangements are also defined to include pledge-type arrangements, and collateral arrangements themselves are included as qualified financial contracts covered by the legislation.

> "By allowing each pair of counterparties to compress their various obligations into a single payment due by one to the other, netting mitigates credit risk and means a default is less likely to be harmful to the health of the overall market"

Although recent attention in financial markets has largely focused on the implementation of regulatory reforms and the operational aspects of derivatives trading and processing, ISDA has not lost sight of the fundamental importance of the enforceability of netting and the protection of derivatives arrangements from challenge on the basis of insolvency and other general laws. ISDA's ongoing promotion of new laws in markets where legislation is desirable for these purposes may get less public attention, but it is a vital part of the work that ISDA undertakes. IQ

Further Reading

- *What are the Benefits of Close-out Netting?* bit.ly/3sQWmLp
- *2018 ISDA Model Netting Act and Guide*: bit.ly/3iD0BFZ
- Status of netting legislation: bit.ly/2Y5AsWM
- ISDA opinions overview: bit.ly/3oalAAO

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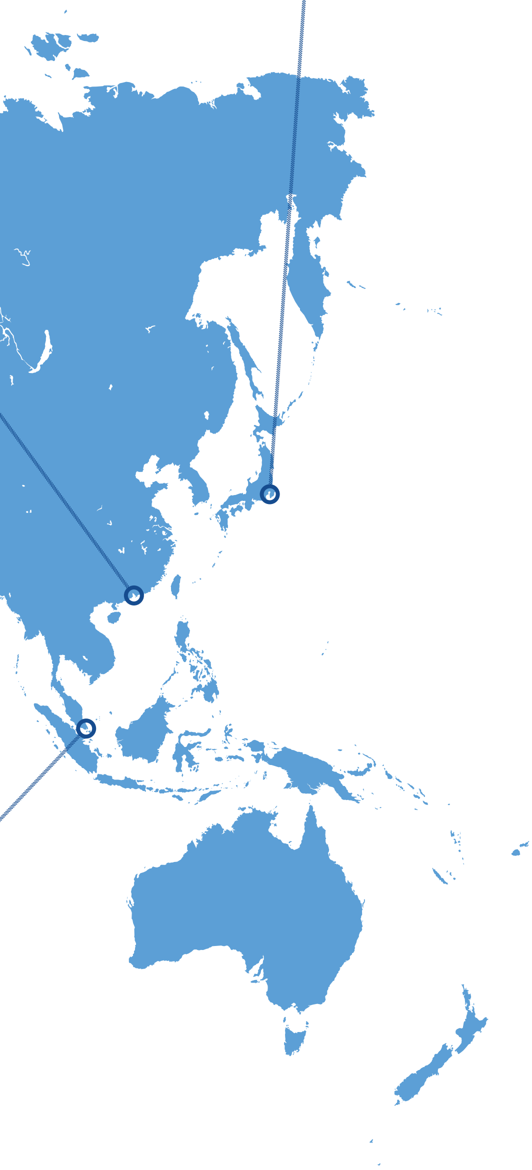

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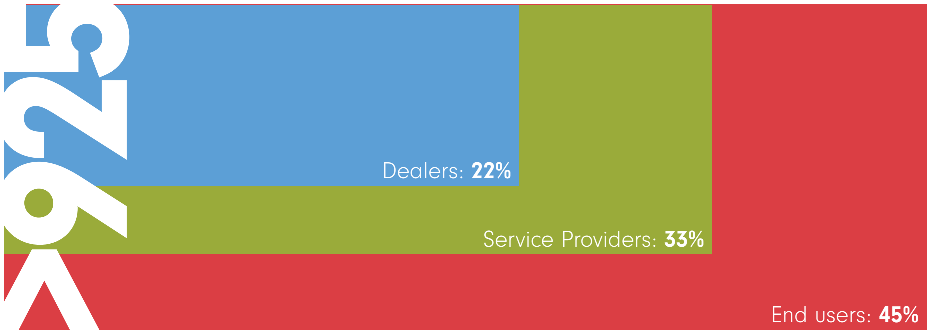

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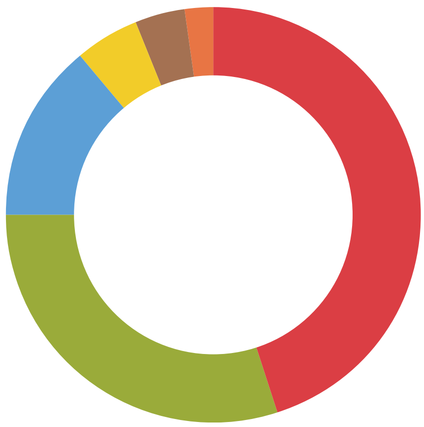

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"Today, the incentives to reduce emissions are much too small, where they exist at all. Because of this fundamental flaw in the global economic system, emissions continue to grow over time, creating changes in the climate that are already affecting financial markets"

Bob Litterman, founding partner, Kepos Capital