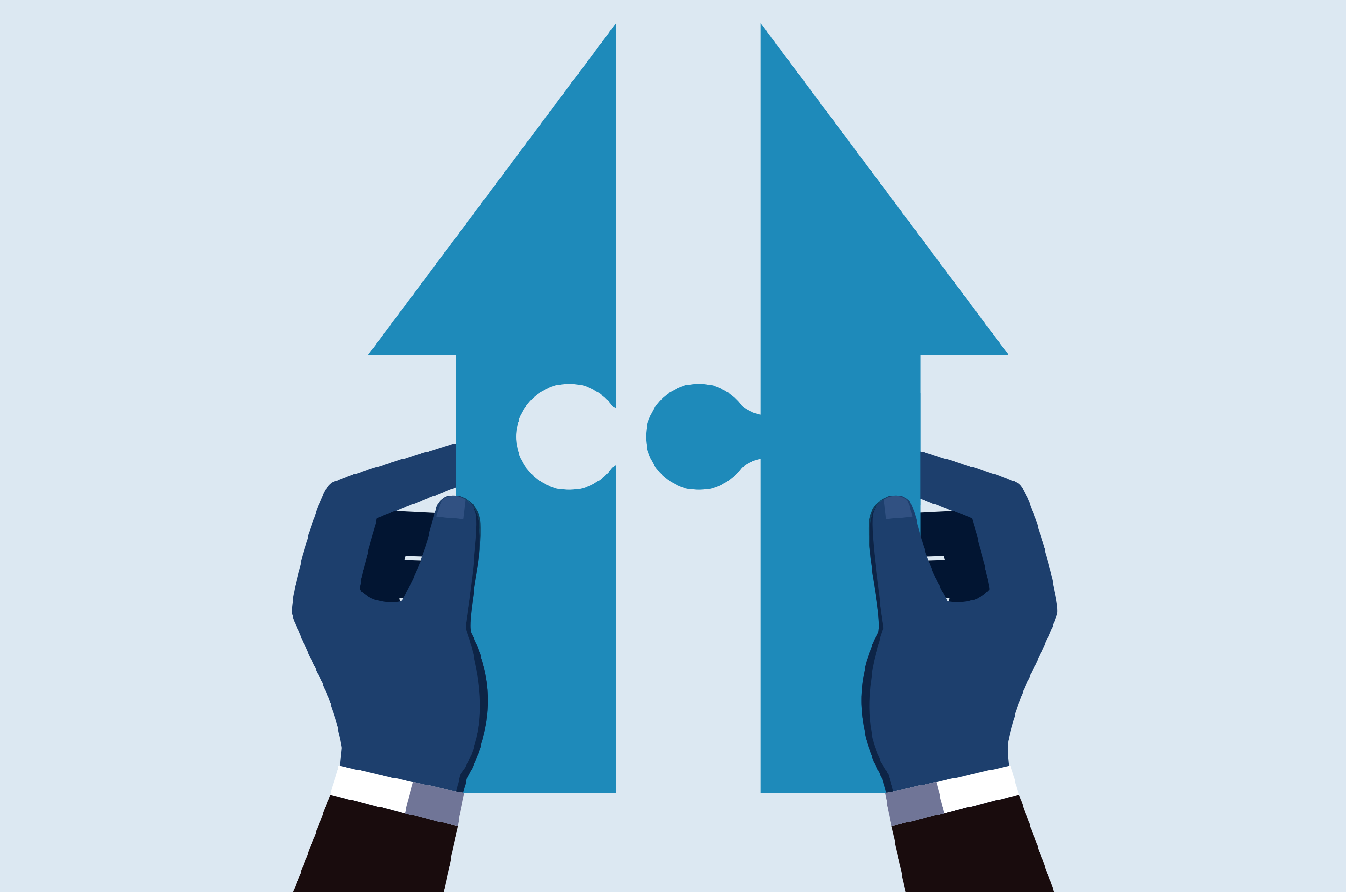
Risk publications

Fine margins

Integrating risk and IM costs under new CCP risk models

Risk.net September 2020

Survey report & white paper



In today's regulatory and low-rate environment, liquidity providers are under pressure to develop a clearer view of risk and risk-adjusted profitability across the entire trading and clearing landscape. This white paper, based on the findings of a *Risk.net* survey commissioned by Nasdaq, assesses market participants' efficiency in managing risk, margin and collateral amid increased volatility, and the transition to new central counterparty risk methodologies. The results provide a unique insight into the preparedness and evolving strategies of liquidity providers and the sell side seeking a competitive advantage in the 'new normal'

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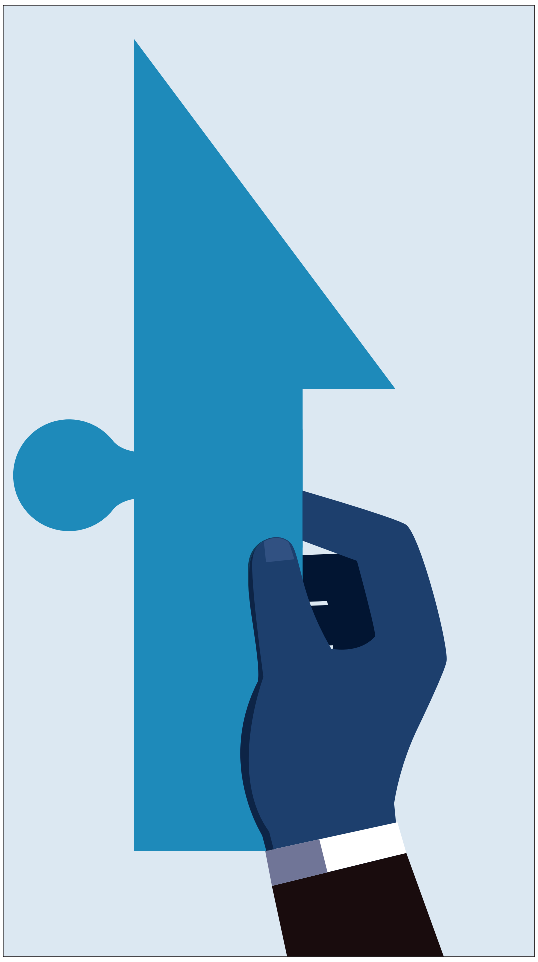
Contents



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Introduction
2020's great compression

In a year of market chaos and dislocations, surprises and resurgences, perhaps one of the starkest occurred in late April 2020, when West Texas Intermediate (WTI) oil prices swung into the negative. All manner of prognostications followed as equities markets reacted the next day by paring more value, and investment banks reportedly covered millions in customer losses on derivatives desks. However, the next few months saw further surprising news: not more persistent pain but a record month-on-month recovery for WTI as the Chinese economy rebounded and billions in emergency funding was injected elsewhere by global central banks.

This was just one illustration of how a new era of volatility can pose new challenges, risks and opportunities. Of course, this includes those trying to predict macroeconomic conditions, as the Covid-19 pandemic continues to affect interest rates and demand for commodities. But it has spotlighted the cost and complexity of trading and hedging in these rapidly shifting markets.

In fact, firms were already operationally challenged by new methodologies governing how derivatives trading is funded and risk-managed, known as the updated Standard Portfolio Analysis of Risk (Span 2) – a move to value-at-risk (VAR)-based models designed to better capture the resulting makeup of portfolio effects. These, along with intraday exchange calls for margin, have placed long-held operational strategies for efficient initial margin (IM) and collateral management in doubt.

Indeed, 2020 has seen many clearing brokers flying blind to their exposures and funding obligations, overfunding these requirements at a significant cost to return on equity, measured to the tune of 5%–10% annualised. For the same reason – a lack of dexterity around IM management – they may simultaneously be unaware of risk tolerances and thresholds for certain clients. Solving this organisational and technological issue could unlock or claw back significant new working capital for capital-constrained participants, if only they were able to build and manage the function more effectively, such as a more flexible infrastructure and on a near-real-time rather than overnight basis.

Earlier this year, *Risk.net* gauged industry sentiment on these issues, collecting nearly 100 responses from a cross-section of senior sell-side risk and technology professionals working within new funding frameworks and, of course, a new normal. This research, which included perspectives from the early period of the pandemic, rendered several important results that prove a paradigm shift is under way. Examined in depth in this white paper, they include:

- The myriad ways firms acknowledge being 'behind the curve' in funding IM, treasury deployment and navigating counterparty credit risk more broadly.
- Goals proving an integrated approach to margin precision and processing efficiency are critical to competitiveness in the VAR-based (Span 2 or historical VAR, for example) future.
- Affirmation of the changing mindset around the issue as a rising institutional priority.
- Growing awareness of the benefits of alternative technology solutions and cloud-based platforms to address these needs, enabling broker-dealers to respond to these demands more nimbly and quickly than when using traditional solutions.

Method/madness meets market maelstrom

Unlike the whiplash of Covid-19, the changes in margin calculation methodology have not come from nowhere – they have been many years in the making. The original Span 1 regime governing listed derivatives at the CME – and versions thereof used by many other central counterparties (CCPs) – has lasted more than three decades. But, for many on the sell side, that has neither helped clear up confusion nor necessarily led to stronger preparation.

Instead, for many, it has simply proven that legacy technology belongs in margin management's past and could inhibit the effectiveness of this function as the industry enters a new era, with ICE, LME and CME all moving to VAR-based methodologies. The primary differences in the new formula lie in two areas. First, instead of taking a product-by-product approach, VAR will now be calculated at a portfolio level and calibrated to incorporate the cyclical effects of markets. Second, additional factors will be examined and reported as part of the new framework, including market risk, liquidity and concentration.

As *Risk.net* reported in September 2019, these added wrinkles are meant to enhance transparency and simplicity. Yet, particularly for buy-side clients of banks' future commission merchant and clearing services arms, they will prove tough to replicate holistically across venues and in real time.[1] Span 2's portfolio-level modelling, with less parameterisation than its predecessor, is likely to prove more complex and costly to manage for banks themselves. While CME predicts margin costs will remain broadly the same, some market participants remain unconvinced.[2] That sentiment has certainly been reinforced through the maelstrom of 2020.

So, what to do? Unsurprisingly, institutional response strategy for dealers is guided by their appetite for uncertainty. As markets remain roiled and Span 2 comes into play, the temptation remains to play it conservatively and to overfund the treasury function that backs margin management operations. Higher and more frequently called for quality collateral requirements during times of market stress – such as during the first half of this year – and more careful trade scrutiny have exacerbated the twin operational challenges firms are facing. In short, they would rather take a little extra capital off the table every night than risk getting caught out. But, as we found throughout this survey, they don't want to.

All this change is putting heavy pressure on outdated margin replication technology – and is exposing the fractured nature between this and risk. Some investment banks got a famously early start, betting on a financial technology approach to Span 2 before the calendar even turned to 2020.[3] Naturally, many others have seen their technology road maps thrown sideways and rerouted as the year's events have reshaped how banks operate – perhaps permanently. Through it all, however, the key questions remain essentially unchanged: when it comes to IM platforms, how fast, how precise and how reliable is enough? How do you realise that value? How can this integrate with the wider risk management function? And is the impending pivot to Span 2 the moment to change these expectations?

Notes

[1] *C Mourselas (September 2019), Risk.net,* A look under the hood of Span 2, CME's new margin engine, *www.risk.net/6950491*
[2] *C Mourselas (September 2019), Risk.net,* Span 2: A fine balance, *www.risk.net/6963921*
[3] *C Mourselas (November 2019), Risk.net,* JP Morgan turns to start-up to manage CME margin, *www.risk.net/7189326*

In the dark

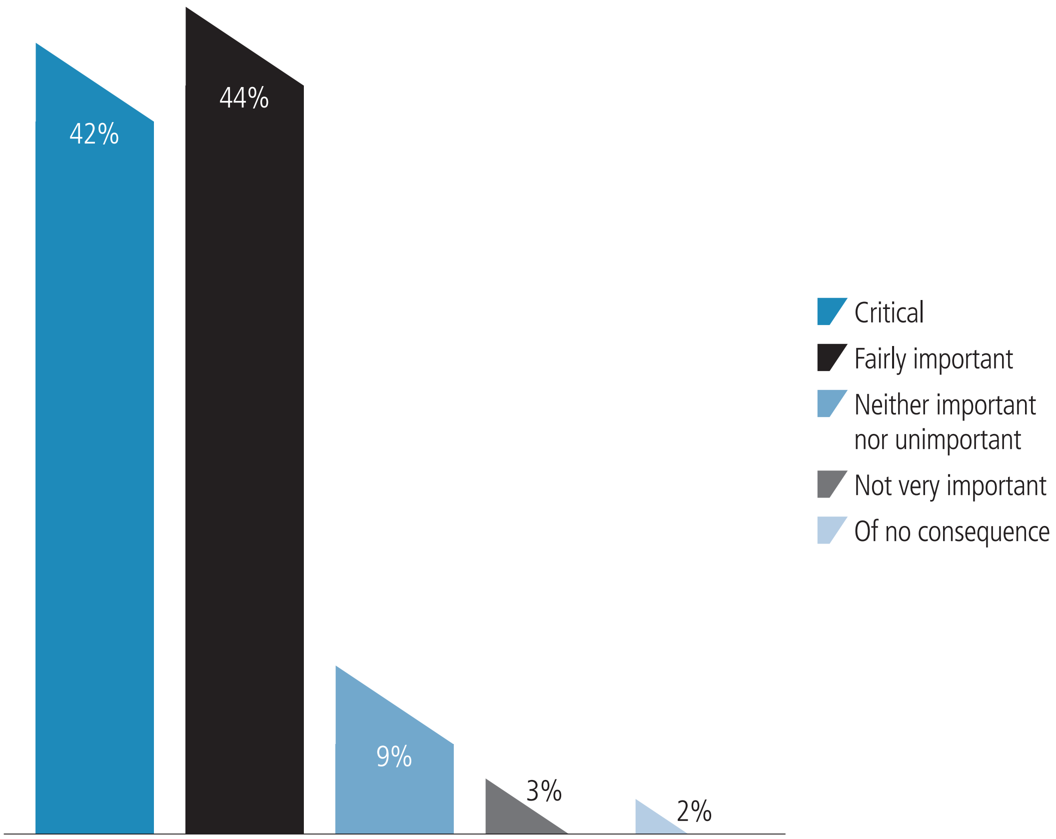
The survey was conducted during a time of unprecedented market upheaval, operational and even societal change, and the research first sought to take stock of prevailing capabilities and crutches, before moving on to institutional awareness and possible solutions.

The survey started with a gauge of firms' current status: what level of precision do clearing members as liquidity providers achieve when it comes to funding margin, and why? The broad answer is that they agree efficiency is critical to future success, but struggles abound (see figure 1).

The survey found that two-thirds (67%) of participants' platforms are incapable of performing margin calculations in real time (see figure 2). Of those, less than half (28%) can do it intraday, which means, for the rest, the modelling and calculations used to perform funding decisions are typically made overnight – when the data is already stale and markets have moved. This is incompatible given the increasing frequency intraday with which CCPs can make calls.

Another question explored this slightly differently. When describing how they measure IM and collateral management success, less than one-quarter saw real-time analysis as the standard. This is a primary reason they may be critically unaware of exactly where exposures, requirements and risk limits in the treasury function may lie at a given moment, with a given client or even the quality of collateral required for a particular trading situation.

1 How important is efficient IM and collateral management to your organisation's future success?



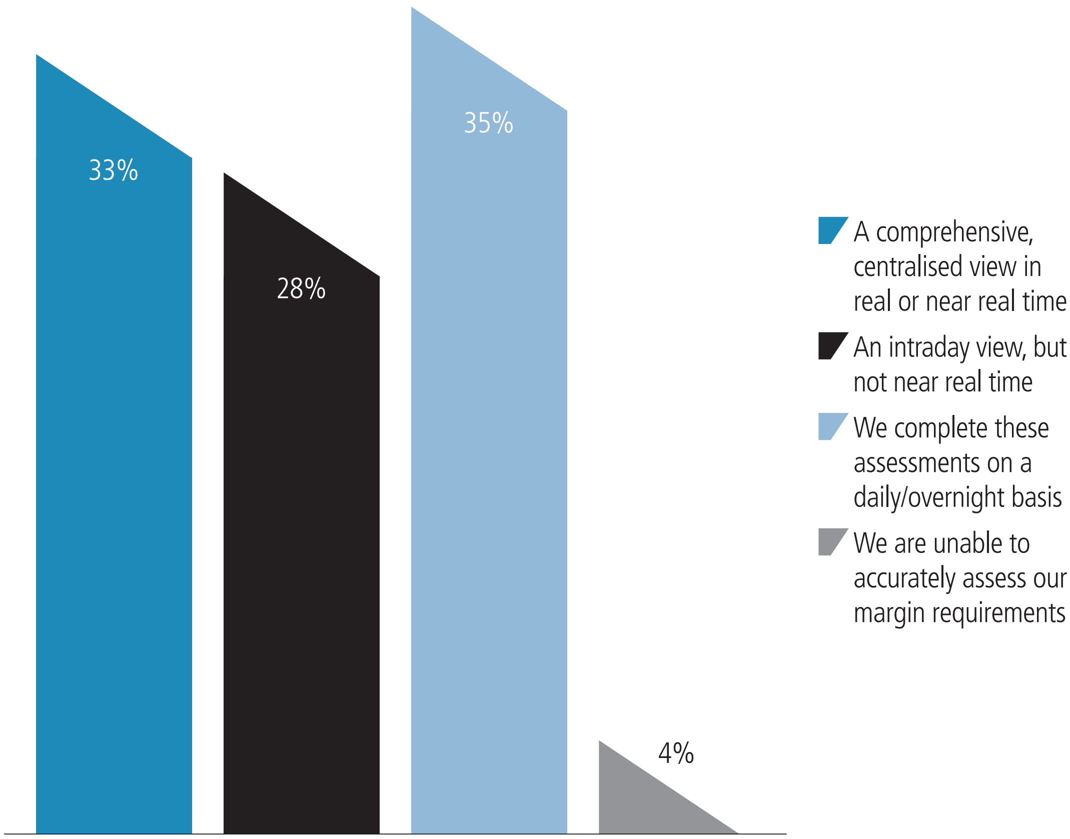
In the new Span 2 environment, all of these elements can vary by instrument, size, dating and jurisdiction among other things and, again, the final calculation relies on portfolio – rather than product-level – risk aggregation.

This explains why 15% of respondents simply weren't aware of any measure of success on this question (see figure 3). They – and their platforms – are literally feeling around in the dark for this information.

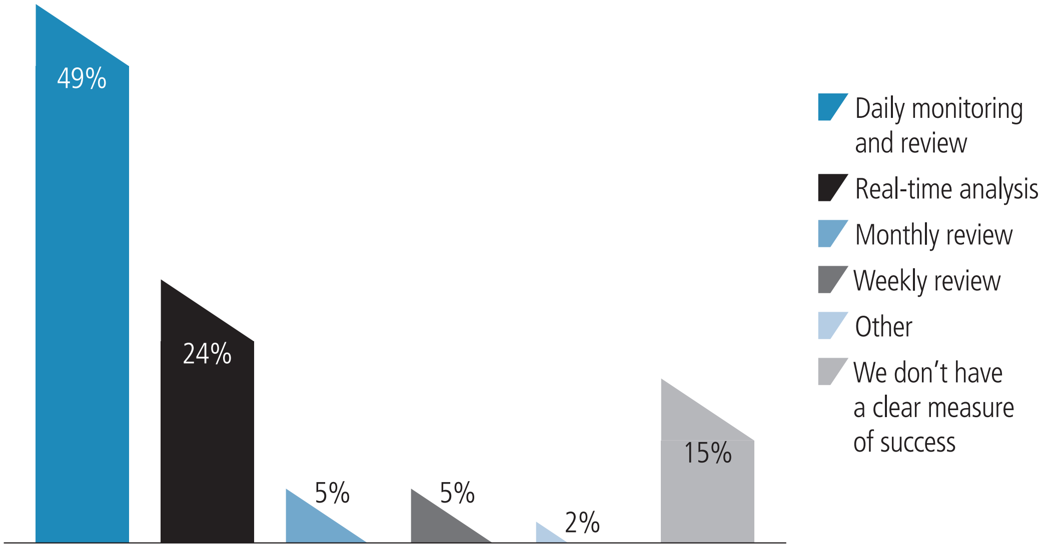
Next is a second and related issue to overnight refresh: institutional awareness. This question touched upon the kind of operational awareness firms have when trying to measure, anticipate or predict funding margin. Again, it's clear many see their organisations as lagging – particularly at board level – and this is likely an indication of lowered expectations and legacy processing (see figure 4). IM simply hasn't been defined as a mission-critical area for efficiencies, despite banks' desperate need in an era of capital constraints and profit compression for the added pool of liquidity to realise and fund other trading and business opportunities.

The next question ties these two items together to determine what kinds of operational outcomes this imprecision generates, with responses showing that fewer than one-third (32%) of respondents believe they 'rarely' or 'never' have problems with overfunding (see figure 5). In other words, the cost of excess margin management is a clear issue for a strong majority of participants. Around 30% of respondents reported it as standard operating procedure. It is one they are forced to live with in an era of regulatory incentivised central clearing, resulting in impediments for funding uncleared positions and regulatory surveillance – but an expensive one. The question is: in this new era of flux for margin methodologies as well as volatile trading, are they finally waking up to the issue?

2 To what extent does your organisation have an optimised view of its derivatives' IM requirements?



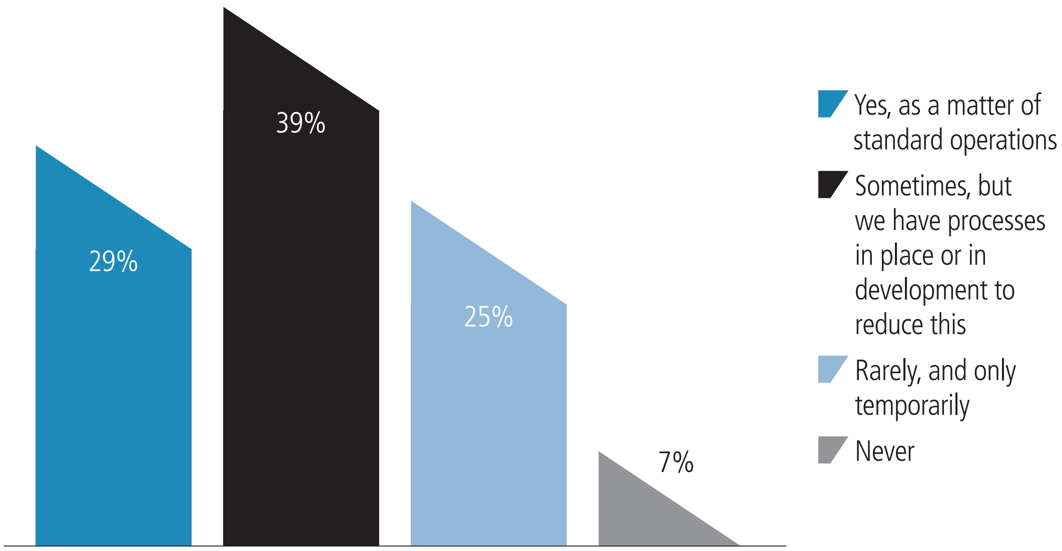
3 How does your organisation measure the success of your IM and collateral management?



4 Rate awareness of issues around derivatives trading costs among your organisation, board and clients

	No awareness	Low awareness	Good awareness	High awareness
Organisation	10%	14%	45%	29%
Board	17%	24%	32%	20%
Clients	12%	28%	26%	28%

5 Does your organisation regularly experience overfunding or inefficient deployment of capital around IM and collateral provision?

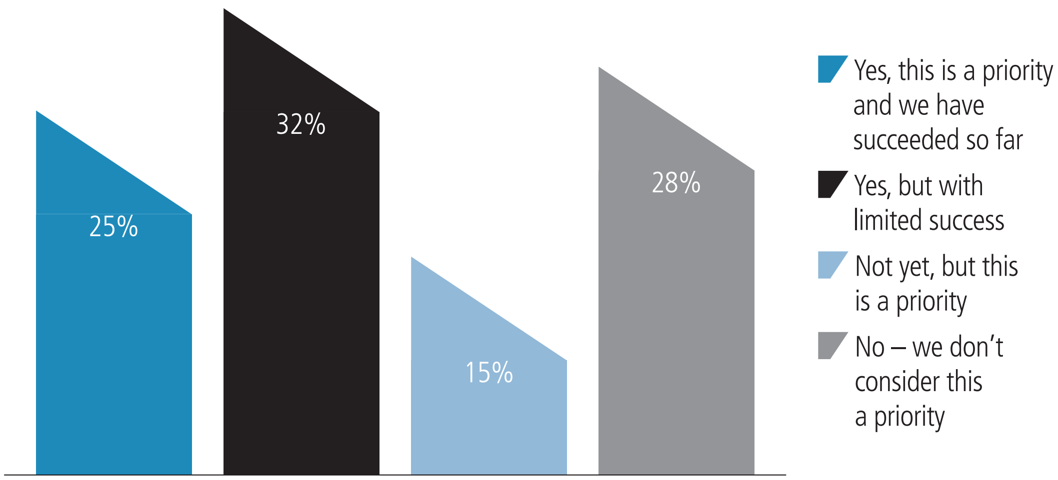


Known unknowns

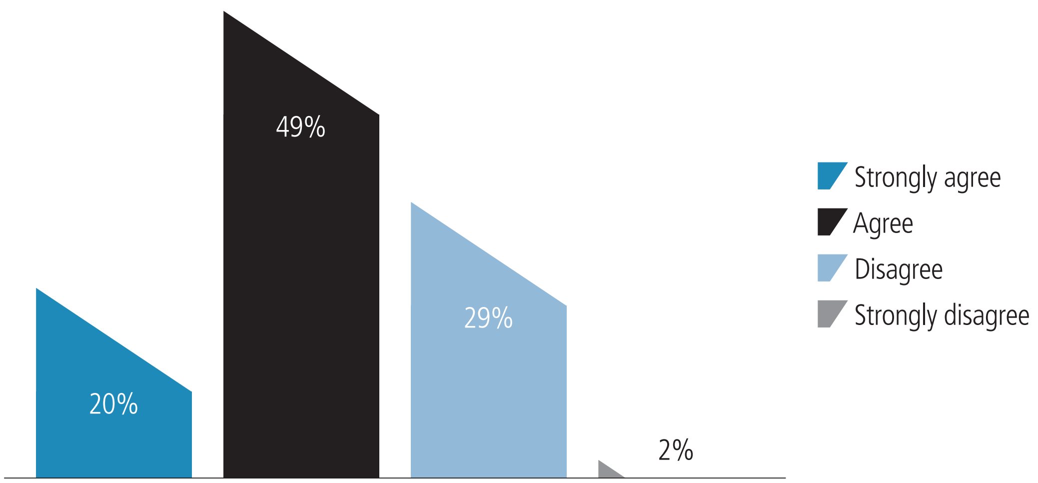
If the first set of responses sought to characterise margin operations as they are, this set assesses how firms believe they ought to be doing. The moment is ripe for greater organisational acknowledgment and, ultimately, transformation, but do they believe their buy-in and technology is up to a more integrated risk-based approach? For one, Span 2 costs appear more visible at an enterprise level than in the past – but only a small percentage believe they have the right framework for holistically managing CCP methodologies and the modelling subtleties set to be in play (see figure 6). More than 70% of participants view this as an organisational priority, yet almost two-thirds (47%) of those say they haven't been able to do this effectively or haven't even begun.

An approximately equivalent number said they would consider a rethink of their function given the market dynamics during the initial months of the Covid-19 pandemic (see figure 7). Clearly, we are at an inflection point. For a number of firms, the problem is not 'if' but 'how?'.

6 Has your organisation tried to replicate CCP methodologies for calculating an enterprise-wide view of IM requirements across traded markets?



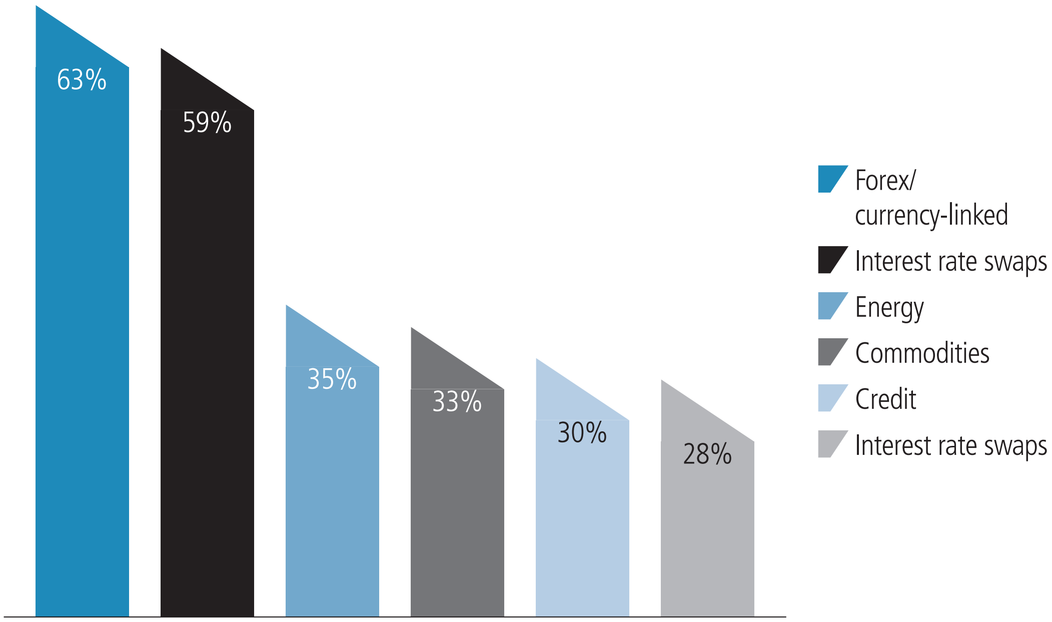
7 Do you agree that recent Covid-19-related market turmoil is causing your organisation to rethink its exchange IM and collateral management strategy?



A separate question also served to highlight why this area is gaining emphasis. The survey revealed that three types of derivative instruments – foreign exchange/currency-linked, interest rate swaps, and energy and commodity derivatives – would stand to benefit the most from a revamped, enterprise approach to margin management (see figure 8). This trio comes as little surprise, given not only newly variable IM methodologies but separate uncleared margin rules (UMRs) being implemented that may see high volumes of forex and interest rate swaps change trading patterns. The same could be said for energy derivatives, which were subject to unprecedented volatility earlier this year.

In combination, these results suggest awareness of a choppy environment in the coming years and, above all, the need for platforms that can support visibility in real time to margin funding – and surface intelligence on trading decisions – much more quickly and accurately than in the past, with UMR poised to potentially introduce more exchange-traded products as viable alternatives to over-the-counter, uncleared trading (see figure 9).

8 Which asset class is most likely to benefit from the ability to optimise exchange margin requirements?



9 Do you agree with the following statements relating to the impact of UMR on your trading activities?

	Strongly agree	Agree	Disagree	Strongly disagree
We expect to trade a greater volume of exchange-traded products	26%	52%	17%	4%
We will significantly restructure our existing asset class mix	13%	26%	54%	7%
We expect to stop trading certain asset classes	17%	17%	50%	15%
We are more likely to consider new asset classes	17%	48%	24%	11%
We have no plan to change our trading patterns	20%	28%	39%	13%

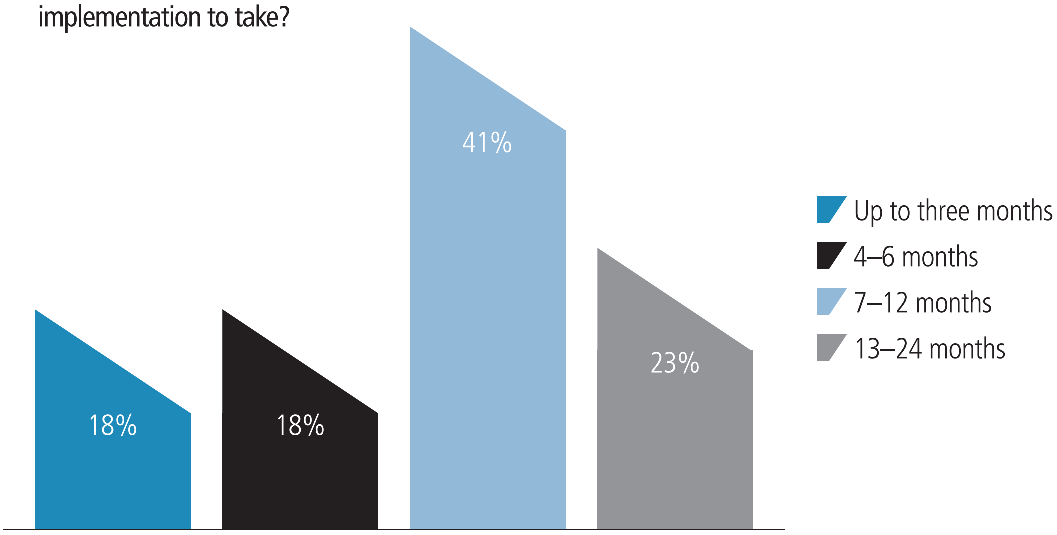
Teeing up transition

The final piece of the puzzle is where to go from here. The earlier results make clear the need for process and technology transformation around derivatives processing and firms increasingly see this as a priority where perhaps it wasn't in the past. That doesn't make the challenge any simpler to solve for, however. Part of the reason it hasn't moved forward is the investment and resources required to manage this type of platform – building it to be fault-tolerant and scalable according to needs – is significant.

Nearly two-thirds (64%) said they expect new implementations to take at least seven months, and almost one-quarter (23%) see it taking between one and two years (see figure 10). Participants noted three priorities as they go about that design process: regulatory compliance, balance sheet matters, including funding optimisation and efficient capital deployment, and operational/technology risk mitigation (see figure 11).

To perform all three of these, firms need a proper infrastructure refresh with performance to support intraday calculations, managed services that can focus purely on methodological change and update the platform accordingly, and actionable data and analytics insights that will ultimately bear out measurable value for the treasury and even traders themselves.

10 How long would you expect a typical exchange margin replication and processing platform implementation to take?



11 How does your organisation prioritise the following transition programme outcomes for exchange/ IM replication?

1st	Regulatory compliance
2nd	Balance sheet, funding optimisation and efficient capital deployment
3rd	Mitigation of operational/technology risk
4th	Longer-term efficiency gains
5th	Maintenance of business-as-usual operations
6th	Competitive advantage of speed to market

Ranking based on respondents' aggregated scores. Respondents were asked to rank their organisation's top three priorities

Capability, or even willingness, to undertake these tasks depends – in the case of new IM modelling – on facing down data management difficulties and architecture and engineering concerns, with budget considerations and rote compute power limitations also among primary concerns. Banks are feeling these pressures (see figure 12).

Another question throws up just how much of an undertaking this transition can be: more than one-third (36%) haven't begun planning an integrated risk and exchange margin visibility programme at all, which is shocking given the calendar for the new methodology (see figure 13). Another 18% have a plan but haven't begun delivery. Combined, this is many more than those either currently in delivery or finished.

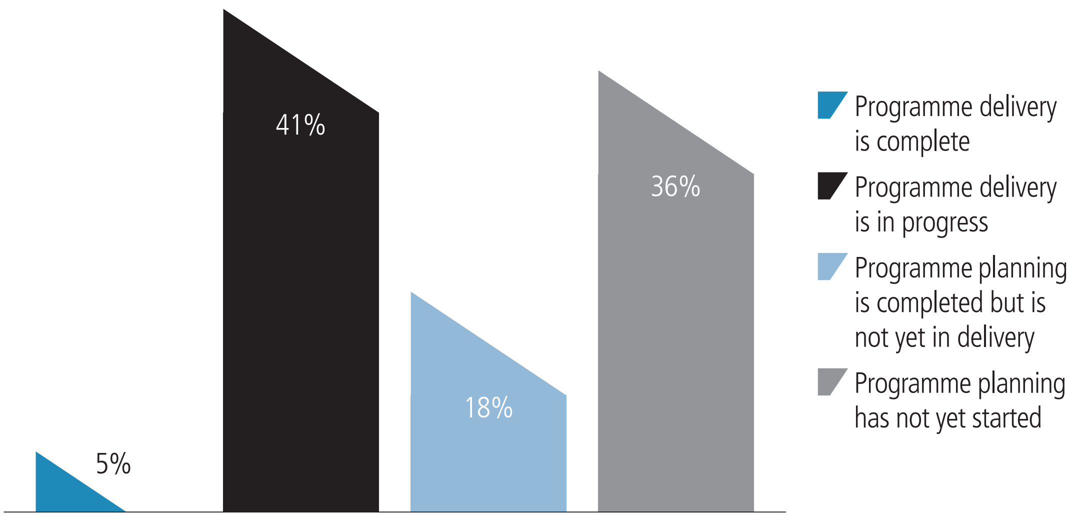
It also lends thought to a final set of results that examine industry willingness to work outside their own four walls to get this work done. Already, almost two-thirds are engaged with a third-party vendor on margin management, either heavily or in a more even mix with internal resources (see figure 14). Almost half (46%) are now considering a multi-tenancy model for their derivatives processing infrastructure, and a slightly greater number (51%) would consider moving their IM calculations to an outsourced cloud-based service (see figures 15 and 16).

13 What are the main challenges your organisation has encountered or is likely to encounter in the transition process?

1st	Data management difficulties
2nd	Architecture and engineering
3rd	Lack of budget
4th	Compute power/infrastructure limitations
5th	Acquiring people with the right skills
6th	Institutional buy-in or responsiveness
7th	Centralisation of vendor systems
8th	Other

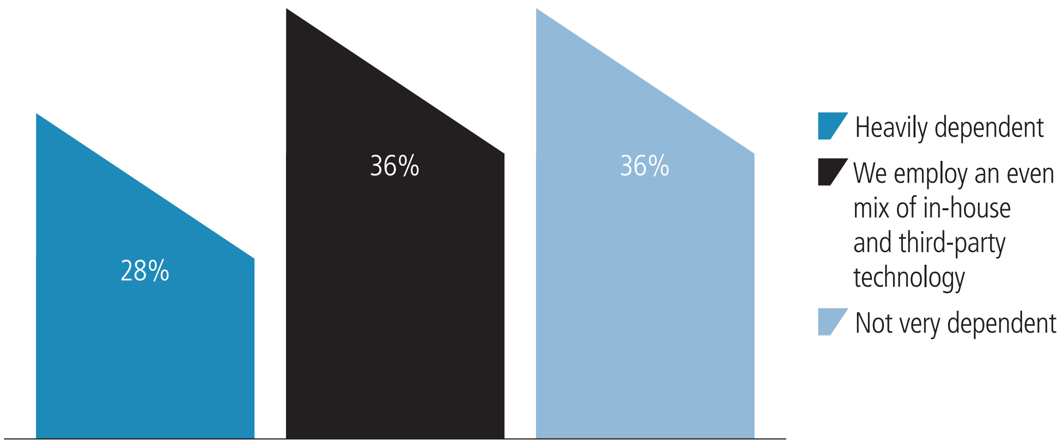
Ranking based on respondents' aggregated scores. Respondents were asked to rank their organisation's top three challenges

12 At what stage is your organisation's transition programme for adapting new exchange margin methodologies, from Span to VAR, and including UMR considerations?

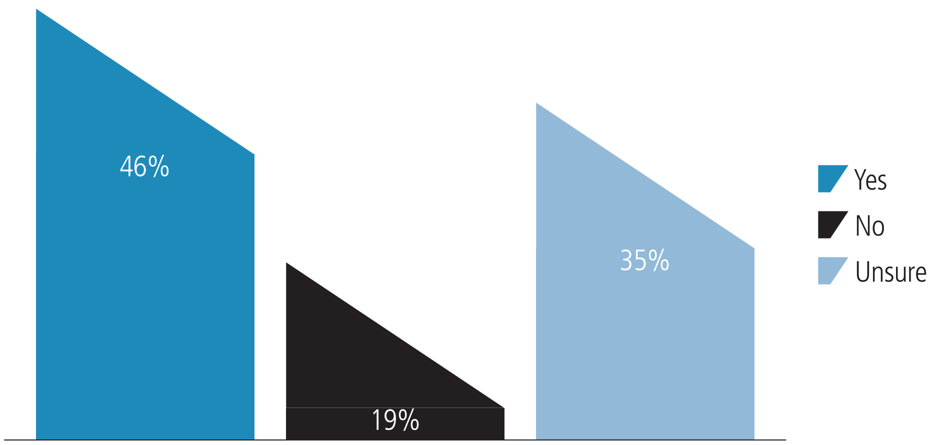


Again, the results are a measure of the tremendous data undertaking that a VAR-based optimisation will require. Whereas margin calculations were once a relative afterthought done – as their name suggests – at the margin, clearers' future platforms will need frequent curation as models change, and withstand far greater tests of volatility.

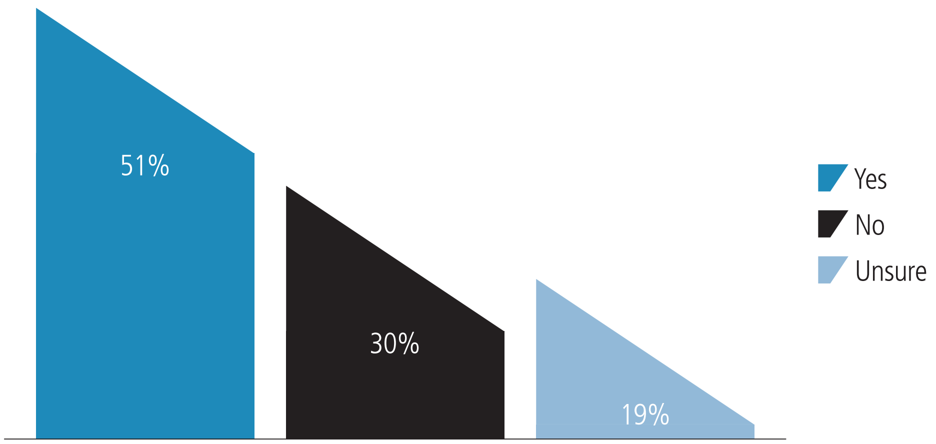
14 How dependent is your organisation on third-party technology and platforms for margin management?



15 Would your organisation consider outsourcing IM calculations to a cloud-based service under a multi-tenancy model, sharing virtual private cloud resources to reduce infrastructure costs?



16 Would your organisation consider outsourcing IM calculations to a cloud-based service?



Conclusion
Never let a good crisis go to waste

There is a kind a symmetry in the history of margin methodology. Span 1's birth came less than a year after Black Monday and the 1987 financial crisis. VAR-based methodology comes to fruition in today's equally unsettled operating environment amid the global Covid-19 pandemic. It is fitting that IM is the industry's version of protection in a crisis – a trading emergency parachute. One seems to follow the other.

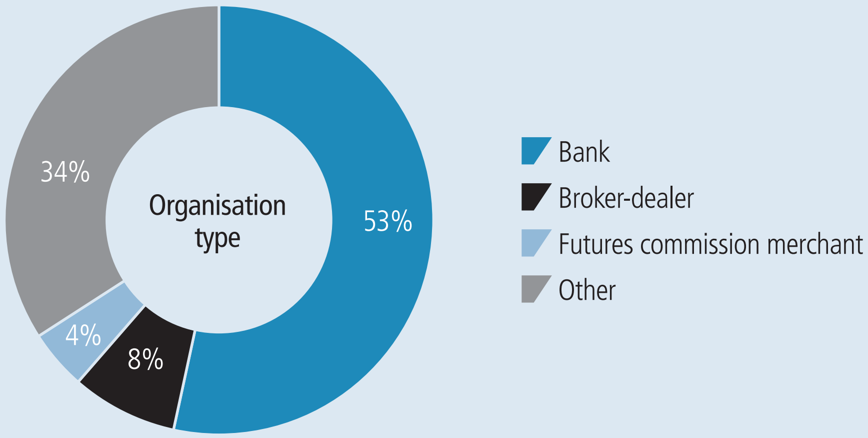
The difference today is that regulation looks very different, with implied costs and capital constraints that demand banks examine how every dollar is most efficiently put to work. To that end, this survey throws into stark relief the evolution seen in funding derivatives' IM and collateral management. The events of 2020 – be they pandemic-driven or regulatory – mean clearers must be precise in their margin processing, able to adjust on the fly in their simulations, meet steeper collateral requirements and adapt to an increasing frequency with which calls for collateral are made intraday. Simultaneously, they disfavour throwing too much money at overfunding margin pledges. And, increasingly, they are coming around to this idea – that something radical is required to meet these greater ambitions.

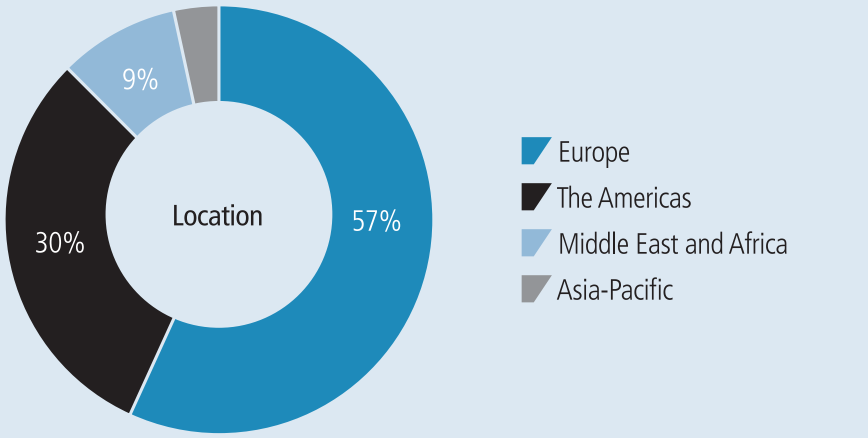
For now, many clearing members are playing catch-up on the eve of Span 2; they are incapable of the balancing act with their current platforms and hindered not only by outdated legacy infrastructure, but an inability to manage and redeploy data to discover value and stay current with methodological adjustments promised by the new framework. Some part of the industry is putting in the work to change that status quo; however, a significant segment still seems in the early stages or has not yet begun. Many, it appears, are also considering external partnership for these transformation projects, seeking alternative platforms to solve for these issues. They would be well served to consider that expertise. In IM, it seems the time for the old ways is closing.

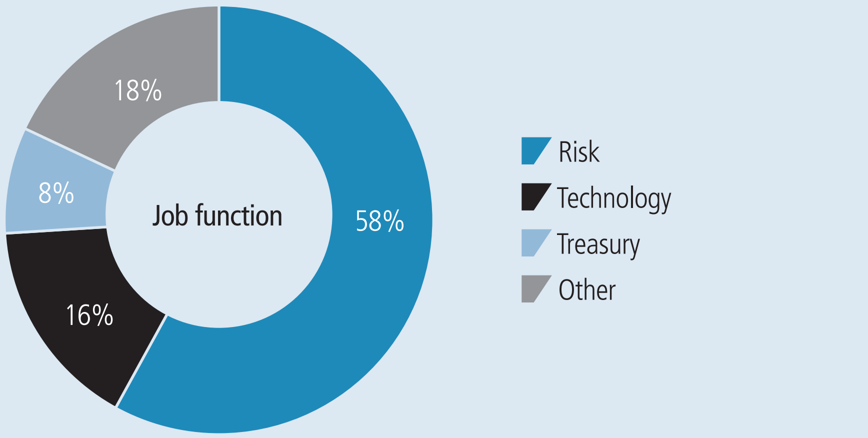
ABOUT THE SURVEY

Risk.net sought the views of a cross-section of senior risk and technology professionals from sell-side organisations worldwide. The results in this analysis are drawn from a total of 94 valid responses to the survey conducted in Q1 2020.

Respondent profile







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