Analyzing the global usage of XVAs: The similarities and differences across regions and countries

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When numbers matter

The XVA world has a wide audience: traders and trading desks, risk managers, quants, regulators, financial engineers and software vendors/solution providers. The family of valuation adjustments also manifests globally. Not every region across the globe is the same when it comes to the primary reasons for implementing valuation adjustments, and in a few cases, a different emphasis is placed on different adjustments. However, addressing pricing risk and regulatory risk are common themes that run across every region.

This is just a small sampling of the information we uncovered in an internal XVA survey we conducted with Numerix XVA experts based in the U.S./Canada, Latin America, EMEA and APAC. Their input into the survey is based on their work with banks, asset managers, insurers, hedge funds and corporates.

This white paper presents the most interesting survey findings. The survey aimed to understand current XVA usage and practices within a still diverse implementation global landscape of XVA. The focus was not on the technical and methodological aspects but more on the general issues typically encountered within the task of managing XVAs. The survey touches on XVA trends and challenges, utilization of the XVA function, organizational and infrastructure issues, business implications, as well as other areas of focus.

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Most to Least Common XVAs

Our first, and unsurprising, observation is that CVA, DVA and FVA are well established in all four global regions. The newer XVAs, such as KVA, MVA and ColVA, exhibit a different strength of implementation between the four regions but in general have not reached a mature state.

Chart A - XVA Measures Used by Region

	CVA	DVA	FVA	MVA	KVA	ColVA
U.S./CANADA	✓	✓	✓	✓	✓	✓
LATIN AMERICA	✓	✓	✓			
EMEA	✓	✓	✓	✓	✓	✓
APAC	✓	✓	✓ (to a lesser extent)		✓ (to a lesser extent)	

In terms of the primary use case for XVA usage, regulatory reporting and risk adjusted pricing needs are the most common use cases across countries and regions. We highlight all the use cases in Chart B (an interesting perspective is how much Latin America differs from the other regions).

Chart B - XVA Use Cases

U.S./Canada

UNITED STATES	CANADA
Regulatory Reporting	Regulatory Reporting
Risk Adjusted Pricing	Risk Adjusted Pricing
Hedging	

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Latin America

MEXICO	COLOMBIA	BRAZIL	CHILE	PERU
Regulatory Reporting	Regulatory Reporting		Regulatory Reporting	
Competitive Advantage	Competitive Advantage	Competitive Advantage		Competitive Advantage
Better Risk Management	Better Risk Management	Better Risk Management	Better Risk Management	Better Risk Management
	Risk Adjusted Pricing			

EMEA

GERMANY	FRANCE	ITALY	UK	NORDICS	GREECE	SPAIN	RUSSIA
Risk Adjusted Pricing	Risk Adjusted Pricing	Risk Adjusted Pricing	Risk Adjusted Pricing	Risk Adjusted Pricing			
Regulatory Reporting		Regulatory Reporting		Regulatory Reporting	Regulatory Reporting	Regulatory Reporting	
		Hedging	Hedging				Hedging

APAC

AUSTRALIA	CHINA	JAPAN	SINGAPORE	HONG KONG	SOUTH KOREA
Regulatory Reporting	Regulatory Reporting	Regulatory Reporting	Regulatory Reporting	Regulatory Reporting	Regulatory Reporting
Risk Adjusted Pricing		Risk Adjusted Pricing	Risk Adjusted Pricing	Risk Adjusted Pricing	
			Hedging		

Some APAC clients have expressed an interest in taking XVAs to the next level. — APAC

Other countries that are XVA users but where types of usage were not cited include: Taiwan, Vietnam, Malaysia, the Philippines, Netherlands, Luxembourg, South Africa and Cote D'Ivoire.

When asked about trends in their territories, or for any general statements, survey respondents in APAC indicated, other than for reasons tied to regulatory reporting, Asian firms do not see much

value in XVAs for their business and will only spend the minimal amounts required to support the management of XVAs. It is believed this could attributed to two rather unique business situations. First, most local banks are doing back-to-back business, so they do not have the sophisticated infrastructure that most foreign banks do. Most products are issued in note form to investors and backed by a swap trade to a counterparty, mostly a foreign bank. To the investor, the credit risk is immaterial while the credit risk with most counterparties is protected by the ISDA agreement on the application of regulatory margin requirements (i.e., regulatory IM [initial margin] and regulatory VM [variation margin]). Second, CVA desks for foreign banks are mostly centralized and located in the U.S. or EMEA, so most APAC banks do not want to invest into more actively managing CVA.

Credit data management in most banks is still running on disparate systems. Data quality issues exist and robust internal rating methods with mapping to generic CDS curves are not established for most of the institutions in the region. — APAC

Having said that, some APAC clients have expressed to us an interest in taking XVAs to the next level. For example, one client has inquired about the linkage between different modules such as SIMM and XVA as IM should be simulated along with exposure when calculating variational margin. Furthermore, as financial institutions are implementing XVAs for both their exotic and vanilla portfolios in order to disclose them on their financial statements, regulators have started asking what is the methodological rationale in how these institutions manage XVAs and related trading risks. Therefore, it is anticipated that XVAs (especially CVA, DVA and FVA) will go beyond pure regulatory fulfillment in APAC and move towards becoming a more common market practice.

In EMEA, there is growing demand for the more exotic valuation adjustments. Specifically, there is much discussion around MVA within the commodity and energy markets (which we are also experiencing in the U.S.).

Looking at Chart B prompted the question as to why aren't more jurisdictions hedging. The common answer is that, in many cases, it is purely a business decision made by the organization. If it chooses not to hedge and carry its CVA exposure, that is its choice. The main argument is that hedging will end up costing an organization potential profits on the trades it makes. Firms are not required to hedge their risk—the only requirement, at least in the U.S., is that a firm has to recognize XVAs on its financials and report them against its investment income. However, it was noted that for those organizations that have a formal XVA desk, the desk often has the mandate to hedge.

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Additionally, it was stated that in Singapore, banks mostly hedge market risk exposure rather than credit risk as there is no tradeable CDS for corporates in Asia.

About XVA Desks

In the U.S./Canada, the typical XVA desk organizational setup follows a centralized model, which also applies to EMEA in the areas where there is an XVA desk structure. Generally, there is no desk function in APAC and Latin America.

The most common XVA desk mandates include: reduce PnL volatility or remain revenue neutral, incorporate additional risks/costs into pricing, manage risk, and regulatory reporting.

Main Challenges with XVA

Valuation adjustments have rightfully become increasingly important to market practitioners. But managing XVAs, particularly calculating them, can be complex. "Messing up" can lead to costly errors. According to our survey results, the main challenges with XVAs by region include the following:

Chart C – XVA Challenges

	Data Management	Regulatory Uncertainty	Lack of hedge instruments	Methodological concerns	Data quality	Complexity of calculations	Limited or lack of computing power	Incorporating new XVAs
U.S./ CANADA	✓	✓	✓	✓	✓		✓	
LATIN AMERICA				✓		✓		✓
EMEA	✓	✓	✓	✓	✓	✓		✓
APAC	✓	✓		✓	✓	✓	✓	

Several comments were offered by survey participants regarding XVA challenges or general issues with XVA implementation. Some of the more revealing statements include the following:

- *The main challenge in the U.S. for a broader adoption of XVAs is a lack urgency from the regulatory or business side. With the exception of tier 1 banks, smaller banks don't really write uncollateralized deals, and when they do they're small in materiality so they're ok living with some CVA exposure. – U.S./Canada*
- *Model validation and regulatory scrutiny takes significant effort before going live. Also, in some cases, market participants experience high cloud and/or hardware costs. Additionally, there is a need for a more efficient end-to-end process that is faster and costs less. – U.S./Canada*

Some XVAs are not 100% regulatory driven and thus are prone to methodological debate. — EMEA

- *There are transparency and methodological concerns. – U.S./Canada*
- *Some XVAs are not 100% regulatory driven and thus are prone to methodological debate. – EMEA*
- *XVA requires not only trade and market data (which are usually available in Front or Risk systems) but also requires credit data, collateral/netting set information, and counterparty information. All of this info usually resides in different systems and are maintained by different groups other than Front and Risk and therefore different logic is applied and this results in lower accuracy. So, any XVA project's main challenges are system collection and integration and input data cleansing/quality. – EMEA*
- *It is difficult to consolidate counterparties and provide proper ratings to them. – APAC*
- *There is a challenge in preparing liquid or complete credit data for calculations and usually it takes a lengthy amount of time to complete computations for a portfolio that contains large and diversified exotics. – APAC*
- *Credit data management (both customer/counterparty hierarchy, agreements as well as internal rating methodology) in most banks is still running on disparate systems and in most cases are consolidated in Excel. Robust internal rating methods with mapping to generic CDS curves are not established for most of the institutions in the region. Data quality issues exist both with underlying risk factors as well as CDS spreads for emerging currencies/economies in the region. – APAC*

Desired Features

Our last survey question sought to discover what new features the various regions are asking for in relation to the overall management of XVAs. The responses from our global team are in Chart D.

Chart D – New Features Wanted

U.S./CANADA	LATIN AMERICA	EMEA	APAC
AAD and overall calculation speed improvement	Running spreads for CVA and MVA for listed products	AAD XVA greeks	Flexible reporting for risk management
Greater efficiency with XVA greeks		Full support for new ARR, MVA	Standardized, out-of-the-box reports that clients can send to regulators
XVA PnL Explain / attribution and PFE Limits			Hierarchical CVA/DVA report
			What-if CSA
			Ability to override market and credit data (scenario based/manual approval for pricing to Sales)
			KVA and Limit Management

XVAs: A Challenging Endeavor with Degrees of Diversity Globally

Implementing a best practice XVA function is a challenging endeavor. XVA constitutes an attempt to identify and isolate many important costs and risks of conducting a derivatives business. It is certainly one of the most complex topics in the financial world and its impact spans widely across the capital markets. Some aspects of XVA have reached a good degree of maturity globally, such as the management of CVA, DVA and FVA, but a degree of diversity can still be observed in the practices at the four regions we observed in our survey.

Bottom line: XVAs are extremely important in global derivatives trades. Harnessing the best minds, the best technology and the best data can go a long way towards achieving XVA success. To learn about Numerix's XVA solutions, contact marketing@numerix.com.

ABOUT THE AUTHOR

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Mr. Agarwal joined Numerix in 2010 and leads the Risk Analytics group globally, which analyzes market trends, assesses regulatory impact, and devises a product vision that enables clients to efficiently manage their risk.

He has over 15 years of industry experience in quantitative finance, pricing derivatives and risk analytics, capital market products in Interest Rates, FX, Equity, Credit and Hybrid asset classes. He holds a Master in Financial Engineering/Quantitative Finance from Rutgers University and a Bachelor of Engineering, Electronics and Telecommunication from the University of Mumbai.

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More than 550 clients and 90 partners across 52 countries rely on Numerix analytics. Headquartered in the financial capital of the world, with offices around the globe, Numerix brings together unparalleled expertise combined with local market understanding.

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