

**CVA Risk Management Working Group Report**  
**—Towards the Introduction of Market-based CVA—**

**June 2017**

**Japanese Bankers Association**

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\*This report is mainly prepared by CVA Risk Management Working Group, established in Japanese Bankers Association, to discuss CVA risk management.

## **I. Executive Summary**

Credit Valuation Adjustment (CVA) is a valuation methodology to adjust pricing of a derivative transaction based on credit risk of its counterparty. In other words, it is the expected credit loss arising from that counterparty exposure.

In Europe and US, global banks first applied CVA based on market implied Probability of Default (PD) in their managerial accounting for risk management purposes, and then extensively reflected it in their financial accountings as a common practice.

On the other hand, CVA has not been well-introduced in Japanese banks due to certain reasons including the limited availability of observable CDS pricing data. As a consequence, there might be some concerns including the adverse selection concern that higher counterparty-risk transactions may be concentrated more on Japanese banks that have not introduced CVA (“non-CVA Japanese banks” hereinafter) than the financial institutions in other jurisdictions, in addition to reputational risks. We believe such concern leads to increased necessity to introduce CVA among Japanese banks.

However, introducing market-based CVA involves many issues that cannot be easily solved as elaborated later in this report. Hence, a realistic approach would be that banks with significant exposures on derivatives are expected to assess the feasibility of introducing market-based CVA and aim to introduce it in a phased manner.

To overcome the issues for phased-in implementation of market-based CVA, it is important to clarify who is responsible for and place priority on existing issues to address.

## **II. Background and issues**

CVA is a valuation methodology to adjust pricing of a derivative transaction based on credit risk of its counterparty. In other words, it is the expected credit loss arising from that counterparty exposure. If CVA is not introduced, losses on derivatives are not recognized even if the creditworthiness of a counterparty is deteriorating. And a large amount of loss will be suddenly recorded only when the default of such counterparty becomes highly likely to occur. In order to avoid such risk, global banks

in Europe and US introduced CVA in managerial accounting around the year 2000, and then reflected it in their financial accountings through responding to the fair value losses caused by hedge transactions. In addition, CVA-based accounting has become well-introduced in the market thanks to positive developments in tax treatment.

In measurement and evaluation of CVA, it is crucial to determine what kind of PD would be applied. In particular, global investment banks, in Europe and US, have initially applied CVA using market-implied default rate (“market-implied PD” hereinafter) such as CDS, by which MTM (marked-to-market) has been promptly reflected in internal risk management, and such practice has been followed by global commercial banks in those areas. Currently, it has become a common practice for internationally active banks in Europe and US to use market-implied PD for derivative valuation and risk management, and leading Asian banks have increasingly introduced such a practice.

On the other hand, CVA has not been well-introduced in Japanese banks. As elaborated in “III. Issues in introducing market-based CVA”, one such issue is the fact that the Japanese CDS market is not as active as the CDS markets in Europe and US, with a smaller number of traded names and less liquidity, therefore available CDS pricing data is limited to apply market-implied PD.

Notwithstanding, in the context of further globalization of banking business, European and US banks have been applying CVA using market-implied PD (“market-based CVA” hereinafter) in their businesses as a common practice, we believe that certain risks could arise in non-CVA Japanese banks, including:

- ✓ Concentration of higher counterparty-risk transactions on non-CVA Japanese banks (adverse selection concern)
- ✓ Opportunity costs are likely to occur when any favorable transactions are not executed.
- ✓ Counterparty credit risk for uncollateralized transactions is not proactively mitigated, which would result in increasing losses when any financial crisis emerges
- ✓ Reputational risks of relying on risk management approach not aligned with the global standard/practices

In addition to the above, the global debate on the “Review of the Credit Valuation Adjustment Risk Framework” (Consultative Document) led by Basel Committee on Banking Supervision (BCBS) can be considered another trigger to introduce market-based CVA. Given that we see growing needs to introduce CVA in Japan, Japanese banks with significant exposures on derivatives are expected to consider applying CVA in their practices as first mover.

### **III. Issues in introducing market-based CVA**

As explained in “II. Background and issues”, we see a growing need to introduce CVA here in Japan. However, when introducing market-based CVA we highlight some issues below.

#### **1. Issues arising from lower liquidity of credit instruments market**

One of the largest issues when relying on market-implied PD is the limited availability of CDS pricing data due to limited number of single-name credits quoted in the Japanese market relative to CDS market in Europe and US, and the resultant lower liquidity.

##### **(1) Estimate of market-implied PD using Proxy Curve**

If single-name CDS is not available in the market, a market-implied PD needs to be estimated using a Proxy Curve with certain assumptions.

While more than one approach would be applicable for creating Proxy Curve, in a region where CDS liquidity is lower such as Japan, key factors include, but not limited to (a) calibration required to create appropriate proxy curve and (b) the method to ensure accuracy.

##### **(2) Credit risk hedging**

CVA involves volatility, which is largely classified into credit risk and market risk components (interest rate, foreign exchange etc.). Credit risk inherent in CVA volatility arises from creditworthiness of trading counterparty (counterparty credit risk). When CVA is measured using market-implied PD and the CDS of such counterparty (“single-name CDS” hereinafter) can be traded in the market, its credit risk can be hedged individually.

Issues arising from credit risk hedging include, (a) credit curve risk constantly remained even if single-name CDS is traded in the market, as typical tenor is 5-year

CDS, (b) larger basis risk not be mitigated if single name CDS is not traded in the market and sector-based CDS hedging or index hedging is available..

## 2. Issues on setting up a CVA desk

A responsible function would be required to manage CVA risk properly and effectively. We note that Consultative Document “Review of the Credit Valuation Adjustment Risk Framework” issued by BCBS in July 2015, stated that a bank is required to have a CVA desk (or a similar dedicated function) responsible for CVA risk management when such advanced approach is applied in CVA risk management, which can be considered another trigger to set up a CVA desk.

As we believe that the role (position) of CVA desk within the organization may vary depending on the business model of each bank, the structure is expected to develop tailor-made to the respective banks, taking into account the following requirements:

- ✓ A CVA desk may access to or share certain client information with marketing division when a deal is originated. As a result, pursuant to the insider trading restrictions of the Financial Instruments and Exchange Act (FIEA) or other industry guidelines, a CVA desk may be restricted to enter into certain transaction that a CVA desk would require for hedging purpose. Then banks should assess and determine the relevant action(s) to address such a situation.
- ✓ From organizational structure perspective, it is necessary to assess in which division (i.e. Front office (Global Markets division), Middle office (Risk Management division) or CPM division) is the best to assign a CVA desk.
- ✓ For organizational structure purpose, banks are effectively required to segregate the functions involved in trading of certain securities as proprietary trading without relationship with an issuer (“trading investments” hereinafter) and those involved in corporate banking business. While a CVA desk trades credit instruments in the market at its own discretion, a function such as CVA desk does not fall into “trading investment function” or “strategic investment function” currently envisaged. Then redefining them is necessary for clarification.
- ✓ Though CVA volatility cannot be fully hedged, the cost for trade execution (offer/bid spread) would inherently incur and assigning CVA trader(s) with professional knowledge of market developments is crucial to cover such costs and keep profit-neutral. Generally, CVA desks are not regarded as a profit center.
- ✓ In managing risks arising from MTM-based transactions, in principle, it may be required to determine certain risk triggers (thresholds) including risk sensitivities,

VAR limit or loss-cut (hard or soft) limits. Thus, banks should assess whether such risk management approach would be acceptable for managing market-based CVA.

- ✓ Globally active banks are required to assess additional requirements. For example, while the group-wide control is led by the headquarters (for Japanese banks, head office located in Japan), banks may set up a CVA desk at the respective regions to manage CVA at region level, in view of the trade volume in certain overseas unit(s) and time zone difference between Japan and such region.

### 3. Accounting challenges

#### (1) Introduction of market-based CVA

Fair value measurement (“FVM” hereinafter) of derivatives under financial accounting requires banks to reflect adjustment related to credit risk incorporated into pricing in accordance with the market climate and practices. If such FVM is introduced in Japanese market where market-based CVA has not been well-introduced, developing market practices to reflect CVA in quoted prices is expected. In the current market in Japan (in particular, for customer-facing derivative transactions), if market-based CVA is fully applied, it is likely that banks cannot sufficiently obtain observable inputs for CVA measurement purpose in the market. Accounting treatments should be discussed and determined in terms of such condition.

#### (2) Hedge accounting

When CVA is newly introduced, or significant change is made to the calculation methodology, it is necessary to confirm whether the hedge accounting under the current Japanese Generally Accepted Accounting Principles (JGAAP) would be applicable without changing the current practical approach. When CVA is introduced as part of the MTM of a derivative transaction and used as hedging instrument, it is important to discuss and analyze potential impact by applying CVA on the hedge effectiveness and accounting treatment specific to JGAAP.

#### (3) Inconsistency between accounting CVA and regulatory CVA

While CVA measured subject to capital requirements only involves counterparty credit risks, credit risk measurement for financial reporting purpose may involve both CVA, and Debt Valuation Adjustment (DVA) - the bank’s own credit risk.

Such differences in practices may give rise to certain inconsistency, however, each

bank should develop an appropriate framework to control CVA respectively, taking into account such difference, and discuss solution to address such inconsistency (if any), including the interaction between the regulations and the accounting practices to be applied in the future.

#### 4. Issues on tax treatment

For tax treatment of gain or loss on valuation of derivatives, if a domestic company has entered into derivative transactions and some of them have not been settled at the end of the fiscal year, gains or losses on valuation is calculated, assuming they were settled at the end of the fiscal year, and the amount of gains or losses calculated pursuant to Ordinance of the Ministry of Finance (i.e. gain or loss on assumed settlements of derivatives) would be recorded as gain or loss for tax reporting purpose for the year. When CVA is reflecting in the pricing going forward, the banking industry should discuss the expected tax treatment, for example, CVA is also recognized within gain or loss on valuation of assumed settlement of derivatives, and reported as gain or loss for tax reporting purpose. Banks should continue to discuss this issue as industry-wide topic, by reference to the practices applied by overseas jurisdictions and accounting implications.

#### 5. Issues on organization, human resources and IT systems

When CVA is introduced, banks would be required to address issues with respect to organization, human resources (i.e. know-how) and supporting IT systems.

In terms of organization, banks should reassess and reorganize the current organizational structure, by setting up a CVA desk and developing procedures to ensure proper measurement and control of CVA. It is an important agenda to attract and retain capable talents with expertise to lead such a function, but we also recognize it difficult to develop such capable human resources within the near-term future, and banks should look to develop such a talent pool over mid-to-long term horizon.

In order to develop IT systems to properly support functionality including CVA measurement, a significant amount of resources including IT personnel and development costs is likely to incur, requiring a longer time horizon to go-live.

#### 6. Concentration of higher counterparty risk transactions on non-CVA Japanese banks (i.e. adverse selection concern)

When a need and priority of CVA is assessed, we believe it is effective to focus on the



volume of derivative transactions. However, if a bank with significant derivative exposure has introduced CVA as first mover ahead of others, non-CVA Japanese banks could be faced with “adverse selection” risk.

While immediate action may not be required, banks with relatively smaller derivative exposure would carefully consider risk management using CVA.

As described above, we have identified the issues in introducing market-based CVA in Japan. Notwithstanding, we assume that considerable time would be required to address each of those issues. We recognize the fact that European/US banks have also applied CVA for products through phased approach, starting from the easy-to apply products such as plain-vanilla products, and rolling out to more complicated exotic products. By reference to such precedent, we believe it is a realistic approach for Japanese banks to develop a framework depending on its profile, by applying market-based CVA through phased approach, by extensively applying CVA to the regions, business sectors and products of the counterparties where available.

#### **IV. Specific actions going forward**

This chapter discusses specific efforts required to address the issues described above, assuming that market-based CVA is introduced through phased approach.

The issues raised in the previous chapter are classified into either of two categories, “issues requiring the industry-wide efforts” or “issues mainly requiring each bank-specific actions”, as below.

##### **【Issues requiring the industry-wide efforts】**

- ✓ Leading practices of effective CVA desk in compliance with insider-trading restrictions (III.2)
- ✓ Accounting treatments of CVA (III.3)
- ✓ Tax treatment for derivative transaction assuming CVA is applied (III.4)
- ✓ Effective solution to tackle concentration of trades with higher-risk counterparties to non-CVA Japanese banks (III.6)

##### **【Issues mainly requiring each bank-specific actions】**

- ✓ Solution to address lower liquidity of credit instruments market (III.1)

- ✓ Development of organization, human resources and IT system(s) including setup of a CVA desk (III.2 and III.5)

To address “issues requiring industry-wide efforts”, banks should continue to discuss, through trade organizations, with the relevant authorities and organizations

In this category, among other things, a priority would be placed on accounting treatments. For example, it is desirable for each bank to discuss and identify the expected timing to introduce market-based CVA to each of the respective netting sets (e.g. sets by regions (domestic/overseas), sets by types of counterparty (industry sectors, corporate size), or sets by types of transaction) under a phased-in approach, considering the current external and internal circumstances. .

With respect to “issues mainly requiring each bank-specific actions”, we believe that specific actions would be required as follows, for example, for IT system development which is recognized as an immediate issue.

#### (1) Budget

While it depends on the size of each bank’s derivative business and its exposure, considerable amount of project costs would be generally required to develop a system to calculate CVA and its risks.

#### (2) Attract and retain resources for IT system development

Banks should develop a plan for large scale investment and attract/retain skilled personnel to assign based on the developed plan. Given that it is not easy to attract and retain such skilled personnel with technical expertise (i.e. quants and system engineers), banks should develop a mid-to-long term plan from earlier stage, develop in-house resource pool over time as well as rely on outside experts.

#### (3) Capture required data

It is necessary to develop a framework to identify data required for CVA measurement and to capture those data through the system(s) automatically. If the system(s) to capture in-scope data involves complex development, the amount and time for investment may not be justified from cost-effectiveness perspective. In such a case, priority should be placed on the data identification from more high-risk (i.e. larger CVA) locations/units and systems.

As explained above, we believe that banks should address those issues through a phased-in approach in implementation of market-based CVA, by clarifying the responsible owners and prioritizing those issues. Japanese Bankers Association would be actively involved in such efforts on an ongoing basis.

(End of Text)

## **(Annex) Participants of CVA Risk Management Working Group**

### **(Members)**

Mizuho Financial Group

MUFG : Bank (The Bank of Tokyo-Mitsubishi UFJ)

Sumitomo Mitsui Banking Corporation

Resona Bank

The Iyo Bank

North Pacific Bank

### **(Advisors)**

Financial Services Agency

Bank of Japan

The Japanese Institute of Certified Public Accountants (JICPA)

International Swaps and Derivatives Association (ISDA)