Market Credit Risk Standard

Key components

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- ➤ **Why develop a Market Credit Risk Standard?**
- ➤ **Impact of an entity default vs impact of a market default**
- ➤ **What should be included in this Standard?**
- ➤ **Big picture goals / guiding principals**
- ➤ **Base case and current case**
- ➤ **Key component – Amount of loss**
- ➤ **Key component – Confidence level**
- ➤ **Other components**
- ➤ **Next steps**

Why develop a Market Credit Risk Standard?

➢ **The Board of Directors requested it**

➢ **Provides a common basis for understanding risk in the market and how that risk will be managed**
  - ➢ For existing market participants, potential new entrants, PUCT, and others

➢ **Establishes good risk management practice**
  - ➢ It is good risk management practice to set standards around key risks and measure, monitor and manage these risks
    - ➢ Similar to what almost all larger corporate entities have
    - ➢ Reduces the risk of surprises and increases the ability to address risks in advance
    - ➢ Ensures that mitigation plans are sufficient to protect the market in the event of an "extremely adverse scenario" even when the probability of that event occurring is small, when the impacts of the event occurring are significantly negative

➢ **Demonstrates ability to self-monitor**
  - ➢ When done effectively, the market not only protects itself, but also demonstrates its ability to self-monitor to external stakeholders

➢ **The market should be able to withstand "stress or extremely adverse scenarios", even when the probability of those events occurring is small since the impact of such events can be significantly negative**

  ➢ If an entity defaults
    ➢ Liquidates (goes out of business) or
    ➢ Files Chapter 11 and reorganizes under a prescribed set of rules

  ➢ If the market defaults / ceases to function
    ➢ Broader potential impacts - Multiple entities default or a cascading of default is triggered?
    ➢ Is reorganization possible? Under what conditions?

➢ **Big picture goals / guiding principals**

    ➢ Easily understood by all stakeholders

➢ **Nuts and bolts for achieving the goal**

    ➢ Assign responsibility for measuring, monitoring and managing the risk

    ➢ Define the risk tolerance

    ➢ Define how the risk will be measured

    ➢ Define actions to be taken as level of risk approaches or exceeds tolerance

Purpose

This Market Credit Risk Standard provides a framework by which the ERCOT Board of Directors seeks to maintain the long-term financial integrity of the ERCOT market and to help ensure that overall market credit risk is maintained within acceptable limits.

Market Credit Risk Objective

In seeking to fulfill BOD objectives to provide for a reliable Texas electricity market, ERCOT stakeholders will

- directly consider the credit implications of operational or market decisions, and
- seek to maintain a market-wide credit risk profile consistent with an investment grade rating

Base case and current case

- **Base case**
  - Model scenario that considers only forms and amounts of collateral required per ERCOT Protocols
    - Provides a comparison of the potential risk with the base level of mitigation available per the Protocols
      - Do the existing rules provide adequately for the risk?

- **Current case**
  - Model scenario that considers forms and amounts of collateral held as of a specific point in time. This scenario includes, for guarantees, collateral amounts above those required per ERCOT Protocols and which can be unilaterally withdrawn at the Counterparty's direction and assumes that "excess collateral" from guarantees will continue to be held throughout the time horizon defined in the model
    - What is the current level of risk in the market?

Key component – Amount of loss

- **How much loss from credit events (over the course of a year) does the market believe it can or is willing to absorb in extremely adverse scenarios (e.g. What is the market's risk tolerance?)**
  - Base case
  - Current case

- **Need to consider the potential overall loss and each entity's estimated pro rata share of that loss**
  - If a net seller – consider the near term cost of your estimated short payment
  - If a load – consider your estimated pro rata share of the loss

- **At what potential loss level should the BOD be notified**
  - When the PFE exceeds the defined risk tolerance?
  - At some point prior to the defined risk tolerance loss being reached?

➢ **Discuss risk tolerance**

➢ **Discuss BOD notification levels**

Key component – Confidence level

➢ **The confidence level embedded in the Market Credit Risk Standard is different from a Value at Risk (VAR):**

   ➢ VaR – Measure of market risk
   - ➢ Deals primarily with price or rate volatility (one of many factors in the PFE)
   - ➢ Short term in nature – 1 day / 1 week

   ➢ PFE – Measure of credit risk
   - ➢ Deals with credit risk (entity creditworthiness and exposure, based on price, volume and other factors)
   - ➢ Longer term in nature – 1 year

The Confidence level can be thought of in several ways:

➢ The percentage of times the annual loss simulation was less than the specified level. For 10,000 simulations,

  ➢ At a 95% confidence level - 9,500 simulations had losses less than the amount specified and 500 simulations had losses greater than that amount

  ➢ At a 99% confidence level – 9,900 simulations had losses less than the amount specified and 100 simulations had losses greater than that amount

  ➢ At a 99.9% confidence level – 9,990 simulations had losses less than the amount specified and 10 simulation had losses greater than that amount

➢ How frequently you might expect an event to occur

➢ At a 95% confidence level – an event with a loss greater than the amount specified could be expected to occur once in a 20 year period

➢ At a 99% confidence level – an event with a loss greater than the amount specified could be expected to occur once in a 100 year period

➢ At a 99.9% confidence level – an event with a loss greater than the amount specified could be expected to occur once in a 1,000 year period

➢ If the dollar limit assigned to a confidence level reflects the maximum loss the market believes it can withstand, the confidence level can also represent the probability of the market remaining solvent (or the inverse of the likelihood of default)

  ➢ At a 95% confidence level – there is an expectation that 95% of the time, the market will remain solvent and 5% of the time, the market will default or crash

  ➢ At a 99% confidence level – there is an expectation that 99% of the time, the market will remain solvent and 1% of the time, the market will default or crash

  ➢ At a 99.9% confidence level – there is an expectation that 99.9% of the time, the market will remain solvent and 0.1% of the time, the market will default or crash

Rating	1-yr PD	Conf level
AAA	0.002%	99.9980%
AA+	0.003%	99.9970%
AA	0.005%	99.9950%
AA-	0.010%	99.9900%
A+	0.018%	99.9820%
A	0.033%	99.9670%
A-	0.059%	99.9410%
BBB+	0.108%	99.8920%
BBB	0.185%	99.8150%
BBB-	0.354%	99.6460%
BB+	0.642%	99.3580%
BB	1.164%	98.8360%
BB-	2.111%	97.8890%
B+	3.828%	96.1720%
B	6.943%	93.0570%
B-	12.59%	87.4080%
CCC+	22.84%	77.1620%

This table shows historical default rates for firms with a variety of S&P credit ratings

The "1-yr PD" is the likelihood a firm with this rating will default for any reason within one year.

The "Confidence level" can be thought of as the likelihood that a firm with this rating will still be solvent after one year has passed, or the fraction of firms holding this rating that will remain solvent over the year

Some firms use a target rating as a solvency standard

> They manage their business so that the likelihood of bankruptcy within the next year equals the associated 1-yr PD

> For example, if they target BBB+, the probability of insolvency must be about 0.1%

> The amount of available assets the firm must hold to achieve this is its **required economic capital**

➢ **What level of confidence do we want to have, under the given set of assumptions, that we will not have losses in excess of our defined risk tolerance?**

Other components

➢ **Market Credit Risk Standard draft language discussion**

Next steps

➢ Wednesday, April 30th – ERCOT staff distribute revised CRA statement draft (if any revisions to date)

➢ Wednesday, May 7th – Comments due on CRA statement draft and assumptions used in OW model

➢ Friday, May 9th – ERCOT staff distribute comments

➢ **Tuesday, May 13th–CWG meeting in Austin (Met Center)**
   ➢ Consider comments received
   ➢ Continue work on CRA statement