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| B #: | B10298-18 |
| Date: | December 31, 2018 |
| To: | All Participants |
| Category: | DTC Risk Management |
| From: | Settlement Manager/Managing Director/Cashier |
| Attention: | Changes to DTC Collateral Haircuts |
| Subject: | B10298-18 |

Beginning January 25, 2019, DTC will be implementing a change that will modify the collateral value for certain securities which may affect the value of positions applied to the Collateral Monitor.

The change will result in an increase of haircuts for securities during the initial issuance period if no third party credit rating information is available ("Affected Securities") to 100%. This change will align the collateral valuation of the Affected Securities with the current DTC haircut schedule (please see Appendix below).

DTC anticipates that this change will have minimal impact, however Participants should be alerted to monitor the Collateral Monitor to ensure that there is no disruption to transaction flow intraday that would require action.

As a reminder, to manage intraday transaction blockages due to risk management controls, the tools available to you are: to designate additional securities as collateral, process delivery versus payment transactions that will generate intraday credits to your settlement account, or Fed wire settlement progress payments to your Account at DTC. Participants can monitor their collateral monitor balance via the Risk Management Controls Inquiry link in the Cash and Balances tab in the Settlement Web.

For more information related to collateral processing at DTC, you may wish to review the Settlement Service Guide¹.

Questions regarding this notice should be directed to:

- Your Relationship Manager or
- DTC Risk Hotline (212) 855-2260

¹ For more information on Collateralization please reference the Settlement Service Guide <http://www.dtcc.com/~media/Files/Downloads/legal/service-guides/Settlement.pdf>

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Appendix:

| Security Type | Rating (S&P / Moody) | Current Collateral Haircut |
|---|----------------------------------|-------------------------------|
| Interest bearing United States Treasury Securities | | |
| with remaining terms to maturity of up to 2 years | | 2% |
| with remaining terms to maturity in excess of 2 years and up to 5 years | | 3% |
| with remaining terms to maturity in excess of 5 years and up to 10 years | | 4% |
| with remaining terms to maturity in excess of 10 years | | 6% |
| Zero Coupon United States Treasury Securities | | |
| with remaining terms to maturity of up to 5 years | | 5% |
| with remaining terms to maturity in excess of 5 years | | 12% |
| MBS issued by a US Agency and US Government Sponsored Enterprise (GSE) | | |
| | AAA to AA / Aaa to Aa2 | 7% |
| Interest bearing Agency unsecured notes, debentures and other interest bearing obligations of (i) instrumentalities of the U.S. or (ii) GSEs | | |
| GNMA, FNMA, FHLMC, remaining terms to maturity of up to 10 years | AAA to AA / Aaa to Aa2 | 5% |
| All other GSEs not under US Govt conservatorship with remaining terms to maturity of up to 10 years | AAA to AA / Aaa to Aa2 | 7% |
| GNMA, FNMA, FHLMC, remaining terms to maturity in excess of 10 years | AAA to AA / Aaa to Aa2 | 7% |
| All other GSEs not under US Govt conservatorship with remaining terms to maturity in excess of 10 years | AAA to AA / Aaa to Aa2 | 10% |
| Zero Coupon Agency unsecured notes, debentures and other interest bearing obligations of (i) instrumentalities of the U.S. or (ii) GSEs | | |
| GNMA, FNMA, FHLMC, remaining terms to maturity of up to 5 years | AAA to AA / Aaa to Aa2 | 7% |
| All other GSEs not under US Govt conservatorship with remaining terms to maturity of up to 5 years | AAA to AA / Aaa to Aa2 | 7% |
| GNMA, FNMA, FHLMC, remaining terms to maturity in excess of 5 years | AAA to AA / Aaa to Aa2 | 12% |
| All other GSEs not under US Govt conservatorship with remaining terms to maturity in excess of 5 years | AAA to AA / Aaa to Aa2 | 18% |
| Fixed-rate, non-callable, non-amortizing Canadian Dollar (CAD) - denominated negotiable debt obligations with fixed maturity, in book entry form, issued by the federal Government of Canada | | |
| with remaining terms to maturity of up to 10 years | AAA / Aaa | 4% |
| with remaining terms to maturity in excess of 10 years | AAA / Aaa | 8% |
| Zero coupon Canadian Dollar (CAD) - denominated negotiable debt obligations with fixed maturity, in book entry form, issued by the federal Government of Canada | | |
| with remaining terms to maturity of up to 10 years | AAA / Aaa | 7% |
| with remaining terms to maturity in excess of 10 years | AAA / Aaa | 14% |
| Agency CMOs | | |
| Supported by US Govt conservatorship and 2 Vendor prices | AAA to AA / Aaa to Aa2 | 20% |
| < 2 Vendor Prices | | 100% |
| Medium-Term Notes / Corporate Bonds | | |
| | AAA to A- / Aaa to A3 | 20% |
| | BBB+ to BBB- / Baa1 to Baa3 | 30% |
| | BB+ to BB- / Ba1 to Ba3 | 40% |
| | B+ to B- / B1 to B3 | 50% |
| | CCC+ / Caa1 and below or unrated | 100% |

| Security Type | Rating (S&P / Moody) | Current Collateral Haircut |
|--|----------------------------------|-------------------------------|
| Municipal Bonds | | |
| | AAA to A- / Aaa to A3 | 25% |
| | BBB+ to BBB- / Baa1 to Baa3 | 30% |
| | BB+ to BB- / Ba1 to Ba3 | 100% |
| | B+ / B1 and below or unrated | 100% |
| Money market Instruments | | |
| Corporate Commercial Paper Discount Notes (maturity not to exceed one year) | A-1+ to A-1 / P-1 | 6% |
| | A-2 / P-2 | 30% |
| | A-3 / P-3 | 100% |
| | below A-3 / P-3 or unrated | 100% |
| Institutional Negotiable Certificates of Deposit (original maturity 270 days or less) | A-1+ to A-1 / P-1 | 6% |
| | A-2 / P-2 | 100% |
| | A-3 / P-3 | 100% |
| | below A-3 / P-3 or unrated | 100% |
| Municipal Commercial Paper Discount Notes, Municipal Notes and Other Short Term Municipal Debt (maturity not to exceed one year) | SP-1+ to SP-1 / MIG-1 | 10% |
| | SP-2 / MIG-2 | 100% |
| | SP-3 / MIG-3 | 100% |
| | below SP-3 / MIG-3 | 100% |
| Preferred Stock in CP mode | All | 100% |
| Bankers Acceptances | All | 100% |
| Discount Notes | All | 100% |
| Short Term Bank Notes | All | 100% |
| Institutional Negotiable Certificates of Deposit (original maturity greater than 270 days, with remaining maturity of up to five years) | | |
| | AAA to A- / Aaa to A3 | 10% |
| | BBB+ to BBB- / Baa1 to Baa3 | 25% |
| | BB+ to BB- / Ba1 to Ba3 | 100% |
| | B+ to B- / B1 to B3 | 100% |
| | CCC+ / Caa1 and below or unrated | 100% |
| with remaining maturity of more than 5 years | All | 100% |
| Corporate and Municipal Variable-Rate Demand Obligations (non-CP Mode with 2 Agency Ratings) | | |
| | AAA / Aaa | 20% |
| | AA+ to AA- / Aa1 to Aa3 | 35% |
| | A+ to A- / A1 to A3 | 50% |
| | BBB+ to BBB- / Baa1 to Baa3 | 75% |
| | BB+ / Ba1 and below or unrated | 100% |
| less than 2 Agency Ratings | | 100% |
| Corporate and Municipal Variable-Rate Demand Obligations (in-CP Mode) | | |
| | All | 100% |
| Non-Agency CMOs | | |
| 2 Agency Ratings & 2 Vendor Prices | AAA / Aaa | 50% |
| 2 Agency Ratings & 2 Vendor Prices | AA+ to AA- / Aa1 to Aa3 | 60% |
| 2 Agency Ratings & 2 Vendor Prices | A+ / A1 and below or unrated | 100% |
| < 2 Agency Ratings or < 2 Vendor Prices | | 100% |

| Security Type | Rating (S&P / Moody) | Current Collateral Haircut |
|--|------------------------------|-------------------------------|
| Publicly issued Asset Backed Securities (ABS) | | |
| 2 Vendor prices | AAA / Aaa | 35% |
| 2 Vendor prices | AA+ to AA- / Aa1 to Aa3 | 45% |
| 2 Vendor prices | A+ / A1 and below or unrated | 100% |
| < 2 Vendor prices | | 100% |
| Equity Securities (Common, Preferred) listed on a U.S. national securities exchange, NASDAQ, or a Canadian securities exchange | | |
| with a market price of \$10.00 or more per share or per other unit | | 25% |
| with a market price between \$7.50 and \$9.99 per share or per other unit | | 30% |
| with a market price between \$5.00 and \$7.49 per share or per other unit | | 50% |
| with a market price below \$5.00 per share or per other unit | | 100% |
| Equity Securities (Warrants, Rights, Units, Closed End Mutual Funds) listed on a U.S. national securities exchange, NASDAQ, or a Canadian securities exchange with a market price of \$5.00 or more per share or per other unit | | |
| with a market price of \$5.00 or more per share or per other unit | | 50% |
| with a market price below \$5.00 per share or per other unit | | 100% |
| American Depository Receipts (ADRs) traded OTC | | |
| with a market price of \$5.00 or more per share or per other unit | | 50% |
| with a market price below \$5.00 per share or per other unit | | 100% |
| UITs listed or not listed on a U.S. national securities exchange, NASDAQ, or a Canadian securities exchange | | |
| with a market price of \$5.00 or more per share or per other unit | | 50% |
| with a market price below \$5.00 per share or per other unit | | 100% |
| Equity Securities (Common, Preferred, Warrants, Rights, Units) not listed on a U.S. national securities exchange, NASDAQ, or a Canadian securities exchange | | |
| with a market price of \$5.00 or more per share or per other unit | | 65% |
| with a market price below \$5.00 per share or per other unit | | 100% |
| 144A / Reg S (All Securities - Equity & Debt) | | |
| | All | 100% |
| Auction Rate Preferred Stock and Tender Rate Preferred Stock | | |
| | | 100% |

1. Securities are assigned a 100% haircut if the issue has matured, the issuer is in bankruptcy or the security is not priced by an approved DTC pricing model or by a third-party vender for a period of 10 business days or more.

2. DTC may reduce its risk by assigning higher haircuts, where applicable, to equity securities designated as highly volatile, based on their historical price volatility.