

MTA Adder: A More Sound Implementation of Initial Margin Plus Variation Margin

SUFFOLK FUND

Proposal: Max with MTA Adder

Use maximum of current credit requirement and MTA plus “MTA adder”

- MTA adder functions as cushion once initial (existing) credit has been eroded by MTA losses, addressing concerns raised by Appian Way

Proposed adders:

- 20% of MTA loss for FTRs awarded in BOPP and annual auction
- 50% of MTA loss for long-term FTRs

Advantages over simple additive approach

- “Cushion” is dynamic—it grows as MTA loss grows rather than remaining constant regardless of the level of MTA loss
- Better correlates collateral to risk
 - more cushion on riskier long term FTRs
 - more cushion for very negatively marked (high-risk) portfolios
 - less excess cushion for slightly negatively marked (and therefore lower risk) portfolios still well within bounds of initial (existing) credit requirements
- Follows industry standard concepts of maintenance margin and volatility-based cushion
- Fewer collateral calls
- Takes positive aspects of MTA and integrates them into a complex, multi-faceted credit framework rather than turning whole existing model into an initial+variation framework

Notes on Evaluating Credit Proposals

Backtesting rule changes should be taken with a grain of salt

- Simply applying proposed rules to GreenHat's portfolio (or everyone else's) does not consider fact that **new rules would have changed behavior** and in GreenHat's case, probably would have stopped them years ago with only a few million dollars of loss
- We need to design sound rules that prevent future "gaming"

More credit across the board is not necessarily better

- We need to ensure credit is **properly allocated to the portfolios representing greatest risk** of material default
 - If we decrease everyone's credit overall but increase it for those several portfolios (both now and in the future) actually at risk of material default, that's a good thing!
- Many "cushions" are already built into existing credit requirements:
 1. 10% adjustment to historical reference prices
 2. Adjustment of historical reference prices for transmission upgrades
 3. Requiring a minimum credit for all positions, even if they appear to be winners (similar to initial margin concept)
 4. Undiversified adder
 5. Taking the maximum of multiple credit requirements (minimum, historical ref price, adjusted historical ref price, and now potentially MTA)
 6. Not netting credit requirements across months. For example, an annual FTR bought at \$1200 whose reference prices are \$1000 for January and \$0 for every other month will require \$0 for January (excluding the min credit) and \$100 for every other month (\$1200/12mos). The total credit required is then \$1100 even though the FTR was bought for only \$200 more than the total expected payout. This monthly calculation necessarily results in credit requirements greater than or equal to expected losses.

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- Below is an example of GreenHat's last year of credit requirements under additive vs. our proposal
- Our proposal is less coverage, but only because of the backtesting circumstances

- Going forward, with new minimum credit rule, participants will not likely amass huge portfolios of "low-value" low-volatility paths that require \$0.10/MWh of credit in order to hopefully make \$0.01/MWh
- It's easy to imagine a scenario where the MTA loss per MWh is much higher than ~\$0.10/MWh
- Consider if GreenHat's same MTA loss was on a tenth of its volume:

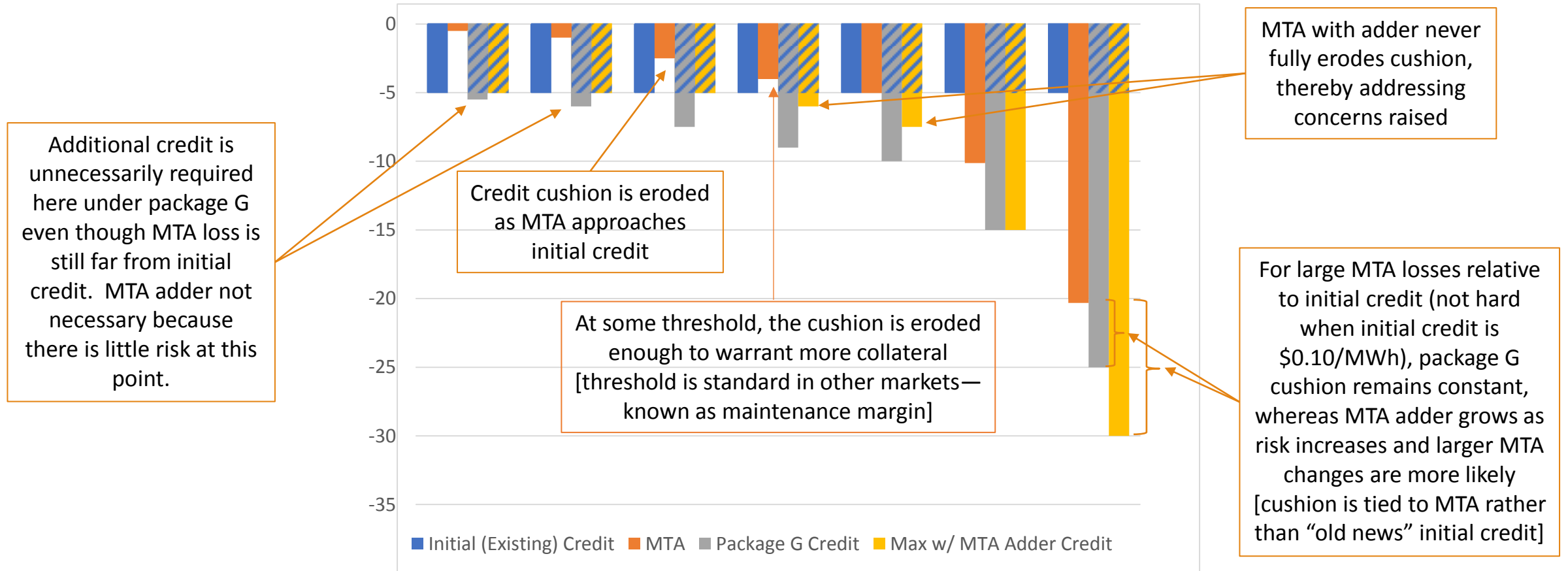
	MWh (MM)	Init. Credit (\$MM)	MTA (\$MM)	MTA/MWh	Credit (\$MM)	
					Additive (Package G)	Max w/ MTA Adder
Jun 2017	375	\$37.5	(\$39)	(\$0.10)	\$76.5	\$58.5
Sep 2017	450	\$45.0	(\$37)	(\$0.08)	\$82.0	\$55.5
Dec 2017	620	\$62.0	(\$46)	(\$0.07)	\$108.0	\$69.0
Apr 18 R1	622	\$62.2	(\$80)	(\$0.13)	\$142.2	\$120.0
Apr 18 R2	675	\$67.5	(\$80)	(\$0.12)	\$147.5	\$118.8
Apr 18 R3	770	\$77.0	(\$75)	(\$0.10)	\$152.0	\$111.4
Apr 18 R4	870	\$87.0	(\$79)	(\$0.09)	\$166.0	\$117.3
Final	900	\$90.0	(\$127)	(\$0.14)	\$217.0	\$186.7

	MWh (MM)	Init. Credit (\$MM)	MTA (\$MM)	MTA/MWh	Additive (Package G)			Max w/ MTA Adder (Package H)		
					Credit (\$MM)	Cushion, (Actual Loss)	Uncovered loss (\$MM)	Credit (\$MM)	Cushion, (Actual Loss)	Uncovered loss (\$MM)
Jun 2017	37.5	\$3.8	(\$39)	(\$1.04)	\$42.8	\$3.8 (-\$2.0)	\$0.0	\$58.5	\$19.5 (-\$2.0)	\$0.0
Sep 2017	45.0	\$4.5	(\$37)	(\$0.82)	\$41.5	\$4.5 (\$9.0)	\$4.5	\$55.5	\$18.5 (\$9.0)	\$0.0
Dec 2017	62.0	\$6.2	(\$46)	(\$0.74)	\$52.2	\$6.2 (\$34.0)	\$27.8	\$69.0	\$23.0 (\$34.0)	\$11.0
Apr 18 R1	62.2	\$6.2	(\$80)	(\$1.29)	\$86.2	\$6.2 (\$0.0)	\$0.0	\$120.0	\$40.0 (\$0.0)	\$0.0
Apr 18 R2	67.5	\$6.8	(\$80)	(\$1.19)	\$86.8	\$6.8 (-\$5.0)	\$0.0	\$118.8	\$38.8 (-\$5.0)	\$0.0
Apr 18 R3	77.0	\$7.7	(\$75)	(\$0.97)	\$82.7	\$7.7 (\$4.0)	\$0.0	\$111.4	\$36.4 (\$4.0)	\$0.0
Apr 18 R4	87.0	\$8.7	(\$79)	(\$0.91)	\$87.7	\$8.7 (\$48.0)	\$39.3	\$117.3	\$38.3 (\$48.0)	\$9.7
Final	90.0	\$9.0	(\$127)	(\$1.41)	\$136.0			\$186.7		

*These numbers are not exact as they were pulled from a plot, but they are close and serve to illustrate the point nonetheless. Also, since annual auction positions were entered at \$0 MTA, the MTA ratio between annual/LT was estimated to be 0/100 for R1, 5/95 for R2-4, and 10/90 for Final [note this is different from volume ratio]. Init. credit is assumed to be the minimum \$0.10/MWh.

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Comparison of credits for portfolios with the same initial (existing) credit and different MTA losses



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Small losses relative to initial credit cause unnecessary collateral calls/collection under package G

Portfolio MTA fluctuates in a relatively small range



A portfolio that moves slightly negative at some point is just as likely to end positive as negative.

Additional credit is unnecessarily required here 4 times under package G even though MTA loss is still far from initial credit. MTA adder not necessary because there is little risk at these levels.

Here, Package H requires no additional collateral, as the threshold shown here has not been crossed. Surely there is *some* threshold of initial collateral erosion that should be crossed before requiring additional collateral. For example, why require an additional \$100 on a portfolio that has \$10,000,000 posted?