

# Margins on Options

Similar to futures, SPAN generates 16 risk scenarios, shocking price and volatility, to determine margins for options. For further details, please see the SPAN Methodology PowerPoint on our "Using SPAN" page. Additionally, for long option value (money you pay) we create a credit in the PC Span calculation and for short option value (money you collect) we create a debit. This way you are getting credit against the margin (span risk) calculation for the money that you have already paid out. Long option value is always greater than the span risk that is calculated because we understand that you cannot lose more than what you have paid for a long option. For a short option we create a debit because we want to make sure that you are keeping the premium for that option in the account until you unwind the position or it expires. In other words, a short option will also have additional margin that has to be posted that is not covered by the premium collected.

Additionally, if you have a short deep-out-of-the-money option, CME applies a Short Option Minimum (SOM) to the position. This is because deep-out-of-the-money short options may show zero or minimal Scan Risk given the price and volatility moves in the 16 market scenarios, yet still present risk in the event that these options move closer-to-the-money or in-the-money, thereby generating potentially large losses. Hence CME applies the SOM to each product to account for this potential exposure. *Note that if the Scan Risk is lower than the Short Option Minimum, the SOM is charged. An example of this can be seen below:*

Scenario	Underlying Price Move	Volatility Change	Gain/Loss
1	Unchanged	Up	\$16.00
2	Unchanged	Down	-\$10.00
3	Up 33%	Down	\$8.00
4	Up 33%	Up	-\$10.00
5	Down 33%	Up	\$27.00
6	Down 33%	Down	-\$9.00
7	Up 67%	Up	\$3.00
8	Up 67%	Down	-\$11.00
9	Down 67%	Up	\$41.00
10	Down 67%	Down	-\$7.00
11	Up 100%	Up	-\$1.00
12	Up 100%	Down	-\$11.00
13	Down 100%	Up	\$62.00
14	Down 100%	Down	-\$4.00
15	Up 300%	Unchanged	-\$4.00
16	Down 300%	Unchanged	\$88.00
SCAN RISK			\$88.00

Here our greatest loss from our risk scenarios is \$88 so our Scan Risk is \$88. Now suppose that we had a Net Option Value (Long Option Value - Short Option Value) of -\$100 (i.e. \$100 more of SOV than LOV). Now our total requirement calculated normally would be Scan Risk minus NOV = Total Requirement. Therefore, our total requirement will be 88 minus -100 = \$188. Now suppose in this case, our options have deep-out-of-the-money positions and we are charged a SOM of \$100 due to their inherent risk. Now since SOM > Scan Risk (\$100 > \$88), we use the SOM in place of the Scan Risk. Therefore, we actually have to pay a total requirement of 100 minus -100 = \$200 instead of the \$188.