Caselet #40 – Sparky Learns About American, European & Bermudan Callables

Learning Outcome Statement

After completing this caselet, students and trainees should be able to explain the contractual differences among American, European and Bermudan callable bonds. They should also be able to explain the bonds’ relative option values for matched setups.

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Renowned Darla Moore School of Business graduate and bond analyst, Ms. Jane Gotzrox, has waited impatiently for her intern to return from buying aspirin in the lobby mart. Her withering glare makes disapproving words superfluous.

“Sparky,” she says, “it’s not bad enough that Goody Tewschues and Jimmy Second Best are dabbling in callables, now Wedge wants in on the action, too. Bah! To make matters even worse, that little twit Nick-for-brains is helping Wedge understand them. Oh, Sparky, ‘what’s a mother to do?’”

“Well, mustn’t leave money on the table, eh? We can fight the forces of ignorance, reinforced by stupidity, even if we are heavily outgunned and we’ll make a few bucks in the process. Here’s what I want you to do:"

“The first step is to show the option valuation difference for European, Bermudan, and American callables. Make them 10NC3s. You know how to do that, yeah, Sparky?”

“To keep from having ‘too many moving parts,’ I want you to create your own callables using Yield Book Add-in. I want the bonds to have 6% coupons and to be priced at par with a flat yield curve at 5%. Use 20% volatility for each of them.”

“After calculating the price, find the option value and display it in your spreadsheet. Compare the option values for American and European callables – do they meet your priors, Sparky? Finally, for the first round, compare the option value for the Bermudian callable with the option values for both the American and European callables. Which structure is the Bermudian option value closer to, Sparky? Can you explain why that’s the case?”

“As a second round, I want you to revalue each of the callables, changing the volatility to 10% and 30%. Leave the yield curve at 5% and bond prices at par; we’ll worry about explaining option-adjusted spread to those guys later. Did the option values change as you expected? Can you explain the results to two blockheads?”
“Once you have that done, it should keep Wedge and Nick-for-brains out of mischief for a few hours. Now, go knock that little project out. I’ve got more for you yet today, so don’t dawdle.”