

Mortgage Calculator

Compare the values of individual securities backed by subprime home loans using Excel and the Bloomberg API. **By LAURA PRICE**

THE DETERIORATION of mortgage-backed securities as U.S. home loan delinquencies and foreclosures rise has given new urgency to valuing these instruments. With Bloomberg's application programming interface (API), you can create a calculator in a Microsoft Excel spreadsheet that lets you plug in any security backed by subprime loans to see the effect of faster prepayments or changes in the price of the security. The calculator allows for quick comparisons of different bonds.

The spreadsheet contains overridable fields, which allow you to change values and see the result in a reactive or output field. Using overridable fields, you can create a spreadsheet that replicates functions such as [Yield Analysis \(YT\)](#) and then apply the calculation to a custom list of securities. Type WACL 2005-SD1 B2 <Mtge> YT <Go> to see an example using a Wachovia Loan Trust security.

Begin setting up your spreadsheet by calling up a list of the Bloomberg mnemonic codes for overridable fields. Open a new Excel spreadsheet, click on the Bloomberg menu and select Help. Under the contents tab on the help screen, double-click in succession on Retrieving Data, Function Reference, Using Formulas and Overridable Fields, and then click on the link for Table 18, which has codes for mortgage yield, spread and floater analysis. Bloomberg API allows for the creation of so-called override calculators for a variety of markets, based on the mnemonic codes in these tables.

The mnemonics for the mortgage security prepayment calculator are MTG_PREPAY_TYP, which allows you to specify a prepayment model; MTG_PREPAY_SPEED, which allows for the

prepayment rate to be set; PX_ASK, for the asking price of the security; and MTG_DISC_MRGN, a reactive field to calculate the discount margin in basis points.

ENTER THE FOUR MNEMONICS into separate cells in a column in the spreadsheet; adjacent cells will be used to enter values for the overridable fields. Click on a nearby cell and type WACL 2005-SD1 B2 Mtge or the ticker for any other mortgage security.

You are now ready to write an Excel formula using the Bloomberg Data Point (BDP) function. The formula will start with =BDP followed by an open parenthesis, a security ticker, a reactive field, a series of overridable fields, a series of input cells and then a closing parenthesis. To build the formula, click in a new cell where you want your result to appear; type =BDP(and then click on the cell that has the mortgage security ticker; type a comma; click on the cell with the reactive field mnemonic for discount margin; type a comma; click and drag over the three cells with the overridable mnemonics; type a comma; click and drag across the three adjacent cells you will use as input fields; type a closing parenthesis and press <Go>.

The final step is to input data for the overridable fields in the input cells you specified. In the cell adjacent to MTG_PREPAY_TYPE, enter PSA for prepayment standard assumption, which assumes that homeowners will prepay at a gradually increasing rate during the first five years of their mortgages; next to MTG_PREPAY_SPEED, enter a prepayment speed such as 98; and in the input cell for PX_ASK, enter a value such as 100 for the asking price. The discount margin will appear automatically. Standard Excel formatting and colors can be applied. Once entered, the formula can be copied for a list of securities. **B**

For assistance with writing Bloomberg API formulas, select Live Help from the Bloomberg menu in Excel or **press <Help> twice** on your Bloomberg terminal to send a question to the Bloomberg Analytics help desk.

BUILDING A WORKSHEET

To build a calculator in Excel for analyzing mortgage-backed securities, use the Bloomberg Data Point (BDP) function and a set of overridable fields.

