

Agency Prepayment Model

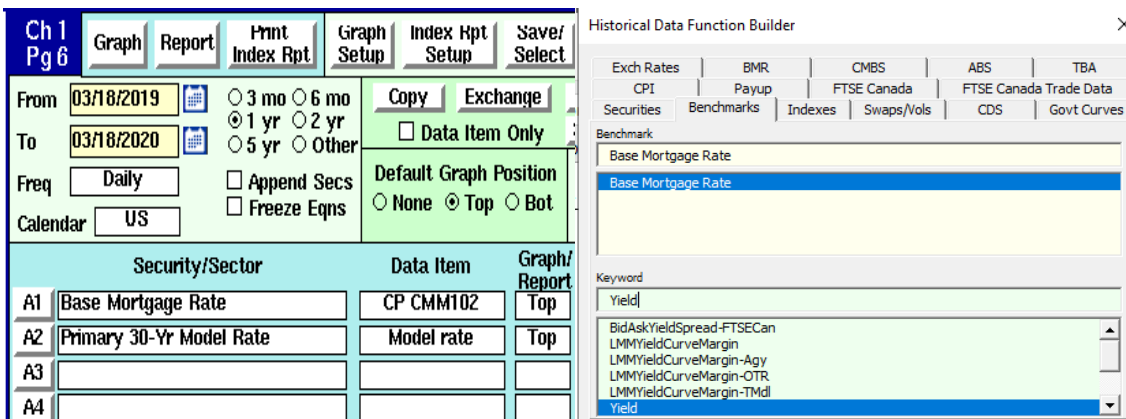
Model Commentary: COVID-19 Impact and Market Volatility

COVID-19 and the markets reaction to it are unprecedented. For the past three weeks, the CMM102 was as low as 2.0 and as high as 3.5. Clients have observed some issues with our primary/secondary spread model and projected primary mortgage rates, which we have been working to improve together with other issues, such as media effect.

With regard to prepayment considerations due to COVID-19, discussions and observances continue with the expectation that we will learn more over the coming days. We do expect to assume a lower HPA, higher unemployment, longer persistence of higher P/S spreads, and likely some temporary turnover slowdown on top of what is driven by HPA and unemployment due to the expected weaker "home shopping" season.

Many Yield Book clients have expressed interest in viewing the model-projected primary/secondary spreads and primary rates. While we are working on exposing them, we recommend the following to clients:

Clients can use Yield Book's "HistData" functionality to view the primary/ secondary spread CMM102 and daily primary 30 year model rate. The below chart uses March 18 as an example.



The screenshot shows the 'Historical Data Function Builder' window. On the left, there are controls for 'From' (03/18/2019), 'To' (03/18/2020), 'Freq' (Daily), and 'Calendar' (US). Below these are options for 'Data Item Only', 'Default Graph Position' (Top), and 'Append Secs'/'Freeze Eqns'. A table lists data items:

	Security/Sector	Data Item	Graph/Report
A1	Base Mortgage Rate	CP CMM102	Top
A2	Primary 30-Yr Model Rate	Model rate	Top
A3			
A4			

On the right, the 'Historical Data Function Builder' window shows a list of securities and a search bar with the keyword 'Yield'. The search results include 'BidAskYieldSpread-FTSECan', 'LMMYieldCurveMargin', 'LMMYieldCurveMargin-Agy', 'LMMYieldCurveMargin-OTR', and 'LMMYieldCurveMargin-TMId'. The 'Yield' keyword is highlighted in blue.

=YBHIST("Base Mortgage Rate", "3/18/2020", "yield", "bmk", "")

=YBHIST("Primary 30-Yr Model Rate", "3/18/2020", "", "bmk", "")

THE YIELD BOOK								
Daily data from 3/18/2019 to 3/18/2020								
				Percentiles				
	Item	Avg	Std Dev	Lo	25%	50%	75%	Hi
A1: Base Mortgage Rate	CP	3,239	0,332	1,854	3,051	3,213	3,410	3,833
A2: Primary 30-Yr Model Rate	MR63	3,883	0,237	3,077	3,732	3,833	3,998	4,405

Date	A1:CP	A2:MR63
03/18/2020	3,179	4,170
03/17/2020	2,446	3,483
03/16/2020	2,408	3,472
03/13/2020	3,119	4,158
03/12/2020	2,970	4,041
03/11/2020	2,819	3,924
03/10/2020	2,475	3,614
03/09/2020	1,854	3,077
03/06/2020	1,989	3,186
03/05/2020	2,322	3,433
03/04/2020	2,301	3,414
03/03/2020	2,286	3,396
03/02/2020	2,385	3,451
02/28/2020	2,460	3,456

From the table you can see that the current coupon CMM102 is 3.179, while the primary mortgage 30 year model rate is 4.170. The model primary secondary spread is the difference ($4.170 - 3.179 = 99.1$ bps).

Along the static path, we assume the CMM102 holds constant, and over 12-18 months the primary/secondary spread reverts to a long term baseline value which is currently 65-80 bps. Therefore, approximately 15 months from today, the model primary rate will be around 3.829-3.979 ($3.179 + 0.65, 3.179 + 0.80$).

Note that beginning with Model v21.5, the primary/secondary spread baseline level itself depends on the estimated refinancible universe and the shape of the curve; the result tends to be tighter spreads at times of excess capacity, more widening in modest rallies, and a lower spread when the curve is flat. We therefore caution clients not to interpret the 65-80 bps as a constant, but rather a general baseline.

With the above, users will have a rough idea of our immediate model projected primary/secondary spread and primary 30 year rate and our model projected primary rate along the static path 12-18 months from now. Clients who want to express their view over the model can make use of the "P/S Spread Level Shift" dial, which accepts a vector. If you select 10, it adds 10bps to the spread, and hence 10 bps to the model projected mortgage primary rate. (See the screenshot on next page for an illustration).

Even after we expose the path-wise primary secondary spread and primary rates on Yield Book, the dials functionality will still be useful to clients.

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