

Valuing Available Funds Caps on HEL Floaters off Fixed-Rate Collateral

Issuers have chosen to take advantage of the difference in fixed- and floating-rate spread levels by issuing floating-rate HELs backed by fixed-rate collateral.

Considering the extent of widening in fixed-rate home equity loan spreads since the beginning of July and the large new-issue calendar originally anticipated for September (the ABS market's version of an irresistible force meeting an immovable object?), something had to yield to the reality of an extremely difficult market. And in fact, something has, in the form of new issuance strategies. Some issuers have decided to delay transactions until October. Others have discovered that at these wider levels, securitization no longer allows them to generate the gains that they need to continue to generate positive earnings, and have therefore decided to pursue other funding alternatives, including wholeloan sales. Still others have resolved to take advantage of the difference in fixed- and floating-rate spread levels by issuing floating-rate HELs backed by fixed-rate collateral, a structure only rarely used in the past. So far this month, at least \$1.8 billion of securities backed by fixed-rate home equity loans that would otherwise have come to market as fixed-rate bonds have come as floaters.

Floating-rate HELs backed by fixed-rate collateral should trade at discount margins that are comparable with those of similar average life home equity ARMs, adjusting for the costs of any interest rate caps that may be embedded in the structure.

On a relative-value basis, floating-rate HELs backed by fixed-rate collateral should trade at discount margins that are comparable with those of similar average life home equity ARM securities after adjusting for differences in prepayment characteristics and the costs of any interest rate caps that may be embedded in the structure. Fortunately, fixed-rate home equity loan prepayment and OAS models give us the tools we need to measure both prepayment variability and the cost of the caps. However, to fully understand the analysis, we must first discuss certain characteristics of the securities along with several critical modeling assumptions.

Just as in the home equity ARM market, there are often subtle differences among floating-rate securities backed by fixed-rate collateral. Most transactions carry credit enhancement in the form of a triple-A rated surety bond and overcollateralization that builds up over time to a specific target percentage of the current outstanding balance. Once the target level is achieved, the dollar amount of overcollateralization is allowed to amortize (or “step down”) to the extent necessary to maintain the target, but not below a minimum amount specified as a percentage of the original pool balance. The transaction has an obligation to pay bond principal and interest along with servicing and other fees. All excess interest is applied to pay down bond principal at an accelerated pace until the target overcollateralization level is reached. Typically, after the first six months, 50bp–75bp of interest (a “carveout”) is separated to cover losses for the benefit of the surety provider.

The coupon is generally defined as one-month LIBOR plus a margin subject to an available funds cap, which works in the following way: In rising or high interest rate scenarios, the amount of interest income generated by the fixed-rate collateral less fees and the carveout could be inadequate to pay the full coupon. Under such circumstances, the amount of interest required to be paid on the bonds would be capped at the amount actually available. Some transactions provide for “supplemental interest,” which may be applied during the current payment period only, or during the current payment period and all future periods, to the extent necessary to make up any interest shortfalls. Depending on the transaction, supplemental interest may be applied to cover interest on the shortfall amount in addition to the shortfall amount itself. Supplemental interest usually includes all cash flow remaining in a period after applying the carveout to cover losses and overcollateralization requirements and taking into account any overcollateralization step-down amounts.⁴

Most structures include a 10% cleanup call with a step-up coupon. If the cleanup call is not exercised, the margin over LIBOR usually increases to two times its original size.

Modeling these transactions can be quite complicated.

Not surprisingly, modeling these transactions can become quite complicated for a variety of reasons. First, a floating-rate HEL backed by fixed-rate collateral may be part of a larger deal with one or more tranches backed by other, segregated groups of collateral that may share some form of credit support. Second, the collateral backing the security may be quite diverse, with a broad dispersion of coupons and

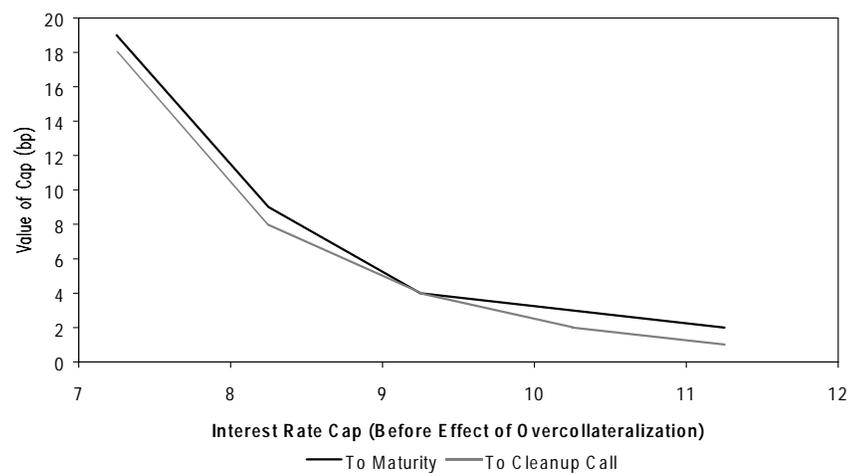
⁴ Unfortunately, the terminology is not uniform across all transactions. Sometimes, supplemental interest may instead be referred to as LIBOR carryover.

maturities. This means that the weighted average coupon likely changes over time and could, in fact, decline if higher coupon loans prepay before lower coupon loans. Without a prepayment model, it would be very difficult to project cash flows accurately, especially in scenarios where interest rates initially decline and later rise (since higher coupon loans would likely prepay faster during the rally, leaving lower coupon loans outstanding when interest rates go back up). Third, since losses are covered out of the carveout, if net losses are low, then there will be additional cash flow to cover potential interest rate shortfalls. However, if net losses are high, then there will be little, if any, additional protection. Thus, loss and recovery assumptions can be critical.

The most effective way to value the cost of the embedded caps is to compare the OAS of a HEL floater backed by fixed-rate collateral with that of an identical uncapped bond.

Perhaps the most effective way to value the cost of the embedded caps is to compare the OAS (to the swap curve) of a HEL floater backed by fixed-rate collateral with that of an identical uncapped bond. The difference in OAS should reflect the cost of the caps, since the only difference in the two cash flows is the existence of the caps. In Figure 17, we show how the cost of the caps varies for hypothetical transactions backed by fixed-rate home equity loan collateral with successively increasing weighted average coupons⁵ and, therefore, successively higher caps. We have assumed that the transaction is not part of a larger structure, that defaults occur according to our baseline prepayment model projection, that servicing fees equal 50bp, that all other fees equal 12bp, that net losses are realized 12 months after the date of default, that there is a 75bp carveout that becomes effective in the seventh month of the transaction, that the overcollateralization target is 7% of the current outstanding balance of home equity loans, that supplemental interest is available in the current payment period only, that there is a 10% cleanup call, and that the margin on the coupon doubles if the 10% cleanup call is not exercised. Obviously, there are many possible permutations of these assumptions, and the results will vary over each of the permutations.

Figure 17. Cost of Embedded Caps for Hypothetical Floating-Rate HEL Backed by Fixed-Rate Home Equity Loans with Progressively Higher Weighted Average Coupons



Source: Salomon Smith Barney Inc.

⁵ We assume a weighted average maturity of 239 months and a weighted average loan age of one month. We also assume that there is no dispersion in weighted average coupon to eliminate any valuation artifacts of the particular dispersion that we might have chosen.

The cost of the caps increases sharply as the cap level declines. In reality, the level of the cap changes over time based on the remaining composition of the collateral and on the current percentage of overcollateralization. Before taking overcollateralization into account, the level of the cap equals the weighted average coupon of the collateral less servicing fees, other fees, and the carveout. Given collateral with a 9.5% coupon, 50bp servicing, 12bp other fees, and a 75bp carveout, the cap level before overcollateralization would equal 8.13% ($9.50\% - 0.50\% - 0.12\% - 0.75\%$). As the percentage of overcollateralization increases, the cap level increases. With an overcollateralization target of 7%, the cap level in our example would increase to 8.80% ($1.07 \times 9.50\% - 0.50\% - 0.12\% - 0.75\%$) once the target was achieved.

The value of embedded caps in transactions similar to our example should fall in the range of about 3bp–10bp.

Recently originated HELs have weighted average coupons between approximately 9.5% and 11% (with caps of 8.13% - 9.63% before overcollateralization using our assumptions). These rates suggest, based on the results in Figure 17, that the value of embedded caps for transactions similar to the one in our example falls in the range of approximately 3bp–10bp. Note that there is little difference whether or not we assume that the 10% cleanup call is exercised.

Some transactions, unlike the example we presented, have significant partial protection in the form of an interest rate cap agreement with a third-party cap provider based on a specific strike level and schedule of prepayments. As long as prepayments remain faster than the schedule, the bonds will be effectively uncapped. To the extent that prepayments occur more slowly than the schedule, the bonds will bear cap risk that is proportional to the excess of the actual current balance over the scheduled balance. Given the relatively low cost of the caps *without* such protection, the value of the caps *with* the protection is likely to be negligible.

Figure 18 . Percentage of ABS Floating-Rate and Fixed-Rate Issuance, 1996 to Year-to-Date

	1996-97	1998
Floating-Rate	39.7%	39.8%
Fixed-Rate	60.3	60.2

Source: Salomon Smith Barney Inc.

Figure 19. Year-to-Date ABS Issuance by Sector, 1997–1998 (Dollars in Billions)

	1997 (YTD)	%	1998 (YTD)	%
Auto Loans	\$21.4	19.0	\$24.2	20.8
Credit Cards	26.8	23.8	25.3	20.9
Home Equity Loans	38.0	33.7	40.6	36.2
Manufactured Housing	6.5	5.8	8.7	7.7
Student Loans	9.6	8.5	7.9	6.4
Other	10.3	9.2	10.0	8.0
Total	\$112.6		\$116.7	

Source: MCM "Corporatewatch"

Figure 20. Comparison of Quoted Spreads and Static Spreads

	Avg. Life (Yrs.)	Quoted Spread (bp/Curve)	Static Spread ^e (bp)	Difference (bp)
3-Year Bullet	3.00	65	55	10
5-Year Bullet	5.00	80	69	11
Wide Window Auto ^a	1.81	80	75	5
Short Auto ^b	1.06	75	85	-10
Wide Window HEL ^c	3.63	130	123	7
Short HEL ^d	1.16	95	104	-9

Source: Smith Barney Inc./Salomon Brothers Inc. a Assumes collateral original WAM of 60 months and remaining WAM of 54 months, 9% coupon, 1.3% ABS prepayment speed. b Assumes collateral original WAM of 60 months and remaining WAM of 30 months, 9% coupon, 1.3% ABS prepayment speed. c Assumes collateral remaining WAM of 174 months, 11% coupon, 20% CPR prepayment speed. d Assumes collateral remaining WAM of 120 months, 11% coupon, 20% CPR prepayment speed, security maturity in 30 months. e Static spread of bullets incorporates the richness or cheapness of the on-the-run Treasury benchmarks. bp Basis points. CPR Constant prepayment rate. HEL Home equity loan-backed securities. WAM Weighted average maturity.

Figure 21. Fixed-Rate ABS Secondary Market Spreads to Benchmark Treasuries

		AAA			A		
		18 Sep 98 Spread	1 Week Change	1 Year SD of 1 Week Spread Changes	18 Sep 98 Spread	1 Week Change	1 Year SD of 1 Week Spread Changes
2-Yr.	Retail Auto	70 bp	0 bp	2.9 bp	85 bp	0 bp	2.6 bp
	Credit Card	60	0	2.2	80	0	2.2
	Home Equity	100	-5	3.7	N/A	0	
	Man. Housing	95	5	3.3	N/A	0	
3-Yr.	Wholesale Auto	65	3	2.6	85	3	2.4
	Credit Card	65	3	2.6	85	3	2.4
	Home Equity	115	0	3.7	N/A	0	
	Man. Housing	105	5	3.8	N/A	0	
5-Yr.	Wholesale Auto	80	7	N/A	N/A	0	
	Credit Card	80	7	3.2	100	5	3.6
	Home Equity	135	5	3.2	N/A	0	
	Man. Housing	120	10	3.6	N/A	0	
7-Yr.	Wholesale Auto	85	0	N/A	N/A	0	
	Credit Card	85	0	N/A	110	0	N/A
	Home Equity	155	5	N/A	N/A	0	
	Man. Housing	130	5	N/A	N/A	0	
10-Yr.	Wholesale Auto	100	5	N/A	125	0	N/A
	Credit Card	100	5	4.2	125	0	4.3
	Home Equity	170	0	4.2	N/A	0	
	Man. Housing	145	0	3.4	N/A	0	

bp Basis points. SD Standard deviation. Source: Salomon Smith Barney Inc.

Figure 22. Floating-Rate ABS Secondary Market Discount Margins (Over One-Month LIBOR)

		AAA			A		
		9/18/98	1 Week	1 Year	9/18/98	1 Week	1 Year
		DM	Change	SD of 1 Week	DM	Change	SD of 1 Week
				Spread Changes			Spread Changes
2-Yr.	Auto	8 bp	1 bp	0.8 bp	27 bp	4 bp	1.4 bp
	Credit Card	8	1	0.8	27	4	1.4
	Home Equity	12	0	0.8	32	2	1.1
3-Yr.	Wholesale Auto	10	0	0.8	33	6	1.4
	Credit Card	10	0	0.8	33	6	1.4
	Home Equity	22	8	1.1	38	7	1.3
5-Yr.	Wholesale Auto	15	1	N/A	37	8	N/A
	Credit Card	15	1	0.7	37	8	1.5
	Home Equity	28	10	1.4	43	10	1.4
7-Yr.	Wholesale Auto	17	0	N/A	43	9	N/A
	Credit Card	17	0	0.8	43	9	1.6
10-Yr.	Wholesale Auto	21	0	N/A	50	11	N/A
	Credit Card	21	0	N/A	50	11	N/A

bp Basis points. LIBOR London Interbank Offered Rate. SD Standard deviation. Source: Salomon Smith Barney Inc.

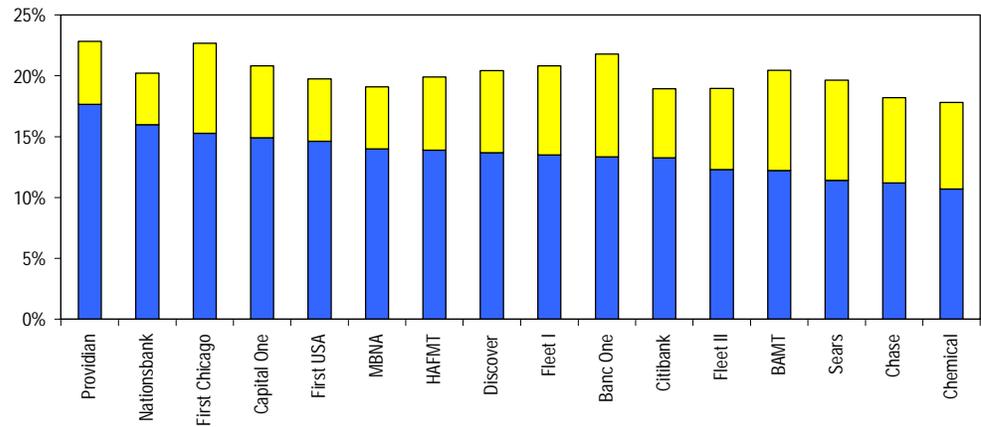
Figure 23. Representative Secondary Trading Levels

Floating-Rate Issue	Avg. Life	DM	Price	Cap
FUSAM 95-1 A	0.5 Yrs	6	100-01	None
ADVCC 95-A A	1.5	9	100-04	None
FUSAM 95-2 A	3.5	12	100-12	None
CCIMT 96-5 A	5.0	15	99-25 +	None
MBNA 96-B A	7.5	18	100-15 +	None

Fixed-Rate Issue	Coupon	Average Life	Spread	Price	Yield	Static Spread
FORD 95-B A	5.90	0.4 @1.5 ABS yrs	65 bp	100-04	5.664	65 bp
UAC 96-B A	6.45	1.1@1.6 ABS	75	100-23	5.692	86
PRAT 96-4 A4	6.40	1.1@1.6 ABS	70	100-26 +	5.642	73
CCIMT 94-3 A	6.80	0.5	70	100-19	5.655	64
MBNA 95-D A	6.05	1.7	60	101-08 +	5.336	58
CHEMT 95-3 A	6.23	3.9	70	103-00 +	5.428	70
CCIMT 94-2 A	7.25	7.5	90	109-20	5.662	89

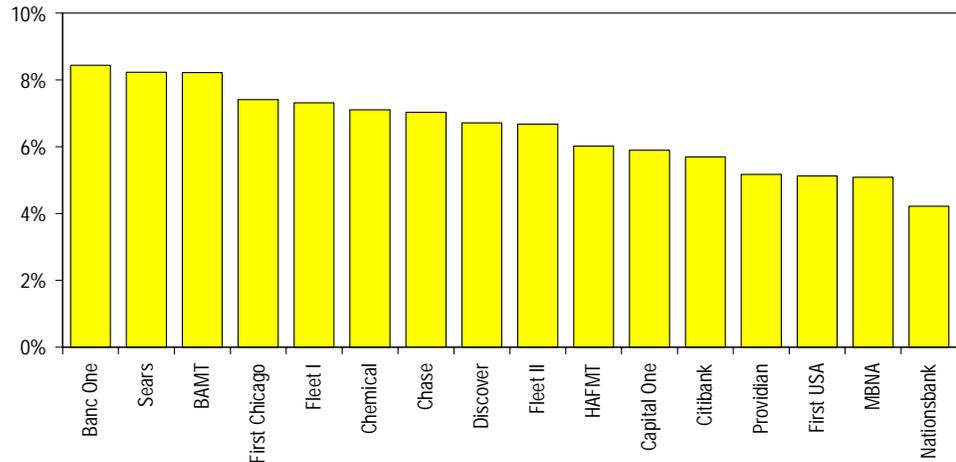
Source: Salomon Smith Barney Inc.

Figure 24. Credit Card Master Trust Gross and Net Portfolio Yields Reported for Jul 98



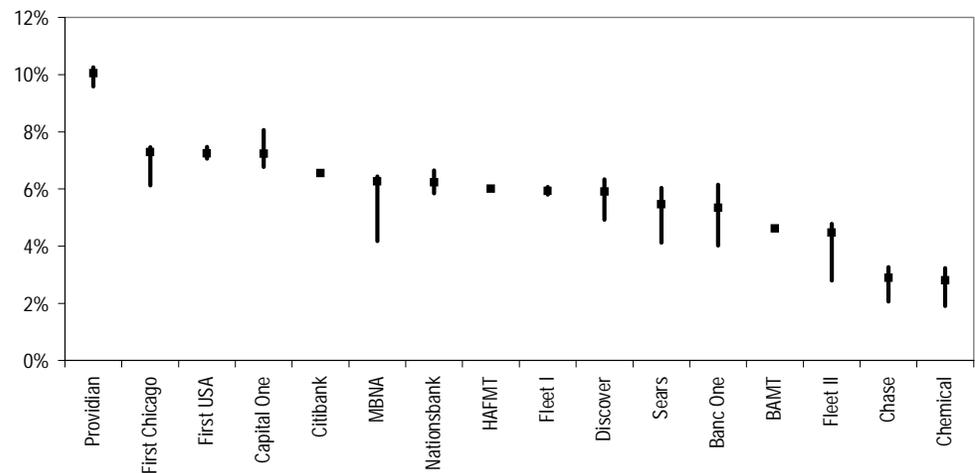
Source: Master Trust 8Ks, Bloomberg, Bloomberg Credit Card Reports.

Figure 25. Credit Card Master Trust Defaults Reported for Jul 98



Source: Master Trust 8Ks, Bloomberg, Bloomberg Credit Card Reports.

Figure 26. Credit Card Master Trust Excess Spreads Reported for Jul 98



Source: Master Trust 8Ks, Bloomberg, Bloomberg Credit Card Reports.

Figure 27. Recent Issuance

Date	Issuer	Asset Type	Class	Size Mils.	Credit Enhancement	WAL	Pricing Speed	Spread
9/10/98	Green Tree Financial Corporation 1998-7	MH	A-1	718.00	Sr/Mezz/Sub	6.35	175% MHP	N/A
			M-1	46.75		9.80		160/6.125 8/07
			M-2	25.50		9.80		205/6.125 8/07
			B-1	25.50		5.90		300/7.25 8/04
			B-2	34.00		13.16		Not Offered
9/10/98	GMACM Home Equity Loan Trust 1998-2	HE	A	160.00	100% AMBAC	4.00	N/A	1ML+22
9/10/98	Advanta Mortgage Loan Trust 1998-3	HE	A	500.00	100% MBIA	2.92	100% MBIA	1ML+23
9/10/98	EQCC Home Equity Loan Trust 1998-3	HE	A-1F	706.60	100% AMBAC	2.75	125% PPC	1ML+23
			A-1A	39.30		2.73		27% CPR
9/4/98	Green Tree Recreation & Consumer Trust 1998-C	CON	A-1	122.00	Sr/Mezz/Sub	0.29	100% PPC	4ML-4
			A-2	193.00		1.00		1ML+13
			A-3	150.00		2.01		100/6.25 8/00
			A-4	111.00		3.00		120/6.50 8/01
			A-5	104.00		4.16		130/6.25 8/02
			A-6	36.00		5.68		175/7.25 5/04
			A-7	32.00		6.42		205/7.50 2/05
			B-1	16.00		6.43		315/7.50 2./05
9/3/98	Onyx Acceptance Owner Trust 1998-B	AL	A-1	165.00	100% MBIA	1.07	1.6% ABS	12ML+25
			A-2	72.50		2.94		90/6.625 6/01
			CTFS	12.50		4.20		110/5.75 11/02
9/3/98	First USA Credit Card Master Trust 1998-7	CC	A	750.00	Sr/Sub	3.00	14.4% MPR	1ML+10
			B	67.77		3.00		1ML+30
9/2/98	Premier Auto Trust 1998-4	AL	A-1	360.00	Sr/Sub	0.20	1.5% ABS	Retained
			A-2	550.00		1.00		12ML+15
			A-3	470.00		2.00		80/2yr
			A-4	304.40		3.01		75/6.25 10/01
			B	65.60		3.48		Retained
8/27/98	IMC Home Equity Loan Trust 1998-5	HE	A-1	175.30	Sr/Mezz/Sub	0.90	4%-25% CPR 12 Month Ramp	1ML+7
			A-2	63.97		2.00		84/6.00 8/00
			A-3	77.27		3.00		107/6.375 9/01
			A-4	54.55		5.40		117/5.875 2/04
			A-5	23.92		7.90		146/6.875 5/06
			A-6	35.00		6.30		95/7.50 2/05
			A-7	35.00		10		135/5.875 2/04
			M-1	31.25		5.30		163/5.875 2/04
			M-2	18.75		5.30		203/5.875 2/04
			B-1	20.00		5.30		345/5.875 2/04
			8/27/98	WMC Mortgage 1998-B		HE		A-1
A-2	232.00	4.71			1ML+22			
M-1	64.00	5.37			1ML+34			
M-2	56.00	5.30			1ML+65			
B	48.00	5.27			N/A			
8/26/98	FHLMC Structured Pass-Through Certificates T013	HE	A-1	161.00	FHLMC Wrap	1.00	N/A	67/5.875 8/99
			A-2	25.00		2.15		68/5.75 10/00
			A-3	68.00		3.02		85/6.50 5/01
			A-4	19.00		4.17		94/5.75 10/02
			A-5	25.00		5.05		98/5.75 8/03
			A-6	47.15		9.26		130/6.125 8/07
			A-7	38.35		6.43		85/7.50 2/05
			A-8	38.35		N/A		Private

Source: MCM "Corporatewatch". ABS Asset-backed securities. AD Auto dealer floorplan. AIR Airplane leases. AL Auto loan. ALE Automobile lease. BL Boat Loan. CA Controlled amortization. CC Credit card. CCA Cash collateral account. CHC Charge card. CIA Collateral invested amount. CON Consumer loans. DF Dealer floorplan. EL Equipment loan. FEL Farm equipment loan. FF Fed funds. Whole 1st & 2nd liens. HE Home equity. HIL Home Improvement loan. MB Mortgage backed. Mezz. Mezzanine. MH Manufactured housing. ML Motorcycle Loans. N/A Not available. O Other. OC Overcollateralized. RIC Retail installment contracts. RV Recreational vehicle. BA Small business association loans. SL Student loan. TL Truck loan. Sub. Subordinate. UBA Utility bill allocations. WAL Weighted average life. WHL Wholesale inventory. WI When issued.