

Prepayment and Valuation Comparisons for New and Old HEL Models

The new Salomon Smith Barney issuer-specific home equity loan (HEL) prepayment models, which were released on *Yield Book* on June 1,⁷ offer significantly improved prepayment projections and valuation of securities.⁸ In contrast to the old model, the new models have:

- Refinancing incentives based, in essence, on a current coupon specific to an issuer;
- Greater distinction between issuers under all interest-rate scenarios; and
- Different option-adjusted spreads (OASs), weighted average lives (WALs), and other valuation parameters for many bonds.

Prepayment Projections

Projected speeds obtained from the old and new models for five seasoned deals issued by different lenders are displayed in Figure 1. All deals were originated in early 1996, when the coupon rates for conforming mortgages were within 30bp of the current rate levels. Therefore, the deals are not significantly in the money at present.

Figure 1. Comparison of New and Old Model Prepayment Projections

Deal	WAC	WAM	WALA	Historical			Projected Speeds														
				Speeds (% CPR)			-300		-200		-100		0		+100		+200		+300		
				1-Mo.	3-Mo.	12-Mo.	1-Yr.	LT	1-Yr.	LT	1-Yr.	LT	1-Yr.	LT	1-Yr.	LT	1-Yr.	LT	1-Yr.	LT	
EQCC 96.2	9.85%	12-08	26	36.8	32.3	30.1	N	51.7	50.9	45.1	45.1	38.2	37.6	31.4	31.0	29.2	27.9	23.3	19.1	18.8	12.2
							O	51.6	47.8	48.8	44.3	40.3	36.4	28.3	28.1	25.1	24.6	23.1	22.0	21.9	20.3
TMS 96.B	10.74%	20-08	25	34.0	30.8	27.5	N	46.9	44.5	41.9	40.3	37.1	35.0	30.0	27.7	27.2	24.2	24.2	19.3	22.3	16.0
							O	50.7	45.2	50.2	44.0	45.2	37.6	32.7	29.1	29.7	25.9	27.0	22.6	25.7	20.9
UCFC 96.B	11.53%	19-01	25	33.6	29.5	29.2	N	48.2	46.0	44.1	42.4	36.0	35.2	29.0	29.4	27.2	26.8	22.9	21.0	19.3	16.1
							O	53.5	49.6	53.1	48.5	45.2	40.2	29.4	28.6	27.2	25.8	24.5	22.5	22.5	19.9
CONTI 96.2	11.03%	15-04	23	35.8	31.9	32.3	N	52.6	50.2	46.9	45.2	40.5	38.4	33.7	32.0	31.4	28.9	25.1	19.9	20.4	12.7
							O	51.6	47.4	51.0	45.7	44.8	38.1	32.3	29.3	29.0	25.6	26.4	22.5	25.3	20.7
IMC 96.2	11.79%	16-02	33	34.3	29.4	27.9	N	47.2	44.7	42.0	40.2	35.1	33.4	28.7	27.6	27.1	25.4	23.3	20.1	20.2	15.5
							O	51.7	46.3	51.2	45.0	45.2	38.0	31.6	29.4	29.4	26.9	27.0	23.6	24.5	21.2

∨ New prepayment model. O Old prepayment model.

Source: Smith Barney Inc./Salomon Brothers Inc.

Both the baseline speeds and the response to interest-rate rallies can be significantly different for the two models. In the new model, an instantaneous drop in interest rates of 100bp would trigger increases in long-term speeds of about 6%–7% CPR. In contrast, the speed increases in the old model are greater than 8% CPR for all deals, reaching 11.6% CPR

⁷ See *Bond Market Roundup: Strategy*, Salomon Smith Barney, May 29, 1998.

⁸ Models exist for EquiCredit, The Money Store, Conti Financial, IMC and UCFC. For other issuers prepayment projections are computed on *Yield Book* using the EquiCredit model.

The new model uses issuer-specific current coupons.

for UCFC96.B. The differences are even more pronounced for one-year speeds. This does not mean that the new model is less reactive in declining interest-rate scenarios; in fact, as indicated in last week's article, the new model has a stronger media effect. The differences arise from a more accurate representation of the refinancing incentive, due to using issuer-specific current coupon series. In light of historical speeds, the new model projections are more reliable. Figure 2 displays the aggregate historical speeds for the five issuers since January 1996.

Figure 2. Aggregate HEL and Conventional Historical Prepayments, Jan 96 –Apr 98

Date	FHLMC		Aggregate CPRs (%)				
	Mortgage Rate	Conti	IMC	EQCC	UCFC	TMS	Conventional
01/96	7.04	25.5	---	25.1	---	17.5	10.1
02/96	7.10	28.3	---	28.4	---	18.8	12.8
03/96	7.60	32.4	---	33.9	---	23.6	13.9
04/96	7.90	37.0	---	31.9	---	21.8	12.4
05/96	8.07	33.4	---	32.6	---	23.7	10.6
06/96	8.29	28.2	---	31.1	---	23.0	8.9
07/96	8.25	32.5	39.0	32.0	---	19.1	8.9
08/96	7.99	30.3	35.7	31.4	---	22.3	8.5
09/96	8.22	27.1	31.3	27.6	---	19.5	7.3
10/96	7.93	33.2	27.3	30.5	---	22.5	7.6
11/96	7.64	28.3	25.3	27.3	---	20.2	7.3
12/96	7.57	29.8	34.8	30.6	---	22.3	8.6
01/97	7.82	26.4	23.0	27.0	---	17.5	7.4
02/97	7.69	30.1	27.1	25.7	---	18.2	6.7
03/97	7.85	31.1	29.5	28.5	---	21.7	8.3
04/97	8.13	30.9	33.6	30.3	31.6	25.1	8.7
05/97	7.95	31.4	23.1	27.2	28.8	23.0	8.7
06/97	7.74	29.8	31.1	27.7	23.7	21.8	9.3
07/97	7.49	37.2	32.5	28.9	32.0	25.4	10.2
08/97	7.47	30.4	26.0	28.7	28.9	22.7	10.9
09/97	7.45	33.0	31.1	28.2	27.3	25.1	11.3
10/97	7.32	34.3	32.1	30.2	31.9	27.0	12.0
11/97	7.21	31.0	25.4	28.0	27.2	25.5	12.2
12/97	7.11	35.1	25.8	32.4	27.0	32.0	13.6
01/98	6.98	27.4	22.5	23.0	29.9	22.4	12.6
02/98	7.05	32.2	26.5	26.8	28.9	25.6	22.5
03/98	7.12	37.7	29.9	34.0	30.4	32.7	26.7
04/98 ^a	7.14	NA	32.2	33.0	33.9	32.7	22.3

NA Not available.

Source: Smith Barney Inc./Salomon Brothers Inc.

As we discussed previously,⁹ historically the first 100bp drop in rates has generally led to increases in speeds of less than 6% CPR. The slightly greater increase in the new model is a result of two factors. First, the deals displayed are already about 30bp–40bp in the money and hence are closer to the steepest part of the refinancing curve. Second, a decline of 100bp would bring the conforming mortgage rate to about 6% — a level not seen in several decades. The strong media effect that would accompany such a decline would inevitably lead to an extra increase in speeds.

Under a severe decline in rates, say, of 300bp, the new model makes sharper distinctions between issuers. EquiCredit and Conti displayed greater increases in one-year and long-term speeds than the others. This distinction is supported by historical data in Figure 2 (although the process of aggregation suppresses response to interest rates). During the refinancing wave of 1998, EquiCredit and Conti showed stronger response to rate movements than the other issuers. A similar comparison can be made between these two issuers and The Money Store deals during the refinancing wave of early 1996.

When interest rates increase dramatically, by 200bp–300bp, the old and new models again project significantly different speeds. Compared to the old model, the new model projects a much larger slowdown of prepayments. The main reason for the decrease in speeds is a larger drop in credit-driven refinancings. When the conforming mortgage rate becomes comparable to

Responsiveness to changes in interest rates can vary by issuer.

⁹ See *Bond Market Roundup: Strategy*, Salomon Smith Barney, February 13, 1998.

the WAC of the deal, the incentive to refinance to take advantage of improvement in credit standing is strongly diminished. The old model does not explicitly account for this scenario.

Valuation

Results from the new model suggest how important it is to project prepayments on an issuer-by-issuer basis. Bonds that have a given OAS using the old model may have a significantly different OAS using the new model. Figure 3 provides an illustration of pricings of a sample of relatively long-term WAL senior tranches, mostly on loans originated around the middle of 1997.

Figure 3. Valuation of Securities Under the New and Old Models, as of Close of 4 Jun 98

Security	Coupon	Price		1-Yr.	LT CPR	WAL	Sprd WAL	Eff. Dur.	Eff. Conv.	Yield Curve Margin	OAS	Option Cost
CONTI97.3 A8	7.58	\$104-80	N	33.5	33.6	7.08	125	3.8	-2.8	111	74	37
			O	33.7	32.2	8.15	134	3.2	-3.5	118	81	37
CONTI95.2 A5	8.10	\$103-28+	N	36.3	34.8	4.01	138	1.6	-1.0	87	72	15
			O	35.2	32.9	4.36	146	1.5	-1.3	100	76	24
IMC97.3 A6	7.52	\$103-16	N	28.3	28.6	8.05	137	3.6	-2.6	117	81	35
			O	33.1	31.9	6.18	121	2.0	-3.3	105	62	42
TMS 97.B A7	7.27	\$102-20+	N	29.2	30.1	5.97	115	4.1	-1.9	113	80	33
			O	33.8	32.6	5.4	110	3.3	-1.9	108	77	31
UCFC97.B A5	7.27	\$102-29+	N	29.1	30.1	7.50	121	4.7	-1.6	119	88	31
			O	33.6	32.7	6.76	116	4.0	-2.1	115	82	32
EQCC97.3 A7	6.93	\$102-00	N	26.5	28.3	6.33	102	3.8	-1.7	97	71	27
			O	26.1	26.5	7.43	108	3.9	-1.5	101	83	18

Effective duration, effective convexity, yield curve margin, option-adjusted spread, and option cost are priced to call.

N New prepayment model. O Old prepayment model.

Source: Smith Barney Inc./Salomon Brothers Inc.

As the numbers indicate, differences between the new and old models are not all in the same direction. This lack of directionality points to altered relative values. For example, the new model suggests that EQCC97.3 A7 is rich compared to UCFC97.B A5, on an OAS basis, whereas the old model does not allow for such a conclusion.

While the OASs in the new model are generally within 10bp of the ones in the old model, for IMC97.3 A6 the deviation is larger (19bp). This reflects two differences between the new and old models. The new model recognizes the slower speeds on IMC deals, which for a premium bond leads to a significant increase in static spreads (including the yield curve margin, or zero-volatility OAS). Second, the new model also has a lower option cost (convexity effect), reflecting the relative stability of IMC speeds. The combination of these two factors gives rise to a large increase in the OAS for the new model. These factors also translate into significant differences in effective durations and convexities, with direct implications for hedging.

Figure 4. Percentage of ABS Floating-Rate and Fixed-Rate Issuance, 1996 to Year-to-Date

	1996-97	1998
Floating-Rate	44.9%	35.3%
Fixed-Rate	55.1	64.7

ABS Asset-backed security.

Source: Salomon Brothers Inc./Smith Barney Inc.

Figure 5. Year-to-Date ABS Issuance by Sector, 1997-1998 (Dollars in Billions)

	1997	%	1998	%
Auto Loans	\$10.4	19.8	\$13.9	19.8
Credit Cards	14.0	26.6	15.0	26.6
Home Equity Loans	16.0	30.4	19.6	30.4
Manufactured Housing	2.8	5.3	4.9	5.3
Student Loans	2.8	5.3	4.8	5.3
Other	6.6	12.6	8.4	12.6
Total	\$52.6		\$66.6	

N/A Not Applicable. Source: MCM "Corporatwatch."

Figure 6. Comparison of Quoted Spreads and Static Spreads

	Avg. Life (Yrs.)	Quoted Spread (bp/Curve)	Static Spreads (bp)	Difference (bp)
3-Year Bullet	3.00	37	33	4
5-Year Bullet	5.00	43	39	4
Wide Window Auto ^a	1.81	40	39	1
Short Auto ^d	1.06	36	36	0
Wide Window HEL ^c	3.63	85	83	2
Short HEL ^u	1.16	55	58	-3

^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. bp Basis points. HEL Home equity loan-backed securities. WAM Weighted average maturity.

Source: Salomon Brothers Inc./Smith Barney Inc.

Figure 7. Fixed-Rate ABS Secondary Market Spreads to Benchmark Treasuries

		AAA			A		
		5 Jun 98 Spread	1 Week Change	1 Year SD of 1 Week Spread Changes	5 Jun 98 Spread	1 Week Change	1 Year SD of 1 Week Spread Changes
2-Yr.	Auto	36bp	+1bp	1.5bp	60bp	0bp	1.1bp
	Credit Card	35	0	1.3	53	0	0.9
	Home Equity	52	0	1.7	N/A		
	Man. Housing	48	0	1.9	N/A		
3-Yr.	Wholesale Auto	38	+2	1.3	54	0	1.1
	Credit Card	37	+1	1.4	54	0	1.1
	Home Equity	63	0	1.6	N/A		
	Man. Housing	52	0	2.3	N/A		
5 Yr	Wholesale Auto	43	+1	N/A	N/A		
	Credit Card	43	+1	1.8	62	0	1.9
	Home Equity	84	-1	1.7	N/A		
	Man. Housing	63	0	2.0	N/A		
7 Yr	Wholesale Auto	48	+3	N/A	N/A		
	Credit Card	48	+3	N/A	65	0	N/A
	Home Equity	102	0	N/A	N/A		
	Man. Housing	75	-2	N/A	N/A		
10-Yr.	Wholesale Auto	60	0	N/A	80	0	
	Credit Card	60	0	1.9	80	0	1.8
	Home Equity	125	0	2.3	N/A		
	Man. Housing	95	-5	1.7	N/A		

bp Basis points. SD Standard deviation.

Source: Salomon Brothers Inc./Smith Barney Inc.

Figure 8. Floating-Rate ABS Secondary Market Discount Margins (Over One-Month LIBOR)

		AAA			A		
		5 Jun 98	1 Week	1 Year	5 Jun 98	1 Week	1 Year
		DM	Change	SD of 1 Week	DM	Change	SD of 1 Week
				Spread Changes			Spread Changes
2-Yr.	Auto	2bp	+1bp	0.6bp	15bp	0bp	1.0bp
	Credit Card	2	+1	0.6	15	0	1.0
	Home Equity	10	0	0.6	28	0	1.0
3-Yr.	Wholesale Auto	4	+1	0.6	20	0	0.8
	Credit Card	4	+1	0.6	20	0	0.8
	Home Equity	13	0	0.4	31	0	0.9
5-Yr.	Wholesale Auto	8.5	+0.5	N/A	26	0	N/A
	Credit Card	8.5	+0.5	0.6	26	0	0.8
	Home Equity	15	0	0.3	33	0	0.5
7-Yr.	Wholesale Auto	11	0	N/A	28	0	N/A
	Credit Card	11	0	0.6	28	0	0.9
10-Yr.	Wholesale Auto	16	0	N/A	33	0	N/A
	Credit Card	16	0	N/A	33	0	N/A

bp Basis points. LIBOR London Interbank Offered Rate. SD Standard deviation.

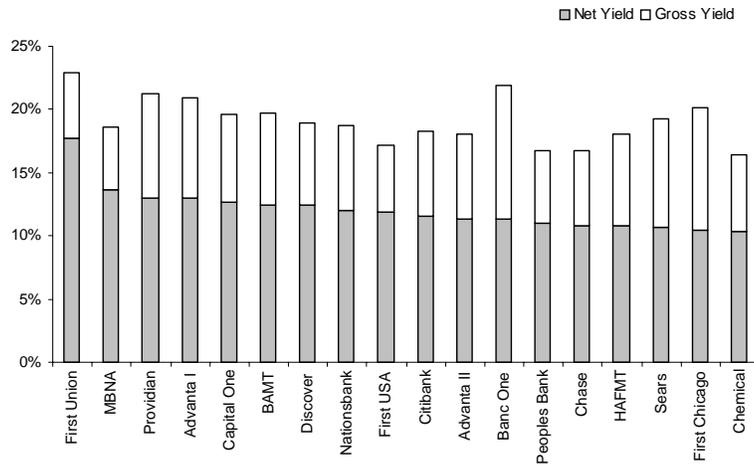
Source: Salomon Brothers Inc./Smith Barney Inc.

Figure 9. ABSs —Representative Secondary Trading Levels

Floating-Rate							
Issue	Avg. Life	DM	Price	Cap.			
FUSAM 95-1 A	0.8Yrs	1	100-03	None			
ADVCC 95-A A	1.8	4	100-07+	None			
FUSAM 95-2 A	3.8	7	100-18+	None			
CCIMT 96-5 A	5.3	6	100-06+	None			
MBNA 96-B A	7.8	11	100-30+	None			
Fixed-Rate							
Issue	Coupon	Avg.-Life	Spread	Price	Yield	Static Spread	
FORD 95-B A	5.900	0.6@ 1.5 ABSYrs	40bp	100-02+	5.826@YTC	36bp	
UAC 96-B A	6.450	1.2@ 1.6 ABS	52	100-11+	6.090	52	
PRAT 96-4 A4	6.400	1.4@1.6 ABS	34	100-23	5.922	34	
CCIMT 94-3 A	6.800	0.8	32	100-24	5.832	32	
MBNA 95-D A	6.050	2.0	32	100-12+	5.910	32	
CHEMT 95-3 A	6.230	4.2	47	100-22+	6.112	47	
CCIMT 94-2 A	7.250	7.9	55	106-04+	6.243	55	

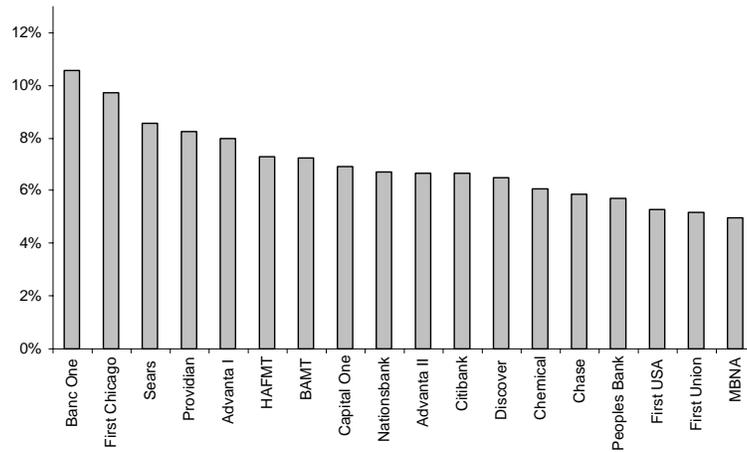
Source: Salomon Brothers Inc./Smith Barney Inc.

Figure 10. Credit Card Master Trust Gross and Net Portfolio Yields Reported for April 98



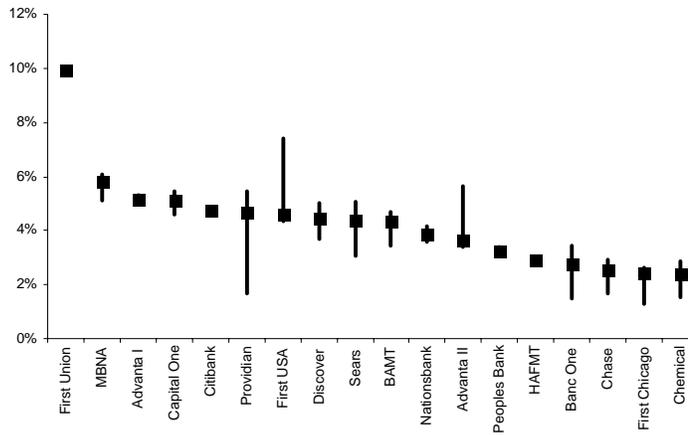
Source: Master Trust 8-Ks, Bloomberg, Bloomberg Credit Card Reports.

Figure 11. Credit Card Master Trust Defaults Reported for April 98



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

Figure 12. Credit Card Master Trust Excess Spreads Reported for April 98



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

Figure 13. Recent Issuance

Date	Issuer	Asset Type	Class	Size Mils.	Credit Enhancement	WAL	Pricing Speed	Spread
6/5/98	Mortgage Lenders Network 1998-2	HE	A-1A	93.30	100% MBIA	3.10	25% HEP	90/6.625 7/01
			A-2A	60.00		3.10		88/6.625 7/01
6/3/98	Centex Home Equity 1998-2	HE	A-1	47.00	100% MBIA	1.00	120% PPC	50/6.25 5/99
			A-2	36.10		2.79		67/5.375 2/01
			A-3	17.00		5.00		86/5yr
			A-4	14.20		9.84		119/6.125 8/07
			A-5	12.70		6.47		78/7.875 11/04
			A-6	73.00		2.59		1ML+15
6/3/98	CIT RV Owner Trust 1998-A	RV	A-1	111.00	Sr/Sub	0.70	1.4% ABS	Libor+3
			A-2	94.00		1.97		44/6.375 5/00
			A-3	54.00		2.96		48/6.50 5/01
			A-4	80.00		3.94		54/6.50 5/02
			A-5	37.00		4.82		60/5.75 4/03
			B	18.00		4.92		78/5.75 4/03
			C	6.00		4.92		120/5.75 4/03
			6/3/98	CSXT Trade Receivables Master Trust 1998-1		O		A
6/3/98	Provident Home Equity 1998-2	HE	A-1	28.44	100% MBIA	0.90	N/A	1ML+5
			A-2	12.90		2.10		48/6.125 7/00
			A-3	13.37		3.00		58/6.625 6/01
			A-4	10.19		4.10		65/6.00 7/02
			A-5	12.57		6.70		86/6.50 5/05
			A-6	36.51		0.80		FF+23
			A-7	121.02		4.70		1ML+18
6/2/98	American Business Financial 1998-2	HE	A-1	38.70	100% FSA	0.90	23% HEP	1ML+5
			A-2	14.20		2.00		57/5.625 4/00
			A-3	24.90		3.00		68/6.625 6/01
			A-4	14.10		5.00		89/5.75 4/03
			A-5	14.48		7.50		120/6.125 8/07
			A-6	11.82		6.50		82/7.875 11/04
5/29/98	IMC Home Equity Loan Trust 1998-3	HE	A-1	75.00	100% FSA	0.33	100% PPC	4ML-5
			A-2	228.30		1.00		48/6.00 6/99
			A-3	198.19		2.00		52/5.625 4/00
			A-4	118.58		3.00		64/5.375 2/01
			A-5	95.07		4.00		75/6.25 6/02
			A-6	100.87		5.40		85/5.75 4/03
			A-7	113.98		7.70		112/5.625 2/06
			A-8	70.00		6.27		74/7.875 11/04
5/29/98	Merrill Lynch Mortgage Investors 1998-FF1	HE	A-1	170.90	Sr/Mezz/Sub	2.60	25% CPR	1ML+15
			M-1	11.90		5.20		1ML+37
			M-2	9.40		5.10		1ML+58
			B	5.90		5.10		1ML+110
5/28/98	Amresco Residential Securities Mortgage Loan Trust 1998-2	HE	A-1	116.00	Sr/Mezz/Sub	0.80	24% HEP	50/5.50 4/99
			A-2	61.00		2.00		52/5.625 4/00
			A-3	36.00		3.00		62/6.625 6/01
			A-4	37.00		5.10		84/5yr
			A-5	16.00		12.10		112/6.125 8/07
			A-6	35.00		6.70		75/7.875 11/04
			M-1F	19.25		6.00		112/5.875 2/04
			M-2F	15.75		5.90		142/5.875 2/04
			B-1F	14.00		5.60		210/5.875 2/04
			A-7	150.00		0.90		1ML+4
			A-8	376.50		2.80		1ML+15.5
			M-1A	50.00		5.00		1ML+33
			M-2A	39.00		4.90		1ML+55
			B-1A	32.50		4.80		1ML+115
5/28/98	Oakwood Mortgage Investors 1998-B	MH	A-1	62.90	Sr/Mezz/Sub	1.10	180% MHP	1ML+4
			A-2	57.60		3.10		53/6.625 7/01
			A-3	33.70		5.10		67/5.75 4/03
			A-4	18.70		7.10		75/6.50 5/05
			A-5	64.90		11.98		105/6.125 8/07
			M-1	23.30		9.67		118/6.125 8/07
			M-2	12.80		9.61		140/6.125 8/07
			B-1	11.30		9.09		183/6.125 8/07
			B-2	15.00		10.16		215/6.125 8/07
			5/20/98	WMC Mortgage 1998-A		HE		A
M-1	72.00	5.37			1ML+42			
M-2	56.00	5.29			1ML+63			
B	44.00	5.26			1ML+125			

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. 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.
Source: MCM *Corporatwatch.