

*Even when the collateral performance is poor, the risk of principal loss on a double-A rated HEL bond is small.*

## Risk of Principal Loss on a HEL Mezzanine Bond

Mezzanine bonds backed by home equity loan (HEL) collateral trade at a substantial discount to senior bonds with the same weighted average life (WAL). At the WAL of five years, for example, single-A HEL sequentials are 45bp wider than triple-As. Many factors account for the difference, including: (1) higher liquidity of seniors; (2) the subordinated nature of mezzanines (which makes them ineligible for ERISA investments); (3) higher risk of principal loss on the mezzanines; (4) higher risk of ratings downgrade on the mezzanines; and (5) the extension risk for discount mezzanines arising from failure of the stepdown test.<sup>5</sup> This article focuses on the risk of principal loss and shows, through a detailed example, that even when the collateral performance is poor, the likelihood of principal loss on a double-A rated tranche is small. The example is GTHIL 98.E M1, a double-A rated security backed by Green Tree HEL collateral.

### Structure and Credit Support

The deal GTHIL 98.E was issued by Green Tree in December 1998. It consists of two collateral pools: the home improvement loan pool (HI) and the HEL pool. **The**

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<sup>5</sup> The stepdown test fails when the collateral credit performance is worse than was expected at deal origination. See *Bond Market Roundup: Strategy*, January 29, 1999, for a discussion and examples.

**excess spreads of the two pools are cross-collateralized. There is no other cross-collateralization between the HI and HEL pools.**

The M1 class is a fixed-rate double-A rated bond backed by the HEL pool. Its interest and principal are paid by the **fixed-rate** HEL collateral. However, this bond, together with other credit-enhancement structures, provides support to all senior HEL bonds in the deal, including those backed by floating-rate HEL collateral. Senior tranches backed by fixed-rate collateral are the HEA1 through HEA5 tranches, and senior tranches backed by floating-rate collateral are the A1A and the A1B tranches. The cross-collateralization between the fixed- and floating-rate collateral groups in the HEL pool makes it essential to estimate losses for the entire HEL pool, not only for the fixed-rate portion of it.<sup>6</sup>

*Credit support underneath the M1 tranche is 18.2%.*

The HEL pool principal balance as of April 2000 was \$782 million, and the principal balance of the M1 tranche was \$66 million. Credit enhancement for the M1 tranche is provided by the single-A rated M2 tranche (\$55 million), the double-B rated B tranche (\$44 million), the reserve account (\$44 million), the servicing fee (50bp), and the excess spread. The credit support provided by the M2 and B tranches and the reserve account was 18.2% of the pool balance in April 2000, higher than the credit support at origination of 13%. While the servicing fee is currently subordinated to the interest and principal payments of all the securities issued, that would change under a transfer of servicing. In that case the servicing fee would be awarded the highest priority in the payment structure. Therefore, the servicing fee should not be included in the stress tests of the risk to principal of the M1 bond.

*Excess spread is 260bp-270bp and is expected to increase.*

The excess spread generated by the HI pool should also be excluded from the stress tests. A scenario in which the HI pool is performing so well that it is generating excess interest, while the HEL pool is generating losses at the double-A level, is highly unlikely. Therefore, only the excess spread from the HEL pool can be considered a true credit enhancement for the M1 tranche. Currently this excess spread is 260bp-270bp and may be expected to increase after the IO tranche HEA5 has paid off. At the pricing speed of 125 PPV the IO tranche has seven more months of interest payments. It currently takes out about 70bp from the excess spread.

#### Prepayment and Credit Performance

The collateral cross section and prepayment performance of representative Green Tree fixed-rate HEL deals are given in Figure 21. Although the information for the fixed-rate collateral group backing GTHIL 98.E M1 is limited, this group appears typical of Green Tree HEL originations. Also typical is the spread between its WAC and the conforming mortgage rate at loan origination time. (This spread can be used as a proxy for the credit composition of the deal.) The average spread from the conforming rate for all fixed-rate Green Tree HEL deals is 438bp, with a standard deviation of 20bp. The spread for the fixed-rate group collateralizing the M1 bond in GTHIL 98.E is 426bp.

*GTHIL 98.E is typical of Green Tree HEL originations.*

<sup>6</sup> Under some scenarios, interest shortfalls and principal writedowns on the M1 tranche may be made up from the excess spread on the floating-rate HEL collateral.

**Figure 21. Selected Green Tree Fixed-Rate HEL Deals — Collateral Composition and Prepayment Rates**

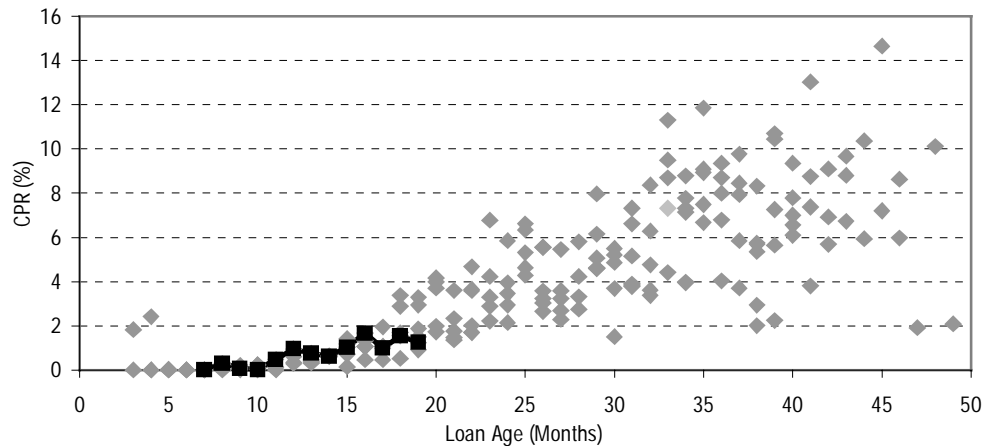
Deal	Issue Date	Original Amount	Original WAM	% First Lien	Current Collateral Information						Historical Speeds (%CPR)		
					WAC	WAM	WALA	Bal. (000s)	Coll. Type	Curr. Avg. LTV	12 mo.	3 mo.	1 mo.
GTHIL 96.C (HE)	Jun 96	\$121.2	17-04	79	11.55	13-07	48	\$44	44/-/40	86	26.2	22.7	20.8
GTHIL 96.F (HE)	Dec 96	353.0	14-01	--	12.58	13-08	41	39	45/-/42	86	31.4	27.1	24.5
GTHIL 97.A (HE)	Mar 97	364.3	18-03	--	12.03	15-00	38	46	47/-/34	85	29.5	25.7	27.9
GTHIL 97.D (HE)	Sep 97	540.0	18-11	--	11.94	16-09	32	47	48/-/23	88	29.2	24.9	25.9
GTHIL 98.B (HE)	Mar 98	270.0	19-07	79	11.52	17-11	25	54	27/17/26	88	29.8	24.4	26.1
GTHIL 98.D (HE)	Aug 98	825.0	20-08	81	11.27	19-02	20	57	27/18/20	89	26.3	23.2	24.5
GTHIL 98.E (HEA2-HEB)	Dec 98	408.2	21-04	79	11.18 <sup>a</sup>	--	17 <sup>a</sup>	63 <sup>a</sup>	--	--	21.5 <sup>b</sup>	23.6 <sup>b</sup>	16.2 <sup>b</sup>
GTHE 99.A (A1-B2)	Mar 99	900.0	20-07	81	11.17	19-08	14	60	23/21/24	89	--	22.2	23.5
GTHE 99.D	Aug 99	498.0	19-11	--	11.49	19-04	9	58	24/19/26	90	--	15.8	17.4

<sup>a</sup> At origination. <sup>b</sup> As of February 2000. Source: Salomon Smith Barney.

Historical credit performance of all Green Tree HEL deals, including fixed- and floating-rate HEL collateral, is shown in Figure 22 through Figure 24. Each point represents a monthly performance of one deal. Figure 22 shows the realized default rates, Figure 23 the loss severities, and Figure 24 the cumulative loss rates (as a fraction of the original principal balance). The dark squares in Figure 22 through Figure 24 give the performance of GTHIL 98.E.

Credit performance of GTHIL 98.E appears average compared to other Green Tree HEL deals. Therefore, we may conservatively expect that the default rates on GTHIL 98.E will rise to about 8% CPR by the loan age of three years and will remain at that level for about one year before tapering off.<sup>7</sup> Average loss severities may be expected to be in the 60%–70% range.

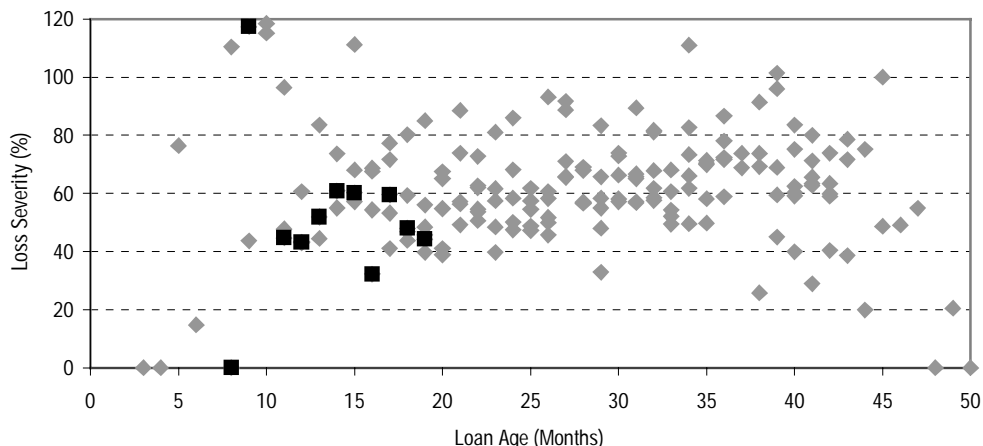
**Figure 22. Green Tree HEL Defaults by Loan Age**



Source: Salomon Smith Barney.

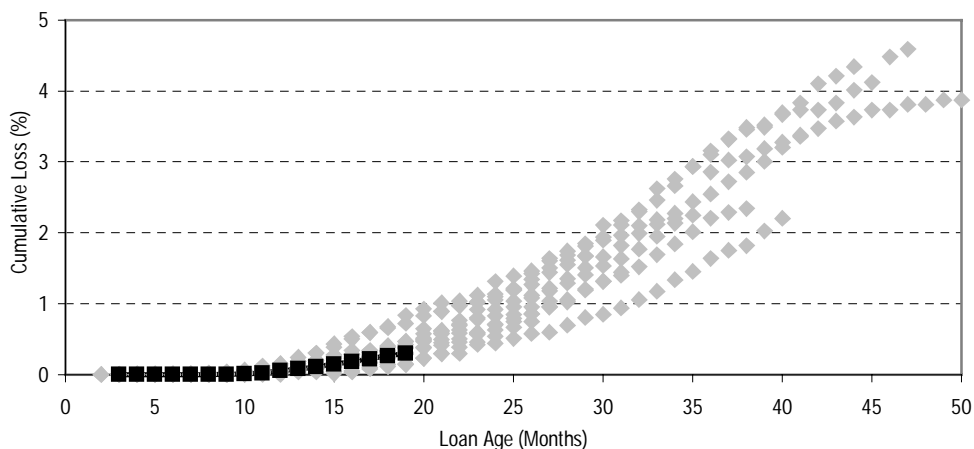
<sup>7</sup> The decline of defaults with loan age is not evident in Figure 2 because of limited history. Our suggestion that defaults will decline is based on a study of a broad range of HEL issuers. See *Bond Market Roundup: Strategy*, April 14 and April 28, 2000, and *Prepayments on Fixed-Rate HEL Loans*, Salomon Smith Barney, August 1998.

Figure 23. Green Tree HEL Loss Severity by Loan Age



Source: Salomon Smith Barney.

Figure 24. Green Tree HEL Cumulative Losses



Source: Salomon Smith Barney.

GTHIL 98.E M1 Is Well Protected Against Losses of Principal  
 Cash flows that include losses on the M1 bond are available on Yield Book™ under the symbol GTHIL.EL M1. To examine the protection of the M1 principal under various loss scenarios, we use a model default curve: At present the defaults are taken to be 1.5% CPR (from the most recent data), rising to a maximum value at loan age of 36 months (19 months from the current loan age), staying constant until loan age of 48 months, then declining to 1% CPR at loan age of 120 months, and remaining at 1% CPR thereafter. The peak of the default curve is varied between runs.

*Defaults required for loss of principal on the M1 are outside of historical experience.*

The highest default rates that the M1 bond can withstand without losing principal depend on the prepayment rate and loss severity. Figure 25 shows peak default rates under which the M1 tranche does not lose principal, as a function of the voluntary prepayment rate (the total prepayment is the sum of voluntary prepayments and defaults) and loss severity. Even though the credit performance of Green Tree HEL

deals is poor compared with that of other large HEL issuers, as shown in Figure 22 through Figure 24, **the defaults required for loss of principal on the M1 bond are significantly outside the domain of historical experience.**

**Figure 25. Peak Default Rates Under Which the M1 Tranche Does NOT Lose Principal**

Voluntary Speed (% CPR)	Loss Severity (%)			
	60	70	80	100
15	19	15	13	10
20	20	18	16	12
25	26	22	17	14
30	34	27	22	18

The calculation assumed that the stepdown test fails.

Source: Salomon Smith Barney.

*We do not expect significant long-term deterioration of servicing.*

Transfer of Servicing

Based on recent experience with financially stressed or liquidated servicers of HEL collateral, including First Pacific, UCFC, and Conti, the quality of servicing does not appear to decline significantly with the declining financial performance of the servicer. In all cases, servicing operations remained fully functional through the distressed period, and the transfer of those operations to a successor servicer has generally been accomplished successfully. Therefore, we do not expect significant long-term deterioration of servicing of GTHIL 98.E pools, even in the case that Conseco Financial is no longer able to service the loans. Included below is an excerpt from the Prospectus for GTHIL 98.E that describes the process of transfer of servicing:

**RIGHTS UPON AN EVENT OF TERMINATION**

If an Event of Termination has occurred and is continuing, either the Trustee or holders of Certificates representing 25% or more of the Aggregate Certificate Principal Balance may terminate all of the Servicer’s management, administrative, servicing and collection functions under the Agreement. Upon such termination, the Trustee or its designee will succeed to all the responsibilities, duties and liabilities of the Company as Servicer under the Agreement and will be entitled to similar compensation arrangements; provided, however, that neither the Trustee nor any successor Servicer will assume any accrued obligation of the prior servicer or any obligation of the Company to repurchase Contracts for breach of representations and warranties, and the Trustee will not be liable for any acts or omissions of the Servicer occurring prior to a transfer of the Servicer’s servicing and related functions or for any breach by the Servicer of any of its representations and warranties contained in the Agreement or any related document or agreement. In addition, the Trustee will notify FHA of the Servicer’s termination as Servicer of the FHA-insured Home Improvement Contracts and will request that the portion of the Servicer’s FHA Insurance reserves allocable to the FHA-insured Home Improvement Contracts be transferred to the Trustee or a successor Servicer. See “Description of FHA Insurance” in the Prospectus. Notwithstanding such termination, the Servicer shall be entitled to payment of certain amounts payable to it prior to

such termination, for services rendered prior to such termination. No such termination will affect in any manner the Company's obligation to repurchase certain Contracts for breaches of representations or warranties under the Agreement. In the event that the Trustee is unwilling or unable so to act, it may appoint, or petition a court of competent jurisdiction for the appointment of, an Eligible Servicer to act as successor to the Servicer under the Agreement. The Trustee and such successor may agree upon the servicing compensation to be paid (after receiving comparable bids from other Eligible Servicers), which may not be greater than the Monthly Servicing Fee payable to the Company as Servicer under the Agreement without the consent of all of the Certificateholders.