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Manufactured Housing Prepayments and Defaults

We analyze recent prepayments and defaults on manufactured housing pools. In light of recent economic developments, we also analyze the potential impact of a recession on the loss performance of MH pools. Our main conclusions are as follows:

- MH prepayments showed a fairly sharp increase over the past several months, compared with the same period last year, although they have been flat in the last quarter.
- Most of the increase was due to a sharp increase in landhome prepayments, since many landhome rates are refinaneable with conventional mortgage lenders.
- We expect significant increases in default rates in the event of a serious recession. However, because MH is a relatively long asset, a one-year recession would increase losses by about 15%.

Looking ahead, the refinance wave in the conforming mortgage market is just starting, as mortgage rates continue to drop. We expect that refinancing in landhomes will continue to grow for the next couple of months before they start to burn out.

Aggregate Prepayments have increased

Figure 1 shows aggregate prepayments for the last 3 months compared with the second quarter of 2001 and with the comparable period in 2000. Prepayments have increased by up to 5% CPR depending on the vintage, with the newest vintages showing the largest increases on a year-over-year basis. For the period for which data is available, prepayments appear to have leveled off—the increase in the last 3 month period is relatively small. While a small part of the increase in prepayments for the newer vintages can be attributed to seasoning, this effect is small—seasoning alone causes prepayments to increase by only about 1-2% CPR per year. In the aggregate, these increases should not be surprising—prepayments on agency mortgages and sub-prime home equity loans have all increased quite sharply. However, given the well-publicized reduction in volumes from the largest originators, including Consecro and GreenPoint, we had not expected significant increases.

Figure 1. **Recent MH Prepayments by Origination Period, % CPR**

Vintage	Jul-Sep '00	Apr-Jun '01	Jul-Sep '01	Y-o-Y Change	Latest Change
1993	9.6	10.1	10.3	+0.7	+0.2
1994	9.9	11.3	10.9	+1.0	-0.4
1995	8.9	10.8	10.7	+1.8	-0.1
1996	8.9	11.2	11.0	+2.0	-0.2
1997	9.1	11.0	11.0	+1.9	+0.0
1998	8.4	10.8	10.2	+1.8	-0.6
1999	6.8	10.1	10.4	+3.6	+0.3
2000	5.3	8.9	10.4	+5.2	+1.6

Also, as Figure 2 shows, there does not appear to be a clear pattern across different WAC ranges. For example, seasoned loans with an average WAC of 9% prepaid at almost the same rate as loans with an average WAC of 11%, this is different from the pattern a year ago, when higher WAC pools prepaid at higher rates than lower WAC pools. The current pattern is also surprising at first glance—in other similar asset classes, higher WAC pools are prepaying much faster than lower WAC pools. To understand this pattern, we recall that in 1998, the dramatic (in the MH context) prepayments we saw were mainly the result of much higher landhome prepayments.

We are in the curious situation in the MH market that most of the bonds in the market, particularly the shorter ones, are trading at premium prices, but at the pool level, most pools are out of the money. This is due to a combination of the conditions in the MH market and an unusually steep yield curve. It would be easy to conclude from this that there is no prepayment risk in the premium bonds. However, as our analysis below shows, the MH market is really made up of two parts which behave quite differently—traditional MH, which continue to be out of the money because of conditions in the MH market and are very unresponsive to rates in any case; and the landhome market. The landhome market is significantly more competitive and we believe that rates have declined in this market.

It Is Landhomes Again

Landhomes loans are those in which the collateral includes the manufactured housing unit as well as the land it stands on. The prepayment and default patterns on the loans are significantly different from traditional manufactured homes for several major reasons: differential rates of price appreciation, differences in refinancing opportunities and differences in borrower credit. Traditional MHs are a depreciating asset, while the land component of landhome loans typically appreciate like most other real estate. The portion of the value of the property due to the land is often in excess of 50%. This price appreciation gives the borrower the ability to refinance by lowering loan-to-value ratios. In addition, landhome borrowers are often eligible for loans from conventional mortgage lenders. Default rates are also lower for landhomes because the lower LTV means a lower incentive to default. During the 1998 refinance wave, we found (see *Global Relative Value*, September 1998) that landhomes prepaid at rates as high as 30% CPR, which is astronomically for this normally slow prepaying asset. We again analyzed loan level data from Conseco and found that this phenomenon has been repeated over the past few months.

Figure 2. **MH Prepayments by Pool WAC, % CPR**

WAC Range	Jul-Sep 00	Apr-Jun 01	Jul-Sep 01
9.0 to 10.0	9.0	10.5	10.3
10.0 to 11.0	9.1	11.2	11.0
Over 11.0	9.7	10.5	10.6

Another factor that contributes to the stronger response of landhomes to rates is the fact that landhome loans are typically made to better credit borrowers, who are better able to take advantage of lower rates. Figure 3 shows that prepayments of traditional MH borrowers with FICO over 670 did increase from 8.7% CPR to 10.1% CPR while prepayments by lower FICO MH borrowers actually declined slightly. By contrast, prepayments for landhome borrowers increased quite sharply for each FICO bucket, with the highest FICO borrowers responding most sharply. We conclude that although the credit quality of borrowers is a contributor, the quality of the collateral is a much stronger determinant of response to interest rates.

As shown in Figure 4a and b, prepayments on traditional MH have rebounded to their level of a year ago from the winter lows. However, prepayments on landhome loans increased sharply for all vintages over the past few months. For example, prepayments on 1998 originated landhomes have increased from about 5% CPR in the Jan-

Figure 3. **Landhomes Responded More to Rate Declines Even After Adjusting for Credit Quality**

FICO bin	Traditional MH		Landhomes	
	May-Jul 2000	May-Jul 2001	May-Jul 2000	May-Jul 2001
< 615	10.4	8.4	8.6	13.1
615-670	9.1	8.7	9.9	13.6
> 670	8.7	10.1	7.6	16.3

Figure 4a. **1996-Originated Loans**

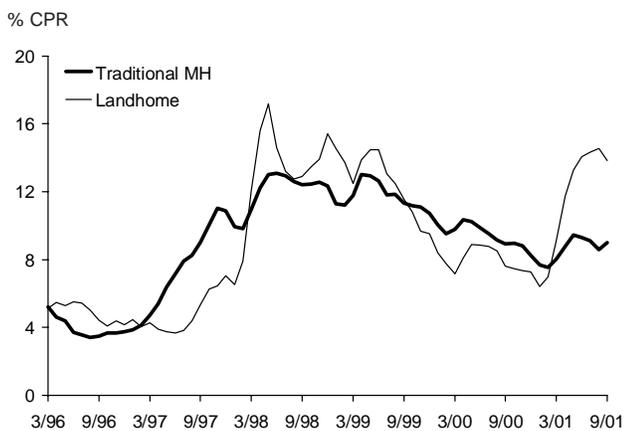
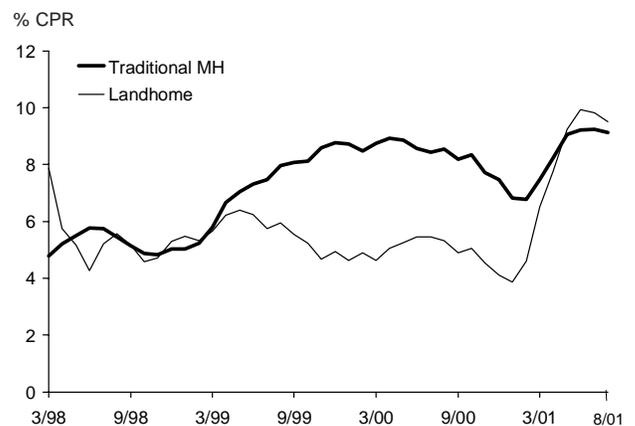


Figure 4b. **1998-Originated Loans**



April 2001 period to about 10% CPR in the July-September 2001 timeframe. By contrast, prepayments on traditional MH has only increased from 8% CPR to 9% CPR over the same period. Other vintages showed similar increases. In general, traditional MH prepays somewhat faster when in-the-money or at-the-money, but landhomes respond much more sharply to rate declines.

The high prepayments on relatively recently originated loans are perhaps not surprising for several reasons: most of these loans are in the money for the first time, the high home price appreciation over the past few years and the very high prepayments that other mortgage markets have seen. However, we are somewhat surprised by the resurgence of prepayments on the relatively seasoned vintages. For example, 1996 originated loans prepaid quite rapidly in 1998, but burnt out just as rapidly. Now, it appears that this vintage is again prepaying at high levels, lending credence to the idea of “burn-out curing”.

Are Prepayments Relevant?

In addition to prepayments, the average life of MH bonds is also affected by the credit performance of the collateral. This is because MH transactions have relatively stringent triggers built into them to protect the senior bonds in the event of deterioration in the performance of the collateral. These triggers divert all cash-flows to the senior bonds. There are typically hard triggers for delinquencies, current loss rates as well as cumulative losses. It is important to remember that some of these triggers can cure, i.e., a pool can show high delinquencies for a period, but the performance can improve.

Figure 5 shows how prepayments and triggers interact to affect the average life of bonds in an example transaction. When triggers fail, the senior bonds are generally shortened while mezzanine and subordinate bonds are generally lengthened, as shown by this example. For example, for the deal CNF01-1 shown, let us use 15% CPR with failed triggers as a benchmark. This projects an average life of 5.5 years for the A5. Over the past year, we have seen prepayments below 10% CPR for several months,

Figure 5. **Impact of Prepayments and Triggers, CNF01-1**

	% CPR	Average Life (Years)	
		Pass	Fail
Tranche A5	5	18.5	13.7
	10	12.0	8.2
	15	7.9	5.5
	20	5.4	4.1
Tranche M1	5	14.3	20.1
	10	9.4	13.2
	15	7.5	9.2
	20	6.4	6.8

and at this speed, the average life would extend to 8.2 years. For triggers to have the same impact, the deal would have to now pass the triggers 100% of the time. The recent credit performance of MH deals suggests that most deals will continue to fail their triggers, and indeed most deals are now trading to failed triggers. Further, while delinquency performance and current loss performance may improve, a deal that is failing cumulative loss triggers is unlikely to ever pass it again.

We conclude then, that the variability in average lives caused by prepayments is significantly larger than that caused by triggers, and prepayments are indeed an important component of valuation of MH bonds, although the combined effect of triggers and prepayments is not to be neglected.

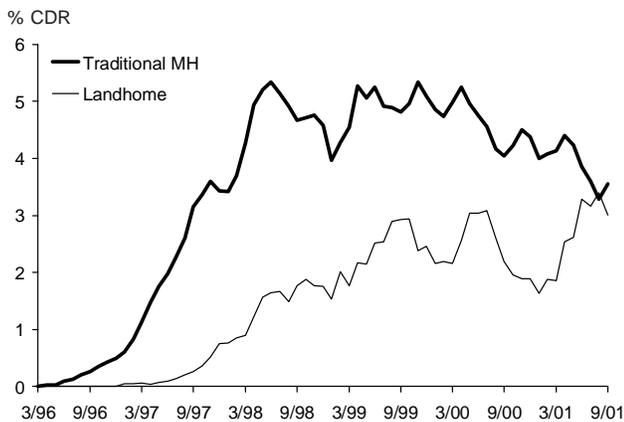
The Credit Story

While landhomes have once more demonstrated their sensitivity to interest rates, they also default at much lower rates. This has continued to be true over the recent past as illustrated in Figure 6. There are many reasons for this, some of which we have discussed on past occasions.

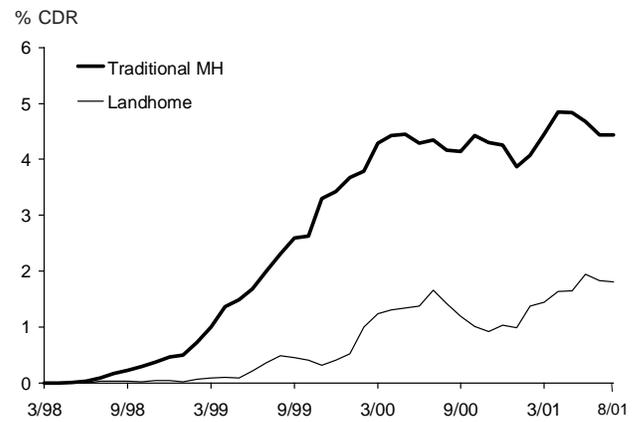
However, the true story in defaults may be yet to unfold. With the US economy edging towards recession, the issue is not what defaults have been but what they may be in the event of a recession. This projection is made considerably more difficult because, during the period for which we have reliable data, which is during the last 10-12 years, there has only been one relatively mild recession in 1992. We have found that unemployment is a good measure of economic conditions, since MH borrowers

Figure 6. Defaults on Landhomes compared with Conventional MH

a. 1996 Originated Loans



b. 1998 Originated Loans



generally have relatively high debt-to-income levels and are often employed in cyclical occupations. During the 1991-1993 period, national unemployment rates topped out at 7.8%, and stayed above 7% for about 15 months. However, since there was considerable variation in economic conditions across the country, we turned instead to state level data.

When unemployment was below 4.5%, we defined that as a “good” economy. When unemployment was between 4.5% and 7%, we defined that as a “medium” economy, and when the level of unemployment was above 7% at the state level, we defined that as a “recession” economy. We then computed default rates for loans going through these levels of economy. The results are shown in Figure 7.

In essence, we found that when the economy went from “good” to “medium”, default rates rose modestly by 10-20%. However, when the economy went to “bad”, default rates rose sharply to about twice the level of a good economy. This result was consistent for all origination periods. The differences among different vintages are due to differences in credit quality. The negative impact of a recession is compounded by the fact that recovery rates decline as well. As Figure 8 shows, recovery rates declined by 5 to 14 points when the economy was weak.

Figure 7. **Recession Impact on MH Defaults**, Average CDR for WALA >24 months

Vintage	Unemployment:	Average % CDR		
		<4.5%	4.5%-7%	>7%
1990		2.75	2.84	5.10
1991		2.03	2.34	4.43
1992		1.74	2.12	4.08
1993		1.78	2.08	3.21

Figure 8. **Recession Impact on MH Recovery**, Average for WALA > 24 months

Vintage	Unemployment:	Average % Recovery Rate		
		<4.5%	4.5%-7%	>7%
1990		56	62	52
1991		62	63	47
1992		52	56	38
1993		52	53	

The analysis above uses the same fixed range of unemployment for each state for different economic conditions. However, it could be argued that some areas have a higher base level of unemployment than others, so that 7% unemployment in one state where that is the background level of unemployment does not have as large an impact on defaults as in another state where the background level of unemployment is 4%. To analyze whether this is true, we repeated the above analysis using quartiles of unemployment levels in each state as our measure of economic condition. In other words, we redefined a good economy in a given state as one in which unemployment is at the 75th percentile or higher for that state. The results of this analysis are shown in Figure 9. The conclusions from this analysis are largely similar. As before, we find that defaults increase sharply when unemployment is in the highest quartile, typically increasing by a factor of 2. However, this methodology suggests that defaults may increase quite sharply in the third quartile of unemployment as well.

The combination of the increase in default frequency and the decrease in recovery rates implies that during a recession, we would expect that loss rate increase to about double the level of a good economy. What impact does this have on cumulative losses in a securitized pool? Manufactured homes are a relatively slow prepaying asset with average lives of over 7 years. If we make the simplifying assumption that losses occur uniformly over the life of the pool, about 15% of the losses could be expected to occur in any one year. Thus a recession that lasts one year could be expected to increase lifetime losses by about 15% compared with a good economy scenario. In general, most manufactured housing transactions are sufficiently well protected to withstand such an increase in cumulative losses, although the impact may vary depending on the transaction.

Figure 9. **Default Rates at State Level Unemployment Quartiles**
WALA > 24 months

Vintage	Average %CDR			
	Best Quartile	Second Quartile	Third Quartile	Worst Quartile
1989	1.7	4.8	6.2	6.6
1990	3.2	5.2	6.1	6.7
1991	2.0	3.3	4.4	4.1

