

Prepayment history

Months	1 - 12	13 - 24	25- 36	37 - 48
SMM	0.82%	1.52%	3.57%	4.89%
CPR (simple avg.)	9.38%	16.82%	35.39%	45.24%
CPR (exact)	9.40%	16.82%	35.47%	45.27%

Simplifying assumptions and computational notes.

We assume:

- a constant weighted average coupon.
- the weighted average maturity is reduced by one month per month.

We recognize a more data intensive approach would involve computing the actual weighted average coupon and weighted average maturity each month.

We compute scheduled principal each month using:

- the Excel function "PPMT"
- a 30/360 day basis, rather than actual/actual (simple interest).
- the beginning principal as if a new loan is granted.

Because prepayments result in reduction of principal outstanding, we cannot use the original amortization schedule for scheduled principal reductions.

Therefore, we compute an estimate of the scheduled principal each month.

By using the beginning principal balance as if a new loan is granted, we take into account both prepayments and slower amortization that results from delinquencies and deferrals granted.

We also recognize the precise approach would be to compute the actual scheduled principal reduction per loan each month.

However, the prepayment measure used here is consistent with that used to project cash flows.

We note that negative SMM result primarily from the granting of payment deferrals and delinquencies.

SMM is converted to CPR in the usual method. CPR for 12 months is computed two ways:

First, CPR is computed as a simple average of the SMM for the 12 months, then converted to CPR.

Second, CPR is computed for the 12 month period using the exact Bond Market Association standard formulas from the Uniform Practices manual for mortgage backed securities.

The difference does not appear material.

NCUA Prepayment Model

PREPAYMENT HISTORY

Inputs in yellow

Worksheet is protected, but there is no password.

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March 2006 Version

row	MONTH	10	11	12	13	14	15	16	17	18	19
1	PRINCIPAL BALANCE	840,000.00	820,000.00	800,000.00	780,000.00	760,000.00	740,000.00	720,000.00	700,000.00	680,000.00	660,000.00
2	FACTOR	0.8400	0.8200	0.8000	0.7800	0.7600	0.7400	0.7200	0.7000	0.6800	0.6600
3	WAC (assumed constant)										
4	Monthly WAC										
5	WAM (enter in whole months) (assumed reduced by 1 month per month)	56	55	54	53	52	51	50	49	48	47
6	Scheduled Principal (30/360) PPMT	9,652.13	9,677.69	9,700.74	9,721.10	9,738.59	9,752.98	9,764.07	9,771.61	9,775.35	9,775.00
7	Principal Reduction (Beg bal - End bal) [(row 1, month n-1) - (row 1)]	20,000.00	20,000.00	20,000.00	20,000.00	20,000.00	20,000.00	20,000.00	20,000.00	20,000.00	20,000.00
8	Prepayment Estimate [row 7 - row 6]	\$10,347.87	\$10,322.31	\$10,299.26	\$10,278.90	\$10,261.41	\$10,247.02	\$10,235.93	\$10,228.39	\$10,224.65	\$10,225.00
9	Single Monthly Mortality (SMM) [row 8 / {(row 1, month n-1) - row 6}]	1.22%	1.24%	1.27%	1.30%	1.33%	1.37%	1.40%	1.44%	1.48%	1.53%
10	CPR by 12 month period [computed from average SMM for 12 months]			Avg SMM 0.82%							
				CPR 9.38%							
11	Rolling average prepayment rates [computed using exact MBA standard formulas]										
	1 month CPR	13.66%	13.94%	14.23%	14.54%	14.87%	15.21%	15.58%	15.98%	16.40%	16.85%
	3 month CPR	13.41%	13.67%	13.94%	14.24%	14.55%	14.87%	15.22%	15.59%	15.99%	16.41%
	6 month CPR	11.22%	12.37%	12.61%	13.82%	14.11%	14.41%	14.73%	15.07%	15.43%	15.82%
	12 month CPR			9.40%	10.93%	11.59%	12.28%	12.99%	13.73%	14.03%	14.83%

Computed where the scheduled balance is calculated from the current period WAC, WAM, from the balance at the start of the period.
[The current period WAC is set to the initial WAC]

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row	MONTH	20	21	22	23	24	25	26	27	28	29
1	PRINCIPAL BALANCE	640,000.00	620,000.00	600,000.00	580,000.00	560,000.00	540,000.00	520,000.00	500,000.00	480,000.00	455,000.00
2	FACTOR	0.6400	0.6200	0.6000	0.5800	0.5600	0.5400	0.5200	0.5000	0.4800	0.4550
3	WAC (assumed constant)										
4	Monthly WAC										
5	WAM (enter in whole months) (assumed reduced by 1 month per month)	46	45	44	43	42	41	40	39	38	37
6	Scheduled Principal (30/360) PPMT	9,770.26	9,760.80	9,746.25	9,726.23	9,700.30	9,667.98	9,628.77	9,582.09	9,527.31	9,463.74
7	Principal Reduction (Beg bal - End bal) [(row 1, month n-1) - (row 1)]	20,000.00	20,000.00	20,000.00	20,000.00	20,000.00	20,000.00	20,000.00	20,000.00	20,000.00	25,000.00
8	Prepayment Estimate [row 7 - row 6]	\$10,229.74	\$10,239.20	\$10,253.75	\$10,273.77	\$10,299.70	\$10,332.02	\$10,371.23	\$10,417.91	\$10,472.69	\$15,536.26
9	Single Monthly Mortality (SMM) [row 8 / {(row 1, month n-1) - row 6}]	1.57%	1.62%	1.68%	1.74%	1.81%	1.88%	1.96%	2.04%	2.14%	3.30%
10	CPR by 12 month period [computed from average SMM for 12 months]					Avg SMM 1.52%					
						CPR 16.82%					
11	Rolling average prepayment rates [computed using exact MBA standard formulas]										
	1 month CPR	17.33%	17.84%	18.40%	19.00%	19.64%	20.34%	21.10%	21.92%	22.82%	33.16%
	3 month CPR	16.86%	17.34%	17.86%	18.42%	19.02%	19.66%	20.36%	21.12%	21.95%	26.15%
	6 month CPR	16.23%	16.67%	17.14%	17.64%	18.18%	18.77%	19.40%	20.08%	20.81%	23.31%
	12 month CPR	15.17%	15.55%	15.94%	16.37%	16.82%	17.30%	17.83%	18.39%	19.00%	20.53%

Computed where the scheduled balance is calculated from the current period WAC, WAM, from the balance at the start of the period.
[The current period WAC is set to the initial WAC]

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row	MONTH	30	31	32	33	34	35	36	37	38
1	PRINCIPAL BALANCE	430,000.00	405,000.00	380,000.00	355,000.00	330,000.00	300,000.00	280,000.00	260,000.00	240,000.00
2	FACTOR	0.4300	0.4050	0.3800	0.3550	0.3300	0.3000	0.2800	0.2600	0.2400
3	WAC (assumed constant)									
4	Monthly WAC									
5	WAM (enter in whole months) (assumed reduced by 1 month per month)	36	35	34	33	32	31	30	29	28
6	Scheduled Principal (30/360) PPMT	9,288.54	9,095.53	8,883.12	8,649.52	8,392.71	8,110.44	7,672.29	7,458.97	7,222.48
7	Principal Reduction (Beg bal - End bal) [(row 1, month n-1) - (row 1)]	25,000.00	25,000.00	25,000.00	25,000.00	25,000.00	30,000.00	20,000.00	20,000.00	20,000.00
8	Prepayment Estimate [row 7 - row 6]	\$15,711.46	\$15,904.47	\$16,116.88	\$16,350.48	\$16,607.29	\$21,889.56	\$12,327.71	\$12,541.03	\$12,777.52
9	Single Monthly Mortality (SMM) [row 8 / {(row 1, month n-1) - row 6}]	3.53%	3.78%	4.07%	4.40%	4.79%	6.80%	4.22%	4.60%	5.05%
10	CPR by 12 month period [computed from average SMM for 12 months]							Avg SMM 3.57%		
								CPR 35.39%		
11	Rolling average prepayment rates [computed using exact MBA standard formulas]									
	1 month CPR	34.99%	37.01%	39.25%	41.75%	44.52%	57.05%	40.37%	43.18%	46.34%
	3 month CPR	30.52%	35.07%	37.11%	39.37%	41.88%	48.22%	47.82%	47.40%	43.35%
	6 month CPR	25.97%	28.81%	31.85%	35.10%	38.57%	42.94%	43.75%	44.71%	45.84%
	12 month CPR	22.18%	23.96%	25.88%	27.98%	30.26%	33.85%	35.47%	37.26%	39.25%

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row	MONTH	48	49	50	51	52	53	54	55	56	57
1	PRINCIPAL BALANCE	100000									
2	FACTOR	0.1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	WAC (assumed constant)										
4	Monthly WAC										
5	WAM (enter in whole months) (assumed reduced by 1 month per month)	18	17	16	15	14	13	12	11	10	9
6	Scheduled Principal (30/360) PPMT	5,046.63	4,880.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	Principal Reduction (Beg bal - End bal) [(row 1, month n-1) - (row 1)]	10,000.00	100,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	Prepayment Estimate [row 7 - row 6]	\$4,953.37	\$95,119.42	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
9	Single Monthly Mortality (SMM) [row 8 / {(row 1, month n-1) - row 6}]	4.72%	100.00% N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10	CPR by 12 month period [computed from average SMM for 12 months]	Avg SMM 4.89%									
		CPR 45.24%									
11	Rolling average prepayment rates [computed using exact MBA standard formulas]										
	1 month CPR	44.02%	100.00%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
	3 month CPR	40.42%	100.00%	100.00%	100.00%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
	6 month CPR	43.48%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	#DIV/0!	#DIV/0!	#DIV/0!
	12 month CPR	45.27%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

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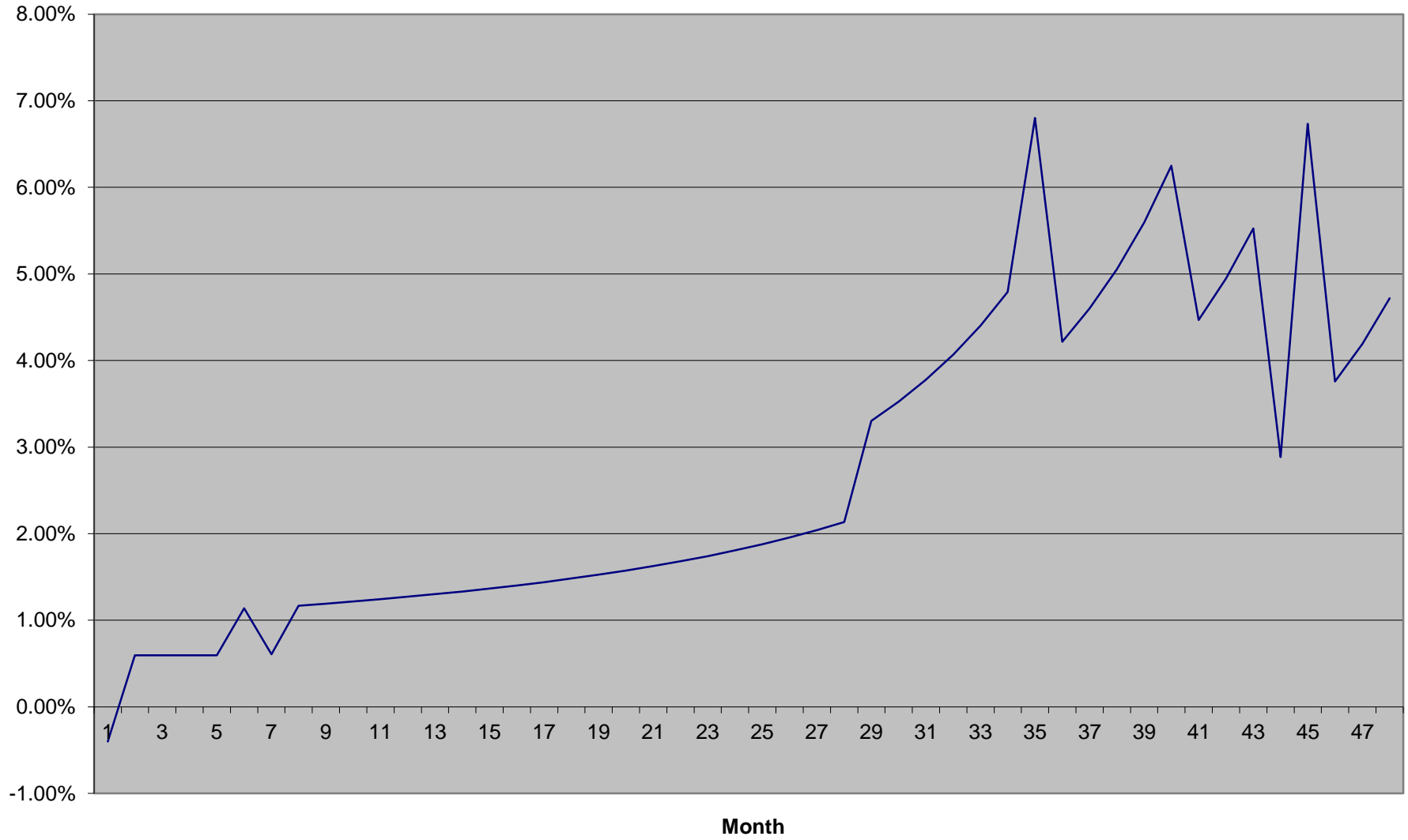
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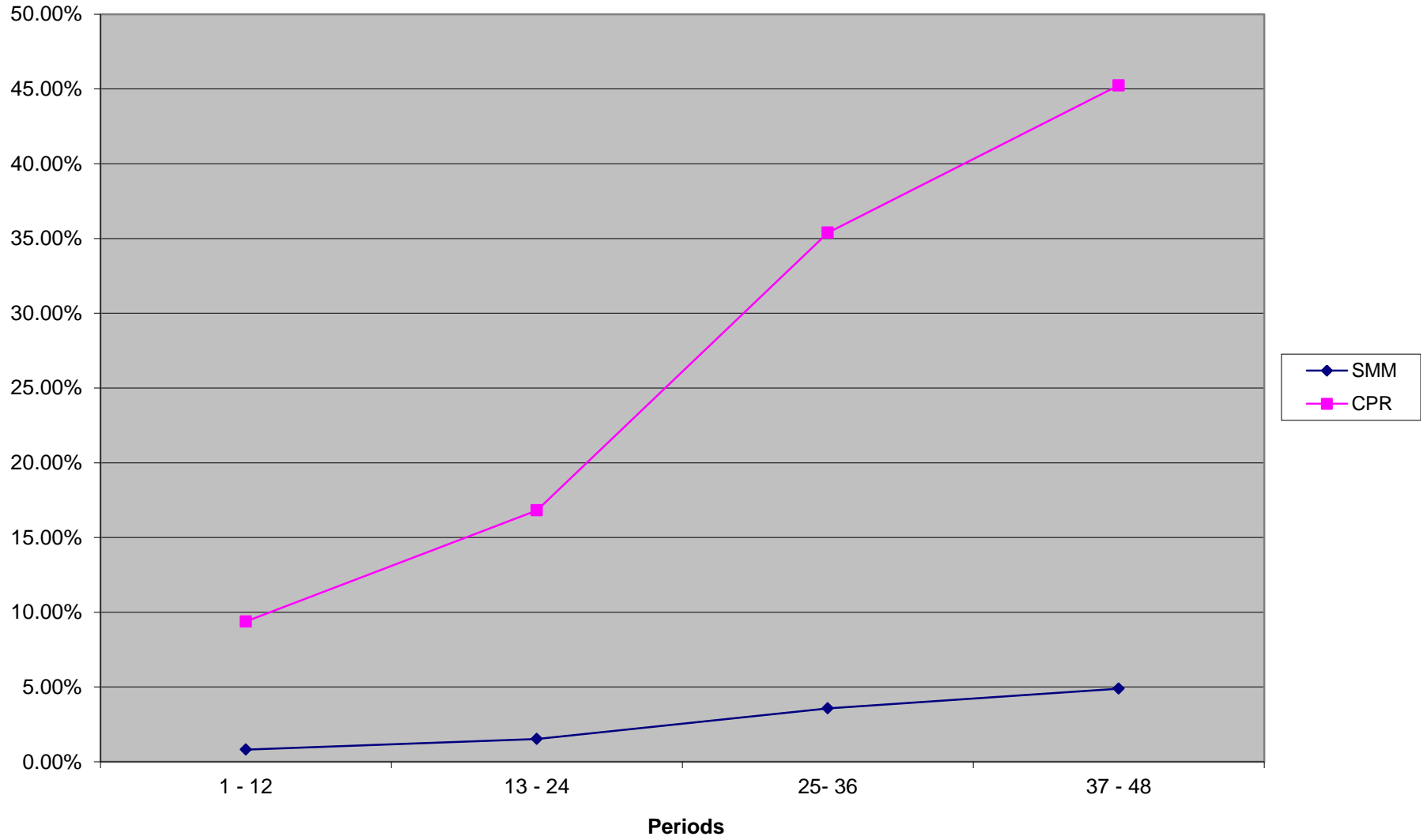
March 2006 Version

row	MONTH	68	69	70	71	72
1	PRINCIPAL BALANCE					
2	FACTOR	0.0000	0.0000	0.0000	0.0000	0.0000
3	WAC (assumed constant)					
4	Monthly WAC					
5	WAM (enter in whole months) (assumed reduced by 1 month per month)	0	0	0	0	0
6	Scheduled Principal (30/360) PPMT	0.00	0.00	0.00	0.00	0.00
7	Principal Reduction (Beg bal - End bal) [(row 1, month n-1) - (row 1)]	0.00	0.00	0.00	0.00	0.00
8	Prepayment Estimate [row 7 - row 6]	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
9	Single Monthly Mortality (SMM) [row 8 / {(row 1, month n-1) - row 6}]	N/A	N/A	N/A	N/A	N/A
10	CPR by 12 month period [computed from average SMM for 12 months]					
11	Rolling average prepayment rates [computed using exact MBA standard formulas]					
	1 month CPR	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
	3 month CPR	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
	6 month CPR	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
	12 month CPR	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
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Single Monthly Mortality



Average Prepayments



Building Assumptions about future behavior

Three simple assumption sets:

Base case

Assume prepayment behavior in fourth year prevails to maturity.

CPR = **45.24%**

Rising prepayments stress

Assume prepayment behavior to maturity spikes, increasing from the fourth year rate by the largest annual change (from year two to year three).

CPR = 45.24% + 18.57% = **63.81%**

Declining prepayments

Assume prepayment behavior to maturity slows from the rate in fourth year, decreasing by the largest annual change (the opposite from year two to year three)

CPR = 45.24% - 18.57% = **26.66%**

These assumptions assume a stable economic scenario.

These assumptions do not address possible increases in loss due to significant balances that may be due at loan maturity.

Additional historic data is needed to reduce uncertainty regarding balances due at maturity.

Three alternative assumption sets:

Base case

As above.

Rising prepayments stress

Increase fourth year by 50%

CPR = **67.85%**

Declining prepayments

Decrease fourth year by 50%

CPR = **22.62%**

