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**Measuring Delinquency and Default in
Microfinance Institutions**

by

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Measuring Delinquency and Default in Microfinance Institutions

Introduction

The focus of this article is on measuring loan delinquency and default in microfinance institutions (MFIs) at top management level. The core issue addressed is how well does an MFI's management control system accurately assess delinquency and default. By this I mean how do senior managers judge the quality of the loan portfolio from financial data. I do not intend to cover how a field-level staff responsible for, say, 150 borrowers monitors her loan portfolio. The article is clearly not intended for MFIs with high quality loan portfolios, but for the run-of-the mill MFIs (such as the typical Indian MFI with a Portfolio-at-Risk [PAR₆₀] of 14.1% (M-CRIL 2005). In this article, a loan is delinquent if installments are delayed and in default if one or more installments are never repaid. The background is as follows:

1. A typical MFI has a large number of essentially short-term loans (say one year), that are contractually expected to be repaid in a number of installments (weekly/monthly). Such a loan differs both from that of mainstream commercial banks and the accounts receivable portfolio of industrial corporations.

A commercial bank (even one with rural operations) would have loans with a single bullet installment (such as a crop loan that stipulates a single installment after harvest), medium-term loans of say 5-7 year duration with half-yearly/annual installments, or an overdraft account (with an out-of-borrowing clause requiring that the outstanding balance be brought to zero for a specified period). On the other hand the typical accounts receivable extended by an industrial corporation is an 'open account' expected to be settled within a few months.

2. An MFI usually has a loan portfolio that grows rapidly, sometimes with seasonality.
3. MFI Loans are stepped up with principal amounts increasing with each cycle.
4. Loans have no collateral so that expected loss given default is the entire amount of unpaid installments.

I shall use this background to subsequently argue that default and delinquency measures appropriate for commercial banks need to be applied with care when used with MFIs, and that the monitoring approach used in the industrial corporation accounts receivable may be of some help to MFIs.

A classic paper by Rosenberg (1999) covers significant ground in measurement of delinquency in MFIs. In a sense this article takes off from that paper. Let me summarize the Rosenberg paper. Measures of delinquency that work are the on-time collection rate, current collection rate, cumulative collection rate, and portfolio-at-risk (PAR). Measures that do not work too well are the Asian collection rate and

arrears rate. In this article we will restrict ourselves to the measures that Rosenberg shows work well, these are defined in the annex.

According to Rosenberg, the on-time collection rate provides immediate feedback about the timeliness of client payments. The current collection rate does not give such immediate feedback. The inclusion of prepayments and later payments can cause the current collection rate to fluctuate from one period to another. However the smoothing can make the current collection rate more usable. Both on-time and the current collection rate can provide information on the annual loan loss. The cumulative collection rate is a good measure for long-term portfolio performance that is not sensitive to assess the current repayment problems. The portfolio-at-risk is perhaps the most suitable measure. This is an international standard for measuring bank loan delinquencies. An aged portfolio-at-risk can provide feedback immediately. It cannot, however, provide an assessment for loan losses.

In the industrial corporation accounts receivable context Stone (1976) and Lewellen and Johnson (1972) show that measures used such as DSO (Days Sales Outstanding) and aging of receivables can be misleading if sales have seasonality. With seasonality, the payment-pattern approach is recommended. In this approach the payment received is disaggregated into month of origin. For instance from sales made in January 20% may be collected in the same month, 30% in the following month (February) and the balance 50% in March. If from the sales in February 20% is collected in the same month, 25% is collected one month later (March), 40% two months later (April), and the remaining 15% in May; then the pattern of payments shows a deterioration in the collection effort on February sales as compared to January sales.

Focus

The issues addressed in this article are the following:

1. Suppose a newly started MFI reaches a steady state delinquency/default status. By a steady state is either meant that the figures stabilize (say, 2% of loans are in default) or the underlying distribution stabilize (say, default is a normal distribution with a mean of 2% and standard deviation of 4%). What set of measures help the MFI assess delinquency and default?
2. Suppose a mature MFI transits from one steady state delinquency/default status to another. How well and quickly can it detect this?
3. Suppose an MFI suffers a shock; default rates for loans in a given period are significantly higher than "normal." How well and quickly can this be detected?

The issue not addressed here is that of renegotiated loans. It is not that as an academic I am holding something back for another paper. As of now I am pretty clueless about this issue.

In order to answer the above three questions, I need to introduce another collection rate—the “primitive” collection rate (PCR). I use the word “primitive” in the sense of the original number that is causally related to loan collection performance. The PCR is the cumulative amount collected, in a given period, of loan amounts disbursed in a previous given period. Thus the PCR traces collection to the period of origin of the loan. The PCR is not a rate usually tracked, since it does not provide a single neat summary of collection performance (as other measures do), but provides one for every period in which a loan was disbursed. As one moves further from the originating month the PCR will reflect the “primitive” loan loss, that is the default amount of a loan disbursed in a previous given period, uncollected. This PCR is closely related to the payment pattern approach in the standard monitoring receivable model (Llewellyn and Johnson, 1972).

I would like to stress that this PCR is not necessarily equivalent to the other collection measures. All the other measures cited earlier reflect the impact of PCRs for different prior periods.

Model-Inputs

A fairly straightforward simulation model was used. The decision period in the model is monthly. In each period, loans are disbursed and collected. The model horizon is 96 months. Loans have standardized repayment terms, with the principal payable in 12 equal monthly installments.

The size of the loans may increase over time. In that case the loan amount will increase at a monthly rate ‘g’.

There may also be seasonality. If there is seasonality then each year has three periods with no seasonality in the first, an increase to a peak in the second, and a decline to a trough in the third period. The loan disbursed is level in the first period of four months. Loans increase in the second period of four months by a factor s [(the loans in the four months are $\text{base loan} \cdot (1+s)^2$, $\text{base loan} \cdot (1+s)^1$, $\text{base loan} \cdot (1+s)^1$, $\text{base loan} \cdot (1+s)^2$ respectively], and decline in the third period of four months by a similar factor.

A fraction of the loans disbursed in a given month may be Type-1 delinquent. If Type-1 delinquency exists, there is a probability ‘p’ that T1 percent of the total loan disbursed in a given month will not be paid on time, in subsequent months..

A fraction of loans disbursed in a given month may be Type-2 delinquent. If Type-2 delinquency exists, all installments of T percent of loans disbursed in a given month will be stretched by ‘n’ months. If ‘n’ is negative this is equivalent to a prepayment.

A fraction of the loans disbursed on a given month may be in default. If default exists, D percent of loans disbursed in a given month will never be repaid. In a variation of this a “shock” may be experienced. If a shock is experienced, the loan disbursed in the month may suffer a high default risk simulated using an extreme value function.

It is important to note that delinquency and default are properties associated with loans disbursed in a given month.

A final input is a loan loss reserve. The paper will assume a full-foresight provisioning, that loan loss reserve anticipates default “correctly.” The consequence of not doing this, are separately discussed.

Model-Outputs

Base

In each month the three collection measures (on-time collection rate, current collection rate and cumulative collection rate), and PAR are computed. PARs were computed for the range 0 to 6 months. However only PAR_0 is reported in the tables. In addition to net PAR (net of loan-loss provisioning) gross PAR (without provisioning) is also reported. Gross PAR can help in understanding the consequences of provisioning that is not full-foresight, i.e. a provisioning that does not capture default correctly.

Sensitivity

The model is run first for four categories: only Type-1 delinquency [base $T1=10\%$, $p=10\%$], only Type-2 delinquency [base $T2=10\%$, stretch=3 months], only “normal” default [base $D=2\%$]; and with Type-1 delinquency, Type-2 delinquency and “normal” default combined.

For each category the model is run under four loan disbursement assumptions: level loan disbursements [$g=0\%$, $s=0$], loan disbursements with growth [$g=2\%$], loan disbursements with seasonality [$s=0.2$], and loan disbursements with both seasonality and growth [$g=2\%$, $s=0.2$].

For each category and loan disbursement assumption, the model is run twice: first with steady state from Month 1 for the entire 120 months (based on numbers indicated earlier), second with steady state from Month 1 with a new steady state starting Month 49 (the new steady state is characterized by different levels of the delinquency/default used by the model. Wherever a new steady state was introduced from Month 49 the following assumptions were used..

Type-1 delinquency was $T1=20\%$, $p=20\%$. Type-2 delinquency was $T2=20\%$. Default was $D=4\%$. For instance if the model has only default, the default rate of 2% from Months 1 to 48 would be revised to 4% for Months 49 to 120.

Finally the model was run for a fifth category “shock” default. In this run, all months except 49 had “normal” default of 2 percent. Month 49 had a “shock” default with an expected value of 2% but with a low probability of very high defaults (such as 20%).

Results

The results are as follows:

Default

Level Base

Only default is pretty easily determined. All collection measures detect the steady state loss of 2% of loans disbursed. The fact of default and indeed the default magnitude, are detected almost immediately. The PAR is fine and shows a value of 0%, as long as the write-off is full-foresight (which implies that it has been correctly made).

Level Sensitivity

A change in default to 4% in Month 49 is detected over the 12 month period by both the on-time collection rate and the current collection rate, with the stable number of 4% clear by Month 60. The cumulative collection rate however does not detect the change as quickly as the other two collection measures. The PAR continues to do a good job.

Growth and Seasonality

Growth and seasonality do not contaminate results for the three collection measures and PAR.

Detection

Given only default, on-time and current collection measures can be used, the PAR is usable if one of these two collection measures is used to write-off. Cumulative collection is usable to detect base case default, but not if there is a change in default pattern.

Type-1 Delinquency

Level Base

With Type-1 delinquency alone, given the probabilistic nature of the delinquency inputted, simulations were run using Palisade Decision Tolls @RISK. The current collection rate reaches a level of close to 100% by Month 16 to indicate no loan losses. The cumulative collection ratio provides almost identical information. The on time collection rate shows about 95.5% of collections are on time. The PAR indicates that about 4% of the portfolio is in trouble

Level Sensitivity

With Type-1 delinquency changed in Month 49 (to 20% of the disbursed amount with a 10% probability), the current collection rate continues to be close to 100%, indicating no default. The on time collection rate reduces from the base level of 95.6% to 90.9% in a year. PAR takes about a year to reflect a new level of 7.7%. However, if the write-off is set at 2%, PAR increases to 11.96% by Month 61 (not in table).

Growth and Seasonality

As before, growth and seasonality do not contaminate results for the three collection measures and PAR. PAR is altered more than other measures by seasonality, but not by an amount that should worry a manager.

Detection

The current collection rate is the one measure that actually captures the fact that there is no default.

Type-2 Delinquency

Level Base

With Type-2 delinquency alone, the current collection rate reaches a level of close to 100% by Month 16 to indicate no loan losses. The cumulative collection ratio lags showing 96.84% by Month 16. The on time collection rate shows 90% of collections are on time. The PAR indicates that about 12.50% of the portfolio is in trouble.

Level Sensitivity

With Type-2 delinquency changed in Month 49 to 20%, 3 months, the current collection rate continues to signal absence of delinquency. The on time collection rate reduces from the base level of 90% to 80% in 15 months. PAR takes about 15 months to reflect a new level of 23.94%. However, if the write-off is set at 2%, PAR increases to by Month 64 (not in table).

Growth and Seasonality

As before, growth and seasonality do not contaminate results for the three collection measures and PAR. PAR is altered more than other measures by seasonality, but not by an amount that should worry a manager.

Shock

An interesting result is that while the PCR detects shocks, other measures do not detect shocks. The reason is that other measures aggregate across loans and shock is drowned in the noise of the aggregate loan portfolio.

Implications

1. Use the “mature” current collection rate to determine default. The “mature” rate is after one loan cycle, in this case 12 months. Use on-time collection rate to determine delinquency and default.
2. Use Net PAR with caution, it most likely provides a pessimistic number. I do not subscribe to the theory that equates pessimism with conservatism, and then equates conservatism with good governance. What an MFI manager needs is realism. The tighter the PAR (0 days for instance) the more noise the message contains. One can never be sure whether one is talking about delinquency or default.
3. The cumulative collection rate sounds pretty impressive, one admires organizations that are willing to bear the logistical burden of this ratio, but overall this is not a number for a manager.
4. Keep tabs on the primitive collection ratio. Any shock in the system can be identified quickly by this measure.

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Table-1: Only Default

	BASE				SENSITIVITY					
	Month	Default 2%	50	61	96	Default 4% from Mth 49 onwards	2	50	61	96
BASE										
On-time Collection Rate%	98.00%	98.00%	98.00%	98.00%	98.00%	98.00%	97.83%	96.00%	96.00%	96.00%
Current Collection Rate %	98.00%	98.00%	98.00%	98.00%	98.00%	98.00%	97.83%	96.00%	96.00%	96.00%
Cumulative Collection Rate %	98.00%	98.00%	98.00%	98.00%	98.00%	98.00%	98.00%	97.76%	97.07%	97.07%
Gross PAR 0	2.09%	13.57%	16.07%	23.16%	2.09%	14.11%	19.17%	31.58%		
PAR 0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
GROWTH										
On-time Collection Rate%	98.00%	98.00%	98.00%	98.00%	98.00%	98.00%	97.85%	96.00%	96.00%	96.00%
Current Collection Rate %	98.00%	98.00%	98.00%	98.00%	98.00%	98.00%	97.85%	96.00%	96.00%	96.00%
Cumulative Collection Rate %	98.00%	98.00%	98.00%	98.00%	98.00%	98.00%	98.00%	97.77%	97.08%	97.08%
Gross PAR 0	2.08%	13.45%	15.78%	22.53%	2.08%	13.93%	18.82%	30.81%		
PAR 0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
SEASONALITY										
On-time Collection Rate%	98.00%	98.00%	98.00%	98.00%	98.00%	98.00%	97.84%	96.00%	96.00%	96.00%
Current Collection Rate %	98.00%	98.00%	98.00%	98.00%	98.00%	98.00%	97.84%	96.00%	96.00%	96.00%
Cumulative Collection Rate %	98.00%	98.00%	98.00%	98.00%	98.00%	98.00%	98.00%	97.76%	97.07%	97.07%
Gross PAR 0	2.09%	13.56%	16.01%	23.01%	2.09%	14.08%	19.09%	31.40%		
PAR 0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
GROWTH AND SEASONALITY										
On-time Collection Rate%	98.00%	98.00%	98.00%	98.00%	98.00%	98.00%	97.86%	96.00%	96.00%	96.00%
Current Collection Rate %	98.00%	98.00%	98.00%	98.00%	98.00%	98.00%	97.86%	96.00%	96.00%	96.00%
Cumulative Collection Rate %	98.00%	98.00%	98.00%	98.00%	98.00%	98.00%	98.00%	97.77%	97.08%	97.08%
Gross PAR 0	2.08%	13.46%	15.76%	22.44%	2.08%	13.93%	18.79%	30.70%		
PAR 0	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

1. PAR based on full-foresight loan write-off

Table-2: Only Type-1 Delinquency

	BASE						SENSITIVITY						
	Month	Delinquency 10% [with probability 10%]				Delinquency 20% from Mth 49 onwards [with probability 10%]							
		2	13	16	50	61	96	2	13	16	50	61	96
LEVEL													
On-time Collection Rate%	90.00%	95.38%	95.42%	95.31%	95.39%	95.36%	90.00%	95.50%	95.35%	95.37%	90.93%	90.77%	
Current Collection Rate %	98.97%	98.98%	99.97%	100.06%	99.96%	99.98%	98.96%	98.97%	99.85%	99.95%	99.00%	100.20%	
Cumulative Collection Rate %	98.97%	99.01%	99.24%	99.83%	99.87%	99.92%	98.96%	99.00%	99.23%	99.84%	99.75%	99.84%	
Gross PAR 0	0.54%	3.88%	3.92%	4.00%	3.94%	3.99%	0.53%	3.79%	4.00%	4.11%	7.74%	7.67%	
PAR 0	0.54%	3.88%	3.92%	4.00%	3.94%	3.99%	0.53%	3.79%	4.00%	4.11%	7.74%	7.67%	
GROWTH													
On-time Collection Rate%	90.00%	95.51%	95.34%	95.47%	95.53%	95.44%	90.00%	95.50%	95.35%	95.37%	90.93%	90.77%	
Current Collection Rate %	99.04%	99.00%	99.89%	100.05%	100.14%	100.12%	98.96%	98.97%	99.85%	99.95%	99.00%	100.20%	
Cumulative Collection Rate %	99.04%	99.00%	99.23%	99.84%	99.87%	99.92%	98.96%	99.00%	99.23%	99.84%	99.75%	99.84%	
Gross PAR 0	0.49%	3.78%	4.08%	3.95%	3.85%	3.82%	0.53%	3.79%	4.00%	4.11%	7.74%	7.67%	
PAR 0	0.49%	3.78%	4.08%	3.95%	3.85%	3.82%	0.53%	3.79%	4.00%	4.11%	7.74%	7.67%	
SEASONALITY													
On-time Collection Rate%	90.00%	95.38%	95.34%	95.40%	95.38%	95.59%	90.00%	95.37%	95.37%	95.19%	90.71%	91.12%	
Current Collection Rate %	99.02%	99.02%	99.93%	99.87%	99.89%	100.05%	99.09%	99.04%	99.96%	99.79%	98.84%	99.96%	
Cumulative Collection Rate %	99.02%	99.01%	99.25%	99.84%	99.87%	99.92%	99.09%	99.00%	99.25%	99.83%	99.75%	99.85%	
Gross PAR 0	0.51%	3.94%	4.07%	4.05%	4.03%	3.99%	0.47%	3.95%	4.05%	4.34%	7.96%	7.98%	
PAR 0	0.51%	3.94%	4.07%	4.05%	4.03%	3.99%	0.47%	3.95%	4.05%	4.34%	7.96%	7.98%	
GROWTH AND SEASONALITY													
On-time Collection Rate%	90.00%	95.50%	95.24%	95.42%	95.51%	95.65%	90.00%	95.52%	95.32%	95.31%	91.00%	91.33%	
Current Collection Rate %	99.04%	98.96%	99.82%	99.88%	99.84%	100.08%	99.04%	99.00%	99.79%	99.75%	98.93%	100.23%	
Cumulative Collection Rate %	99.04%	99.00%	99.21%	99.84%	99.87%	99.92%	99.04%	99.01%	99.23%	99.84%	99.76%	99.85%	
Gross PAR 0	0.49%	3.95%	4.26%	4.13%	3.98%	3.84%	0.49%	3.88%	4.15%	4.29%	7.79%	7.68%	
PAR 0	0.49%	3.95%	4.26%	4.13%	3.98%	3.84%	0.49%	3.88%	4.15%	4.29%	7.79%	7.68%	

Table-3: Only Type-2 Delinquency

LEVEL	BASE Delinquency 10%					SENSITIVITY Delinquency 20% from Mth 49 onwards					
	Month	2	16	50	61	96	2	16	50	61	96
LEVEL											
On-time Collection Rate%	90.00%	90.00%	90.00%	90.00%	90.00%	90.00%	90.00%	90.00%	89.17%	80.00%	80.00%
Current Collection Rate %	90.00%	100.00%	100.00%	100.00%	100.00%	100.00%	90.00%	100.00%	99.17%	97.50%	100.00%
Cumulative Collection Rate %	90.00%	96.84%	99.31%	99.45%	99.66%	90.00%	96.84%	99.29%	98.94%	99.33%	99.33%
Gross PAR 0	5.19%	12.50%	12.50%	12.50%	12.50%	5.19%	12.50%	13.95%	23.67%	23.94%	23.94%
PAR 0	5.19%	12.50%	12.50%	12.50%	12.50%	5.19%	12.50%	13.95%	23.67%	23.94%	23.94%
GROWTH											
On-time Collection Rate%	90.00%	90.00%	90.00%	90.00%	90.00%	90.00%	90.00%	89.25%	80.00%	80.00%	80.00%
Current Collection Rate %	90.00%	100.00%	100.00%	100.00%	100.00%	90.00%	100.00%	99.25%	97.27%	100.00%	100.00%
Cumulative Collection Rate %	90.00%	96.76%	99.31%	99.45%	99.66%	90.00%	96.76%	99.29%	98.95%	99.33%	99.33%
Gross PAR 0	5.14%	12.60%	12.61%	12.60%	12.26%	5.14%	12.60%	13.90%	23.87%	23.51%	23.51%
PAR 0	5.14%	12.60%	12.61%	12.60%	12.26%	5.14%	12.60%	13.90%	23.87%	23.51%	23.51%
SEASONALITY											
On-time Collection Rate%	90.00%	90.00%	90.00%	90.00%	90.00%	90.00%	90.00%	89.19%	80.00%	80.00%	80.00%
Current Collection Rate %	90.00%	100.00%	100.00%	100.00%	100.00%	90.00%	100.00%	99.19%	97.79%	100.00%	100.00%
Cumulative Collection Rate %	90.00%	96.82%	99.31%	99.45%	99.66%	90.00%	96.82%	99.29%	98.93%	99.33%	99.33%
Gross PAR 0	5.19%	12.56%	12.54%	12.53%	12.95%	5.19%	12.56%	13.95%	23.81%	24.82%	24.82%
PAR 0	5.19%	12.56%	12.54%	12.53%	12.95%	5.19%	12.56%	13.95%	23.81%	24.82%	24.82%
GROWTH AND SEASONALITY											
On-time Collection Rate%	90.00%	90.00%	90.00%	90.00%	90.00%	90.00%	90.00%	89.28%	80.00%	80.00%	80.00%
Current Collection Rate %	90.00%	100.00%	100.00%	100.00%	100.00%	90.00%	100.00%	99.28%	97.60%	100.00%	100.00%
Cumulative Collection Rate %	90.00%	96.75%	99.31%	99.45%	99.66%	90.00%	96.75%	99.29%	98.93%	99.33%	99.33%
Gross PAR 0	5.14%	12.67%	12.66%	12.64%	12.76%	5.14%	12.67%	13.91%	24.02%	24.47%	24.47%
PAR 0	5.14%	12.67%	12.66%	12.64%	12.76%	5.14%	12.67%	13.91%	24.02%	24.47%	24.47%

**Table-4: Type-1 & Type-2 Delinquency and Default
BASE**

	Month	SENSITIVITY										
		From Mth 49 onwards										
	2	13	16	50	61	96	2	13	16	50	61	96
LEVEL												
On-time Collection Rate%	78.00%	83.38%	83.42%	83.42%	83.42%	83.36%	78.00%	83.45%	83.47%	82.34%	67.01%	66.89%
Current Collection Rate %	87.03%	94.51%	97.95%	97.98%	98.01%	98.01%	87.17%	94.49%	97.96%	96.87%	92.51%	96.05%
Cumulative Collection Rate %	87.03%	92.76%	94.09%	97.14%	97.32%	97.58%	87.17%	92.78%	94.10%	97.12%	96.46%	96.24%
Gross PAR 0	7.76%	19.17%	20.20%	27.22%	29.24%	34.97%	7.69%	19.13%	20.21%	29.17%	43.33%	51.62%
PAR 0	5.81%	16.04%	16.41%	16.43%	16.43%	16.46%	5.74%	16.00%	16.42%	18.20%	31.25%	31.65%
GROWTH												
On-time Collection Rate%	78.00%	83.55%	83.38%	83.47%	83.51%	83.43%	78.00%	83.47%	83.36%	82.47%	67.14%	66.98%
Current Collection Rate %	86.98%	94.27%	97.84%	97.99%	98.11%	98.09%	86.96%	94.27%	97.84%	97.12%	92.38%	96.12%
Cumulative Collection Rate %	86.98%	92.67%	93.99%	97.15%	97.32%	97.58%	86.96%	92.65%	93.98%	97.12%	96.47%	96.24%
Gross PAR 0	7.73%	19.13%	20.40%	27.25%	29.10%	34.20%	7.74%	19.20%	20.40%	28.98%	43.38%	50.72%
PAR 0	5.78%	16.08%	16.65%	16.56%	16.53%	16.09%	5.79%	16.16%	16.65%	18.13%	31.55%	31.03%
SEASONALITY												
On-time Collection Rate%	78.00%	83.42%	83.40%	83.45%	83.37%	83.51%	78.00%	83.30%	83.28%	82.34%	66.78%	67.09%
Current Collection Rate %	87.11%	94.79%	97.94%	97.88%	97.80%	98.00%	87.08%	94.74%	97.94%	96.86%	92.56%	95.97%
Cumulative Collection Rate %	87.11%	92.63%	94.07%	97.15%	97.32%	97.59%	87.08%	92.61%	94.05%	97.12%	96.45%	96.25%
Gross PAR 0	7.72%	19.33%	20.37%	27.32%	29.32%	35.33%	7.74%	19.45%	20.47%	29.17%	43.76%	52.38%
PAR 0	5.77%	16.23%	16.59%	16.55%	16.58%	17.05%	5.78%	16.35%	16.69%	18.22%	31.84%	32.86%
GROWTH AND SEASONALITY												
On-time Collection Rate%	78.00%	83.42%	83.23%	83.40%	83.51%	83.70%	78.00%	83.57%	83.34%	82.46%	66.96%	67.24%
Current Collection Rate %	86.95%	94.56%	97.79%	97.90%	97.86%	98.07%	86.91%	94.62%	97.82%	96.97%	92.51%	96.13%
Cumulative Collection Rate %	86.95%	92.48%	93.95%	97.14%	97.32%	97.59%	86.91%	92.52%	93.98%	97.12%	96.46%	96.25%
Gross PAR 0	7.75%	19.47%	20.69%	27.44%	29.21%	34.54%	7.77%	19.33%	20.56%	29.06%	43.72%	51.59%
PAR 0	5.79%	16.44%	16.94%	16.77%	16.68%	16.59%	5.81%	16.30%	16.80%	18.22%	32.01%	32.31%