

Military Lending Act

Calculating the Military APR

The purpose of this document is to aid in the calculation of the Military APR (MAPR) for closed-end and open-end loans. Other aspects of the act will not be covered in this document. Because the calculation and timing of the calculation is different for closed-end and open-end they will be handled separately.

If you have any questions on calculating the MAPR for either closed-end loans or open-end loans, please contact Tom Kellen;

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Table of Contents

Closed-end MAPR Calculation	2
Open-end MAPR Calculation.....	3
Appendix A – Closed-end MAPR Example	4
Appendix B – Open-end MAPR Examples	8

Notice

This guide is for informational purposes only and is provided as an aid for data processors and loan origination system providers to ensure that credit unions do not charge an MAPR that exceeds the 36% cap. This guide is only a summary of the issues and should not be construed as any form of advice, including legal advice or as a comprehensive listing of the regulatory requirements for calculating the MAPR. Data processors and loan origination system providers should consult their own independent advisors.

Closed-end MAPR Calculation

The formula used to calculate the MAPR value is the same that is used to calculate the APR value that is found in Appendix J to Regulation Z (link <http://www.consumerfinance.gov/eregulations/1026-J/2015-18239#1026-J-b-6>). This document will assume that you have the ability to calculate the APR and items like 'Amount Financed'. With the Military Lending Act there are additional items that are to be considered finance charges that need to be accounted for when calculating the MAPR value. The following will show how to handle the additional items to be considered 'finance charges' for the purpose of calculating the MAPR value.

When calculating the APR you should have already accounted for any pre-paid finance charges in the 'Amount Financed'. To calculate the MAPR value we will start by subtracting any additional items considered finance charges that are paid upfront (like GAP, Single Premium Credit Life, or Single Premium Credit Disability Insurance) from the 'Amount Financed'. This will be the amount that you enter in the APR formula when calculating the MAPR value.

Now you would need to account for the payment streams. If there is monthly paid payment protection (like Level Rate Credit Life or Level Rate Credit Disability) that is being added to the loan (so the payment is adjusted to cover the cost of the payment protection) you would enter the payment streams (**don't enter the payment protection as additional amounts**). This will treat the payment protection as a finance charge. Calculate the interest rate that makes the equation equal (until you reach your level of precision) – this is the MAPR value.

I am including an example of a calculation (screen shots of an application) followed with an explanation of what would need to be done to do the MAPR calculation as well as information for calc engine users. The calculation will have some pre-paid finance items, some items that are MAPR items, and payment protection. This can be found in Appendix A.

Open-end MAPR Calculation

The options for the formula that would be used to calculate the MAPR value are the same that are used to calculate the effective APR value that is found in subsections 1026.14(c) and (d) of Regulation Z (link: <http://www.consumerfinance.gov/eregulations/1026-14/2015-18239#1026-14-c>). This document will discuss the logic to decide which option to use to calculate the effective APR. The effective APR calculation (hence the MAPR calculation for open-end loans) is done on the billing statement (sometimes called the periodic statement). Because the effective APR calculation requires all of the transaction history for that statement period, this calculation isn't done at the time of the transaction. Because of the information that is needed and the time that it is done, this calculation is not in CUNA Mutual's calc engine. The effective APR calculation would normally be done by the data processor or the party creating the statement.

The effective APR calculation is not a difficult calculation from a math standpoint. The difficult part is deciding what types of fees are on the account for that billing statement and what actual calculation to use under each fact pattern. Because 1026.14(c) and (d) are ambiguous and may lead to various interpretations depending on your lending practices, you may want to consult with your legal counsel for an opinion on which calculation to use and how to do the actual math.

The discussion below assumes that payment protection is considered to be a periodic rate type of fee and that balance is the balance that the fee is calculated on.

There are a number of options that can be used to calculate the effective APR value. Which formula to use is determined by what types of fees are on the account for that statement period. The following is a table that lists different types of fees and the formula that should be used:

Formula to use:	Type of fee(s)
14(c)(3)	Transaction specific fee, there can be other fees but this type of fee mandates using this formula
14(c)(2)	No Transaction specific fee but other fees besides payment protection
14(c)(1)(i) or (ii)	Only interest and payment protection (both considered periodic rates)

This document will not determine the clarification of the type of fee as this is prescribed in the regulation. There are examples of each formula in Appendix B to illustrate how the math works. All of the formulas besides 14(c)(1)(i) have the simple formula of numerator/denominator * the number of statements in the year. In this formula the numerator consists of the total of the items to be considered finance charges. The denominator will vary, but is the sum of the balance(s) that the fees were calculated on where 14(c)(3) has the requirement of 'without duplication'.

Appendix A – Closed-end MAPR Example

The purpose of this example is to show how the calculation is done, not to necessarily exceed the 36% limit. The payment protection rate is \$4.00 per 1000. This example will have various types of finance charges and MAPR fees to illustrate how they are handled.

This Input screen has monthly pay debt protection and the check box for the MAPR calculation as well as other general loan information. Note: this application uses CUNA Mutual's calc engine and when the 'Military APR' is checked the payment protection will be included in the MAPR calculation.

Calc Engine - Calculator (CE Version - 6.8) * For CUNA Mutual Internal Use *****

Loan Class

- Closed End
- Open End

Calc Type

Installment Payment

- Consumer
- Home Equity
- Mortgage

Solve For

- Regular Payment
- Amount
- Term

Loan Information

Amount to Member: 20000.00

Other Amounts: 1600.00

Regular Payment:

Residual Value:

Number of Payments: 60

Rollover Term:

Final Payment Date: / /

Interest Rate: 6.000 %

Payments Per Year: 12

Teaser Rate: %

Teaser Term:

Billing %/Factor Rate: %

Minimum Payment:

Control Dates

Effective Date of Loan: 05/14/2016

Days to First Payment: 30

or First Payment Date: 06/13/2016

APR Options

- Military APR

Payment Protection

Credit Disability: Credit Life: Debt Protection:

Pmt Protection: Plan/Type:

Pmt Protection: Financed Cash

Member's Birth Date: 02/05/1983

Joint Insured's Birth Date: / /

This is the output screen showing the APR value as well as the MAPR calculation. The calc engine will return both values. It also returns the total of items considered finance charges. The total includes interest, cash and financed pre-paid finance charges, cash and financed MAPR items, and payment protection. The MAPR value **is not required** to be disclosed on a lending form. In similar fashion, the total of MAPR fees is not required to be disclosed on a lending form.

Output screen showing the APR value, MAPR value, MAPR fees:

Payment Details		Loan Details		Payment Protection	
Number:	Amount:	Effective Date:	05/14/2016	<u>Credit Life</u>	
59	467.60	First Payment Date:	06/13/2016	Insured Amt:	0.00
1	467.59	Interest Rate:	6.0000%	Premium:	0.00
		Member's Birth Date:	02/05/1983	Termination Date:	/ /
		Joint Insured's Birth Date:	/ /	Term in Months:	0
Payments Due Monthly:		Financial Information		<u>Credit Disability</u>	
First:	06/13/2016	Amount to Member:	20,000.00	Insured Amt:	0.00
Last:	05/13/2021	Amount Refinanced:	0.00	Premium:	0.00
		Financed PP Fin Charge:	100.00	Monthly Benefit:	0.00
		Financed SP Credit Insurance:	0.00	Termination Date:	/ /
		Other Financed Amounts:	1,500.00	Term in Months:	0
		Financed Filing Fee:	0.00	<u>Blended Debt Protection</u>	
		Financed Doc Stamps:	0.00	Covered Amt:	21,600.00
				Fees:	2,866.35
		Amt Owed to CU:	21,600.00	Monthly Benefit:	467.60
		PrePaid Fin Charge:	150.00	Termination Date:	05/13/2021
		Amount Financed:	21,450.00		
		Total Outstanding Bal Credit Ins./Debt Can:	2,866.35		
		Finance Charge:	3,739.64		
		Total of Payments:	28,055.99		
Annual Percentage Rate					
APR:	6.2812%				
MAPR:	14.7826%				
Disclosure Amounts					
Amt Owed CU:	21,600.00				
Amt Financed:	21,450.00				
Finance Chg:	3,739.64				
CL Premium:	0.00				
CD Premium:	0.00				
DC Fee:	2,866.35				
Total of Pmts:	28,055.99				
Avg Cost/ Day:	1.57				
MPR Fees:	8,305.99				

This explanation will assume that you currently are able to calculate the TIL values and part of that is doing the APR calculation. Based on those assumptions we will start with the 'Amount Financed' value of \$21,450 (includes the loan amount and the pre-paid finance charges for this example). We would subtract any additional paid upfront MAPR fees (this would include the \$200 MAPR cash fee, and the \$1500 financed MAPR amount) for a 'MAPR Amount Financed' value of \$19,750. When calculating the APR you start with the 'Amount Financed' value so when calculating the MAPR value we start with the MAPR 'Amount Financed' value. We then handle the payment stream, and this is the same when calculating the MAPR. When calculating the APR you would treat the monthly paid payment protection as additional amounts throughout the loan. For the MAPR, the payment protection is to be treated as finance charges. If the payment is adjusted to cover the cost of the payment protection, the payment protection will be treated as finance charges by simply not including the payment protection as

additional amounts. If the payment was not adjusted to cover the cost of the payment protection (pulled from a share account each month), then you would need to treat the payment protection as negative amounts in the MAPR calculation. With those adjustments to the APR routine for calculating the MAPR value, you would then solve for the value of the interest rate that would make both sides of the equation the same within your existing logic.

Calc Engine Users and the Closed-end MAPR Calculation

The application that was used for the example uses CUNA Mutual's calc engine. To calculate the MAPR value there are loan input variables/settings and two output values that are returned. There is a Boolean setting that tells the calc engine to do the MAPR calculation. From the screen print this is illustrated on the first screen as 'Military APR'. There is a Cash MAPR variable where you would pass a total of all the additional MAPR fees paid in cash. On the 'Amount to Others' array there are Boolean settings that would be checked for any additional financed MAPR fees. Any payment protection is automatically handled when the MAPR Boolean variable is set to 'TRUE'.

The details of the individual functions are in the programmer user guides. If you search on 'MAPR' it will take you to the sections of the document that address the Military APR.

Appendix B – Open-end MAPR Examples

14(c)(3) Examples

This formula would be used any time that there is a fee that is a transaction charge. There are three examples to illustrate the concept of 'without duplication'. These examples will use payment protection with a rate of \$3.50 per thousand.

Example A:

Beginning balance:	\$1,000.00
Advance on day 1:	\$2,000.00
Advance fee:	\$25.00
Payment Protection on day 30	\$10.50 on \$3000 balance
Average Daily Balance (ADB)	\$3,000.15
Interest	\$22.50

With the ADB (\$3000.15) being larger than the Advance amount (\$2000) and the Payment Protection balance (\$3000) we will use 3000.15 as the denominator.

$$\text{MAPR} = ((25 + 10.50 + 22.50)/3000.15) * 12 = (58/3000.15) * 12 = 23.199\%$$

Example B:

Beginning balance:	\$1,000.00
Advance on day 30:	\$2,000.00
Advance fee:	\$25.00
Payment Protection on day 30	\$10.50 on \$3000 balance
ADB	\$1,033.68
Interest	\$7.75

With the Payment Protection balance (\$3000) being larger than the Advance amount (\$2000) and the ADB (\$1033.68) we will use \$3000 as the denominator.

$$\text{MAPR} = ((25 + 10.50 + 7.75)/3000) * 12 = (43.25/3000) * 12 = 17.3\%$$

Example C (Interest calculated on prior balance only):

Beginning balance:	\$1,000.00
Advance on day 15:	\$2,000.00
Advance fee:	\$25.00
Payment Protection on day 30	\$10.50 on \$3000 balance
Interest	\$7.50

With the interest being calculated on \$1000.00 prior balance and the payment protection being calculated on the \$3000.00 (1000 prior and 2000 new advance) and not wanting duplication the denominator is the sum of the \$1000 and \$2000 (the new part).

$$\text{MAPR} = ((25 + 10.50 + 7.50)/3000) * 12 = (43.00/3000) * 12 = 17.2\%$$

14(c)(2) Examples

This formula may be used any time that there is a fixed charge but not a fee that is a transaction charge. For example; if there as a \$3 fixed charge on the account with a beginning balance of \$0 and a \$1000 advance on day 16 of a 30 day month. On day 30, a \$3.50 payment protection charge is added to the loan (rate of \$3.5 per1000). The annual interest rate of 9% is being applied to the account. Statements are monthly.

The numerator would be the sum of the fee, payment protection, and interest. $3.00 + 3.50 + 3.70 = 10.20$
The denominator would be balances used to calculate the payment protection and the interest (balance times daily rate times number of days).

1000 (balance to calculate the payment protection) + 500.12 (balance to calculate interest) = 1500.12 .
The MAPR would be $10.20/1500.12 = .006799456 * 12$ (convert to yearly) = 8.159% .

If we had the same rates and fees but the advance was taken on day 1 of a 30 day month, we would have the following results.

The numerator would be the sum of the fee, payment protection, and interest. $3.00 + 3.50 + 7.40 = 13.90$
The denominator would be balances used to calculate the payment protection and the interest.

1000 (balance to calculate the payment protection) + 1000.12 (balance to calculate interest) = 2000.12 .
The MAPR would be $13.90/2000.12 = .006949583 * 12$ (convert to yearly) = 8.339% .

14(c)(1)(i) or 14(c)(1)(ii) Examples

One of these formulas may be used any time that there are not any other fees on the loan besides interest and payment protection. We will use the example above for (c)(2), but without the \$3.00 fee. With just interest and payment protection and both being considered periodic rates we can use either (1)(i) or (1)(ii) to calculate the MAPR value. (1)(ii) will work for any type of payment protection MRCD (gross indebtedness – calculation involves the payment amount – payment * rate * number of remaining payments), LRCD, or Debt Protection (net indebtedness – calculation is based on the balance – balance * rate). If the product is net indebtedness you can use (1)(i) formula.

14(c)(1)(ii) Example

Using formula (1)(ii) and the results of the first example for 14(c)(2) the numerator would be $3.50 + 3.70 = 7.20$ and the denominator would be the sum of the balances used to calculate those amounts $1000 + 500.12 = 1500.12$.

The MAPR value would be $7.20/1500.12 * 12 = 5.760\%$.

14(c)(1)(i) Example

Converting the \$3.50 per 1000 from monthly rate per 1000 to a yearly rate per 100 just multiply by 1.2 to get a yearly rate per hundred of 4.2. If there is more than one coverage on the loan you can add the rates together and then multiply by 1.2.

Now add the annual interest rate and the yearly payment protection rate together.

$MAPR = 9 + 4.2 = 13.2\%$.