**RiskGPS: Floating and Adjustable Loan Assumptions**

**Overview**

Call report data lacks key details necessary to perform accurate interest rate risk analysis on loans that reprice prior to final maturity. RiskGPS addresses these limitations by allowing users to input additional loan detail to improve the rate risk analysis.

RiskGPS organizes adjustable loans into two categories:

1. **All Other Loans – (all loans excluding 1-4 family residential mortgages):** Includes all loans except “closed-end” 1–4 family first mortgages. “Closed-end” means that additional principal advances require new loan documentation. Therefore, items like home equity loans and construction loans are included in this first category, even if they are secured by a 1-4 family first mortgage.
2. **Closed-end loans secured by 1st liens on 1-4 family residential properties:** Includes only closed-end first mortgages secured by 1–4 family residential properties.

Together, these two categories account for all performing loans in the bank’s portfolio, excluding non-performing or non-accrual loans.

RiskGPS uses a specific method for handling loans with rates that change in each of these two categories. Loans in the All Other Loans – (all loans excluding 1-4 family residential mortgages) category are considered either “fixed” or “floating.”Call data doesn’t break out the amount of floating rate loans. In fact, such loans are mixed up in other categories and maturity buckets. Call report instructions specify that a floating rate loan without a floor (i.e., a minimum rate), or one at a rate above their floor (i.e., a maximum rate), are reported in the shortest maturity bucket, the 1- to 3-month bucket. However, some maturities of fixed rate loans are included in that bucket as well. *Floating rate loans accruing at their floor rate are shown in the same maturity bucket as if they were a fixed rate loan – in other words, at their final maturity.*

**RiskGPS Estimation Method**

RiskGPS estimates the amount of floating rate loans using a **migration analysis** between maturity buckets over the previous quarter. More precise information is generally available from your loan processing system. To get the most accurate rate risk results, you can split floating rate loans that are not residential closed-end mortgages into three groups:

1. Floating rate loans that do not have a minimum rate (called a floor);
2. Loans with floors that are currently earning more than the floor rate; and
3. Loans that are currently earning the floor rate because the regular rate is equal to or below the floor.

Interest Rate Risk calculations can be made even more accurate if you provide specific weighted average rate information for the two categories of floating rate loans with floors. On the Loan Assumptions page in RiskGPS, first enter the amount of loans that are floating and have no floor and click the “OK” button at the bottom of the screen to register the change.

RiskGPS will not allow the floating rate total entered on the Assumptions screen to be larger than the total loans in the 1–3-month maturity bucket, as reported in your bank’s call report. If the entry exceeds the amount reported, an error message will appear. To resolve the error, verify these things:

1. Are there adjustable rate loans included in this category that will not re-price during the next quarter? These should be placed in longer maturity buckets than 1-3 months, per call report instructions. *Common examples are commercial real estate or other non-residential loans that re-price annually. Loans of this type should not be included in the “floating rate” loan total in RiskGPS*;
2. Are ‘closed-end loans, 1 to 4 family first mortgages’ included in the fixed rate section? These need to be included in the Adjustable Rate section instead;
3. Are loans at their floor being included in this section? Those loans should be included in the “Floating Loans Already at Floor” report line instead;
4. Is there an error in the bank’s call report? The amount can be verified by checking Schedule RC-C part 1, Section 2b1. If it doesn’t include all the loans that it should, or there’s an error in the breakdown of those maturity categories there, the bank may need to file an amended call report.

Once the correct amount is entered in RiskGPS, the remaining loan amounts can be entered. If the bank’s floating rate loans do not have ceilings or floors, or if the ceilings and floors are so high and low that they would not impact interest income significantly at the rate shock increments, the next two sections of this Assumption input screen can be ignored.

However, if the bank has a significant amount of loans with floors or ceilings:

1. enter the last quarter-end balance of “floating loans above floor.” Do not include floating rate loans that have no floor.
2. Enter the weighted average Yield on this group of loans as of the call report date. If you do not enter an average yield, RiskGPS will use the default yield on all loans, per call report data. This weighted average yield will be used as the exit rate on these loans as they reprice in the rate shocked income calculations.
3. Next, enter the **Weighted Average Contractual (or Indexed) Rate**. *That is the Index rate plus the spread as defined in the loan documents*. Often the Contractual Rate on this group of loans is the same as the Yield, but not if there are timing differences in repricing. Calculate the weighted average Contractual rate as the current index rate plus the weighted average contractual spread, regardless of any ceiling or floor. Bankers GPS uses the Weighted Average Contractual Rate (plus the shock amount) in the projected shock calculations.
4. Enter the weighted average floor rate. Calculate the weighted average of the floor rates on just this group of loans. For floating loans above floor, the indexed rate should be greater than the floor rate. If you enter a weighted average floor rate that is higher than the weighted average Contractual Rate, RiskGPS will display an error.

The next section is loans at their floor:

1. enter the Weighted Average Contractual (Indexed) rate for this group of loans.
2. enter the weighted average floor rate for this group of loans. For floating loans at their floor, the indexed rate should be less than or equal to the floor rate. If you enter an average floor rate that is lower than the average indexed rate, RiskGPS will display an error.

Entering all this loan detail in the floating rate loan section helps RiskGPS calculate rate shocked income more accurately.

The second major category of loans to enter are **Closed-end loans secured by 1st liens on 1-4 family residential properties.** . RiskGPS uses the “ARM method” for loans in this category that re-price before maturity. **ARMs, or Adjustable Rate Mortgages**, *are loans that re-price before they mature; oftentimes, these do not reprice immediately, but rather once a year.*

*Adjustable loans may contain limits on the amount of rate adjustment. Because that detail is not included in the call report, and the call report may not reflect the earliest re-pricing date, nor ceilings and floors on the loans, the user will find it valuable to enter this level of detail into the Loan Assumptions section of RiskGPS.* Adding that information will improve results for both rate shocked income and market value analysis, so it is worth the effort to get those numbers.

Users must remember that the ARMs in this section are limited to those loans that are secured by closed-end 1-4 family first mortgages. *This does not include Commercial Real Estate loans, home equity lines of credit, or construction loans*; those should be included in the appropriate area of the adjustable rate loans section.

The amounts on the first line (**RE Loans as Reported**) are completed by the model and include the breakdown of the bank’s 1-4 family first mortgages by final maturity, based on the way they were reported in the call report. As such, the total amount of all maturities on this line will be equal to the amount the bank reported on line 1.c.(2).a in Schedule RC-C Part 1 less the non-accrual loans on line 1.c.2.a in column C in Schedule RC-N. However, *since many banks have material volumes of residential ARM loans with characteristics that alter their repricing (such as floors and ceilings), RiskGPS allows the user to separate the model’s defaulted repricing data that came from the Call Report.* Completing this section is optional but highly recommended if the bank has ARMs secured by residential first mortgages.

If you enter data in the section, first separate the defaulted data into “Non ARM Volume” and “ARM Volume.” The total amount of “Non ARM Volume” should equal the amount reported on line 1.c.(2).a in Schedule RC-C Part 1 of the call report, less the non-accrual loans on line 1.c.2.a in column C in Schedule RC-N, less the amount on line 4 in the memorandum section of Schedule RC-C Part 1. For many community banks, line 4 is only reported semi-annually in June and December. In the other quarters, the user may either use the same source used to get the data in the required months or use an estimate. RiskGPS only requires that the total of both ARM and Non-Arm volume equals the residential first mortgage total from the call report line 1.c.(2).a in Schedule RC-C Part 1 less the non-accrual loans on line 1.c.2.a in column C in Schedule RC-N.

*Both the “Non-ARM Volume” and “ARM Volume” should be divided among the time buckets, based on the earlier of their scheduled repricing or maturity.* If your bank does not have a balance in that column, enter a zero. This information should be available from a bank’s loan application, if it includes a breakdown that separates fixed loans from ARM loans.

After completing the repricing inputs, complete the “Floor,” “Ceiling,” and “Average Contract (Indexed) Rate” inputs. RiskGPS uses this data to appropriately reprice the balances in each repricing bucket.

1. the “Floor Rate” line is the weighted average floor rate for the ARM loans in each repricing bucket. If this information is not readily available from your bank’s loan system, you may estimate the average floor level based on knowledge of your bank’s loan underwriting standards and terms. Additionally, if it is believed that the floor rate is consistent regardless of repricing term/bucket, you may input the usual floor rate. You can enter a zero if there is not a floor rate or balance in that column.
2. The next line is the “Ceiling Rate” data. This should be completed the same way as the “Floor Rate” inputs. That is, either from the bank’s loan system, or by making an estimate based on knowledge of the bank’s loan underwriting standards and terms. Again, if you think the ceiling rate is consistent regardless of repricing term/bucket, the bank’s usual ceiling rate can be entered. If there is no ceiling rate, you can enter either 99 or zero, and RiskGPS will not apply a ceiling.
3. Finally, input the “weighted average indexed rate” for each repricing bucket. The “weighted average indexed rate” is the average rate the loans in each bucket would be paying if there were no floor or ceiling.

**Contract (Indexed) Rate Example:**

If

Current prime rate = 8.5%

Loans in the repricing bucket are priced at Prime + 1% with a floor of 6%

Then the weighted average Contract rate = 9.5%.

The Indexed Rate is typically available from your loan system, but if not, the user may have to estimate the rate based on their knowledge of the bank’s loan underwriting standards and terms. Once again, a zero may be entered in any columns where an averaged indexed rate does not apply.

Entering loan details in the RiskGPS loan assumptions often results in reducing the bank’s rate sensitivity to both margin and EVE shocks. And it certainly creates a more accurate estimate of the bank’s rate risk profile.