



## Modified PC Disclosure Calculations

### Available Modified Fixed Rate PC and Modified Step Rate PC Disclosure Calculations

Following are the loan-level and pool-level disclosure calculations for single-family Modified Fixed Rate Participation Certificate (PC) securities and Modified Step Rate PC securities. Some of these calculations incorporate assumptions as to permitted mortgage characteristics and variables therein. As a result, in some cases the application of these calculations could result in minor differences between the actual characteristics of a given mortgage and the reported characteristics.

Loan-level and pool-level disclosure is available on Freddie Mac's Web site at [www.FreddieMac.com/mbs](http://www.FreddieMac.com/mbs).

**The following disclosure calculations are divided into two sections:**

**Modified Fixed Rate PC and Modified Step Rate PC Inception Disclosure Calculations:**

Outlines the disclosure calculations for Modified Fixed-Rate PCs and Modified Step Rate PCs at inception.

**Monthly Modified Fixed Rate and Step Rate PC Disclosure Calculations:**

Outlines the disclosure calculations for monthly Modified Fixed-Rate PCs and Modified Step Rate PCs.

### Modified Fixed Rate PC and Modified Step Rate PC Inception Disclosure Calculations

| Variable Name                                    | Description   | Disclosure Calculation   |
|--|---|--|
| <b>Origination Credit Score</b>                  | A number prepared by third parties, summarizing the borrower's creditworthiness, which may be indicative of the likelihood that the borrower will timely repay future obligations. Generally, this credit score was used to originate the mortgage. | <i>If credit score is &lt; 300 or &gt; 850, the credit score will be disclosed as "Unknown," which will be indicated by a blank space.</i>   |
| <b>Weighted Average Origination Credit Score</b> | The weighted average, as of the note date, of the borrowers' credit scores for the mortgages in a Modified Fixed Rate PC or a Modified Step Rate PC pool.   | <p><b>WA Origination Credit Score =</b></p> $\frac{\sum_{Loan(1)}^{Loan(N)} ((Origination\ Credit\ Score) * (Investor\ UPB))}{\sum_{Loan(1)}^{Loan(N)} Investor\ UPB}$ <p><b>OR</b></p> <p><b>WA Origination Credit Score = (Sum((Origination Credit Score) * (Investor UPB)))/(Sum (Investor UPB))</b></p> <ul style="list-style-type: none"> <li>• Round to the nearest integer.</li> <li>• If credit score is &lt; 300 or &gt; 850, the loan is excluded from the WA Origination Credit Score calculation.</li> </ul> |

## Modified Fixed Rate PC and Modified Step Rate PC Inception Disclosure Calculations

| Variable Name                                | Description   | Disclosure Calculation  |
|--|---|---|
| <b>Updated Credit Score</b>                  | A number, prepared by third parties, summarizing the borrower's creditworthiness, which may be indicative of the likelihood that the borrower will timely repay future obligations. A new credit score is collected, as of PC Issuance, consistent with the process used to underwrite the mortgage originally. | If credit score is < 300 or > 850, the Updated Credit Score will be disclosed as "Unknown," which will be indicated by a blank space.   |
| <b>Weighted Average Updated Credit Score</b> | In the case of Modified Fixed Rate PC or a Modified Step Rate PC pool, the weighted average of the borrowers' updated credit scores as of PC Issuance.  | <p><b>WA Updated Credit Score =</b></p> $\frac{\sum_{Loan(1)}^{Loan(N)} ((Updated\ Credit\ Score) * (Investor\ UPB))}{\sum_{Loan(1)}^{Loan(N)} Investor\ UPB}$ <p><b>OR</b></p> <p><b>WA Updated Credit Score =</b> (Sum ((Updated Credit Score) * (Investor UPB)))/(Sum (Investor UPB))</p> <ul style="list-style-type: none"> <li>• Round to the nearest integer.</li> <li>• If credit score is &lt; 300 or &gt; 850, the loan is excluded from the WA Updated Credit Score calculation.</li> </ul> |
| <b>Loan Age</b>                              | The number of months since the modification date of the modified mortgage.  | <p><b>Loan Age =</b> (As of Date (MM/YY) – Loan Modification Date (MM/YY))</p> <ul style="list-style-type: none"> <li>• Cap = (Product Term * 12) – Remaining Months to Maturity + 2</li> <li>• If Loan Modification Date is not valid or is null, set the loan age to Cap value.</li> <li>• If loan age &gt; Cap, set the loan age to Cap value.</li> <li>• If loan age &lt; 0, set loan age to 0.</li> </ul>  |
| <b>Weighted Average Loan Age</b>             | The weighted average of the number of months since the modification date of the mortgages in a Modified Fixed Rate PC or a Modified Step Rate PC pool.  | <p><b>WA Loan Age =</b></p> $\frac{\sum_{Loan(1)}^{Loan(N)} ((Loan\ Age) * (Investor\ UPB))}{\sum_{Loan(1)}^{Loan(N)} Investor\ UPB}$ <p><b>OR</b></p> <p><b>WA Loan Age =</b> (Sum ((Loan Age) * (Investor UPB))) / (Sum (Investor UPB))</p> <ul style="list-style-type: none"> <li>• Round to the nearest integer.</li> </ul>   |
| <b>Loan Age as of Modification Date</b>      | For loans modified for loss mitigation purposes only, the number of months from the note date of the origination mortgage to the modification date of the modified mortgage loan.   | <b>Loan Age as of Modification Date =</b> (Modification Date (MM/YY) – Loan Origination Date (MM/YY))   |
| <b>Months to Adjust</b>                      | The number of months from the Modified Step Rate PC pool issuance to the next date on which the mortgage interest rate increases.   | <b>Months to Adjust =</b> (Loan Next Adjustment Date (MM/YY) - As of Date (MM/YY))  |

## Modified Fixed Rate PC and Modified Step Rate PC Inception Disclosure Calculations

| Variable Name                            | Description  | Disclosure Calculation   |
|--|--|--|
| <b>Weighted Average Months to Adjust</b> | For Modified Step Rate PC pools only, the weighted average of the number of months from pool issuance to the next date on which the PC coupon adjusts. | <p><b>WA Months to Adjust =</b></p> $\frac{\sum_{Loan(1)}^{Loan(N)} ((Months\ to\ Adjust) * (Investor\ UPB))}{\sum_{Loan(1)}^{Loan(N)} Investor\ UPB}$ <p><b>OR</b></p> <p><b>WA Months to Adjust =</b> (Sum ((Loan Months to Adjust ) * (Investor UPB))) / (Sum (Investor UPB))</p> <ul style="list-style-type: none"> <li>• <i>Truncate at the one-hundredth decimal place.</i></li> </ul> |

## Modified Fixed Rate PC and Modified Step Rate PC Inception Disclosure Calculations

| Variable Name                                    | Description   | Disclosure Calculation   |
|--|---|--|
| <b>Origination Combined Loan-to-Value (CLTV)</b> | <p>The ratio was obtained by dividing the mortgage loan amount on the note date plus any secondary mortgage loan amount disclosed by the Seller by the lesser of the mortgaged property's appraised value on the note date or its purchase price.</p> <p>In the case of a refinance mortgage loan, the ratio was obtained by dividing the mortgage loan amount on the note date plus any secondary mortgage loan amount disclosed by the Seller by the mortgaged property's appraised value on the note date.</p> <p>If the secondary financing amount disclosed by the Seller included a home equity line of credit, then the Origination Combined LTV calculation reflects the disbursed amount at closing of the first lien mortgage loan, not the maximum loan amount available under the home equity line of credit.</p> <p>In the case of a seasoned mortgage loan, if the Seller could not warrant that the value of the mortgaged property has not declined since the note date, Freddie Mac required that the Seller provide a new appraisal value, which is used in the Origination Combined LTV calculation.</p> <p>This disclosure is subject to the widely varying standards originators use to verify Borrowers' secondary mortgage loan amounts and will not be updated.</p> | <p><i>If any one of the following criteria is met, the Origination CLTV ratio will be disclosed as "Unknown," which will be indicated by a blank space.</i></p> <ul style="list-style-type: none"> <li>- <i>Origination CLTV ratio is &lt;6% or &gt;135%.</i></li> <li>- <i>Origination CLTV ratio is &lt; the Origination LTV ratio.</i></li> <li>- <i>Origination LTV ratio is "Unknown".</i></li> </ul> |

# Modified Fixed Rate PC and Modified Step Rate PC Inception Disclosure Calculations

| Variable Name   | Description   | Disclosure Calculation   |
|---|---|--|
| <b>Weighted Average Origination Combined Loan-to-Value (CLTV)</b> | <p>The weighted average of the ratios between each mortgage's UPB as of the note date plus any secondary mortgage loan amount disclosed by the Seller and either (1) in the case of a purchase, the lesser of the mortgaged property's appraised value on the note date or its purchase price or (2) in the case of a refinance mortgage loan, the mortgaged property's appraised value on the note date.</p> <p>If the secondary financing amount disclosed by the Seller includes a home equity line of credit, then the mortgage Origination Combined LTV ratio used in the PC WA Origination Combined LTV calculation reflects the disbursed amount at closing of the first lien mortgage loan, not the maximum loan amount available under the home equity line of credit.</p> <p>In the case of a seasoned mortgage loan, if the Seller cannot warrant that the value of the mortgaged property has not declined since the note date, Freddie Mac requires that the Seller must provide a new appraisal value, which is used in the mortgage Origination Combined LTV calculation and subsequently in the PC WA Origination Combined LTV calculation.</p> <p>This disclosure is subject to the widely varying standards originators use to verify Borrowers' secondary mortgage loan amounts.</p> | <p><b>WA Origination CLTV =</b></p> $\frac{\sum_{Loan(1)}^{Loan(N)} ((Origination\ CLTV) * (Investor\ UPB))}{\sum_{Loan(1)}^{Loan(N)} Investor\ UPB}$ <p><b>OR</b></p> <p><b>WA Origination CLTV = (Sum ((Origination CLTV Ratio) * (Investor UPB))) / (Sum (Investor UPB))</b></p> <ul style="list-style-type: none"> <li>• Round to the nearest integer.</li> <li>• If any one of the following criteria is met, the Origination CLTV Ratio is excluded from the WA Origination CLTV calculation.             <ul style="list-style-type: none"> <li>- Origination CLTV ratio is &lt;6% or &gt;135%</li> <li>- Origination CLTV ratio is &lt; the Origination LTV ratio</li> <li>- Origination LTV ratio is "Unknown"</li> </ul> </li> </ul> |

## Modified Fixed Rate PC and Modified Step Rate PC Inception Disclosure Calculations

| Variable Name                                      | Description  | Disclosure Calculation   |
|--|--|--|
| <b>Debt-to-Income (DTI) Ratio</b>                  | <p>Disclosure of the debt to income ratio is based on (1) the sum of the Borrower's monthly debt payments, including monthly housing expenses that incorporate the mortgage payment the Borrower is making as a result of the loan modification, divided by (2) the total monthly income of the Borrower at the time of the loan modification.</p> <p>The debt to income ratio will not be updated. This disclosure is subject to the widely varying standards originators use to verify Borrowers' assets and liabilities.</p>  | <p>If the loan's DTI ratio falls outside the range of &gt; 0% and &lt;= 65%, the DTI ratio will be disclosed as "Unknown," which will be indicated by a blank space.</p>   |
| <b>Weighted Average Debt-to-Income (DTI) Ratio</b> | <p>The weighted average of the ratios of each mortgage's (1) sum of the Borrower's monthly debt payments, including monthly housing expenses that incorporate the mortgage payment the Borrower is making as a result of the loan modification, divided by (2) the total monthly income of the Borrower at the time of the loan modification.</p> <p>This disclosure is subject to the widely varying standards originators use to verify Borrowers' assets and liabilities.</p>   | <p><b>WA DTI Ratio =</b></p> $\frac{\sum_{Loan(1)}^{Loan(N)} ((DTI\ Ratio) * (Investor\ UPB))}{\sum_{Loan(1)}^{Loan(N)} Investor\ UPB}$ <p><b>OR</b></p> <p><b>WA DTI Ratio = (Sum ((DTI Ratio) * (Investor UPB)))/(Sum (Investor UPB))</b></p> <ul style="list-style-type: none"> <li>• Round to the nearest integer</li> <li>• If the loan's DTI ratio falls outside the range of &gt; 0% and &lt;= 65%, the DTI ratio will be excluded from the WA DTI calculation.</li> </ul>  |
| <b>Origination Debt-to-Income (DTI) Ratio</b>      | <p>Disclosure of the debt to income ratio is based on (1) the sum of the Borrower's monthly debt payments, including monthly housing expenses that incorporate the mortgage payment the Borrower is making at the time of the delivery of the mortgage loan to Freddie Mac, divided by (2) the total monthly income used to underwrite the Borrower as of the date of the origination of the mortgage loan.</p> <p>The debt to income ratio will not be updated. This disclosure is subject to the widely varying standards originators use to verify Borrowers' assets and liabilities.</p> | <p>If any one of the following criteria is met, the Origination DTI ratio will be disclosed as "Unknown," which will be indicated by a blank space.</p> <ul style="list-style-type: none"> <li>- The loan's Origination DTI ratio falls outside the range of &gt; 0% and &lt;= 65%.</li> <li>- The loan's reported Monthly Income is &lt;= \$100.</li> <li>- The loan's reported Monthly Income or reported Monthly Debt is &gt;= \$99,999.</li> <li>- The loan's reported Monthly Debt is &lt; the loan's Monthly P&amp;I Payment (at the time of delivery to Freddie Mac) and the loan is not an Investment Property.</li> </ul> |

## Modified Fixed Rate PC and Modified Step Rate PC Inception Disclosure Calculations

| Variable Name  | Description  | Disclosure Calculation  |
|--|--|---|
| <b>Weighted Average Origination Debt-to-Income (DTI)</b> | <p>The weighted average of the ratios of each mortgage's (1) sum of the Borrower's monthly debt payments, including monthly housing expenses that incorporate the mortgage payment the Borrower is making as a result of the loan modification and (2) the total monthly income used to underwrite the Borrower at the time of the loan modification.</p> <p>This disclosure is subject to the widely varying standards originators use to verify Borrowers' assets and liabilities.</p>   | <p><b>WA Origination DTI Ratio =</b></p> $\frac{\sum_{Loan(1)}^{Loan(N)} ((Origination DTI Ratio) * (Investor UPB))}{\sum_{Loan(1)}^{Loan(N)} Investor UPB}$ <p><b>OR</b></p> <p><b>WA Origination DTI Ratio = (Sum ((Origination DTI Ratio) * (Investor UPB)))/(Sum (Investor UPB))</b></p> <ul style="list-style-type: none"> <li>• Round to the nearest integer</li> <li>• If any one of the following criteria is met, the loan is excluded from the WA Origination DTI calculation. <ul style="list-style-type: none"> <li>- The loan's Origination DTI ratio falls outside the range of &gt; 0% and &lt;= 65%.</li> <li>- The loan's Monthly Income is &lt;= \$100.</li> <li>- The loan's reported Monthly Income or reported Monthly Debt is &gt;= \$99,999.</li> <li>- The loan's Monthly Debt is &lt; the loan's Monthly P&amp;I Payment (at the time of delivery to Freddie Mac) and the loan is not an Investment Property.</li> </ul> </li> </ul> |
| <b>Estimated Loan-to-Value (LTV)</b>                     | <p>In the case of a modified mortgage, the ratio obtained by dividing the outstanding balance of the modified mortgage loan by the value of the property obtained through our proprietary automated valuation model, at the time of PC issuance.</p> <p>In the case of modified mortgages with deferred amounts, the outstanding balance of the modified mortgage loan at the time of PC issuance reflects both interest bearing and non-interest bearing UPB amounts.</p> <p>Although we believe that our automated valuation model yields a reasonable approximation of the property's current value, using a value obtained from: (i) a different automated valuation model, (ii) an appraisal based on a physical inspection of the property or (iii) an arm's length sale of the property could result in a different value for the property. Estimated LTV ratios that are unavailable, below 6% or greater than 300% will be disclosed as "Unknown," which is indicated by a blank space.</p> | <p><i>Estimated LTV ratios that are unavailable, below 6% or greater than 300% will be disclosed as "Unknown," which is indicated by a blank space.</i></p>   |

## Modified Fixed Rate PC and Modified Step Rate PC Inception Disclosure Calculations

| Variable Name   | Description   | Disclosure Calculation   |
|---|---|--|
| <b>Weighted Average Estimated Loan-to-Value (LTV)</b>   | <p>In the case of Modified Fixed Rate PCs and Modified Step Rate PCs, the weighted average of the ratios between each mortgage's outstanding UPB and the value of the property obtained through our proprietary automated valuation model, as of the PC issue date. In the case of modified mortgages with deferred amounts, the outstanding balance of the modified mortgage loan at the time of PC issuance reflects both interest bearing and non-interest bearing UPB amounts.</p>  | <p><b>WA Estimated LTV =</b></p> $\frac{\sum_{Loan(1)}^{Loan(N)} ((Estimated\ LTV\ Ratio) * (Investor\ UPB))}{\sum_{Loan(1)}^{Loan(N)} Investor\ UPB}$ <p><b>OR</b></p> <p><b>WA Estimated LTV = (Sum ((Loan Estimated LTV Ratio) * (Investor UPB))) / (Sum (Investor UPB))</b></p> <ul style="list-style-type: none"> <li>• Round to the nearest integer.</li> <li>• If Estimated LTV ratio is &lt;6% or &gt;300%, the loan is excluded from the WA Estimated LTV calculation.</li> </ul> |
| <b>Origination Loan-to-Value (LTV)</b>                  | <p>In the case of purchase mortgages, the ratio was obtained by dividing the mortgage loan amount on the note date by the lesser of the mortgaged property's appraised value on the note date or its purchase price.</p> <p>In the case of a refinance mortgage loan, the ratio was obtained by dividing the mortgage loan amount on the note date and the mortgaged property's appraised value on the note date.</p> <p>In the case of a seasoned mortgage loan, if the Seller could not warrant that the value of the mortgaged property has not declined since the note date, Freddie Mac required that the Seller provide a new appraisal value, which was used in the LTV calculation.</p> | <p><i>If the LTV ratio is &lt;6% or &gt;105%, Origination LTV ratio will be disclosed as "Unknown," which will be indicated by a blank space.</i></p>  |
| <b>Weighted Average Origination Loan-to-Value (LTV)</b> | <p>The weighted average of the ratios between each mortgage's UPB as of the note date and either (1) in the case of a purchase mortgage loan, the lesser of the mortgaged property's appraised value on the note date or its purchase price or (2) in the case of a refinance mortgage loan, the mortgaged property's appraised value on the note date.</p> <p>In the case of a seasoned mortgage loan, if the Seller could not warrant that the value of the mortgaged property has not declined since the note date, Freddie Mac required that the Seller must provide a new appraisal value, which is used in the Origination LTV calculation.</p>   | <p><b>WA Origination LTV =</b></p> $\frac{\sum_{Loan(1)}^{Loan(N)} ((Origination\ LTV\ Ratio) * (Investor\ UPB))}{\sum_{Loan(1)}^{Loan(N)} Investor\ UPB}$ <p><b>OR</b></p> <p><b>WA Origination LTV = (Sum ((Loan LTV Ratio) * (Investor UPB))) / (Sum (Investor UPB))</b></p> <ul style="list-style-type: none"> <li>• Round to the nearest integer.</li> <li>• If the LTV ratio is &lt;6% or &gt;105%, the loan is excluded from the WA Origination LTV calculation.</li> </ul>         |

## Modified Fixed Rate PC and Modified Step Rate PC Inception Disclosure Calculations

| Variable Name                           | Description  | Disclosure Calculation   |
|---|--|--|
| <b>Mortgage Loan Amount</b>             | The UPB of the modified mortgage as of the note modification. For modified mortgages with deferred amounts, the loan amount includes the interest bearing and non-interest bearing UPBs.   |  |
| <b>Average Loan Size</b>                | For a Modified Fixed Rate PC or a Modified Step Rate PC, the simple average of the mortgage loan amounts of the mortgages, as of the note modification. For modified mortgage with deferred amounts, the mortgage loan amounts includes interest bearing and non-interest bearing UPB amounts.     | <p><b>Average Loan Size =</b></p> $\frac{\sum_{Loan(1)}^{Loan(N)} (Mortgage\ Loan\ Amount\ rounded\ to\ nearest\ 1000)}{Total\ Number\ of\ Loans\ in\ the\ Pool}$ <p><b>OR</b></p> <p><b>Average Loan Size=</b> (Sum (Mortgage Loan Amount rounded to nearest 1000)) / (Count (Loans in Pool))</p> <ul style="list-style-type: none"> <li>• Round to the nearest dollar.</li> <li>• If the Mortgage Loan Amount is invalid, the loan is excluded from the Average Loan Size calculation.</li> </ul>  |
| <b>Weighted Average Loan Size</b>       | For a Modified Fixed Rate PC or a Modified Step Rate PC pool, the weighted average the mortgage loan amounts of the mortgages, as of the note modification. For modified mortgage with deferred amounts, the mortgage loan amounts includes interest bearing and non-interest bearing UPB amounts. | <p><b>WA Loan Size=</b></p> $\frac{\sum_{Loan(1)}^{Loan(N)} ((Mortgage\ Loan\ Amount\ rounded\ to\ nearest\ 1000) * (Investor\ UPB))}{\sum_{Loan(1)}^{Loan(N)} Investor\ UPB}$ <p><b>OR</b></p> <p><b>WA Loan Size =</b> (Sum ((Mortgage Loan Amount rounded to the nearest 1000) * (Investor UPB)))/(Sum (Investor UPB))</p> <ul style="list-style-type: none"> <li>• Round to the nearest integer.</li> <li>• If the Mortgage Loan Amount is invalid, the loan is excluded from the WA Loan Size calculation.</li> </ul>   |
| <b>Origination Mortgage Loan Amount</b> | The UPB of the origination mortgage on the note date.  |  |
| <b>Origination Average Loan Size</b>    | The simple average of the mortgage loan amounts, as as of the note date, of the mortgages in a Modified Fixed Rate PC or a Modified Step Rate PC pool.   | <p><b>Origination Average Loan Size =</b></p> $\frac{\sum_{Loan(1)}^{Loan(N)} (Origination\ Mortgage\ Loan\ Amount\ rounded\ to\ nearest\ 1000)}{Total\ Number\ of\ Loans\ in\ the\ Pool}$ <p><b>OR</b></p> <p><b>Origination Average Loan Size=</b> (Sum (Origination Mortgage Loan Amount rounded to nearest 1000)) / (Count (Loans in Pool))</p> <ul style="list-style-type: none"> <li>• Round to the nearest dollar.</li> <li>• If the Origination Mortgage Loan Amount is invalid, the loan is excluded from the Origination Average Loan Size calculation.</li> </ul> |

## Modified Fixed Rate PC and Modified Step Rate PC Inception Disclosure Calculations

| Variable Name                                 | Description   | Disclosure Calculation  |
|---|---|---|
| <b>Weighted Average Origination Loan Size</b> | The weighted average of the mortgage loan amounts, as of the note date, of the mortgages in a Modified Fixed Rate PC or a Modified Step Rate PC pool.   | <p><b>WA Origination Loan Size =</b></p> $\frac{\sum_{Loan(1)}^{Loan(N)} ((Origination Mortgage Loan Amount rounded to nearest 1000) * (Investor UPB))}{\sum_{Loan(1)}^{Loan(N)} Investor UPB}$ <p><b>OR</b></p> <p><b>WA Origination Loan Size =</b> (Sum ((Origination Mortgage Loan Amount rounded to the nearest 1000) * (Investor UPB))) / (Sum (Investor UPB))</p> <ul style="list-style-type: none"> <li>• Round to the nearest integer.</li> <li>• If the Origination Mortgage Loan Amount is invalid, the loan is excluded from the WA Origination Loan Size calculation.</li> </ul> |
| <b>Loan Term</b>                              | The number of scheduled monthly payments of the modified mortgage, between the first payment date under the terms of the modified mortgage and the maturity date of the modified mortgage.                              | <p><b>Loan Term =</b><br/>(Modified Mortgage Maturity Date (MM/YY) – Modified Mortgage First Payment Date (MM/YY) + 1)</p> <ul style="list-style-type: none"> <li>• Cap = Product Term * 12</li> <li>• If calculated Loan Term &lt; 1 or &gt; Cap, set Loan Term to Cap value</li> <li>• If Modified Mortgage First Payment Date and Modified Mortgage Maturity Date are not valid, set Loan Term to Cap value.</li> </ul>  |
| <b>Weighted Average Loan Term</b>             | The weighted average of the number of scheduled monthly payments of the modified mortgages in a Modified Fixed Rate PC or a Modified Step Rate PC pool.   | <p><b>WA Loan Term =</b></p> $\frac{\sum_{Loan(1)}^{Loan(N)} ((Loan Term) * (Investor UPB))}{\sum_{Loan(1)}^{Loan(N)} Investor UPB}$ <p><b>OR</b></p> <p><b>WA Loan Term =</b> (Sum ((Loan Term) * (Investor UPB))) / (Sum (Investor UPB))</p> <ul style="list-style-type: none"> <li>• Round to the nearest integer.</li> </ul>  |
| <b>Origination Loan Term</b>                  | For fixed-rate, adjustable-rate, and Initial Interest mortgages, the number of scheduled monthly payments of the mortgage, between the first payment date and the maturity date of the mortgage at time of origination. | <p><b>Loan Term=</b> (Origination Maturity Date (MM/YY) – Origination First Payment Date (MM/YY) + 1)</p> <ul style="list-style-type: none"> <li>• Cap = Modified PC Product Term * 12</li> <li>• If calculated Origination Loan Term &lt; 1 set Origination Loan Term to Cap value.</li> <li>• If Origination First Payment Date and Origination Maturity Date are not valid, set Origination Loan Term to Cap value.</li> </ul>   |
| <b>Weighted Average Origination Loan Term</b> | The weighted average of the number of scheduled monthly payments of the mortgages in a Modified Fixed Rate PC or a Modified Step Rate PC pool.  | <p><b>WA Origination Loan Term =</b></p> $\frac{\sum_{Loan(1)}^{Loan(N)} ((Origination Loan Term) * (Investor UPB))}{\sum_{Loan(1)}^{Loan(N)} Investor UPB}$ <p><b>OR</b></p> <p><b>WA Origination Loan Term =</b> (Sum ((Origination Loan Term) * (Investor UPB))) / (Sum (Investor UPB))</p> <ul style="list-style-type: none"> <li>• Round to the nearest integer.</li> </ul>  |

## Modified Fixed Rate PC and Modified Step Rate PC Inception Disclosure Calculations

| Variable Name  | Description   | Disclosure Calculation   |
|--|---|--|
| <b>Investor UPB</b>  | The interest bearing UPB of the modified mortgage contributing to the issuance UPB of a Modified Fixed Rate PC or a Modified Step Rate PC pool.   |  |
| <b>Issuance Pool UPB</b>                                   | The aggregate UPB of the modified mortgages in a Modified Fixed Rate PC or a Modified Step Rate PC pool, as of PC issuance.   | <p><b>Issuance Pool UPB =</b></p> $\sum_{Loan(1)}^{Loan(N)} Investor\ UPB$ <p><b>OR</b></p> <p><b>Issuance Pool UPB = (Sum (Investor UPB))</b></p>   |
| <b>Interest Bearing Mortgage Loan Amount</b>               | The Interest Bearing UPB of the modified mortgage as of the note modification.  |  |
| <b>Interest Bearing UPB</b>                                | The aggregate Interest Bearing UPB of the modified mortgages in a Modified Fixed Rate PC or a Modified Step Rate PC pool, as of PC issuance.  | <p><b>Interest Bearing UPB =</b></p> $\sum_{Loan(1)}^{Loan(N)} Interest\ Bearing\ UPB$ <p><b>OR</b></p> <p><b>Interest Bearing UPB = (Sum (Interest Bearing UPB))</b></p>  |
| <b>Remaining Months to Maturity (RMM)</b>                  | The number of scheduled monthly payments that, after giving effect to partial unscheduled principal payments, remain on the modified mortgage.  | <p><b>RMM =</b></p> $\frac{-\log\left(1 - \left(\frac{Investor\ UPB * \left(\frac{Note\ Rate\ as\ of\ PC\ Issuance^h}{1200}\right)}{Monthly\ P\&I\ Payment^i}\right)\right)}{\log\left(1 + \left(\frac{Note\ Rate\ as\ of\ PC\ Issuance^h}{1200}\right)\right)}$ <p><b>OR</b></p> <p><b>RMM= - (FUNCTION LOG10 (1 – (Investor UPB*(Note Rate as of PC Issuance/1200) / Monthly P&amp;I Payment)))/ FUNCTION LOG 10 (1 + (Note Rate as of PC Issuance / 1200))</b></p> <ul style="list-style-type: none"> <li>• Round to the nearest integer.</li> <li>• Default RMM = Pool Maturity Date (MM/YY) – As of Date (MM/YY)</li> <li>• If Default RMM &gt; Product Term * 12, use Product Term * 12 as Default RMM.</li> <li>• RMM Cap = Default RMM + 2 months.</li> <li>• If RMM Cap &gt; Product Term * 12, use Product Term * 12 as RMM Cap.</li> <li>• If RMM &gt; RMM Cap, set RMM to Cap value.</li> <li>• If Investor UPB, Note Rate as of PC Issuance, or Monthly P&amp;I Payment are invalid, use Default RMM.</li> </ul> <p><sup>h</sup>For modified step rate mortgages, each Note Rate and Monthly P&amp;I payment, per the step rate schedule, is used in the RMM calculation.</p> |
| <b>Weighted Average Remaining Months to Maturity (RMM)</b> | The weighted average of the number of scheduled monthly payments that, after giving effect to full and partial unscheduled principal payments, remain on the mortgages in a Modified Fixed Rate PC or a Modified Step Rate PC pool. | <p><b>WA Remaining Months to Maturity =</b></p> $\frac{\sum_{Loan(1)}^{Loan(N)} ((Loan\ RMM) * (Investor\ UPB))}{\sum_{Loan(1)}^{Loan(N)} Investor\ UPB}$ <p>• Round to the nearest integer.</p>   |

## Breakout Variables

|   |                       |                         |                          |
|---|-----------------------|-------------------------|--------------------------|
| Borrower Payment History Prior to PC Issuance | First-time Homebuyer  | Mortgage Insurance      | Seller                   |
| Debt to Income                                | Loan Origination Year | Number of Borrowers     | Servicer                 |
| Deferred UPB                                  | Loan Purpose          | Number of Modifications | Total Capitalized Amount |
| Estimated LTV                                 | Modification Program  | Number of Units         | Updated Credit Score     |
| First Payment Distribution                    | Modification Type     | Property State          |                          |

## Modified Fixed Rate PC and Modified Step Rate PC Inception Disclosure Calculations

|  |  |
|--|--|
| <b>For each Breakout Variable: # of Loans</b>        | Number of Breakout Variable Loans or Count (Breakout Variable Loans)   |
| <b>For each Breakout Variable: % of Loan</b>         | $\frac{\text{Number of Breakout Variable Loans}}{\text{Total Number of Loans in Pool}} \text{ OR } (\text{Count (Breakout Variable Loans)}) / (\text{Count Loans in Pool})$ <ul style="list-style-type: none"> <li>• Round to the one-hundredth decimal place.</li> <li>• Note: The sum of the % of loans for the mortgages within a PC may not add up to 100% due to rounding.</li> </ul>   |
| <b>For each Breakout Variable: % of UPB</b>          | $\left( \frac{\sum_{Loan(1)}^{Loan(N)} \text{Breakout Variable Investor UPB}}{\sum_{Loan(1)}^{Loan(N)} \text{Investor UPB}} \right) * 100$ <p><b>OR</b></p> $(\text{Sum (Breakout Variable Investor UPB)}) / (\text{Sum (Investor UPB)}) * 100$ <ul style="list-style-type: none"> <li>• Round to the one-hundredth decimal place.</li> <li>• Note: The sum of the % of loans for the mortgages within a PC may not add up to 100% due to rounding.</li> </ul> |
| <b>Borrower Payment History Prior to PC Issuance</b> | <ul style="list-style-type: none"> <li>• For Modified Fixed Rate PC and Modified Step Rate PC pools, mortgages will be included in the table following Freddie Mac's approval of the permanent loan modification.</li> <li>• Borrower Payment History may not add up to 100% of the Issuance Pool UPB in a given month as a result of the varying Loan Ages of the underlying mortgages.</li> </ul>  |
| <b>DTI Unknown</b>                                   | DTI considered "Unknown" if DTI falls outside the range of > 0% and <= 65%   |
| <b>Estimated LTV Unknown</b>                         | Estimated LTV considered "Unknown" if: <ul style="list-style-type: none"> <li>• Estimated LTV is unavailable or</li> <li>• Estimated LTV &lt; 6% or &gt; 300%</li> </ul>   |
| <b>First Payment Distribution</b>                    | Not applicable for loans in Modified Fixed Rate PC and Modified Step Rate PC pools.  |
| <b>Mortgage Insurance (MI) Unknown</b>               | Loan MI considered "Unknown" if MI percentage is > 55%   |
| <b>Updated Credit Score Unknown</b>                  | Updated Credit Score considered "Unknown" if: <ul style="list-style-type: none"> <li>• Updated Credit Score is unavailable or</li> <li>• Updated Credit Score &lt; 300 or &gt; 850</li> </ul>  |

## Monthly Modified Fixed Rate PC and Modified Step Rate PC Disclosure Calculations

| Variable Name  | Description   | Disclosure Calculation  |
|--|---|---|
| <b>Origination Credit Score</b>                          | A number prepared by third parties, summarizing the borrower's creditworthiness, which may be indicative of the likelihood that the borrower will timely repay future obligations. Generally, this credit score was used to originate the mortgage.   | If credit score is < 300 or > 850, the credit score will be disclosed as "Unknown," which will be indicated by a blank space.   |
| <b>Current Weighted Average Origination Credit Score</b> | The weighted average, as of the note date, of the borrowers' credit scores for the mortgages in a Modified Fixed Rate PC or a Modified Step Rate PC pool.   | <p><b>Current WA Origination Credit Score =</b></p> $\frac{\sum_{Loan(1)}^{Loan(N)} ((Origination\ Credit\ Score) * (Current\ Investor\ UPB))}{\sum_{Loan(1)}^{Loan(N)} Current\ Investor\ UPB}$ <p><b>OR</b></p> <p><b>Current WA Origination Credit Score =</b> (Sum ((Origination Credit Score) * (Current Investor UPB)))/(Sum (Current Investor UPB))</p> <ul style="list-style-type: none"> <li>• Round to the nearest integer.</li> <li>• If credit score is &lt; 300 or &gt; 850, the loan is excluded from the Current WA Updated Credit Score calculation.</li> </ul> |
| <b>Updated Credit Score</b>                              | A number, prepared by third parties, summarizing the borrower's creditworthiness, which may be indicative of the likelihood that the borrower will timely repay future obligations. A new credit score is collected, as of PC Issuance, consistent with the process used to underwrite the mortgage originally. | If credit score is < 300 or > 850, the credit score will be disclosed as "Unknown," which will be indicated by a blank space.   |
| <b>Current Weighted Average Updated Credit Score</b>     | In the case of Modified Fixed Rate PC and Modified Step Rate PC pools, the weighted average of the borrowers' updated credit scores as of PC issuance.  | <p><b>Current WA Updated Credit Score =</b></p> $\frac{\sum_{Loan(1)}^{Loan(N)} ((Updated\ Credit\ Score) * (Current\ Investor\ UPB))}{\sum_{Loan(1)}^{Loan(N)} Current\ Investor\ UPB}$ <p><b>OR</b></p> <p><b>Current WA Updated Credit Score =</b> (Sum ((Updated Credit Score) * (Current Investor UPB)))/(Sum (Current Investor UPB))</p> <ul style="list-style-type: none"> <li>• Round to the nearest integer.</li> <li>• If credit score is &lt; 300 or &gt; 850, the loan is excluded from the Current WA Updated Credit Score calculation.</li> </ul>                 |

# Monthly Modified Fixed Rate PC and Modified Step Rate PC Disclosure Calculations

| Variable Name                            | Description  | Disclosure Calculation  |               |        |                             |  |
|--|--|---|---------------|--------|-----------------------------|--|
| <b>Current Investor UPB</b>              | The interest bearing UPB of the modified mortgage contributing to the current UPB of a Modified Fixed Rate PC or a Modified Step Rate PC pool.   | <p>The Current Investor UPB is derived from the mortgage balance as reported by the servicer. The Current Investor UPB reflects any scheduled and unscheduled principal reductions applied to the mortgage.</p> <p><i>Note: A loan's Current Investor UPB may remain constant from one month to the next for several reasons. Possible reasons are outlined in the chart below:</i></p> <table border="1"> <thead> <tr> <th>Mortgage Type</th> <th>Reason</th> </tr> </thead> <tbody> <tr> <td><b>Fixed-Rate Mortgages</b></td> <td> <p><b>Balance Corrections:</b></p> <p>Mortgages can experience upward balance corrections. When these corrections occur, the Current Investor UPB contributing to the Current Pool UPB will remain constant until the collected borrower's mortgage balance is lower than the Current Investor UPB.</p> <p><b>Paid-in-advance:</b></p> <p>Mortgages that are paid-in-advance may have a constant Current Investor UPB until the current date is later than the due date of the mortgage's last paid installment.</p> </td> </tr> </tbody> </table> | Mortgage Type | Reason | <b>Fixed-Rate Mortgages</b> | <p><b>Balance Corrections:</b></p> <p>Mortgages can experience upward balance corrections. When these corrections occur, the Current Investor UPB contributing to the Current Pool UPB will remain constant until the collected borrower's mortgage balance is lower than the Current Investor UPB.</p> <p><b>Paid-in-advance:</b></p> <p>Mortgages that are paid-in-advance may have a constant Current Investor UPB until the current date is later than the due date of the mortgage's last paid installment.</p> |
| Mortgage Type                            | Reason   |   |               |        |                             |  |
| <b>Fixed-Rate Mortgages</b>              | <p><b>Balance Corrections:</b></p> <p>Mortgages can experience upward balance corrections. When these corrections occur, the Current Investor UPB contributing to the Current Pool UPB will remain constant until the collected borrower's mortgage balance is lower than the Current Investor UPB.</p> <p><b>Paid-in-advance:</b></p> <p>Mortgages that are paid-in-advance may have a constant Current Investor UPB until the current date is later than the due date of the mortgage's last paid installment.</p> |   |               |        |                             |  |
| <b>Current Pool UPB</b>                  | The aggregate UPB of the mortgages in a Modified Fixed Rate PC or a Modified Step Rate PC pool.  |   |               |        |                             |  |
| <b>Current Loan Age</b>                  | The number of months since the modification date of the modified mortgage.   | <p><b>Current Loan Age</b> = (Current Factor Date (MM/YY) – Loan Modification Date (MM/YY))</p> <ul style="list-style-type: none"> <li>• <math>Cap = (Product\ Term * 12) - Remaining\ Months\ to\ Maturity + 2</math>.</li> <li>• If Loan Origination Date is not valid or is null, set the loan age to Cap value.</li> <li>• If loan age &gt; Cap, set the loan age to Cap value.</li> <li>• If loan age &lt; 0, set loan age to 0.</li> </ul>  |               |        |                             |  |
| <b>Current Weighted Average Loan Age</b> | The weighted average of the number of months since the modification date of the mortgages in a Modified Fixed Rate PC or a Modified Step Rate PC pool.   | <p><b>Current WA Loan Age</b> =</p> $\frac{\sum_{Loan(1)}^{Loan(N)} ((Loan\ age) * (Current\ Investor\ UPB))}{\sum_{Loan(1)}^{Loan(N)} Current\ Investor\ UPB}$ <p><b>OR</b></p> <p><b>Current WA Loan Age</b> = (Sum ((Loan Age) * (Current Investor UPB))) / (Sum (Current Investor UPB))</p> <ul style="list-style-type: none"> <li>• Round to the nearest integer.</li> </ul>   |               |        |                             |  |
| <b>Current Months to Adjust</b>          | The number of months from the Modified Step Rate PC pool issuance to the next date on which the mortgage interest rate increases.  | <p><b>Current Months to Adjust</b> = (Loan Next Adjustment Date (MM/YY) – Current Factor Date (MM/YY))</p>  |               |        |                             |  |

## Monthly Modified Fixed Rate PC and Modified Step Rate PC Disclosure Calculations

| Variable Name                                    | Description   | Disclosure Calculation  |
|--|---|---|
| <b>Current Weighted Average Months to Adjust</b> | <p>For Modified Step Rate PC pools only, the weighted average of the number of months from the first day of the current month until the next date on which the PC coupon adjusts.</p>   | <p><b>Current WA Months to Adjust =</b></p> $\frac{\sum_{Loan(1)}^{Loan(N)} ((Months\ to\ Adjust) * (Current\ Investor\ UPB))}{\sum_{Loan(1)}^{Loan(N)} Current\ Investor\ UPB}$ <p><b>OR</b></p> <p><b>Current WA Months to Adjust =</b> (Sum ((Loan Months to Adjust) * (Current Investor UPB))) / (Sum (Current Investor UPB))</p> <ul style="list-style-type: none"> <li>• <i>Truncate at the one-hundredth decimal place.</i></li> </ul> |
| <b>Origination Combined Loan-to-Value (CLTV)</b> | <p>The ratio was obtained by dividing the mortgage loan amount on the note date plus any secondary mortgage loan amount disclosed by the Seller by the lesser of the mortgaged property's appraised value on the note date or its purchase price.</p> <p>In the case of a refinance mortgage loan, the ratio was obtained by dividing the mortgage loan amount on the note date plus any secondary mortgage loan amount disclosed by the Seller by the mortgaged property's appraised value on the note date.</p> <p>If the secondary financing amount disclosed by the Seller included a home equity line of credit, then the Combined LTV calculation reflects the disbursed amount at closing of the first lien mortgage loan, not the maximum loan amount available under the home equity line of credit.</p> <p>In the case of a seasoned mortgage loan, if the Seller could not warrant that the value of the mortgaged property has not declined since the note date, Freddie Mac required that the Seller provide a new appraisal value, which is used in the Origination Combined LTV calculation.</p> <p>This disclosure is subject to the widely varying standards originators use to verify Borrowers' secondary mortgage loan amounts and will not be updated.</p> | <p><i>If any one of the following criteria is met, the Origination CLTV ratio will be disclosed as "Unknown," which will be indicated by a blank space.</i></p> <ul style="list-style-type: none"> <li>- <i>Origination CLTV ratio is &lt;6% or &gt;135%.</i></li> <li>- <i>Origination CLTV ratio is &lt; the Origination LTV ratio.</i></li> <li>- <i>Origination LTV ratio is "Unknown".</i></li> </ul>                                    |

## Monthly Modified Fixed Rate PC and Modified Step Rate PC Disclosure Calculations

| Variable Name   | Description   | Disclosure Calculation   |
|---|---|--|
| <b>Current Weighted Average Origination Combined Loan-to-Value (CLTV)</b> | <p>The weighted average of the ratios between each mortgage's UPB as of the note date plus any secondary mortgage loan amount disclosed by the Seller and either (1) in the case of a purchase, the lesser of the mortgaged property's appraised value on the note date or its purchase price or (2) in the case of a refinance mortgage loan, the mortgaged property's appraised value on the note date.</p> <p>If the secondary financing amount disclosed by the Seller includes a home equity line of credit, then the mortgage Combined LTV ratio used in the PC WA Combined LTV calculation reflects the disbursed amount at closing of the first lien mortgage loan, not the maximum loan amount available under the home equity line of credit.</p> <p>In the case of a seasoned mortgage loan, if the Seller cannot warrant that the value of the mortgaged property has not declined since the note date, Freddie Mac requires that the Seller must provide a new appraisal value, which is used in the mortgage Combined LTV calculation and subsequently in the PC WA Combined LTV calculation.</p> <p>This disclosure is subject to the widely varying standards originators use to verify Borrowers' secondary mortgage loan amounts.</p> | <p><b>Current WA Origination CLTV =</b></p> $\frac{\sum_{Loan(1)}^{Loan(N)} ((Origination\ CLTV) * (Current\ Investor\ UPB))}{\sum_{Loan(1)}^{Loan(N)} Current\ Investor\ UPB}$ <p><b>OR</b></p> <p><b>Current WA Origination CLTV =</b> (Sum ((Origination CLTV Ratio) * (Current Investor UPB))) / (Sum (Current Investor UPB))</p> <ul style="list-style-type: none"> <li>• Round to the nearest integer.</li> <li>• If any one of the following criteria is met, the Origination CLTV Ratio is excluded from the Current WA Origination CLTV calculation.             <ul style="list-style-type: none"> <li>- Origination CLTV ratio is &lt;6% or &gt;135%</li> <li>- Origination CLTV ratio is &lt; the Origination LTV ratio</li> <li>- Origination LTV ratio is "Unknown"</li> </ul> </li> </ul> |
| <b>Debt-to-Income (DTI) Ratio</b>   | <p>Disclosure of the debt to income ratio is based on (1) the sum of the Borrower's monthly debt payments, including monthly housing expenses that incorporate the mortgage payment the Borrower is making as a result of the loan modification, divided by (2) the total monthly income of the Borrower at the time of the loan modification.</p> <p>The debt to income ratio will not be updated. This disclosure is subject to the widely varying standards originators use to verify Borrowers' assets and liabilities.</p>   | <p><i>If the loan's DTI ratio falls outside the range of &gt; 0% and &lt;= 65%, the DTI ratio will be disclosed as "Unknown," which will be indicated by a blank space.</i></p>  |
| <b>Current Weighted Average Debt-to-Income (DTI) Ratio</b>                | <p>The weighted average of the ratios between each mortgage's (1) sum of the Borrower's monthly debt payments, including monthly housing expenses that incorporate the mortgage payment the Borrower is making at the time of the delivery of the mortgage loan to Freddie Mac and (2) the total monthly income used to underwrite the Borrower as of the date of the origination of the mortgage loan.</p> <p>This disclosure is subject to the widely varying standards originators use to verify Borrowers' assets and liabilities.</p>  | <p><b>Current WA DTI Ratio =</b></p> $\frac{\sum_{Loan(1)}^{Loan(N)} ((DTI\ Ratio) * (Current\ Investor\ UPB))}{\sum_{Loan(1)}^{Loan(N)} Current\ Investor\ UPB}$ <p><b>OR</b></p> <p><b>Current WA DTI Ratio =</b> (Sum ((DTI Ratio) * (Current Investor UPB)))/(Sum (Current Investor UPB))</p> <ul style="list-style-type: none"> <li>• Round to the nearest integer.</li> <li>• If the loan's DTI ratio falls outside the range of &gt; 0% and &lt;= 65%, the DTI ratio will be excluded from the Current WA DTI calculation.</li> </ul>   |

## Monthly Modified Fixed Rate PC and Modified Step Rate PC Disclosure Calculations

| Variable Name  | Description   | Disclosure Calculation   |
|--|---|--|
| <b>Origination Debt-to-Income (DTI) Ratio</b>                    | <p>Disclosure of the debt to income ratio is based on (1) the sum of the Borrower's monthly debt payments, including monthly housing expenses that incorporate the mortgage payment the Borrower is making at the time of the delivery of the mortgage loan to Freddie Mac, divided by (2) the total monthly income used to underwrite the Borrower as of the date of the origination of the mortgage loan.</p> <p>The debt to income ratio will not be updated. This disclosure is subject to the widely varying standards originators use to verify Borrowers' assets and liabilities.</p>  | <p>If any one of the following criteria is met, the Origination DTI ratio will be disclosed as "Unknown", which will be indicated by a blank space.</p> <ul style="list-style-type: none"> <li>- The loan's DTI ratio falls outside the range of &gt; 0% and &lt; = 65%.</li> <li>- The loan's Monthly Income is &lt; = \$100.</li> <li>- The loan's reported Monthly Income or reported Monthly Debt is &gt;= \$99,999.</li> <li>- The loan's Monthly Debt is &lt; the loan's Monthly P&amp;I Payment and the loan is not an Investment Property.</li> </ul>  |
| <b>Current Weighted Average Origination Debt-to-Income (DTI)</b> | <p>The weighted average of the ratios of each mortgage's (1) sum of the Borrower's monthly debt payments, including monthly housing expenses that incorporate the mortgage payment the Borrower is making as a result of the loan modification and (2) the total monthly income used to underwrite the Borrower at the time of the loan modification.</p> <p>This disclosure is subject to the widely varying standards originators use to verify Borrowers' assets and liabilities.</p>  | <p><b>Current WA Origination DTI Ratio =</b></p> $\frac{\sum_{Loan(1)}^{Loan(N)} ((Origination DTI Ratio) * (Current Investor UPB))}{\sum_{Loan(1)}^{Loan(N)} Current Investor UPB}$ <p><b>OR</b></p> <p><b>Current WA Origination DTI Ratio = (Sum ((Origination DTI Ratio) * (Current Investor UPB)))/(Sum (Current Investor UPB))</b></p> <ul style="list-style-type: none"> <li>• Round to the nearest integer.</li> <li>• If any one of the following criteria is met, the loan is excluded from the Current WA Origination DTI calculation. <ul style="list-style-type: none"> <li>- The loan's DTI ratio falls outside the range of &gt; 0% and &lt; = 65%.</li> <li>- The loan's Monthly Income is &lt; = \$100.</li> <li>- The loan's reported Monthly Income or reported Monthly Debt is &gt;= \$99,999.</li> <li>- The loan's Monthly Debt is &lt; the loan's Monthly P&amp;I Payment (at the time of delivery to Freddie Mac) and the loan is not an Investment Property.</li> </ul> </li> </ul> |
| <b>Estimated Loan-to-Value (LTV)</b>                             | <p>In the case of a Modified Mortgage, the ratio obtained by dividing the outstanding balance of the modified mortgage loan at the time of PC issuance by the value of the property obtained through our proprietary automated valuation model.</p> <p>Although we believe that our automated valuation model yields a reasonable approximation of the property's current value, using a value obtained from: (i) a different automated valuation model, (ii) an appraisal based on a physical inspection of the property or (iii) an arm's length sale of the property could result in a different value for the property. Estimated LTV ratios that are unavailable, below 6% or greater than 300% will be disclosed as "Unknown," which is indicated by a blank space.</p> | <p>Estimated LTV ratios that are unavailable, below 6% or greater than 300% will be disclosed as "Unknown," which is indicated by a blank space.</p>   |

## Monthly Modified Fixed Rate PC and Modified Step Rate PC Disclosure Calculations

| Variable Name   | Description   | Disclosure Calculation   |
|---|---|--|
| <b>Current Weighted Average Estimated Loan-to-Value (LTV)</b>   | <p>In the case of Modified Fixed Rate PC and Modified Step Rate PC pools, the weighted average of the borrowers' estimated LTV ratios obtained by dividing the outstanding balance of the mortgage loan at the time of PC issuance by the value of the property obtained through our proprietary automated valuation model.</p>   | <p><b>Current WA Estimated LTV =</b></p> $\frac{\sum_{Loan(1)}^{Loan(N)} ((Estimated\ LTV\ Ratio) * (Current\ Investor\ UPB))}{\sum_{Loan(1)}^{Loan(N)} Current\ Investor\ UPB}$ <p style="text-align: center;"><b>OR</b></p> <p><b>Current WA Estimated LTV =</b> (Sum ((Loan Estimated LTV Ratio) * (Current Investor UPB))) / (Sum (Current Investor UPB))</p> <ul style="list-style-type: none"> <li>• Round to the nearest integer.</li> <li>• If Estimated LTV ratio is &lt;6% or &gt;300%, the loan is excluded from the Current WA Estimated LTV calculation.</li> </ul> |
| <b>Origination Loan-to-Value (LTV)</b>                          | <p>In the case of purchase mortgages, the ratio was obtained by dividing the mortgage loan amount on the note date by the lesser of the mortgaged property's appraised value on the note date or its purchase price.</p> <p>In the case of a refinance mortgage loan, the ratio was obtained by dividing the mortgage loan amount on the note date and the mortgaged property's appraised value on the note date.</p> <p>In the case of a seasoned mortgage loan, if the Seller could not warrant that the value of the mortgaged property has not declined since the note date, Freddie Mac required that the Seller provide a new appraisal value, which was used in the LTV calculation.</p> | <ul style="list-style-type: none"> <li>• If Origination LTV ratio is &lt;6% or &gt;105%, the Origination LTV ratio will be disclosed as "Unknown," which will be indicated by a blank space.</li> </ul>  |
| <b>Current Weighted Average Origination Loan-to-Value (LTV)</b> | <p>The weighted average of the ratios between each mortgage's UPB as of the note date and either (1) in the case of a purchase mortgage loan, the lesser of the mortgaged property's appraised value on the note date or its purchase price or (2) in the case of a refinance mortgage loan, the mortgaged property's appraised value on the note date.</p> <p>In the case of a seasoned mortgage loan, if the Seller could not warrant that the value of the mortgaged property has not declined since the note date, Freddie Mac required that the Seller must provide a new appraisal value, which is used in the Origination LTV calculation.</p>   | <p><b>Current WA Origination LTV =</b></p> $\frac{\sum_{Loan(1)}^{Loan(N)} ((Origination\ LTV) * (Current\ Investor\ UPB))}{\sum_{Loan(1)}^{Loan(N)} Current\ Investor\ UPB}$ <p style="text-align: center;"><b>OR</b></p> <p><b>Current WA Origination LTV =</b> (Sum ((Loan LTV Ratio) * (Mortgage Loan UPB))) / (Sum (Mortgage Loan UPB))</p> <ul style="list-style-type: none"> <li>• Round to the nearest integer.</li> <li>• If Origination LTV ratio is &lt;6% or &gt;105%, the loan is excluded from the Current WA Origination LTV calculation.</li> </ul>              |
| <b>Mortgage Loan Amount</b>                                     | <p>The UPB of the modified mortgage as of the note modification</p>   |  |

## Monthly Modified Fixed Rate PC and Modified Step Rate PC Disclosure Calculations

| Variable Name                                | Description  | Disclosure Calculation   |
|--|--|--|
| <b>Current Average Loan Size</b>             | For a Modified Fixed Rate PC or a Modified Step Rate PC, the simple average of the mortgage loan amounts of the mortgages, as of the note modification. For modified mortgage with deferred amounts, the mortgage loan amounts includes interest bearing and non-interest bearing UPB amounts.     | <p><b>Current Average Loan Size =</b></p> $\frac{\sum_{Loan(1)}^{Loan(N)} (Mortgage\ Loan\ Amount\ rounded\ to\ nearest\ 1000)}{Total\ Number\ of\ Loans\ in\ the\ Pool}$ <p><b>OR</b></p> <p><b>Current Average Loan Size =</b> (Sum (Mortgage Loan Amount rounded to nearest 1000)) / (Count (Loans in Pool) )</p> <ul style="list-style-type: none"> <li>• Round to the nearest dollar.</li> <li>• If the Mortgage Loan Amount is invalid, the loan is excluded from the Current Average Loan Size calculation.</li> </ul>  |
| <b>Current Weighted Average Loan Size</b>    | For a Modified Fixed Rate PC or a Modified Step Rate PC pool, the weighted average the mortgage loan amounts of the mortgages, as of the note modification. For modified mortgage with deferred amounts, the mortgage loan amounts includes interest bearing and non-interest bearing UPB amounts. | <p><b>Current WA Loan Size =</b></p> $\frac{\sum_{Loan(1)}^{Loan(N)} ((Mortgage\ Loan\ Amount\ rounded\ to\ nearest\ 1000) * (Current\ Investor\ UPB))}{\sum_{Loan(1)}^{Loan(N)} Current\ Investor\ UPB}$ <p><b>OR</b></p> <p><b>Current WA Loan Size =</b> (Sum ((Mortgage Loan Amount rounded to the nearest 1000 ) * (Current Investor UPB))) / (Sum (Current Investor UPB))</p> <ul style="list-style-type: none"> <li>• Round to the nearest integer.</li> <li>• If the Mortgage Loan Amount is invalid, the loan is excluded from the Current WA Loan Size calculation.</li> </ul> |
| <b>Origination Mortgage Loan Amount</b>      | The UPB of the origination mortgage on the note date.  |  |
| <b>Current Origination Average Loan Size</b> | The simple average of the UPBs as of the note date of the mortgages in a Modified Fixed Rate PC or a Modified Step Rate PC pool.   | <p><b>Current Origination Average Loan Size =</b></p> $\frac{\sum_{Loan(1)}^{Loan(N)} ((Origination\ Mortgage\ Loan\ Amount\ rounded\ to\ nearest\ 1000))}{Total\ Number\ of\ Loans\ in\ the\ Pool}$ <p><b>OR</b></p> <p><b>Current Average Origination Loan Size =</b> (Sum (Origination Mortgage Loan Amount rounded to nearest 1000)) / (Count (Loans in Pool) )</p> <ul style="list-style-type: none"> <li>• Round to the nearest dollar.</li> <li>• If the Mortgage Loan Amount is invalid, the loan is excluded from the Current Average Loan Size calculation.</li> </ul>         |

# Monthly Modified Fixed Rate PC and Modified Step Rate PC Disclosure Calculations

| Variable Name   | Description   | Disclosure Calculation   |
|---|---|--|
| <b>Current Origination Weighted Average Loan Size</b> | The weighted average of the UPBs, as of the note date, of the mortgages in a Modified Fixed Rate PC or a Modified Step Rate PC pool.  | <p><b>Current WA Origination Loan Size =</b></p> $\frac{\sum_{Loan(1)}^{Loan(N)} ((Origination Mortgage Loan Amount rounded to nearest 1000))}{\sum_{Loan(1)}^{Loan(N)} Current Investor UPB} * (Current Investor UPB)$ <p><b>OR</b></p> <p><b>Current WA Origination Loan Size =</b> (Sum ((Origination Mortgage Loan Amount rounded to the nearest 1000 ) * (Current Investor UPB))) / (Sum (Current Investor UPB))</p> <ul style="list-style-type: none"> <li>• Round to the nearest integer.</li> <li>• If the Origination Mortgage Loan Amount is invalid, the loan is excluded from the Current WA Loan Size calculation.</li> </ul> |
| <b>Loan Term</b>                                      | The number of scheduled monthly payments of the modified mortgage, between the first payment date under the terms of the modified mortgage and the maturity date of the modified mortgage.                              | <p><b>Loan Term =</b> (Modified Mortgage Maturity Date (MM/YY) – Modified Mortgage First Payment Date (MM/YY) + 1)</p> <ul style="list-style-type: none"> <li>• Cap = Product Term * 12</li> <li>• If calculated Loan Term &lt; 1 or &gt; Cap, set Loan Term to Cap value</li> <li>• If Modified Mortgage First Payment Date and Modified Mortgage Maturity Date are not valid, set Loan Term to Cap value.</li> </ul>   |
| <b>Current Weighted Average Loan Term</b>             | The weighted average of the number of scheduled monthly payments of the modified mortgages in a Modified Fixed Rate PC or a Modified Step Rate PC pool.   | <p><b>Current WA Loan Term =</b></p> $\frac{\sum_{Loan(1)}^{Loan(N)} ((Loan Term) * (Current Investor UPB))}{\sum_{Loan(1)}^{Loan(N)} Current Investor UPB}$ <p><b>OR</b></p> <p><b>Current WA Loan Term =</b> (Sum ((Loan Term) * (Current Investor UPB))) / (Sum (Current Investor UPB))</p> <ul style="list-style-type: none"> <li>• Round to the nearest integer.</li> </ul>   |
| <b>Origination Loan Term</b>                          | For fixed-rate, adjustable-rate, and Initial Interest mortgages, the number of scheduled monthly payments of the mortgage, between the first payment date and the maturity date of the mortgage at time of origination. | <p><b>Origination Loan Term=</b> (Origination Maturity Date (MM/YY) – Origination First Payment Date (MM/YY) + 1)</p> <ul style="list-style-type: none"> <li>• Cap = Modified PC Product Term * 12</li> <li>• If calculated Origination Loan Term &lt; 1 set Origination Loan Term to Cap value.</li> <li>• If Origination First Payment Date and Origination Maturity Date are not valid, set Origination Loan Term to Cap value.</li> </ul>  |
| <b>Current Weighted Average Origination Loan Term</b> | The weighted average of the number of scheduled monthly payments of the mortgages in a Modified Fixed Rate PC or a Modified Step Rate PC pool.  | <p><b>Current WA Origination Loan Term =</b></p> $\frac{\sum_{Loan(1)}^{Loan(N)} ((Origination Loan Term) * (Current Investor UPB))}{\sum_{Loan(1)}^{Loan(N)} Current Investor UPB}$ <p><b>OR</b></p> <p><b>Current WA Origination Loan Term =</b> (Sum ((Origination Loan Term) * (Investor UPB))) / (Sum (Investor UPB))</p> <ul style="list-style-type: none"> <li>• Round to the nearest integer.</li> </ul>   |

## Monthly Modified Fixed Rate PC and Modified Step Rate PC Disclosure Calculations

| Variable Name                                      | Description   | Disclosure Calculation   |
|--|---|--|
| <b>Current Remaining Months to Maturity (RMM)</b>  | The number of scheduled monthly payments that, after giving effect to partial unscheduled principal payments, remain on the modified mortgage.  | <p><b>Current RMM =</b></p> $\frac{-\text{Log}\left(1 - \left(\text{Investor UPB} * \left(\frac{\left(\frac{\text{Note Rate as of PC Issuance}^1}{1200}\right)}{\text{Monthly P\&I Payment}^1}\right)\right)\right)}{\text{Log}\left(1 + \left(\frac{\text{Note Rate as of PC Issuance}^1}{1200}\right)\right)}$ <p><b>OR</b></p> <p><b>Current RMM=</b> - (FUNCTION LOG10 (1 – (Current Investor UPB*(Note Rate as of PC Issuance/1200) / Monthly P&amp;I Payment))) / FUNCTION LOG 10 (1 + (Note Rate as of PC Issuance / 1200))</p> <ul style="list-style-type: none"> <li>• Round to the nearest integer.</li> <li>• Default RMM = Pool Maturity Date (MM/YY) – As of Date (MM/YY)</li> <li>• If Default RMM &gt; Product Term * 12, use Product Term * 12 as Default RMM.</li> <li>• RMM Cap = Default RMM + 2 months.</li> <li>• If RMM Cap &gt; Product Term * 12, use Product Term * 12 as RMM Cap.</li> <li>• If RMM &gt; RMM Cap, set RMM to Cap value.</li> <li>• If Current Investor UPB, Note Rate as of PC Issuance, or Monthly P&amp;I Payment are invalid, use Default RMM.</li> </ul> <p><sup>1</sup> For modified step rate mortgages, each Note Rate and Monthly P&amp;I payment, per the step rate schedule, is used in the RMM calculation.</p> |
| <b>Current Weighted Average Remaining Maturity</b> | The weighted average of the number of scheduled monthly payments that, after giving effect to full and partial unscheduled principal payments, remain on the mortgages in a Modified Fixed Rate PC or a Modified Step Rate PC pool. | <p><b>Current WA Remaining Maturity =</b></p> $\frac{\sum_{\text{Loan (1)}}^{\text{Loan (N)}} ((\text{Loan RMM}) * (\text{Current Investor UPB}))}{\sum_{\text{Loan (1)}}^{\text{Loan (N)}} \text{Current Investor UPB}}$ <ul style="list-style-type: none"> <li>• Round to the nearest integer.</li> </ul>  |

## Breakout Variables

|                            |                            |                         |                          |
|----------------------------|----------------------------|-------------------------|--------------------------|
| Days Delinquent            | First Payment Distribution | Modification Type       | Property State           |
| Debt to Income             | First-time Homebuyer       | Mortgage Insurance      | Seller                   |
| Deferred UPB               | Loan Origination Year      | Number of Borrowers     | Servicer                 |
| Delinquent Loans Purchased | Loan Purpose               | Number of Modifications | Total Capitalized Amount |
| Estimated LTV              | Modification Program       | Number of Units         | Updated Credit Score     |

## Monthly Modified Fixed Rate PC and Modified Step Rate PC Disclosure Calculations

|   |  |
|---|--|
| <b>For each Breakout Variable: # of Loans</b> | Number of Breakout Variable Loans or Count (Breakout Variable Loans)   |
| <b>For each Breakout Variable: # of Loan</b>  | $\frac{\text{Number of Breakout Variable Loans}}{\text{Total Number of Loans in Pool}}$ <b>OR</b> $\frac{\text{Count (Breakout Variable Loans)}}{\text{Count Loans in Pool}}$ <ul style="list-style-type: none"> <li>• Round to the one-hundredth decimal place.</li> <li>• Note: The sum of the % of loans for the mortgages within a PC may not add up to 100% due to rounding.</li> </ul>   |
| <b>For each Breakout Variable: % of UPB</b>   | $\left( \frac{\sum_{Loan(1)}^{Loan(N)} \text{Breakout Variable Current Investor UPB}}{\sum_{Loan(1)}^{Loan(N)} \text{Current Investor UPB}} \right) * 100$ <b>OR</b><br>$(\text{Sum (Breakout Variable Loan Current Investor UPB)}) / (\text{Sum (Current Investor UPB)}) * 100$ <ul style="list-style-type: none"> <li>• Round to the one-hundredth decimal place.</li> <li>• Note: The sum of the % of loans for the mortgages within a PC may not add up to 100.00% due to rounding.</li> </ul> |
| <b>DTI Unknown</b>                            | DTI considered "Unknown" if DTI falls outside the range of > 0% and <= 65%   |
| <b>Estimated LTV Unknown</b>                  | Estimated LTV considered "Unknown" if: <ul style="list-style-type: none"> <li>• Estimated LTV is unavailable or</li> <li>• Estimated LTV &lt; 6% or &gt; 300%</li> </ul>   |
| <b>First Payment Distribution</b>             | Not applicable for loans in Modified Fixed Rate PC and Modified Step Rate PC pools.  |
| <b>Mortgage Insurance (MI) Unknown</b>        | Loan MI considered "Unknown" if MI percentage is > 55%   |
| <b>Updated Credit Score Unknown</b>           | Updated Credit Score considered "Unknown" if: <ul style="list-style-type: none"> <li>• Updated Credit Score is unavailable or</li> <li>• Updated Credit Score &lt; 300 or &gt; 850</li> </ul>  |

**For additional information on these data variables, contact Investor Inquiry at (800) 336-3672 or visit [www.FreddieMac.com/mbs](http://www.FreddieMac.com/mbs).**