

Revised May 21, 2024

Julia R. Gordon
Assistant Secretary for Housing – FHA Commissioner
Department of Housing and Urban Development
Office of Housing
451 Seventh Street, SW
Washington, DC 20410

RE: Recommendations to Improve the FHA Streamline Refinance Program

Dear Commissioner Gordon:

On behalf of the clients, communities, companies, and borrowers we serve, we write to urge FHA to consider adjusting the FHA Streamline Refinance program to allow closing costs to be rolled into the principal balance of the new loan.¹ When paired with our recommendations for enhanced borrower protections for the program, this adjustment would enable more borrowers, particularly low-to-moderate income (LMI), Black, and Hispanic households, and FHA to obtain the benefits of a rate and term refinance.

Completing a rate and term refinance can be beneficial to both homeowners and FHA alike. The typical rate and term refinance reduces the borrower's monthly mortgage obligation, and the borrower can use the savings to increase consumption or pay off other debts. During the pandemic, millions of homeowners with a mortgage took advantage of record-low mortgage rates and refinanced their mortgages. For example, between March 2020 and September 2021, 8.8 million homeowners completed a rate and term refinance, saving about \$1,770 annually for each year they remain in their mortgage.² Moreover, rate and term refinances reduce defaults because the new, lower monthly payments are more affordable.³ Thus, rate and term refinances benefit both borrowers and FHA by reducing foreclosures and the associated claims on the Mutual Mortgage Insurance Fund (MMIF).

However, the pandemic-induced refinancing wave saw slower refinancing rates among LMI, Black, and Hispanic households as compared to higher income, White and Asian households:

- Research⁴ finds that lower-income homeowners were much less likely to both apply for and complete a mortgage refinance during the recent refinancing boom, even after controlling for underwriting variables such as credit score, loan balance, and loan-to-value (LTV) ratio.

¹ The recommendations herein are incremental changes to the existing FHA Streamline Refinance program. To the extent this letter is silent on an element of the existing policy, we are not recommending FHA make any changes.

² Source: [Untitled \(blackknightinc.com\)](https://blackknightinc.com).

³ Analysis of FHA's March 2012 MIP reduction for streamline refinances found that reducing the borrower's monthly payment by 10% caused their subsequent monthly default probability to fall by 27.5%, as described in [Do Large-Scale Refinancing Programs Reduce Mortgage Defaults? Evidence From a Regression Discontinuity Design: Working Paper 2015-06 | Congressional Budget Office \(cbo.gov\)](#).

⁴ Source: [Refinancing Inequality During the COVID-19 Pandemic \(fdic.gov\)](https://fdic.gov).

- Furthermore, recent research⁵ finds that differences in credit score, LTV, and debt-to-income ratio (DTI) persist beyond origination for distinct racial groups and these disparities make it harder for borrowers of color to refinance their mortgages when interest rates fall. Consequently, Black homeowners were paying nearly 0.5% more than White borrowers on active mortgages originated between 2005 and 2015. In addition, the same study finds that even after controlling for differences in these three underwriting risk measures, Black and Hispanic homeowners were still less likely to refinance than their White counterparts, suggesting that additional factors impede their ability to refinance.

Given the significantly lower refinancing propensities of LMI, Black, and Hispanic households and borrowers with low-balance loans, and the fact that FHA serves a higher proportion of these borrowers, an improved FHA Streamline Refinance program would benefit these borrowers the most. FHA data shows that in 2021:

- 44% of FHA loans went to LMI households (defined as those with an income below 80% of the area median income) compared to 23% for the rest of the market.⁶
- 60% of low down payment loans to Black borrowers and 61% of low down payment loans to Hispanic borrowers were insured by FHA.⁷ Low down payments are typical for lower wealth borrowers, who have less access to liquid resources and would therefore benefit from the savings generated by a streamlined refinance.
- As of September 2021, despite record low mortgage rates, there remained 4.2 million FHA borrowers who could reduce their interest rate by at least 50 basis points by completing a rate and term refinance.⁸ On average, these borrowers could have reduced their monthly P&I payment by \$230, or 28%, a savings of \$2,760 per year for every year they remained in their mortgage.⁹ Of these refinance-eligible borrowers, 75% had a loan balance below \$175,000 and the average balance in this low-balance loan group was about \$97,000, underscoring the challenges borrowers with low-balance loans have in obtaining a rate and term refinance.¹⁰

Given the statistics cited above, it is not entirely surprising that during the 2020 – 2021 refinancing wave, borrowers were more likely to complete a Government Sponsored Enterprise (GSE) or Veterans Administration (VA) rate and term refinance as compared to an FHA rate and term refinance. In fact, just 12% of FHA borrowers with a loan outstanding as of the end of 2019 completed an FHA rate and term refinance, whereas 46% of VA borrowers completed a VA rate and term refinance.¹¹ Some FHA borrowers who can qualify may complete an FHA-to-GSE refinance because it is a cheaper alternative, which explains some of the gap between FHA-to-FHA and VA-to-VA refinancing rates, and we expect this

⁵ Source: [Mortgage Prepayment, Race, and Monetary Policy - Federal Reserve Bank of Boston \(bostonfed.org\)](https://www.bostonfed.org/publications/mortgage-prepayment-race-and-monetary-policy).

⁶ Source: FHA, Fiscal Year 2022 Annual Report to Congress, Table C-6, [2022FHAAnnualRptMMIFund.pdf \(hud.gov\)](https://www.fha.gov/sites/default/files/2022FHAAnnualRptMMIFund.pdf).

⁷ Ibid.

⁸ Source: [crl-adjustments-fha-streamline-refi-mar2022.pdf \(responsiblelending.org\)](https://www.responsiblelending.org/sites/default/files/2022-03/crl-adjustments-fha-streamline-refi-mar2022.pdf).

⁹ Ibid.

¹⁰ Ibid.

¹¹ Source: Recursion's analysis of loans in mortgage-backed securities as of the end of 2019. We ignore loans that have been bought out of the pool because they are either delinquent and unlikely to refinance or have a refinance in progress. While FHA borrowers have higher forbearance and delinquency rates than VA borrowers during the period, these differences cannot account for the entire discrepancy in refinance propensities. Excluding loans in forbearance and delinquent loans, the refinancing rate of FHA borrowers rises to 21%, still well short of the refinancing rate of VA borrowers.

behavior will continue even if FHA were to implement our recommended program adjustments.¹² However, for the many FHA borrowers who *cannot* qualify for a GSE refinance, FHA should offer a more accessible streamline refinance option.

There are several process adjustments FHA could consider implementing to remove the frictions associated with the FHA Streamline Refinance program.¹³ Of those adjustments, the most consequential would be to permit closing costs to be rolled into the balance of the new loan. Taking this step would allow FHA borrowers to refinance their mortgage without either bearing the considerable out-of-pocket expense to pay for the closing costs upfront or paying a higher interest rate on their new loan to pay for closing costs. Premium pricing inevitably reduces the benefit of refinancing. Our analysis indicates that 81% of FHA borrowers who completed a streamlined refinance during the 2020 – 2021 refinancing wave used lender credits to pay their closing costs, paid an average of 1.14% of loan amount, and had their interest rate increased by 28 basis points as a result.¹⁴

Making this adjustment would also align the FHA program with the GSE and VA refinance programs. About 21% of GSE and VA borrowers used lender credits for a rate and term refinance during the 2020 – 2021 refinance wave, which means FHA borrowers were 4 times more likely to use lender credits compared to GSE and VA borrowers. There is no reason that the first-time, LMI, and Black and Hispanic homebuyers that FHA serves should be at a disadvantage when it comes to refinancing their loan relative to their peers with a GSE-backed or VA-guaranteed loan.

To address the concern that our recommended process improvements could inadvertently create an incentive for lenders to originate mortgages to engage in serial refinancing to profit from repeated fee extraction, we suggest that FHA consider three enhanced borrower protections that build on the borrower protections already built into the program:

1. FHA should require a 36-month recoupment period for streamline refinances. The sum of all fees, closing costs, and expenses, whether financed or paid outside of closing, divided by the reduction in the borrower's combined monthly payment (principal, interest, and MIP), should not exceed 36 (meaning the borrower will recoup the refinance costs within 36 months).¹⁵ This requirement would match the recoupment period required in VA's Interest Rate Reduction Refinancing Loan (IRRRL) program.

¹² FHA borrowers whose credit scores have increased since origination and current LTVs have dropped below 80% are most likely to complete an FHA-to-GSE refinance. The GSEs permit closing costs to be financed, do not require mortgage insurance on loans with an LTV below 80%, and GSE LLPAs can be lower than FHA's upfront MIP, which makes a GSE refinance a cheaper alternative for some FHA borrowers. While there are clear benefits for these borrowers, FHA-to-GSE refinances have negative consequences for the FHA's Mutual Mortgage Insurance Fund (MMIF), as discussed in the attached MMIF analysis.

¹³ For example, FHA could waive the direct endorsement underwriter sign-off requirement because a streamline refinance is not being re-underwritten, add the names of all existing borrowers into FHA Connection so that borrowers would no longer need to provide the existing mortgage note to complete a streamline refinance, and add Partial Claim information into FHA Connection to make it easier for lenders to evaluate loans they are not currently servicing for a streamline refinance, as described in [crl-adjustments-fha-streamline-refi-mar2022.pdf](https://www.responsiblelending.org/sites/default/files/2022-03/crl-adjustments-fha-streamline-refi-mar2022.pdf) ([responsiblelending.org](https://www.responsiblelending.org)).

¹⁴ Assuming lenders used a duration of 4 to convert the upfront amount of 1.14% into an interest-rate based charge.

¹⁵ The recoupment period should begin on the due date of the first payment on the new loan. We recommend that the recoupment tests exclude prepaid refinance expenses like insurance, taxes, initial escrow impounds, or HOA dues, as these are all expenses that a borrower will be responsible for paying whether they refinance the loan or not. Using a similar logic, the recoupment test should only include the net-up front MIP payment (i.e. up-front MIP payment minus any MIP refund).

2. Additionally, for loans refinanced less than 12 months after origination, FHA should reduce the required recoupment period to 24 months, as a further disincentive for serial refinancing. Thus, for loans that were originated in the last 12 months, the sum of all fees, closing costs, and expenses, whether financed or paid outside of closing, divided by the reduction in the borrower's combined monthly payment should not exceed 24 (meaning the borrower will recoup the refinance costs within 24-months).
3. FHA should strengthen and simplify the net tangible benefit requirement for a fixed-to-fixed streamline refinance to include both a 50-basis point combined interest rate reduction and that the new combined payment not exceed the existing combined payment regardless of the difference in term between the new loan and the existing loan.¹⁶
 - Currently, for a fixed-to-fixed streamline refinance with a term reduction of 3 years or more, the new combined interest rate must be below the existing combined interest rate. However, the MIP reduction enacted in March 2023 means that many loans originated before March 2023 will receive a 30-basis point reduction in combined rate (as the MIP rate drops from 0.85% to 0.55%) if refinanced. As a result, with enough term reduction, refinances that *increase* the borrower's interest rate will be eligible for a streamline refinance. Adjusting the net tangible benefit test to require a 50-basis point reduction in combined rate regardless of the term change will eliminate this possibility.
 - For a fixed-to-fixed streamline refinance without a term reduction or with a term reduction of less than three years, the new combined payment is permitted to be higher than the old combined payment. For a non-credit qualifying streamline refinance, the borrower's ability-to-repay (ATR) is demonstrated by their recent payment history. However, payment history cannot establish the borrower's ATR if their new combined payment will increase. Therefore, FHA should require that the new combined payment cannot exceed the existing combined payment, regardless of the change in term.
 - Making the net tangible benefit tests consistent regardless of term change will also eliminate any incentive for lenders to reduce the term of the refinanced mortgage solely to avoid the net tangible benefit test.¹⁷

An additional potential concern is that higher FHA refinancing volumes and the resulting faster prepayment speeds will result in less demand for Ginnie Mae mortgage-backed securities (MBS) and higher mortgage rates for future FHA borrowers. We believe that the substantial benefits of more streamlined refinances to borrowers would outweigh any costs created by a modest drop in the price of higher coupon Ginnie Mae MBS that result from faster prepayment speeds. MBS investors may lose some of the gains created by borrowers with a mortgage with an above-market interest rate not

¹⁶ The combined rate is the interest rate on the mortgage plus the annual MIP rate. For FHA streamline refinances with a term reduction of 3 years or more, the current net tangible benefit test only requires the new combined rate to be below the old combined rate.

¹⁷ Under the current program, lenders can avoid the requirement that the new combined rate be 50 basis points below the existing combined rate by making the term of the new loan 3 years shorter than the term of the existing loan, in which case the borrower's new combined rate only need be below the existing combined rate.

refinancing, which as noted above are disproportionately LMI, Black, and Hispanic households, and borrowers with low-balance loans, but investors accept this prepayment risk when they purchase MBS.

Our analysis, which is described in detail in the attached document, suggests that the net impact on the Mutual Mortgage Insurance Fund (MMIF) had the recommended changes to the FHA Streamline Refinance program already been in place would be modest. Based on FHA foreclosure rates (4.5%), loss severities (29%), closing costs on the average FHA Streamline Refinance (1.5%), and the assumptions that the modified program would have increased take-up by 10% and that completion of a streamline refinance reduces expected foreclosure rates by 14%, we estimate the impact on the MMIF would be an incremental benefit of \$166 million, a nominal increase of 1.2 bps in the MMIF capital ratio. The positive MMIF impact created by the program changes result from the projection that the incremental increase in streamline refinances would produce additional upfront mortgage insurance premiums and lower claims sufficiently such that these benefits would more than offset the slightly larger claims from those borrowers who would have completed a streamline refinance anyway and now have a higher loan balance at default due to financed closing costs.¹⁸

In the (highly unlikely) worst-case scenario where the program changes do not induce any additional FHA borrowers to complete a streamline refinance, the FHA foreclosure rate increases to 10%, and streamline refinances do not reduce the foreclosure rate, the program changes would be expected to cost the MMIF an additional \$280 million in claims, reducing the MMIF capital ratio by a modest 2 bps.

We urge the FHA to consider adjusting the FHA Streamline Refinance program in the near future to enable more borrowers to benefit from the program. It is true that mortgage rates have now risen to the point where most FHA borrowers cannot complete a beneficial rate and term refinance, so few would benefit from changes to the FHA Streamline Refinance program if they were made today. However, program changes take time to implement and market conditions can change rapidly. Therefore, we suggest that FHA consider our recommendations now, well before the next refinancing wave begins.

Thank you in advance for your attention to this issue. Should you have any questions or wish to discuss this topic in further detail, we remain at your disposal. Please don't hesitate to contact Kanav Bhagat at kbhagat@housingrpa.com, Matt Douglas at matt.douglas@housingpolicycouncil.org, or Andrew Pizor at apizor@nclc.org.

Yours truly,

Center for Responsible Lending

Housing Policy Council

¹⁸ This estimate is conservative because it assumes that all borrowers who complete a streamline refinance finance their closing costs and ignores the benefit to the MMIF that would be realized if the recommended program adjustments induce some FHA borrowers who would have completed a GSE refinance to instead use the FHA Streamline Refinance program. FHA-to-GSE refinances harm the MMIF because they reduce the overall credit quality of the borrowers insured by the MMIF (only better-credit borrowers can execute an FHA-to-GSE refinance), increase the LTV of the FHA insured portfolio (borrowers with an LTV below 80% are most likely to complete an FHA-to-GSE refinance because they will not be required to pay for mortgage insurance), and FHA no longer collects annual MIP once the FHA-to-GSE refinance is completed.

National Consumer Law Center (on behalf of its low-income clients)

MMIF Impact of Permitting the Financing of Closing Costs for FHA Streamline Refinances

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FHA Closing Costs

Closing costs on FHA purchase loans are around 3.6% of loan amount, as shown in Table 1. While closing costs on underwritten FHA refinances are about the same as on purchase loans, the FHA Streamline Refinance program offers borrowers considerable savings, as shown in Table 2. During the 2020 – 2021 refinance wave, closing costs on FHA streamline refinances averaged 1.5% of loan amount, less than half of the cost of a fully underwritten FHA refinance. Given the considerable savings, it is not surprising that 86% of the FHA-to-FHA rate and term refinances in the FHA portfolio are streamlined refinances.¹⁹

Table 1. Median Loan Amounts and Closing Costs for FHA Purchase Loans.

FHA Purchase Loans	2018	2019	2020	2021	2022
Median Loan Amount	191,000	206,000	221,000	241,000	268,000
Median Total Loan Costs	6,963	7,336	8,052	8,427	10,056
Total Loan Cost / Loan Amount	3.65%	3.56%	3.64%	3.50%	3.75%

Source: [cfpb_data-point-mortgage-market-activity-trends_report_2023-09.pdf \(consumerfinance.gov\)](#).

Table 2. Average Closing Costs as a Percentage of Loan Amount for FHA Refinances.

Type of Refinance	2020	2021
Conventional to FHA	3.48%	3.76%
FHA Underwritten	2.99%	3.27%
FHA Streamline	1.49%	1.53%

Source: FHA PD&R.

The “Cost” of Closing Costs

In general, closing costs on a mortgage can be paid with cash, financed (i.e. included in the balance of the new loan), or paid using lender credits. For liquidity constrained borrowers, financing or using lender credits for closing costs has the advantage of not requiring an upfront payment. If the borrower finances their closing costs, the amount is added to the principal balance of the loan. At closing, the additional proceeds from the loan are used to pay closing costs, and the borrower pays interest on their closing costs over the life of their loan at the same interest rate as on their loan.

For lender credits, also referred to as premium pricing, the lender raises the interest rate on the mortgage sufficiently such that the mortgage commands a premium price when sold for securitization. The price premium is then used by the lender to pay the borrower’s closing costs at closing, and the borrower pays the higher interest rate for as long as their mortgage is outstanding.

¹⁹ Source: [Version 9.4 SAS System Output \(hud.gov\)](#).

Depending on how the borrower chooses to pay closing costs, the terms of their mortgage may change. Table 3 has an illustrative example. We begin with a \$225,000 30-year fixed-rate mortgage with a 4% note rate and closing costs of 1.50% of the loan amount, or \$3,375. For this loan, we then examine how the three methods of paying for closing costs affect the terms of the mortgage.

If the borrower pays the \$3,375 in closing costs with cash, their mortgage terms will remain as described above, and their monthly principal and interest (P&I) payment will be \$1,074. If the borrower chooses to finance their closing costs, their loan amount will increase by \$3,375 to \$228,375. As a result, their monthly P&I will increase by \$16 to \$1,090.

Should the borrower ask their lender to pay their closing costs using lender credits, the lender will increase their mortgage rate by an amount equal to the closing costs divided by the expected duration of the loan, which in our example is $1.5\% / 4 = 0.38\%$. By increasing the note rate to 4.38%, the lender will be able to sell the mortgage for securitization at a price premium of 1.5%, which will be used at closing to pay closing costs. The higher note rate increases the monthly P&I payment to \$1,123, which is \$49 more than the cash result and \$33 more than the financed result.

Table 3. Impact of Closing Cost Method on Mortgage Terms.

Loan Details			
Loan Amount	225,000		
Term	360		
Unadjusted Mortgage Rate	4.00%		
Closing Costs (% of Loan Amount)	1.50%		
Closing Costs	3,375		
Duration for Lender Credit Calculation	4		
Mortgage Terms	Paid with Cash	Financed	Paid with Lender Credits
Adjusted Loan Amount	225,000	228,375	225,000
Adjusted Mortgage Rate	4.00%	4.00%	4.38%
Principal and Interest Payment (P&I)	1,074	1,090	1,123
Increase in P&I vs. Cash (\$)		16	49
Increase in P&I vs. Cash (%)		1.5%	4.6%

Closing Costs and Refinances during the 2020 – 2021 Refinance Wave

Because the FHA Streamline Refinance program does not permit borrowers to finance their closing costs and coming up with the cash to make the upfront payment can be challenging, most FHA borrowers who use the program use lender credits. As shown in Table 4, of those FHA borrowers who completed a streamlined refinance, 81% used lender credits to pay their closing costs.

The average borrower who completed an FHA streamline refinance over the period who used lender credits paid 1.14% of the loan amount.²⁰ Assuming lenders used a duration of 4 to convert the upfront amount of lender credits into a per annum interest rate, just as in our example above, the average interest rate increase would be 0.28%.

²⁰ Source: Recursion. The data in Table 2 indicate the average closing cost on an FHA streamline refinance was 1.5% of loan amount, which suggests the average borrower paid cash for closing costs equal to 0.36% of loan amount.

Few FHA borrowers completing a streamline refinance pay their closing costs entirely in cash. Should FHA adjust the streamlined refinance program to permit the financing of closing costs, it is likely that most FHA borrowers will choose this method over lender credits for two reasons. First, borrowers will choose to finance their closing costs because it creates a lower P&I payment (\$33 lower in our example) than using lender credits. Second, financing closing costs preserves the note rate differential created by a refinance, whereas using lender credits reduces the note rate differential and makes it harder for the refinance to meet FHA’s net tangible benefit test.

In contrast, the Government Sponsored Enterprises (GSEs) Fannie Mae and Freddie Mac and Department of Veterans Affairs (VA) permit borrowers to finance their closing costs when completing a rate and term refinance. As a result, around 20% of GSE and VA borrowers who completed a rate and term refinance used lender credits to pay their closing costs. In sum, due to policy differences, FHA borrowers were four times more likely to use lender credits to complete a rate and term refinance as compared to GSE and VA borrowers.

Table 4. Use of Lender Credits in Rate and Term Refinances (2020 – 2021).

	Used Lender Credits	No Lender Credit	Use of Lender Credits (%)
GSE Rate and Term Refinances	2,125,817	7,713,851	22%
VA Rate and Term Refinances	260,497	1,175,533	18%
GSE / VA Rate and Term Refinances	2,386,314	8,889,384	21%
FHA Streamline Refinances	514,082	118,192	81%

Source: Recursion.

While there may be many reasons for the discrepancy in refinance propensities that are unrelated to policy governing closing cost payment methods, borrowers were much more likely to complete a GSE or VA rate and term refinance as compared to an FHA rate and term refinance during the 2020 – 2021 refinance wave. Table 5 shows the number of GSE, VA, and FHA loans in mortgage-backed securities as of the end of 2019.²¹ In addition, Table 5 shows the number of GSE, VA, and FHA refinance loans that were completed during the period. It is important to note that, as described in the final section of this document, many FHA borrowers refinance into a GSE loan, and in Table 5 we cannot distinguish GSE refinances that were originally GSE loans from GSE refinances that were originally FHA loans.

In contrast, the vast majority of VA borrowers who refinance make use of the VA’s streamline refinance program, the Interest Rate Reduction Refinance Loan (IRRRL), and the data in Table 5 indicate that 46% of VA loans outstanding at the end of 2019 were rate-and-term refinanced into a new VA loan over the course of 2020 and 2021. However, just 12% of outstanding FHA loans were rate-and-term refinanced into a new FHA loan over the same period. Notably, the discrepancy in rate and term refinance rates is not driven by other types of refinances (e.g., cash-out refinances), as FHA borrowers (3%) trail VA borrowers (10%) in that category as well.

²¹ We exclude loans that have been bought out of the pool because they are either delinquent and unlikely to refinance or have a refinance in progress.

Table 5. Outstanding Loans in MBS Pools and Refinances During the 2020 – 2021 Refinance Wave.

	GSE	VA	GSE & VA	FHA
Outstanding Loans in MBS Pools (12/31/19)	27,347,747	3,126,281	30,474,028	7,322,675
Rate and Term Refinances	9,839,668	1,436,030	11,275,698	872,896
Rate and Term Refinance (%)	36%	46%	37%	12%
Other Refinances	5,541,141	317,088	5,858,229	223,033
Other Refinances (%)	20%	10%	19%	3%
Total Refinances	15,380,809	1,753,118	17,133,927	1,095,929
Total Refinances (%)	56%	56%	56%	15%

Source: Recursion.

FHA borrowers had higher delinquency and forbearance rates than VA borrowers during the 2020 – 2021 refinancing wave. Delinquent borrowers typically cannot complete a rate and term refinance until they cure their delinquency. Borrowers in forbearance would need to exit forbearance and make 3 monthly payments before they would be eligible for a rate and term refinance. However, higher delinquency and forbearance rates for FHA borrowers relative to VA borrowers cannot explain the gap in their refinancing propensities. Even if we exclude loans that were delinquent or in forbearance from our analysis, just 21% of FHA borrowers completed an FHA rate and term refinance.²²

Impact of Closing Cost Method on Loan Balance

From FHA’s perspective, loan balance is an important metric because in the event of a foreclosure, a larger loan balance will result in a larger claim, all other things held equal. Should FHA adopt our recommended adjustments, we expect that borrowers will shift from paying for closing costs using lender credits to using financing. Therefore, we focus our attention on the differences in loan balance over the life of the mortgage created by financing or using lender credits for closing costs.

Relative to paying out-of-pocket, both financing closing costs and using lender credits will increase the borrower’s loan balance. Financed closing costs increase the borrower’s loan balance by the amount financed. Using lender credits increases the borrower’s loan balance over time because the higher interest rate causes the mortgage to amortize at a slower rate.

In Table 6, we continue our analysis of the example loan described in Table 3 and show how each method of paying closing costs impacts the future loan balance at a horizon date four years after origination. If the borrower pays the closing costs with cash, there is no change in the loan balance at origination, and four years later the loan balance will have amortized down to \$208,156.

If the borrower chooses to finance closing costs, at origination their loan balance will increase by the closing cost amount of \$3,375, from \$225,000 to \$228,375. Four years later, the loan balance will be \$211,278, which is 1.5% larger than the loan balance had the borrower paid the closing costs using cash.

²² Source: Recursion.

If the borrower chooses to pay the closing costs with lender credits, the loan balance at origination will not change, but the interest rate will increase to 4.38%. Under this method, the higher interest rate increases both the P&I payment and the proportion of the P&I payment going to interest, and therefore slows the amortization of the loan relative to the other two closing cost methods. For our example loan, if lender credits are used for closing costs, the principal paid by year 4 is smaller (\$15,867) than the principal paid if cash (\$16,844) or financing (\$17,097) were used. As a result, four years later, the loan balance will be \$209,133, a 0.47% increase over the loan balance had the closing costs been paid with cash.

Table 6. Impact of Closing Cost Payment Method on Loan Balance Four Years after Origination.

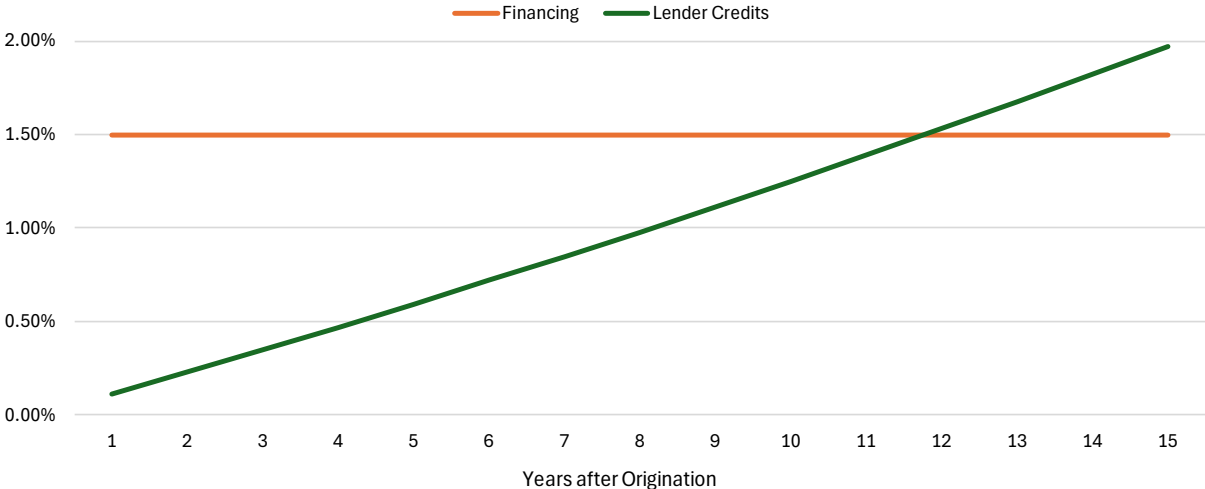
	Paid with Cash	Financed	Paid with Lender Credits
Principal Paid	16,844	17,097	15,867
Interest Paid	34,716	35,237	38,056
Loan Balance	208,156	211,278	209,133
Increase in Loan Balance vs. Cash		1.50%	0.47%
Increase in Loan Balance vs. Lender Credits		1.02%	

Source: Author’s calculations.

For our example loan, if closing costs are financed, the loan balance at the horizon date (year 4) will be 1.02% greater than the loan balance if closing costs were paid with lender credits. All other factors held equal, if the borrower were to default and lose their home to foreclosure, if they financed their closing costs, the claim on the MMIF would be 1.02% greater than if they had used lender credits.

In general, as shown in Figure 1, relative to paying cash, financing closing costs will increase the loan balance proportionately (1.5% in our example) over the life of the mortgage. However, using lender credits creates a smaller increase in loan balance in the early years that grows over time and will eventually exceed the increase created by financing closing costs.

Figure 1. Increase in Loan Balance from Financing and using Lender Credits Relative to Paying Cash for Closing Costs for Example Loan.



MMIF Impact of Allowing the Financing of Closing Costs for Streamline Refinances

To provide an estimate of the cost to the MMIF of adjusting the FHA Streamline Refinance program to permit the financing of closing costs, we use the current portfolio of FHA-insured loans and estimate how MMIF claims would have changed if FHA had already made this program adjustment in the past. By doing so, we can rely on the actual evolution of existing FHA portfolio through the 2020 – 2021 pandemic-induced refinancing wave rather than making assumptions about how the FHA portfolio would change in the next refinancing wave.

Relative to the baseline, if FHA allowed closing costs to be financed for streamlined refinances, three outcomes would be different. First, the number of streamlined refinances in the FHA-insured portfolio would increase because the rule change would induce some FHA borrowers to complete a streamline refinance who would not otherwise do so. For example, the borrowers who had a financial incentive to complete a streamline refinance but did not do so because they did not have the liquidity to pay for out-of-pocket closing costs or the use of lender credits for closing costs made their refinance fail the net tangible benefit test, could complete a streamline refinance under the revised program rules.

Second, one would expect that the payment reduction inherent in streamline refinances would reduce the foreclosure rate for those borrowers who were induced by the program changes to complete one. Third, the unpaid principal balance on all streamline refinances would increase to reflect financed closing costs, net of slower amortization from the use of lender credits (as discussed in above). As a result, to the extent these loans went to foreclosure, the claims on the MMIF would increase accordingly.

Baseline Assumptions

To develop our estimate of the MMIF impact, we must make several assumptions. First, we must project the increase in streamline refinances created by the program changes. As of the end of January 2024, 13.8% of FHA's portfolio were streamlined refinances. For our base case, we assume the program changes would have increased program take-up by 10%, which would increase the share of streamline refinances in the FHA portfolio to 15.2%, a modest increase of 1.4 percentage points.

Next, to calculate how much upfront MIP will be collected on average from newly induced streamlined refinances, we must estimate how many months after origination the average streamline refinance is completed. Here, we assume 24 months between origination and streamline refinance, which means that 34% of the original upfront MIP collected will offset the new upfront premium (FHA will credit what the borrower has already paid to FHA). We approximate the effect of this offset by reducing the upfront MIP collected on each streamline refinance to $66\% \times 1.75\%$, or 1.155%, of loan amount.

We also need to estimate a baseline foreclosure rate for FHA-insured purchase loans. To do so, we use FHA-published failure rates (claim rates plus in-process foreclosure rates) by origination year weighted by the percentage of the FHA-insured portfolio from each origination year, which suggests an approximate foreclosure rate of 4.5% for the purchase loan portfolio.

In addition, we need an estimate of how much the completion of a streamline refinance would be expected to reduce the 4.5% baseline foreclosure rate. The difference between the percentage of active purchase loans in foreclosure and the percentage of active streamline refinance loans in foreclosure between January 2014 and January 2020 is shown in Figure 2 below. We avoid more recent data on foreclosure rates that would have been influenced by the foreclosure moratorium in place during the COVID-19 pandemic. On average over the period, streamline refinances were 14% less likely to be in foreclosure than purchase loans.

Figure 2. Implied Reduction in Foreclosure Rate from Streamlined Refinancing.



Source: FHA Single Family Loan Performance Trends reports from January 2014 to January 2020.

Finally, we need to estimate the average increase in loan amount for streamline refinances that results from borrowers shifting from using lender credits to financing for closing costs. We again assume a 4-year horizon date. If FHA had already adjusted the program to permit the financing of closing costs and we assume all borrowers used this method instead of using lender credits (a conservative assumption), the average streamline refinance unpaid principal balance (UPB) would increase by 1.02%, as calculated in Table 6. To the extent there was an MMIF claim on these loans, the loss rate would also increase by 1.02%.

Table 7. Summary of Assumptions.

Current Streamline Refinance Rate (% of 1/24 Portfolio)	13.8%
Projected Increase in Streamline Refi Rate	10.0%
Timing of Refinance (Month after Origination)	24
New Streamline Refinance Rate	15.2%
FHA Purchase Loan Foreclosure Rate	4.50%
Expected Foreclosure Rate Reduction from Streamline Refinancing	14%
Average increase in UPB for New Streamline Refinance	1.02%

Baseline Scenario MMIF Impact

With these assumptions in hand, we can estimate how the suggested program changes would have changed the MMIF capital fund and ratio had they already been in place. We use two other figures provided by FHA—the average loss rate between December 2022 and December 2023 of 29% and the average FHA loan balance as of September 2023 of \$175,000.²³

The top section of Table 8 shows the existing distribution of purchase and streamline refinance loans in the FHA portfolio as of the end of January 2024. By applying the 4.5% purchase loan foreclosure rate to the loan count at the end of the period, we can compute that about 256,000 FHA purchase loans have been foreclosed, and at an average loss rate of 29% and average UPB of \$175,000, the claims on the MMIF would be about \$13 billion. For the 1.05 million streamline refinances, the foreclosure rate has been reduced by 14% to 3.87%, which implies about 42,000 foreclosures and claims of an additional \$2.15 billion. Total claims are about \$15.15 billion.

Table 8. Existing FHA Portfolio as of January 31, 2024.

Existing Distribution of FHA Portfolio	Loan Count at			Average Loss Rate	Average UPB	MMIF Claims (\$)
	End of Period	F/C Rate	F/C Count			
Purchase Loans	5,435,278	4.50%	256,113	29.0%	175,000	12,997,713,228
Streamline Refi Loans	1,051,493	3.87%	42,331	29.0%	175,000	2,148,297,503
Total	6,486,771	4.40%	298,444			15,146,010,731

New Distribution of FHA Portfolio	Loan Count at			Average Loss Rate	Average UPB	MMIF Claims (\$)
	End of Period	F/C Rate	F/C Count			
Purchase	5,330,129	4.50%	251,158	29.0%	175,000	12,746,263,284
Streamline Refi	1,051,493	3.87%	42,331	30.0%	175,000	2,223,858,312
New Streamline Refis	105,149	3.87%	4,233	30.0%	175,000	222,385,831
Total	6,486,771		297,722			15,192,507,427

MMIF Impact	
Loss from Larger Loan Balance on Existing Streamline Refis	(75,560,809)
Impact of Reduced Foreclosure Rate Due to Incremental Streamline Refis	29,064,113
Additional upfront MIP on induced Streamline Refis	212,533,007
Total MMIF Impact	166,036,311
MMIF Capital (\$B)	145.307
Insurance in Force (\$B)	1382.817
MMIF Capital Ratio	10.51%
MMIF Impact (%)	0.012%

Sources: [Version 9.4 SAS System Output \(hud.gov\)](#), [2023FHAAnnualReportMMIFund.pdf \(hud.gov\)](#), and author's calculations.

Had the program changes been in place, the FHA portfolio would instead resemble the middle section of Table 8. The number of purchase loans outstanding has been reduced by the 105,000 streamline refinances induced by the program changes. The 1.05 million streamline refinances now have an average loss rate of 30%, an increase of 1 percentage point, because these borrowers are assumed to have financed their closing costs, leading to a 1 percentage point increase in their UPB.

Our assumption that permitting the financing of closing costs would lead to a 10% increase in take-up would have resulted in an additional 105,000 completed streamline refinances as of the end of January 2024. To put this in context, research shows that as of September 2021, there were 4.2

²³ Sources: [Version 9.4 SAS System Output \(hud.gov\)](#) for the loss rate, [2023FHAAnnualReportMMIFund.pdf \(hud.gov\)](#) for the dollar amount of insurance in force, and [Version 9.4 SAS System Output \(hud.gov\)](#) for the loan count.

million FHA borrowers who could realize a substantial monthly savings by completing a rate and term refinance but had not done so.²⁴ To achieve the 10% increase in take-up rate in our base case scenario, just 2.5% of the 4.2 million FHA borrowers with a financial incentive to refinance would need to complete a streamline refinance, which suggests our take-up rate assumption is conservative. In Table 8, the 105,000 additional streamline refinances also have a 30% loss rate. In sum, MMIF claims increase to 15.2 billion, an increase of about \$46 million.

The total impact on the MMIF is shown in the bottom section of Table 8. The 1 percentage point increase in UPB on existing streamline refinances costs the MMIF about \$76 million, whereas the lower foreclosure rate on induced streamline refinances saves the MMIF about \$29 million. In addition, FHA will collect upfront MMIF on each newly induced streamline refi, which amounts to 105,149 new loans x \$175,000 loan balance x 1.75% upfront MIP x 66% after MIP refunds = \$213 million. In sum, we estimate the MMIF capital fund would be \$166 million higher had the recommended program changes already been in place, which would equate to a modest 1.2 bp increase in the MMIF capital ratio.

Worst-Case Scenario MMIF Impact

We can adjust our assumptions and see how our estimate of the MMIF impact would change under a “worst-case scenario.” To do so, we assume the program changes lead to no increase in uptake of streamline refinances, a purchase loan foreclosure rate of 10%, and that completing a streamline refinance has no effect on foreclosure rates. In addition, we shorten our horizon date from 4 years to 1 year, which increases the UPB difference between financing closing costs and using lender credits from 1.02% to 1.37% (as shown in Figure 1). The results are shown in Table 9.

In this case, no new streamline refinances are induced, so the MMIF claims on purchase loans are unchanged and no additional upfront MIP is collected. The claims on streamline refinances increase by \$280 million because financing closing costs increases the UPB and therefore the average loss rate by 1.37 percentage points. The \$280 million loss to the MMIF would reduce the capital ratio by a modest 2 bps.

²⁴ Source: [crl-adjustments-fha-streamline-refi-mar2022.pdf \(responsiblelending.org\)](https://www.responsiblelending.org/sites/default/files/2022-03/crl-adjustments-fha-streamline-refi-mar2022.pdf).

Table 9. MMIF Impact under a “Worst-Case Scenario.”

Existing Distribution of FHA Portfolio	Loan Count at		F/C Count	Average Loss Rate	Average UPB	MMIF Claims (\$)
	End of Period	F/C Rate				
Purchase Loans	5,435,278	10.00%	603,920	29.0%	175,000	30,648,928,722
Streamline Refi Loans	1,051,493	10.00%	116,833	29.0%	175,000	5,929,251,765
Total	6,486,771	10.00%	720,752			36,578,180,488

New Distribution of FHA Portfolio	Loan Count at		F/C Count	Average Loss Rate	Average UPB	MMIF Claims (\$)
	End of Period	F/C Rate				
Purchase	5,435,278	10.00%	603,920	29.0%	175,000	30,648,928,722
Streamline Refi	1,051,493	10.00%	116,833	30.4%	175,000	6,209,357,797
New Streamline Refis	0	10.00%	0	30.4%	175,000	0
Total	6,486,771		720,752			36,858,286,519

MMIF Impact	
Loss from Larger Loan Balance on Existing Streamline Refis	(280,106,032)
Impact of Reduced Foreclosure Rate Due to Incremental Streamline Refis	0
Additional upfront MIP on induced Streamline Refis	0
Total MMIF Impact	(280,106,032)
MMIF Capital (\$B)	145.307
Insurance in Force (\$B)	1382.817
MMIF Capital Ratio	10.51%
MMIF Impact (%)	-0.020%

Sources: [Version 9.4 SAS System Output \(hud.gov\)](#), [2023FHAAnnualReportMMIFund.pdf \(hud.gov\)](#), and author’s calculations.

In our worst-case scenario we don’t adjust the 29% loss rate scenario because the MMIF impact is not sensitive to the loss rate itself, but to the difference in loss rates due to the completion of a streamline refinance.

Additional Considerations

It is important to note that our assumptions and therefore our results are conservative (i.e. we likely underestimate the gain to the MMIF in our baseline scenario and overestimate the cost to the MMIF in our worst-case scenario) for two reasons.

First, our analysis does not include any benefit to the MMIF had the program changes persuaded some borrowers who would otherwise complete an FHA-to-GSE refinance to complete an FHA streamline refinance instead. During the 2020 – 2021 refinance wave, many borrowers refinanced away from FHA once their loan-to-value ratio (LTV) reached 80% and their credit score qualified for a GSE loan. The GSEs permit closing costs to be financed, do not require mortgage insurance once LTV falls below 80% whereas an FHA loan requires annual MIP regardless of LTV, and charge LLPAs that can be lower than FHA’s upfront MIP (depending on the borrower’s credit score and LTV).

FHA-to-GSE refinances harm the MMIF by eroding the credit and collateral quality of the FHA portfolio. FHA loses borrowers who are less likely to default (due to higher credit scores) and loses the loans that would have lower losses (due to lower LTVs) if they were to go to claim. Moreover, FHA no longer collects annual MIP once an FHA-to-GSE refinance is completed.

It is not clear how many borrowers who completed an FHA-to-GSE refinance during the 2020 – 2021 refinance wave would have been induced to complete an FHA streamline refinance if the FHA

program were adjusted to permit the financing of closing costs, which is why we exclude this topic from our analysis. However, even if the number of retained refinances were modest, the upfront and annual MIP and the reduced credit and collateral risk would all be to the benefit of the MMIF. Going forward, permitting the financing of closing costs, combined with the lower annual MIP rate of 0.55% that became effective in March 2023, should on the margin make FHA streamline refinances more attractive relative to FHA-to-GSE refinances for some borrowers, and therefore improve the future impact of our recommendations on the MMIF relative to what the impact may have been in the past.

Second, we assume that all FHA borrowers who complete a streamline refinance finance their closing costs; to the extent that some choose to pay their closing costs (or even some portion of their closing costs) up front or through lender credits, we will overestimate the increase in UPB on streamline refinances and therefore underestimate any positive impact and overestimate any negative impact on the MMIF.

FHA Streamline Refinances: Interaction between the Recommended Net Tangible Benefit Test and Recoupment Period Cap

5/7/24

Our recommendations for the FHA Streamline Refinance program include a simplified net tangible benefit test:

- Rate Reduction – for fixed-to-fixed streamline refinances, at least a 0.50% reduction in combined rate (note rate + annual MIP rate) and the new combined payment (principal & interest + MIP) cannot exceed the old combined payment; and
- Recoupment Period – a recoupment period of 36 months or, for loans refinanced less than 12 months after origination, 24 months.

Whether the net tangible benefit test or the recoupment period is the binding constraint on FHA Streamlined Refinances will depend on the terms of the loan and how many months have passed since the existing loan was originated. Below, we discuss six example loans and illustrate which constraint would bind and therefore define the maximum note rate on the new loan for a typical rate and term refinance and for a rate and term refinance where the term is reduced.

In Table 1 below, we use 6 example fixed-to-fixed refinances to illustrate the interaction between interest rate differential and recoupment period in determining the highest permissible note rate on the new loan. Our loan examples include an older loan with a 3.5% note rate that is refinanced 5 years after origination, a recent loan with a 7% note rate that is refinanced 7 months after origination, and a future loan with a 5% note rate that is refinanced 3 years after origination. Because closing costs are a key input into the recoupment period calculation, for each of the 3 loans we include an example with average closing costs (1.5% of loan balance) and high closing costs (3% of loan balance). The older loan is assumed to have an annual MIP rate of 0.85%, whereas the recent and future loans have an annual MIP rate of 0.55%.

For each loan, we calculate the note rate on the new loan such that the refinance meets all of the recommended consumer protection requirements. For the older loan with average closing costs, the requirement that the combined rate on the new loan be at least 0.50% below the combined rate on the old loan is the binding constraint. The annual MIP reduction of 0.30% (from 0.85% to 0.55%) increases the reduction in combined payment, and consequently reduces the recoupment period such that the 36-month limit would not bind. In contrast, if the refinancing of this loan cost 3% in closing costs, the recoupment period would bind. The note rate on the new loan needed to meet the 36-month recoupment period is 3.10%, and as a result, the combined rate reduction is 0.70%.

For the recently originated loan, we assume the refinance takes place as soon as it is eligible, which is 7 months after origination. In this case, a 24-month recoupment period applies, and it is binding whether the borrower pays an average amount or high amount of closing costs. If closing costs are average, the combined rate drop will need to be 1.05%, whereas if closing costs are high (3%), the combined rate drop required will increase to 2.15%. This is the intended consequence of the 24-month recoupment period for recently originated loans—the interest rate differential for these

refinances must be larger in order to remove any incentive for lenders to engage in serial refinancing.

For the future loan with average closing costs, the 0.50% combined rate reduction requirement binds—the new loan has a 4.50% note rate and the recoupment period of 32 months will be below the 36-month cap. If closing costs are high, then the recoupment period binds, and the new note rate will have to be 1.25% below the old note rate to create a 36-month recoupment period.

Table 1. Eligible Streamline Refinances for Older, Recent, and Future Loans with Average and High Closing Costs.

Loan Vintage Closing Costs	Older Average	Older High	Recent Average	Recent High	Future Average	Future High
Loan Amount	300,000	300,000	300,000	300,000	300,000	300,000
Note Rate	3.50%	3.50%	7.00%	7.00%	5.00%	5.00%
Term	360	360	360	360	360	360
P&I	\$1,347	\$1,347	\$1,996	\$1,996	\$1,610	\$1,610
Annual MIP Rate	0.85%	0.85%	0.55%	0.55%	0.55%	0.55%
MIP (\$) (at refi date)	\$191	\$191	\$137	\$137	\$131	\$131
Combined Payment	\$1,538	\$1,538	\$2,133	\$2,133	\$1,742	\$1,742
Refinance in Month	60	60	7	7	36	36
Principal Paid	30,348	30,348	1,497	1,497	13,552	13,552
Unpaid Principal Balance	269,652	269,652	298,503	298,503	286,448	286,448
Closing Costs	1.50%	3.00%	1.50%	3.00%	1.50%	3.00%
New Loan Amount	273,697	277,741	302,980	307,458	290,744	295,041
New Rate	3.30%	3.10%	5.95%	4.85%	4.50%	3.75%
New Term	360	360	360	360	360	360
New MIP	0.55%	0.55%	0.55%	0.55%	0.55%	0.55%
New P&I	\$1,199	\$1,186	\$1,807	\$1,622	\$1,473	\$1,366
New MIP	\$125	\$127	\$139	\$141	\$133	\$135
New Combined Payment	\$1,324	\$1,313	\$1,946	\$1,763	\$1,606	\$1,502
P&I Savings (%)	11.0%	12.0%	9.5%	18.7%	8.5%	15.2%
P&I Savings (\$)	\$148	\$161	\$189	\$373	\$137	\$244
Note Rate Change	-0.20%	-0.40%	-1.05%	-2.15%	-0.50%	-1.25%
Combined Rate Change	-0.50%	-0.70%	-1.05%	-2.15%	-0.50%	-1.25%
Combined Payment Change (\$)	(\$214)	(\$225)	(\$187)	(\$369)	(\$135)	(\$240)
Combined Payment Change (%)	-13.9%	-14.6%	-8.8%	-17.3%	-7.8%	-13.8%
Term Change (Months)	60	60	7	7	36	36
Recoupment Period (Months)	19	36	24	24	32	36

Source: Author's Calculations.

In sum, for our example loans, as long as closing costs are close to average and more than 12 months have passed since the existing loan was originated, the 0.50% net tangible benefit test will be the binding constraint. However, for refinances of recent originations or refinances accompanied by high closing costs, the recoupment period will be the binding constraint.

Some FHA borrowers may wish to complete a rate and term refinance in which they reduce the term of their loan. For these borrowers, it will likely be difficult to make use of the FHA Streamline Refinance program if it includes our recommended adjustments, and these borrowers will have to make use of a traditional, fully underwritten refinance. We use Table 2 below, which is similar to Table 1 but with the term of the new loan set to 15 years, to illustrate the difficulty of meeting the recommended net tangible benefit test and recoupment period requirements when refinancing into a shorter loan.

Table 2. Eligible Streamline Refinances for Older, Recent, and Future Loans with Average and High Closing Costs when Term is Reduced to 15 Years.

Loan Vintage	Older	Older	Recent	Recent	Future	Future
Closing Costs	Average	High	Average	High	Average	High
Loan Amount	300,000	300,000	300,000	300,000	300,000	300,000
Note Rate	3.50%	3.50%	7.00%	7.00%	5.00%	5.00%
Term	360	360	360	360	360	360
P&I	\$1,347	\$1,347	\$1,996	\$1,996	\$1,610	\$1,610
Annual MIP Rate	0.85%	0.85%	0.55%	0.55%	0.55%	0.55%
MIP (\$) (at refi date)	\$191	\$191	\$137	\$137	\$131	\$131
Combined Payment	\$1,538	\$1,538	\$2,133	\$2,133	\$1,742	\$1,742
Refinance in Month	60	60	7	7	36	36
Principal Paid	30,348	30,348	1,497	1,497	13,552	13,552
Unpaid Principal Balance	269,652	269,652	298,503	298,503	286,448	286,448
Closing Costs	1.50%	3.00%	1.50%	3.00%	1.50%	3.00%
New Loan Amount	273,697	277,741	302,980	307,458	290,744	295,041
New Rate	0.00%	0.00%	0.95%	0.00%	0.00%	0.00%
New Term	180	180	180	180	180	180
New MIP	0.55%	0.55%	0.55%	0.55%	0.55%	0.55%
New P&I	\$1,521	\$1,543	\$1,807	\$1,708	\$1,615	\$1,639
New MIP	\$125	\$127	\$139	\$141	\$133	\$135
New Combined Payment	\$1,646	\$1,670	\$1,946	\$1,849	\$1,749	\$1,774
P&I Savings (%)	-12.9%	-14.5%	9.5%	14.4%	-0.3%	-1.8%
P&I Savings (\$)	(\$173)	(\$196)	\$189	\$288	(\$5)	(\$29)
Note Rate Change	-3.50%	-3.50%	-6.05%	-7.00%	-5.00%	-5.00%
Combined Rate Change	-3.80%	-3.80%	-6.05%	-7.00%	-5.00%	-5.00%
Combined Payment Change (\$)	\$108	\$132	(\$187)	(\$284)	\$7	\$33
Combined Payment Change (%)	7.0%	8.6%	-8.8%	-13.3%	0.4%	1.9%
Term Change (Months)	-120	-120	-173	-173	-144	-144
Recoupment Period (Months)	-38	-61	24	32	-636	-264
	INELIGIBLE	INELIGIBLE		INELIGIBLE	INELIGIBLE	INELIGIBLE

Source: Author's calculations.

The older loan with average or high closing costs cannot reduce the term to 15 years through a streamline refinance. Even if the new note rate were 0%, the new combined payment would exceed the old combined payment. For the recent origination with average closing costs, the new note rate

would have to drop to 0.95% in order to meet the 24-month recoupment period. However, if closing costs were high, even at a 0% new note rate, the 24-month recoupment period could not be met. In this case, the borrower could wait 5 months, at which point the required recoupment period would extend to 36 months, to see if they could meet the net tangible benefit test for a streamline refinance. Like the older loan, the future loan cannot achieve a note rate low enough to generate a new combined payment that does not exceed the old combined payment.