Adjustments to Help the FHA Streamline Refinance Program Reach More Low-Wealth Families

December 6, 2021

March 22, 2022 Update:

Since the release of *Adjustments to Help the FHA Streamline Refinance Program Reach More Low-Wealth Families* in December 2021, mortgage rates have risen by about 125 basis points. As a result, the population of FHA borrowers with a financial incentive to refinance and their potential monthly savings are considerably smaller. Nevertheless, adjusting the FHA Streamline Refinance program to improve the pricing and remove the associated frictions now would ensure more borrowers, particularly LMI, Black, and Hispanic households, can experience the benefits of refinancing during future economic downturns.

In mid-November 2021, with mortgage rates around 3%, about 4.2 million FHA borrowers had a note rate at or above 3.5% and on average would have saved $230 per month, or over $2,700 a year, after completing a streamline refinance. With mortgage rates about 125 basis points higher at the time of this update, just 800,000 FHA borrowers have a note rate at or above 4.75% and could still benefit from a streamline refinance,[1] and the average savings has fallen to $180 per month, or over $2,100 a year.

Despite the decrease in the number of refinance-eligible borrowers and their potential monthly savings, FHA should still consider implementing the recommended FHA Streamline Refinance program adjustments. Refinancing waves are driven by falling mortgage rates, and falling interest rates generally accompany an economic downturn. By allowing closing costs to be rolled into the unpaid principal balance of the new loan,[2] along with the other suggested pricing and process improvements and borrower protections,[3] FHA would remove a significant impediment to refinancing and enable the households that have been unable to refinance in the past to reduce their monthly payments in the next refinancing wave without incurring any out-of-pocket costs. Lower monthly payments would in turn reduce the likelihood they default on their mortgage and lose their opportunity to build generational wealth through homeownership.[4]

LMI, Black, and Hispanic households exhibited lower refinancing propensities during the COVID-19 pandemic-induced refinancing wave. As a result, low-balance loans, which are typically held by low-income and/or low-wealth borrowers, are disproportionately represented in the refinance-eligible population. Adjusting the FHA Streamline Refinance program today will help these borrowers refinance during the next recession and experience the benefits of reduced monthly payments during economic stress.

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Acknowledgements

The authors would like to thank Julio Aldecocea, David Ertel, and Maren Kasper from Bayview Asset Management and Kurt Johnson from Mr. Cooper, in addition to Tim Bowler, Laurie Goodman, Jim Parrott, Bob Ryan, and Mark Zandi, all of whom were extremely helpful in the development of this paper.

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Executive Summary

Over the last two years, many FHA borrowers have taken advantage of record-low interest rates and refinanced their mortgage. However, there remain over 4 million FHA borrowers who could realize a substantial reduction in their monthly payments by refinancing, but have not done so. The average borrower in this cohort would save $229 per month (equivalent to 25% of their monthly principal, interest, and mortgage insurance payment), or $2,750 per year, by refinancing their mortgage.

The current refinancing wave has seen slower refinancing rates among low-to-moderate income (LMI), Black, and Hispanic households as compared to higher income, White, and Asian households. As a result, low-balance loans, which are typically associated with low-income and/or low-wealth borrowers, make up about 75% of the refinance-eligible population. Borrowers with low-balance loans start with a higher mortgage rate and subsequently refinance at significantly slower rates because the associated fixed costs pose a significant impediment. Furthermore, because lenders have limited capacity, they tend to focus their efforts on refinancing higher-balance loans, which have higher returns, often at the expense of the LMI households with lower-balance loans.

In response, FHA should consider improving the pricing and removing the frictions associated with the FHA Streamline Refinance program as a way to enable more borrowers, particularly LMI, Black, and Hispanic households, to refinance. By our estimates, implementing the pricing and process improvements would sufficiently increase the incentives for borrowers and lenders alike to induce an additional 865,000 streamline refinances. More households would benefit from lower monthly payments, which in turn would reduce the likelihood they default on their mortgage and lose their opportunity to build generational wealth through homeownership.

Given the racial composition of FHA borrowers and that 75% of refinance-eligible borrowers hold low-balance loans, the program adjustments would disproportionately benefit the LMI, Black, and Hispanic households that have not yet been able to refinance their mortgage. This program would therefore advance the President's racial equity agenda. If FHA prefers, the pricing improvement could just be provided during the COVID-19 pandemic and aftermath.

There is precedent for improving pricing for FHA Streamline Refinances. In March 2012, FHA reduced the upfront and annual MIP for the streamline refinance program, and a subsequent CBO study found that over the next 18 months, the program induced 179,000 refinances that would not have happened without the MIP reduction, avoided an estimated 42,000 defaults, and *saved* FHA $900 million.[5]

While the recommended pricing improvement would modestly reduce FHA revenues, the full complement of program adjustments including the pricing change would come, at most, at a small cost to the Mutual Mortgage Insurance Fund (MMIF). Applying the results from the CBO study, default rates for borrowers who complete a streamline refinance would fall by at least one-third, on average. Moreover, most if not all of the reduction in FHA fees would be offset by lower future claims due to lower defaults and fewer of the strongest FHA loans completing an FHA-to-Conventional refinance.

Given these results, we conclude that there are few government programs available today that offer as much economic benefit, particularly for lower-income / lower-wealth families. As a point of comparison, the American Rescue Plan (ARP) offered $1,400 per-person stimulus checks to households under a

certain income.[6] The average qualifying household, composed of 2.5 people, would have received $3,500.[7] By refinancing, the average refinance-eligible FHA borrower could save $2,750 (nearly 80% of the per-household ARP stimulus) *every year*, at little-to-no cost to FHA.

The remaining sections of this paper describe (i) the recommended pricing and process improvements, which are complemented by enhanced borrower protections that will safeguard FHA borrowers against loan churning, (ii) the universe of refinance-eligible borrowers, (iii) the benefits of refinancing for these borrowers, and (iv) the benefits and potential costs for the MMIF, followed by several Appendices. The Addendum, which describes how FHA could provide borrowers with an additional financial incentive to streamline refinance by reducing the ongoing MIP rate, could be considered at a later date.

I. Recommended Adjustments to the FHA Streamline Refinance Program

The proposed adjustments to the FHA Streamline Refinance program outlined below include steps that would reduce the borrower's costs of refinancing and remove frictions, both of which currently dissuade borrowers and lenders from using the program today. By removing frictions, FHA would enable those homeowners who have not yet made use of the program, particularly LMI, Black, and Hispanic borrowers, to complete a refinance and benefit by substantially lowering their monthly principal and interest (P&I) payments. As a complement, we include enhanced borrower protections, to ensure that by reducing the cost and frictions associated with the streamline refinance program, we do not inadvertently encourage loan churning.

The following recommendations are applicable to the non-credit qualifying streamline refinance, which is the program most FHA borrowers use, and include a pricing improvement, process improvements, and enhanced borrower protections.[8] The recommended adjustments in each category are presented in order of impact and importance. Because the recommended adjustments are substantial, we suggest that FHA post the adjustments to the Single Family Housing Drafting Table for industry and stakeholder feedback, with a short comment window.

Pricing Improvement

- **At least during the COVID-19 period, eliminate the upfront Mortgage Insurance Premium (MIP) for streamline refinances.** As it stands, borrowers must pay the upfront MIP of 1.75% on their purchase loan, and, unless they are refinancing within 3 years of purchase and therefore entitled to a partial refund, must pay the entire upfront MIP again upon refinancing.

  There is no need for FHA to collect this fee a second time, particularly during the continuing COVID-19 pandemic and its associated hardship. Because FHA has already underwritten the refinance-eligible borrowers, and a program requirement is that they have had strong payment performance in the previous year, the FHA Streamline Refinance program does not include any requirements based on credit score, loan-to-value (LTV) ratio, or debt-to-income (DTI) ratio.

Moreover, refinancing reduces the borrower's monthly payment and default risk, and therefore lowers the risk faced by the MMIF.

By asking borrowers to pay upfront MIP again in order to refinance, FHA is deterring a behavior (refinancing) that would help borrowers and the MMIF alike. In addition, eliminating the upfront MIP for streamline refinances may induce some borrowers to remain with FHA rather than completing an FHA-to-Conventional refinance, which would reduce the overall risk to the Fund and provide an important stream of on-going revenues.

Process Improvements

- **Permit closing costs to be rolled into the unpaid principal balance (UPB) of the new loan.** This step will allow borrowers to refinance without enduring a considerable out-of-pocket expense to pay for the closing costs or paying a higher interest rate, which lenders charge to create a premium for themselves to pay for the costs. This change would also align the FHA program with government-sponsored enterprises Fannie Mae and Freddie Mac (the GSEs) and Veterans Administration (VA) refinance programs.

  The inability of FHA borrowers to include closing costs in the UPB of their new loan forces lenders to increase the mortgage rate sufficient to provide the borrower the funds at closing. With mortgage-backed security (MBS) premiums constrained by fast prepayments, this typically leads to lower monthly savings for the borrower than if the loan balance could be modestly increased. While adding closing costs to the UPB of the new loan will create a modest increase in LTV and risk to the MMIF, the recent strength in house prices will more than offset the LTV increase and alleviate this concern.

  In addition, FHA should require that either: (i) any funds held in escrow on the original loan must be rolled into the escrow account associated with the new loan, or (ii) the servicer must net funds held in escrow for the original loan against the proceeds generated by the new loan upon closing. By doing so, FHA will ensure that the new loan is generated by a rate-term refinance rather than a cash-out refinance and therefore eliminate the churning incentive to refund amounts held in escrow on the original loan to the borrower at the expense of the borrower's home equity. This requirement would be consistent with the $500 limit on cash back to the borrower at mortgage disbursement.

- **Waive the direct endorsement (DE) underwriter sign-off requirement.** Since streamline refinances do not require income verification, an appraisal, or a credit report for the underwriter to analyze, a DE underwriter sign-off seems unnecessary at a time when there is a shortage of underwriters with the DE designation. In addition, the borrower is ending up with a lower payment that will reduce FHA's risks. The current requirement disadvantages smaller lenders in particular, and when DE underwriter capacity is stretched, incents all lenders to focus on products, such as GSE-to-GSE refinances, that do not require a DE underwriter.

- **Add the names of all existing borrowers into FHA Connection.** Taking this step would eliminate the need for customers to provide the existing mortgage note in order to complete a streamline refinance. FHA could also add Partial Claim information into FHA Connection, which would make it easier for lenders to evaluate mortgages for a streamline refinance that they are not currently servicing.
- **Adjust the payment history eligibility to require no late payments in the most recent 6 months and no more than 2 late payments (rather than 1) in the previous six months.** Taking this step would align the FHA Streamline Refinance program with the payment history requirements of the GSE legacy HARP program, and would allow more borrowers who are current today but missed a payment due to financial distress related to COVID-19 to qualify for a streamline refinance. This flexibility could just be provided during the COVID-19 period.

Enhanced Borrower Protections

- **Require a recoupment period of 36 months or less for a streamline refinance that results in a lower monthly P&I plus MIP payment. If the loan was originated within 12 months of FHA case number assignment, the recoupment period should be 18 months or less.** Adding these borrower protections will help ensure that the cost of a streamline refinance is kept in proportion to the savings in monthly P&I and MIP payments that it generates. The recoupment period is calculated as the sum of all fees, closing costs, or expenses, whether included in the UPB of the new loan or paid outside of closing, divided by the reduction in the borrower's monthly P&I plus MIP payment. A 36-month recoupment period would be consistent with the recoupment period required by the VA Interest Rate Reduction Refinance Loan (IRRRL) program, so it should be easy for lenders to implement.[9] The 18-month recoupment period for loans originated less than 12 months prior to refinancing will reduce the incentive for serial refinancing, or "loan churning".
- **Strengthen the net tangible benefit test such that it must be met unless the term reduction exceeds 10 years.** Currently, for a fixed rate mortgage without a term reduction or with a term reduction of less than 3 years, the new combined rate (interest rate plus MIP rate) must be at least 0.50% below the prior combined rate.[10] The requirement that the rate on the new loan be at least 50 basis points less than the current note rate is an important protection against lenders artificially churning existing FHA loans to obtain more fee revenue. Although FHA recently enhanced the net tangible benefit test to require the rate reduction unless the term reduction exceeds 3 years, FHA should further strengthen the test to apply unless the term reduction exceeds 10 years to eliminate any incentive for lenders to reduce the term of the refinanced mortgage solely to avoid meeting the net tangible benefit test.
- **If the Mortgagee originated the loan that is to be streamline refinanced, increase the seasoning requirement to 360 days.** Currently, FHA includes a seasoning requirement that, on the date of FHA case number assignment, at least 210 days must have passed from the closing date of the mortgage that is being streamline refinanced. Increasing the seasoning requirement for same-lender refinancing to 360 days will discourage lenders from churning loans while still

allowing FHA borrowers to streamline refinance with a different lender should interest rates drop six months after they close on their mortgage.

Impact of Process Improvement on Lender Incentives, Prepayment Speeds, and Mortgage Rates

The adoption the recommended adjustments to the FHA Streamline Program could give rise to two potential concerns. First, the recommended process improvements should not inadvertently create an incentive for lenders to originate mortgages to engage in serial refinancing in order to profit from repeated fee extraction. The enhanced borrower protections described above are intended to address this concern. With the recommended adjustments in place, the FHA Streamline Refinance program would have several important differences from the VA IRRRL program, which collectively reduce if not eliminate incentives for lenders to engage in loan churn. Specifically, unlike VA borrowers, FHA borrowers:

- Cannot extract equity using an escrow account refund;
- Cannot finance discount points to reduce their mortgage rate, which closes a potential loophole that could be used to meet the 50-basis point net tangible benefit test (the VA IRRRL program allows VA borrowers to finance up to 2 discount points);
- Must meet an 18-month recoupment period if they attempt a streamline refinance within 12 months of originating their loan;
- Must meet the 0.50% net tangible benefit test unless they reduce the term of their mortgage through refinancing by more than 10 years; and
- Must meet a 12-month seasoning requirement if attempting a same-lender refinancing.

The second potential concern is that higher FHA refinancing volumes and the associated faster prepayment speeds should not result in less demand for Ginnie Mae MBS and higher mortgage rates for FHA borrowers. The fact that GSE Uniform MBS (UMBS) trade at a higher price for some interest rates than Ginnie Mae securities, even though the latter carry the full faith and credit guarantee of the US government, animates this potential concern.

There are three considerations that address this issue. First, Ginnie Mae securities with interest rates that new FHA purchase and refinance borrowers receive trade about the same as GSE MBS, and should continue to do so if the changes suggested here are adopted. While higher coupon Ginnie Mae MBS do trade at a price discount to UMBS, mainly due to faster VA prepayment speeds, that has not affected the interest rates of new borrowers.[11]

Second, the mortgage market is at the end of the largest refinancing wave in history driven by record-low mortgage rates, yet investors continue to purchase MBS at tight spreads. Marginal increases in speeds should not significantly affect pricing.

Third, even if there is a modest drop in the price of higher coupon Ginnie Mae MBS due to faster prepayment speeds brought about by more streamline refinancing, the benefits would outweigh this cost. Investors may lose some of the windfall gains created by borrowers with mortgages with an above-market rate not refinancing, which are disproportionately lower-balance loans held by lower-wealth borrowers, but investors accept this prepayment risk when they purchase MBS. In addition, the benefits to borrowers would be substantial.

II. The Universe of Refinance-Eligible FHA Borrowers

As of September 2021, there were approximately 4 million FHA borrowers who could realize a substantial reduction in their monthly payments by refinancing their mortgage, but have not done so notwithstanding record low interest rates. Of these borrowers, the majority have low-balance loans and are paying a mortgage rate far in excess of current mortgage rates. Moreover, the most recent refinancing wave has seen slower refinancing rates for LMI, Black, and Hispanic households. Removing the frictions associated with the FHA Streamline Refinance program would allow many of these borrowers to realize a substantial savings by reducing their monthly P&I payments, and much of the benefits would accrue to LMI, Black, and Hispanic households.

As shown in Table 1, about 4.2 million FHA borrowers, about 56% of the current total FHA-insured portfolio, have a note rate above 3.5% and could benefit from an improved FHA Streamline Refinance program.[12] The average note rate for the loans in this population is 4.5%. By comparison, the most recent Freddie Mac Primary Mortgage Market Survey (PMMS) rate is 2.98%, which means that the average loan in each UPB category has a rate that is more than 1.5 percentage points above the current market rate.

Table 1. About 56% of the FHA portfolio is refinance-eligible, with a note rate above 3.5%.

	Current UPB					
FHA Loans with a Note Rate > 3.50%	**<175K**	**175K-200K**	**200K-225K**	**225K-250K**	**>250K**	**All**
Total UPB ($B)	306.5	53.9	47.3	38.9	126.1	572.7
Loan Count	3,144,616	288,398	223,048	164,225	386,850	4,207,137
Average Note Rate	4.61	4.24	4.20	4.17	4.14	4.50
Average Original Loan Amount	117,826	205,730	230,951	256,121	347,970	160,000
Average Remaining Term (months)	250	302	307	311	317	265
Average UPB	97,465	186,883	212,002	236,923	325,934	136,118
Distribution of Loans	75%	7%	5%	4%	9%	100%

Source: Urban Institute, derived using data from eMBS as of September 1, 2021.

Fully 75% of the refinance-eligible population shown in Table 1 have a current UPB below $175,000 and the average borrower in this category borrowed less than $118,000 at origination. Low-balance loans are typically associated with low-wealth / low-income borrowers and, as calculated in Appendix 1, a majority of the refinance-eligible loans shown in Table 1 are likely held by low-income borrowers (those with an income below 80% of median area income).

Relative to those with higher UPBs, borrowers with low-balance loans tend to refinance at significantly lower rates. One reason is because of the associated fixed costs. Closing costs are usually at least a few

thousand dollars and, if they cannot be financed, can pose a significant impediment, especially to those who are lower-income and/or lower-wealth. Moreover, because lenders have limited capacity, they tend to focus their efforts on refinancing higher-balance loans, which have higher returns, often at the expense of lower-balance loans. As a consequence, prepayment speeds for low-balance loans are relatively slow. For FHA-insured loans, the prepayment speed of loan balances below $110,000 is about half the prepayment speed of loan balances above $350,000. Appendix 1 provides evidence that low-balance loans are less likely to be refinanced and are more likely to be held by low-income households and have a higher mortgage rate.

The conclusions above are consistent with research[13] that finds that lower-income homeowners were less likely to refinance their mortgage during the recent refinancing boom and draws three important conclusions: first, despite having a large enough interest rate differential to create a financial incentive, lower-income borrowers were less likely to apply to refinance their mortgage than higher-income borrowers; second, during 2020 the difference in rates of refinancing between homeowners in the top and bottom income quintiles was 14 times higher than in previous periods; and third, for those homeowners who did refinance, those in the highest income quintile received the largest interest rate decreases.

Black and Hispanic homeowners would likely benefit from an improved FHA Streamlined Refinance program as well, for two reasons. First, Black and Hispanic homeowners make up a disproportionately large percentage of FHA borrowers. In 2021, a total of 32% of FHA loans made were to borrowers of color, including 16% to Hispanic borrowers and 13% to Black borrowers.[14]

Second, Black and Hispanic homeowners refinance at lower rates as compared to White homeowners. Recent research[15] finds that race-based differences in credit score, LTV, and DTI persist beyond origination, which makes it harder for borrowers of color to refinance their mortgage when interest rates fall. Consequently, Black homeowners with a GSE-backed mortgage were paying nearly 0.5% more than White borrowers on active mortgages that were originated between 2009 and 2015. Moreover, the same study also 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.

Mortgage rates remain at historically low levels. As a result, market conditions are extremely favorable for borrowers looking to refinance their mortgage. By adopting the adjustments to the FHA Streamline Refinance program suggested above, FHA could induce more borrowers, particularly LMI, Black, and Hispanic households, to take advantage of currently low mortgage rates and refinance to realize a substantial monthly savings.

III. Borrower Benefits of an Improved Streamline Refinance Program

If FHA implements the recommended changes to the FHA Streamline Refinance program, more borrowers would be able to refinance their mortgage, leading to a considerable reduction in their monthly payments and their risk of default. In addition, most refinance-eligible borrowers would

actually reduce their lifetime interest costs even with extended loan terms, and many would be able to reduce the term of their annual MIP payments from life of loan to 11 years from the date of refinancing.

Allowing closing costs to be rolled into the UPB of the new loan will make refinancing possible for many FHA borrowers, particularly those with low-balance loans. Under the current FHA Streamline Refinance program, the borrower must pay closing costs upfront or by increasing their mortgage rate sufficiently such that the lender's gain-on-sale from selling the mortgage increases by the amount of the borrower's closing costs. For example, to cover closing costs equal to 1.5% of the loan balance, the lender might assume an average life of 5 years for the mortgage, and cover the closing costs by increasing the mortgage rate by 1.5% / 5 years = 0.3%.

Using this method, a borrower without immediate liquidity can still get the benefit of lower P&I payments by refinancing. However, because the mortgage rate on the new loan must increase to cover the closing costs (0.3% in our example), some borrowers will be unable to refinance using this method; either they will no longer have a large enough interest rate differential between their old rate and their new rate to create a material reduction in their P&I payment and/or they will no longer meet the 0.5% net tangible benefit test required of a streamline refinance.[16] If closing costs can be included in the balance of the new loan, the increase in mortgage rate is no longer required and more borrowers will have the chance to refinance their mortgage and reduce their monthly P&I payment.

Borrowers with low-balance loans (and by extension, lower-income and/or lower-wealth borrowers) will benefit most from this adjustment, because while closing costs are typically expressed as a percentage of the loan balance, a portion of closing costs are actually fixed. Therefore, closing costs tend to make up a larger percentage of low-balance loan amounts, making the required increase in the mortgage rate larger as well.

The borrower benefits of refinancing using the sample of refinance-eligible mortgages are shown in Table 2, assuming the recommended program adjustments have been accepted. These examples assume a 3.00% refinancing rate and closing costs equal to the larger of 1% of UPB and $1,500. The monthly savings from refinancing ranges from $186 to $299, or 16% to 28% of the original P&I + MIP. The largest savings in percentage terms accrue to the borrowers in the lowest UPB category (UPB below $175,000) and, as noted above, the borrowers in the lowest current UPB category are likely to be LMI households. The considerable reduction in the borrower's monthly payments will reduce the likelihood that they default on their mortgage and lose their home to foreclosure and therefore increase their opportunity to build intergenerational wealth through homeownership.

Table 2. The impact of refinancing on the refinance-eligible population of FHA loans.

	Current UPB					
FHA Loans with a Note Rate > 3.50%	**<175K**	**175K-200K**	**200K-225K**	**225K-250K**	**>250K**	**All**
Total UPB ($B)	306.5	53.9	47.3	38.9	126.1	572.7
Loan Count	3,144,616	288,398	223,048	164,225	386,850	4,207,137
Average Note Rate	4.61	4.24	4.20	4.17	4.14	4.50
Average Remaining Term (months)	250	302	307	311	317	265
Average UPB	97,465	186,883	212,002	236,923	325,934	136,118
Original Loan Terms (assumes 0.85% annual MIP rate)						

P&I	605	1,011	1,129	1,248	1,689	811
MIP	69	132	150	168	231	96
P&I + MIP	674	1,143	1,280	1,416	1,920	907

Refinance Terms (3.00% 30-year mortgage, 1.00% closing costs subject to a $1,500 minimum, 0% UFMIP, and 0.85% Annual MIP rate)						
Closing Costs	1,500	1,869	2,120	2,369	3,259	1,500
Refinanced UPB	98,965	188,752	214,122	239,292	329,193	137,618
P&I	417	796	903	1,009	1,388	580
MIP	70	134	152	169	233	97
P&I + MIP	487	929	1,054	1,178	1,621	678
Total Savings ($)	186	214	225	237	299	229
P&I + MIP Reduction (% of Total)	28%	19%	18%	17%	16%	25%
Recoupment Period (months)	8	9	9	10	11	7
Total Interest Difference (Refi - Original)	-2,886	-20,063	-23,566	-27,193	-38,645	-7,061
Implied LTV (96.5% Original LTV, 0% HPA)	83%	90%	91%	92%	93%	85%

The data in Table 2 also show that the average mortgage in each current UPB category would meet the three enhanced borrower protections outlined above that provide an additional layer of protection for borrowers beyond the current FHA Streamline Refinance program requirements. First, all of the average loans in Table 2 would recoup their closing costs in less than a year, and therefore easily meet the recoupment period maximum of 36 months.[17] The elimination of upfront MIP contributes to the shorter recoupment periods, which would be shortest for the lowest loan balances.

Second, the average loan in each UPB category was originated more than 12 months ago and would easily meet the applicable seasoning requirement. Third, the average mortgage rate on the refinance-eligible loans shown in Table 2 is at least 1 percentage point above current mortgage rates. As such, borrowers would easily satisfy the 0.50% net tangible benefit test.

There are a few additional and important observations to be made from Table 2. In every case, the average borrower would *save* on their total lifetime interest costs by refinancing even if they hold their new loan to maturity.[18] That is, the reduction in interest rate more than offsets the effects of term extension on the lifetime interest cost of the refinanced mortgage, addressing the concern that the term extension associated with a refinance could cost the borrower more in total interest costs over the life of the loan.

Furthermore, many borrowers with the lowest UPB balances will likely be able to reduce the term of their annual MIP from the full mortgage term to 11 years from the date of refinancing, as permitted by the current program.[19] The average loan with a UPB below $200,000 depicted in Table 2 is fairly seasoned, and assuming a 96.5% LTV at origination and that the borrower has made on-time payments, the last row in Table 2 shows the implied LTV of the mortgage based on the original value of their home (i.e. without the benefit of any house price appreciation). For the two lowest current UPB categories, the average borrower will have a current LTV less than or equal to 90% and, upon refinancing, will have the benefit of a reduction in the term of their annual MIP from maturity to 11 years.

IV. MMIF Considerations and Benefits

Adopting the recommended adjustments would have two positive effects on the MMIF, with little incremental cost. First, the increase in refinancing volume and borrowers' associated lower monthly P&I payments would reduce default rates and subsequent claims on the MMIF. Second, some borrowers who would have otherwise completed an FHA-to-Conventional refinance would be induced to use the FHA Streamline Refinance program instead, so that FHA would retain the associated fees and avoid erosion of the quality of the credit and collateral it insures.

The cost to the MMIF of the adjustments described above would be modest—we estimate the program adjustments would lead to a 4% drop in expected credit subsidy rate, from 2.69% to 2.55%. The credit subsidy rate is the expected net present value, per dollar of new insurance endorsements, of all cash flows from insurance operations over the life of the mortgage insurance as of the year of the insurance commitments.[20] The negative number indicates that the new loans are projected to provide a subsidy to FHA. The net benefit to the Fund of each insured loan, at 2.55%, would still be greater than FHA's 2% capital requirement and the assumed credit subsidy rate for 2020 (2.27%). Furthermore, if the recommended program adjustments allow FHA to retain a relatively modest number of borrowers who otherwise would have completed an FHA-to-Conventional refinance, the associated fees would offset the above cost to the MMIF. The remainder of this section quantifies the benefits and costs to the MMIF, with supporting analysis provided in Appendix 2.

Lower mortgage payments created by refinancing reduce subsequent default rates.[21] In fact, research[22] from CBO economists who analyzed the impact of the FHA's March 2012 MIP reduction announcement[23] for streamline refinances finds that reducing the borrower's monthly P&I plus MIP payment by 10% caused their subsequent monthly default probability to fall by 27.5%.

With the suggested adjustments to the FHA Streamline Refinance program in place, the average borrower with a refinance-eligible FHA loan shown in Table 1 would realize a total savings of $229, or 25% of their original P&I + MIP payment. The P&I reductions by loan balance range from 16% to 28%, with lower balances loans experiencing the largest percentage reductions.

Using the lower-bound estimate from the CBO study noted above that a 10% refinance-related payment reduction would reduce lifetime default rates by 20%, those borrowers who are induced to use the FHA Streamline Refinance program by the suggested adjustments would experience a reduction in default rates of between 31% and 55%. Intuitively, one would expect the effect of payment reduction on default rates to decline for very large payment reductions and to vary with underlying economic conditions, and so under current circumstances could be somewhat lower. Nonetheless, FHA could expect the impact of inducing additional streamline refinances to reduce default rates for those borrowers by at least one-third, on average.

The program adjustments, particularly the pricing improvement, will cause many FHA borrowers to complete an FHA Streamline Refinance rather than an FHA-to-Conventional refinance. We estimate that 5-10% of FHA-insured borrowers per year have completed an FHA-to-Conventional refinance over the last two years (see Appendix 2). Borrowers often refinance away from FHA once their LTV reaches 80% and their credit score qualifies for a conventional loan because a conventional loan does not require private mortgage insurance once the LTV falls below 80%, whereas an FHA loan requires the payment of annual MIP regardless of LTV.[24] Furthermore, GSE LLPAs are often lower than the FHA's upfront MIP.[25]

Many borrowers, because of scheduled amortization and recent increase in house price appreciation, will have a current LTV below 80%, and will be able to meet the eligibility criteria for a conventional mortgage. For example, the average borrower in Table 2 with a current UPB below $175,000 would have a current LTV of 83% based on scheduled amortization alone. Once recent house price appreciation is factored in (at a national level, house prices have appreciated 25% since the start of the refinancing wave) many refinance-eligible FHA borrowers will have an LTV well below 80% and will be able to qualify for a conventional loan.[26] Given the rapid run-up in house prices, the percentage of FHA loans that refinance from FHA to the GSEs may well increase substantially in the near future.

FHA-to-Conventional refinances erode the quality of the credit and collateral insured by the MMIF because the FHA portfolio loses the loans least likely to default (due to higher credit scores) and those that would have the lowest losses (due to lower LTVs) if they did default. In addition, FHA no longer collects annual MIP after an FHA-to-Conventional refinance is completed. Adopting the suggested adjustments to the FHA Streamline Refinance program, particularly the pricing improvement, would make an FHA refinance more competitive with a conventional refinance, enabling FHA to retain many of these borrowers and avoid the portfolio attrition associated with FHA-to-Conventional refinances.

In exchange for the benefits above, we estimate that the MMIF would incur a modest 4% reduction in credit subsidy rate, from 2.69% to 2.55%. We arrive at this estimate using the 2022 budget execution credit subsidy rate approved by the Office of Management and Budget (OMB) as a baseline. We then estimate the increase in take-up of streamlined refinances from the recommended program adjustments, apply the recommended pricing adjustment to recalculate fees, and incorporate the expected reduction in default rates to arrive at an amended credit subsidy rate.

For 2022, FHA expects each insured loan to contribute 2.69% in fees net of losses. FHA receives on average 1.75% of upfront MIP and 0.84% of annual MIP, which will generate a total of 7.19% of fees per dollar of new endorsements based on the OMB-approved average life for the loans in the portfolio of 6.48 years.[27] FHA expects to realize a 5.64% default rate and a 27.18% recovery rate, which together imply a default rate, net of recoveries, of 3.87%.[28] Fees (7.19%) minus defaults, net of recoveries (3.87%) and other costs (0.63%) generates the negative subsidy rate of 2.69%.

To estimate of the number of streamline refinances that would be induced by removing frictions and improving pricing, we begin with the 7.5 million FHA loans outstanding as of the end of September 2021. Of those loans, 18% were the result of an already completed streamline refinance. Applying the 18% historical streamline refinance rate to the 4.2 million refinance-eligible loans suggests that another 745,000 borrowers would execute a streamline refinance even without the program adjustments. That leaves about 3.5 million refinance-eligible borrowers remaining, and we estimate that 25% of these borrowers (about 865,000) would be induced to complete a streamline refinance because of the reduced frictions and pricing adjustments. That bring the total number of streamline refinances to 1.61 million, or 21% of the 7.5 million loans outstanding. Note that our 25% take-up rate results in a modest 3 percentage point (or 20%) increase in the percentage of streamline refinances in the FHA portfolio.

Given the projection that 21% of the 7.5 million loans outstanding will use the FHA Streamline Refinance program, the weighted average fee for the entire portfolio would drop to 6.83%, a reduction of 0.36 percentage points. Incorporating the reduced default rate on the induced streamline refinances of

4.11% results in a negative subsidy rate of 2.55%, which is 4% (or 0.14 percentage points) lower than the 2022 FHA estimate.

The change in negative subsidy rate is not particularly sensitive to our take-up rate assumption, and the negative subsidy rate actually increases as take-up rates increase: if all refinance-eligible borrowers were induced by the program adjustments to complete a streamline refinance, i.e. a take-up rate of 100%, the negative subsidy would drop to 2.65%, a decrease of just 1% from FHA's 2022 estimate.

If the suggested adjustments to the FHA Streamline Refinance program are adopted and the March 2012 experience provides any precedent, FHA could experience results that are similar in direction to the March 2012 pricing adjustment and the net benefit to FHA could be substantial. The research[29] noted above that evaluated the FHA decision to reduce upfront and annual MIP in March 2012 for the streamline refinance program found that over the next 18 months, the program induced 179,000 refinances that would not have happened without the MIP reduction, avoided an estimated 42,000 defaults, and *saved* FHA $900 million.

Finally, another factor that could offset the estimated 4% drop in the negative subsidy rate would be the borrowers who are induced to complete an FHA Streamline Refinance rather than an FHA-to-Conventional refinance. In Appendix 2, we provide lower and upper bound estimates of the number of FHA borrowers who completed an FHA-to-Conventional refinance during the current refinancing wave. Going forward, if the recommended adjustments induce just 235,000 FHA borrowers (about 3% of the current FHA portfolio and well below the 600,000 lower-bound estimate of FHA borrowers who completed an FHA-to-Conventional refinance during the current refinancing wave) to choose an FHA Streamline Refinance instead of an FHA-to-Conventional refinance, the credit subsidy from these loans will bring the overall impact of the recommended program adjustments on the MMIF to zero. Note that these 235,000 retained FHA borrowers are not in addition to the 1.61 million expected streamline refinances calculated above; rather, of the 1.61 million FHA borrowers expected to complete a streamline refinance, if 235,000 of them would have completed an FHA-to-Conventional refinance had the recommended adjustments not been adopted, then the recommended adjustments will have no cost to the MMIF.

Appendix 1. Low-balance loans are less likely to be refinanced and more likely to be held by low-income households and have a higher mortgage rate.

Borrowers with low-balance loans are less likely to refinance, in part because of the associated fixed costs. Closing costs are usually at least a few thousand dollars and, if they cannot be financed, can pose a significant impediment to borrowers who want to refinance, especially those who are lower income and/or lower wealth. Furthermore, due to capacity constraints that become binding during a refinancing wave, lenders tend to focus on refinancing higher balance loans that have higher returns first, at the expense of lower balance loans.

Low-balance refinance-eligible loans are likely held by low-income borrowers, as demonstrated by Table 3, suggesting that an improved streamline refinance program would have considerable benefits for low-income households. This table summarizes the distribution of refinance-eligible loans from Table 1 according to their current UPB, and also shows the percentage of FHA refinances completed in 2020 by low-income borrowers (those earning below 80% of median family income).[30] The top section of Table 3 indicates that the majority (75%) of refinance-eligible FHA loans have a current UPB below $175,000. Moreover, of the FHA refinances completed in 2020, the majority (62%) of refinances with a UPB below $175,000 were undertaken by a low-income household. Among those FHA borrowers who refinanced in 2020, the percentage by low-income households declines as UPB increases, indicating the expected positive association between loan balance and income.

While there could be income and UPB differences between the households who successfully refinanced in 2020 and our target population of refinance-eligible borrowers, if the relationship between income and current UPB exhibited in 2020 refinances continues to hold, the majority of the benefits of the proposed program adjustments will accrue to low-income households. The bottom row of Table 3 shows the product of the percentage of refinance-eligible loans in each UPB category and the percentage of 2020 refinances that were completed by low-income households in each UPB category. Under the assumption noted above, FHA could expect 56% of refinances completed by the refinance-eligible population to be by low-income households.[31]

Table 3. The distribution of refinance-eligible loans by current UPB and refinances by low-income households in 2020.

	Current UPB					
FHA Refi-Eligible Loans (Note Rate > 3.50%)	**<175K**	**175K-200K**	**200K-225K**	**225K-250K**	**>250K**	**All**
Distribution of Loans	75%	7%	5%	4%	9%	100%

	Refinanced UPB					
Household Income Band	**< 175k**	**175k - 200k**	**200k - 225k**	**225k - 250k**	**> 250k**	**All**
Low-income households (< 80% of Median Income)	62%	50%	43%	39%	31%	45%
Implied percentage of low-income refi-eligible borrowers	46%	3%	2%	2%	3%	56%

Sources: eMBS and HMDA (2020).

Borrowers with low-balance loans are less likely to refinance and, as would be expected, prepayment speeds are considerably slower for low-balance loans. Investors, in recognition of the value of slower prepayment speeds in a low interest rate environment, are willing to pay a premium for MBS composed

of low-balance loans. However, the premium is not passed on to borrowers with smaller loan balances in the form of lower mortgage rates; instead, the note rate on low-balance mortgages is generally higher, increasing the potential savings from refinancing.

Prepayment speeds and the original note rate for loans of various sizes are shown in Table 4. For FHA-insured loans, the prepayment speed of loan balances below $110,000 is about half the prepayment speed of loan balances above $350,000. The same is true for GSE-backed and VA-guaranteed loans.

Table 4. Recent prepayment speeds and original note rate for loans originated 12 to 60 months ago.

Prepayment Rates	FHA		VA		GSE	
Loan Balance	Annualized CPR	Original Note Rate	Annualized CPR	Original Note Rate	Annualized CPR	Original Note Rate
< 85K	25	4.36%	26	4.16%	21	4.57%
86K-110K	31	4.29%	33	4.05%	26	4.44%
111K-150K	36	4.24%	40	3.98%	29	4.35%
151K-175K	41	4.21%	43	3.94%	32	4.29%
176K-200K	45	4.19%	45	3.92%	34	4.25%
201K-225K	48	4.16%	47	3.89%	36	4.20%
226K-250K	51	4.13%	49	3.86%	38	4.17%
251K-275K	53	4.10%	51	3.83%	39	4.13%
276K-300K	56	4.13%	52	3.81%	40	4.11%
> 350K	59	4.04%	57	3.73%	44	4.05%

Source: eMBS, covering prepayments between mid-March and mid-September 2021.

While the slower prepayment speed of low balance loans benefits investors in the current low-rate environment, those benefits are not passed along to borrowers in the form of lower mortgage rates. Based on data from GSE-backed loans shown in Table 5, investors are willing to pay a premium for the benefit of slower prepayment speeds. Specified pools composed of only lower balance GSE loans trade at a price premium, or “payup,” to TBAs, which are typically composed of larger balance loans. As indicated in Table 5, the payup increases as loan balance decreases, which indicates that MBS investors recognize the value in the slower prepayments of lower balance loans. While the data presented in Table 5 are for Fannie Mae MBS, one would expect Ginnie Mae MBS composed of lower-balance loans to have similar payups.

Despite the payups, lower balance loans have higher note rates, as is evident in Table 4. The note rates shown in Table 4 are the average original rate across all loans, including those loans that prepaid and those loans that did not. FHA borrowers with the smallest loan balances pay on average an extra 0.32% in interest relative to those with the largest loan balances.

Table 5. Prices and payups for low balance specified pools.

	FN 2		FN 2.5	
Loan Balance	Price	Payup	Price	Payup
< 85K	102.22	1.31	105.94	2.38
86K-110K	102.09	1.18	105.56	2.00
111K-150K	101.84	0.93	105.09	1.53
151K-175K	101.75	0.84	104.84	1.28
176K-200K	101.56	0.65	104.66	1.10

201K-225K	101.44	0.53	104.28	0.72
226K-250K	101.19	0.28	104.00	0.44
251K-275K	101.00	0.09	103.75	0.19
276K-300K	100.91	0.00	103.56	0.00
TBA Price	100.91		103.56	

Source: eMBS.

Taken together, these market observations indicate that while investors recognize and are willing to pay a premium for lower balance loans due the their lower prepayment propensity, the premium is not being passed through to low-balance borrowers through a lower mortgage rate; instead, their note rates are higher and their potential savings from refinancing are greater.

Appendix 2: Calculating the Benefits and Costs to the MMIF.

In this Appendix, we provide the detailed calculations to support our analysis of the MMIF impact of the proposed adjustments to the FHA Streamline Refinance program.

MMIF Benefit 1: Lower Default Rates

Our estimate of the reduction in default rates from the proposed program adjustments is based on research[32] from CBO economists who analyzed the impact of the FHA's March 2012 MIP reduction announcement[33] for streamline refinances and found that reducing the borrower's monthly P&I plus MIP payment by 10% caused the subsequent monthly default probability to fall by 27.5%.

Refinancing leads to lower monthly P&I payments and reduces future default rates, which in turn causes a reduction in future claims on the MMIF. The data in Table 6 indicate the potential monthly savings in P&I and MIP that could be realized if the average loan in each current UPB category were streamline refinanced with the pricing adjustments noted above. For the average loan in the refinance-eligible population, the total savings would be $229 per month, or 25% of their original P&I + MIP payment. The savings in monthly P&I payment as a percentage of original P&I + MIP range from 16% to 28%, with lower UPB balances having the largest reductions.

Table 6. The impact of refinancing on the refinance-eligible population of FHA loans.

	Current UPB					
FHA Loans with a Note Rate > 3.50%	**<175K**	**175K-200K**	**200K-225K**	**225K-250K**	**>250K**	**All**
Total UPB ($B)	306.5	53.9	47.3	38.9	126.1	572.7
Loan Count	3,144,616	288,398	223,048	164,225	386,850	4,207,137
Average Note Rate	4.61	4.24	4.20	4.17	4.14	4.50
Average Original Loan Amount	117,826	205,730	230,951	256,121	347,970	160,000
Average Remaining Term (months)	250	302	307	311	317	265
Average UPB	97,465	186,883	212,002	236,923	325,934	136,118
Original Loan Terms (assumes 0.85% annual MIP rate)						
P&I	605	1,011	1,129	1,248	1,689	811
MIP	69	132	150	168	231	96
P&I + MIP	674	1,143	1,280	1,416	1,920	907
Refinance Terms (3.00% 30-year mortgage, 1.00% closing costs subject to a $1,500 minimum, 0.00% UFMIP, and 0.85% Annual MIP rate)						
Closing Costs	1,500	1,869	2,120	2,369	3,259	1,500
Refinanced UPB	98,965	188,752	214,122	239,292	329,193	137,618
P&I	417	796	903	1,009	1,388	580
MIP	70	134	152	169	233	97
P&I + MIP	487	929	1,054	1,178	1,621	678
Total Savings ($)	186	214	225	237	299	229
Impact of Refinancing						
P&I Reduction (% of Total)	28%	19%	18%	17%	16%	25%
Reduction in Default Rate (Induced)	55%	37%	35%	34%	31%	51%

Source: eMBS. Figures may not sum due to rounding.

As noted by the CBO economists, applying their estimate of the impact of refinance-driven payment reduction on default rates to all streamline refinances can only be considered a rough effect. Intuitively, one would expect the effect of payment reduction on default rates to decline for very large payment reductions. Therefore, we use the lower bound estimate of the impact of refinance-related payment reduction on lifetime default rate from the CBO study (a 10% payment reduction would reduce lifetime default rates by 20%), and estimate that those borrowers who are induced to streamline refinance by the program adjustments would experience a reduction in default rates of between 31% and 55%. Even if the impact of payment reduction from refinancing on default rates does not scale linearly and is smaller than these estimates, the default reduction would still be substantial.

MMIF Benefit 2: Fewer FHA-to-Conventional Refinances Reduces the Attrition of High-credit, Low-LTV Loans

The recommended program adjustments will also cause some FHA borrowers to complete an FHA Streamline Refinance rather than an FHA-to-Conventional refinance. If FHA is able to avoid losing borrowers to an FHA-to-Conventional refinance, FHA will continue to receive monthly MIP payments and retain the (now lower) default risk associated with the refinanced loan, thereby improving the overall credit and collateral risk of the MMIF.

At a national level, house prices have appreciated 25% since the start of the refinancing wave.[34] As a result, many borrowers will have a current LTV below 80%, and will be able to meet the eligibility criteria for a conventional mortgage. Borrowers refinance away from FHA once their LTV reaches 80% and their credit score qualifies for a conventional loan because a conventional loan does not require private mortgage insurance once the LTV falls below 80%, whereas FHA still requires annual MIP payments. Furthermore, GSE LLPAs are often lower than the FHA's upfront MIP.

FHA-to-Conventional refinances erode the quality of the credit and collateral insured by the MMIF and harm the MMIF in three specific ways:

- They reduce the overall credit quality of the borrowers insured by the MMIF, as better-credit borrowers will be the ones who execute an FHA-to-Conventional refinance;
- On balance, FHA-to-Conventional refinances increase the LTV of the MMIF. Loans with an LTV below 80% are most likely to complete an FHA-to-Conventional refinance, whereas the average LTV on new purchase loan endorsements is about 97.25%.[35] The greater the LTV of the loans insured by the MMIF, the larger the default-related losses.
- FHA no longer collects annual MIP after an FHA-to-Conventional refinance is completed.

We can use the figures in Table 7 to estimate a lower and upper bound for the number of FHA-to-Conventional refinances that took place over the two-year period between July 2019 and July 2021. Over the period, FHA has endorsed 1.66 million new purchase loans, about 876,000 FHA-to-FHA-refinances, and 184,000 Conventional-to-FHA refinances. Loans have dropped out of the MMIF due to prepayments (3.14 million) and paid foreclosure claims (about 58,000).

The 3.14 million prepayments include FHA-to-FHA refinances, so the difference between prepayments and FHA-to-FHA-refinances provides us with an upper bound for FHA-to-Conventional refinances of 2.27 million. This is an upper bound because it assumes all prepayments that did not result in an FHA-to-FHA refinance resulted instead in an FHA-to-Conventional refinance, whereas some of these FHA borrowers will have prepaid for reasons other than refinancing (e.g., moving or paying off their loan). The upper bound estimate results in a 15% annualized FHA portfolio attrition rate due to FHA-to-Conventional refinances.

To estimate a more conservative figure, we can assume that all new FHA purchase loans insured over the period were for borrowers who prepaid their FHA loan in order to move and then took out a new FHA loan. This results in a conservative estimate of the number of FHA-to-Conventional refinances because some percentage of new purchase loans over the period were by borrowers who did not previously have an FHA mortgage. However, it also includes those borrowers who prepaid on their mortgage because they sold their house and are now renting, or made their new purchase without financing, and this second factor offsets some of the underestimation resulting from the assumption. Nonetheless, the more conservative estimate suggests that at least 600,000 FHA borrowers executed an FHA-to-Conventional refinance over the last two years, reflecting an annualized FHA portfolio attrition rate of 4%. Generalizing these results, FHA could reasonably conclude that between 5% and 10% of FHA borrowers per year completed an FHA-to-Conventional refinance over the last two years.

Table 7. MMIF loan inflows and outflows during the most recent refinancing wave.

Insurance in Force (June 2019 Month End)	8,114,665
New Purchase Loan Endorsements	1,661,606
New FHA-to-FHA Refinance Endorsements	876,055
New Conventional-to-FHA Refinance Endorsements	184,033
New Foreclosure Claims	-58,340
Prepayments	-3,144,290
Unexplained	-5,811
Insurance in Force (June 2021 Month End)	7,627,918
Change in Insurance in Force (June 2021 - June 2019)	-486,747
Prepayments net of Purchase Loans and FHA-to-FHA Refinances	-606,629
Prepayments net of FHA-to-FHA Refinances	-2,268,235
Annualized FHA-to-Conventional Attrition (Conservative Estimate)	-4%
Annualized FHA-to-Conventional Attrition (Upper Bound)	-15%

*Unexplained is calculated to illustrate that the sum of insurance in force as of June 2019 and MMIF inflows and outflows matches the published insurance in force figure as of June 2021 within reason.

Sources: FHA SF Loan Performance Trends (hud.gov) and MMIQtrlyQ32021.pdf (hud.gov).

Implementing the recommended adjustments to the FHA Streamline Refinance program would make FHA streamline refinances more competitive with a conventional refinance, and would enable FHA to retain some of these borrowers and avoid the portfolio attrition associated with FHA-to-Conventional refinances.

Computing the Costs to the MMIF of the Proposed Program Adjustments

The net cost to the MMIF is measured by the estimated change in the budget execution credit subsidy rate, which FHA estimate to be 2.69% per dollar of new insurance endorsements for 2022. As described below, the net loss in revenue to the MMIF would depend on the number of streamline refinances induced by the suggested program adjustments, and would range between 5% (0.17 percentage points) for a 0% take-up rate and 1% (0.04 percentage points) for a 100% take-up rate.

The Current Budget Execution Credit Subsidy Rate

The budget execution credit subsidy rates for 2020 through 2022 are shown in Table 8. According to the FHA, budget execution credit subsidy rates are the expected net present value, per dollar of new insurance endorsements, of all cash flows from insurance operations over the life of the mortgage insurance as of the year of the insurance commitments, and a negative rate means that the present value of premium revenues is expected to be greater than the present value of net claim expenses over the life of the insurance (a negative subsidy).[36]

For 2022, OMB estimates that upfront MIP of 1.75% and annual MIP of 0.84% will generate 7.19% of fees for FHA, which implies an average life for the mortgages in the portfolio of 6.48 years. The 5.64% default rate and 27.18% recovery rate imply a loss rate at default of 4.11%.[37] The default rate, net of recoveries of 3.87% is the present value of the loss rate at default, and the ratio of loss rate at default to defaults, net of recoveries indicates FHA used a discount factor between the loss date and the present of 0.94.[38] The sum of defaults, net of recoveries, fees, and all other costs results in a negative subsidy rate of 2.69% for 2022, a decrease of 20% over the 2021 estimate of 3.36 but an increase of nearly 19% over the 2020 rate of 2.27%.

Table 8. Budget Execution Credit Subsidy Rates for 2020 through 2022.

	Components of Credit Subsidy Rate	2020	2021	2022
	Loan Characteristics			
A	Loan maturity (years)	30	30	30
B	Upfront Fees	1.75	1.75	1.75
C	Annual Fees	0.84	0.84	0.84
D	Default Rate	6.82	5.17	5.64
E	Recovery Rate	38.62	32.32	27.18
F	Percent Guaranteed	100	100	100
G	Implied Average Life = (-J - B) / C	5.59	6.12	6.48
	Composition of Subsidy			
H	Defaults, net of recoveries = D x (1 – E / 100) x M	3.40	3.10	3.87
J	Fees = B + (C x G)	-6.45	-6.89	-7.19

K	All other	0.77	0.44	0.63
L	Subsidy Rate = H + J + K	-2.27	-3.36	-2.69
M	Implied Discount Factor = H / (D x (1 – E / 100))	0.81	0.89	0.94

*Figures may not sum due to rounding
Sources: BUDGET-2021-FCS.pdf (govinfo.gov) and cr_supp_fy22.pdf (whitehouse.gov).

Estimating the number of Induced Streamline Refinances and FHA Fees

We can estimate the number of streamline refinances that would be induced by removing frictions and improving pricing using the figures shown in Table 9. As of the end of September, there were 7.5 million FHA loans outstanding, of which 18% were the result of a completed streamline refinance. There are 4.2 million refinance-eligible loans, or 56% of the total number of loans outstanding. To estimate the number of refinance-eligible loans that would complete a streamline refinance even without the pricing adjustment, we rely on the 18% historical figure noted above, which suggests that about 747,000 borrowers would execute a streamline refinance even without the pricing incentive.

That leaves about 3.46 million refinance-eligible borrowers, and we estimate that 25% of these borrowers (about 865,000) would be induced to complete a streamline refinance because of the reduced frictions and pricing adjustment, bringing the total number of streamline refinances to 1.61 million, or 21 percent of the 7.5 million loans outstanding. Note that our 25% take-up rate results in a modest 3 percentage point (or 20%) increase in the percentage of streamline refinances within the total FHA loan count.

Table 9. Estimate of the number of induced FHA Streamline Refinances.

	FHA Loan Counts and Take-up	
A	Outstanding Loan Count (as of September 30, 2021)	7,498,614
B	Percentage Already Streamlined	18%
C	Estimate of Eligible Loans	4,207,137
D	Percent of Loans Eligible = C / A	55%
E	Would Streamline Without Pricing Incentive = B x C	746,767
F	Remaining Eligible Candidates = C – E	3,460,370
G	Induced Take-up Rate	25%
H	Induced Streamline Refis = F x G	865,093
J	Total Streamline Refis = E + H	1,611,859
K	Percentage of Eligible Candidates = J / C	38%
L	Percentage of Loans Outstanding = J / A	21%
M	% Induced by MIP Reduction = (H / J)	54%
N	% Streamline Refinances Occurring Anyway = E / J	46%

*Source: FHA SF Loan Performance Trends (hud.gov).

Given that we expect 21% of the total FHA portfolio will be composed of streamline refinances going forward, we can also estimate the weighted average fees (both upfront and annual MIP) that FHA could

expect to collect once the pricing adjustment is in place, as shown in Table 10. For the 21% of the portfolio composed of (new) streamline refinances, the fee will be 5.50%, whereas for the remaining 79% of the portfolio, the fees will be unchanged at 7.19%. The weighted-average fee for the entire portfolio would be 6.83%, a reduction of 0.36 percentage points.

Table 10. Expected FHA fees after pricing adjustment.

FHA Fees	Percentage of Portfolio	Upfront MIP	Annual MIP	Total
Streamline Refi'd	21%	0.00	0.85	5.50
Remaining Portfolio	79%	1.75	0.84	7.19
Weighted Average		1.37	0.84	6.83

Estimating the Reduction in Default Rates due to Payment Reduction from Refinancing

As noted above, research based on the 2012 MIP reduction experience finds that a reduction in monthly payment from refinancing resulted in lower default rates. We can use the estimates developed in the aforementioned study to quantify the impact of refinancing on the expected default rate used in the budget execution credit subsidy rate.

The calculation of the weighted average FHA portfolio default rate is shown in Table 11. Recall from Table 2 that the average refinance-eligible borrower would experience a 25% reduction in their total payment due to the impact of a rate/term refinance. As shown in Table 11, the borrowers who are induced to refinance because of the pricing adjustments will experience a 51% drop in their subsequent lifetime default rate, on average. Applying the percentage of borrowers who were induced to streamline refinance (row M in Table 9) to the estimate of default reduction yields the weighted average default reduction caused by the program of 27%. Applying the 27% default reduction to the OMB default rate estimate of 5.64% indicates that the expected default rate for streamline refinancers would be 4.11%, and the weighted average default rate for the entire FHA portfolio would fall to 5.31%.

Table 11. The impact of payment reduction from refinancing on default rates.

Impact of Payment Reduction from Refinancing on Default Rates	
Default Reduction per 1% of P&I + MIP Reduction*	2.00%
Default Reduction for Induced Streamline Refinances	51%
Weighted average Streamline Default Reduction	27%
OMB Default Rate of Portfolio	5.64%
Default Rate for Induced Streamline Refinances	4.11%
Weighted Average Portfolio Default Rate	5.31%

*The impact of payment reduction on lifetime default rates is based on the lower bound estimate described in the CBO study.
Sources: Do Large-Scale Refinancing Programs Reduce Mortgage Defaults? Evidence From a Regression Discontinuity Design (cbo.gov) and cr_supp_fy22.pdf (whitehouse.gov).

Estimating the Revised Budget Execution Credit Subsidy Rate

Armed with the revised FHA fees and portfolio default rate, we can re-compute the budget execution credit subsidy rate to reflect the implementation of the suggested adjustments to the FHA Streamline Refinance program, as per Table 12 below.

Table 12 is analogous to Table 8; the first column contains the OMB estimates for 2022 and is repeated from Table 8. The column titled "Estimate for Streamline Refis" shows that the 4.11% default rate calculated in Table 11 and the 5.50% fees calculated in Table 10 result in a 2.05% negative subsidy rate for loans that streamline refinance. The final column in Table 12 shows the negative subsidy rate for the full portfolio after adoption of the program to be 2.55%, which reflects the 5.31% default rate and 6.83% fees calculated in Tables 11 and 10 respectively. For both the middle and final column, we use the 0.94 discount factor implied by the components of the 2022 credit subsidy rate to convert the loss rate at default (a future value) to defaults, net of recoveries (a present value).

Table 12. Revised credit subsidy estimates after adoption of adjustments for Streamline Refinances.

	Components of Credit Subsidy Rate	2022	Estimate for Streamline Refis	Estimate for Full Portfolio
	Loan Characteristics			
A	Loan maturity (years)	30	30	30
B	Upfront Fees	1.75	0.00	1.37
C	Annual Fees	0.84	0.85	0.84
D	Default Rate	5.64	4.11	5.31
E	Recovery Rate	27.18	27.18	27.18
F	Percent Guaranteed	100	100	100
G	Implied Average Life = (-J - B) / C	6.48	6.48	6.48
	Composition of Subsidy			
H	Defaults, net of recoveries = D x (1 - E / 100) x M	3.87	2.82	3.65
J	Fees = B + (C x G)	-7.19	-5.50	-6.83
K	All other	0.63	0.63	0.63
L	Subsidy Rate = H + J + K	-2.69	-2.05	-2.55
M	Implied Discount Factor = H / (D x (1 - E / 100))	0.94	0.94	0.94

Source: cr_supp_fy22.pdf (whitehouse.gov).

The results in Table 12 assume that 25% of the 3.46 million remaining refinance-eligible borrowers would be induced to complete a streamlined refinance by the pricing adjustments. However, our take-up estimate of 25% may be too high or too low. To account for errors in this estimate, we compute the negative subsidy rate for the full portfolio for a 10% take-up rate to be 2.53% and for a 50% take-up rate to be 2.58%. At the extreme, even if all 3.46 million borrowers completed a streamline refinance (i.e. a 100% take-up rate), the resulting negative subsidy rate (2.65%) would not be materially different.

Avoiding a modest number of FHA-to-Conventional Refinances can offset the MMIF costs

If the recommended adjustments to the FHA Streamline Refinance program induce just 235,000 current FHA borrowers (about 3% of the current portfolio) to complete an FHA streamline refinance rather than an FHA-to-Conventional refinance, the cost of the program adjustments to the MMIF will fall to zero.

We estimate that between 5% and 10% of FHA borrowers per annum completed an FHA-to-Conventional refinance between July 2019 and July 2021, and such refinances have a negative impact on the MMIF. If the FHA chooses not to implement the recommended pricing adjustment, some number of FHA borrowers will execute an FHA-to-Conventional refinance in the future. However, if FHA chooses to implement the MIP pricing adjustment, some portion of those borrowers would instead use the streamline refinance program and remain with FHA. For those borrowers, FHA would continue to receive fees and continue to provide insurance, and if this population were large enough, it could offset the cost to the MMIF noted above.

The loans that complete a streamline refinance with FHA instead of an FHA-to-Conventional refinance will generate the same 5.50% of fees for FHA shown in Table 10. In order to compute a subsidy rate for this group of loans, we need to estimate their default rate and recovery rate. Since these borrowers could have executed an FHA-to-Conventional refinance but chose to stay with FHA, we use projections based on GSE default and recovery rates of 2% and 68% respectively.[39] Plugging these estimates into the calculation shown in Table 12 yields a negative subsidy rate of 4.27%.

With the negative subsidy rate in hand for this group of borrowers, we can then calculate how many borrowers the improved FHA Streamline Refinance program would have to induce to complete a streamline refinance rather than an FHA-to-Conventional refinance in order for the MMIF to break even. To do so, we equate FHA fees per dollar in the two scenarios. In the first scenario, FHA does not accept the program adjustments and some number of loans are lost to FHA-to-Conventional refinances. In this scenario, the subsidy rate is unchanged at 2.69%, but is received on a smaller number of loans. In the second scenario, FHA implements the program adjustments noted above and receives a lower subsidy rate, but on a larger number of loans, as some FHA-to-Conventional refinances have been avoided.

Setting the fees per dollar equal in each scenario results in the following equation:

$$(LoanCount_{Current} - LoansLost_{b/e}) \times Subsidy_{2022} = (LoanCount_{Current} - LoansLost_{b/e}) \times Subsidy_{adjusted} + (LoansLost_{b/e} \times Subsidy_{LoansLost(b/e)})$$

where $LoanCount_{Current}$ is the current size of the FHA-insured portfolio (about 7.5 million loans), $LoansLost_{b/e}$ is the number of FHA-to-Conventional refinances that would need to be avoided by the reduced pricing if FHA were to break-even on the program, and $Subsidy_{2022}$, $Subsidy_{adjusted}$, and $Subsidy_{LoansLost(b/e)}$ are the FHA's 2022 subsidy rate (2.69%), the subsidy rate after adoption of the suggested adjustments (2.55%), and the subsidy rate that reflects the lower default rate and higher recovery rate for avoided FHA-to-Conventional refinances (4.27%) calculated above, respectively.

Solving for $LoansLost_{b/e}$ indicates that about 235,000 borrowers (about 3% of the current portfolio) would have to choose an FHA streamline refinance rather than an FHA-to-Conventional refinance in order for FHA total fees net of losses to be unchanged by the program adjustments. For context, the break-even number of avoided FHA-to-Conventional refinances, 235,000, is far below our 600,000 lower-end estimate of FHA loans lost due to a conventional refinancing during the most recent refinancing wave.

Appendix 3: Clarifications for Consideration

Ginnie Mae could clarify that their seasoning requirement only applies to VA loans. Ginnie Mae APM 17-06 states "Pooling restrictions for Streamlined Refinances and Cash-out Refinance Loans… the first payment due date of the refinance loan occurs no earlier than 210 days after the first payment due date of the initial loan." While some lenders only apply this standard to VA loans, other lenders believe these requirements apply to FHA loans as well, and are not in alignment with the FHA standard, as the FHA Handbook states "on the date of the case number assignment: … at least 210 days must have passed from the closing date of the mortgage that is being refinanced…" Ginnie Mae could clarify that their seasoning requirement only applies to VA loans and/or provide a separate seasoning requirement for FHA loans that aligns with FHA seasoning requirements as stated in the FHA Handbook.

Appendix 4: Summary of the Current and Proposed FHA Streamline Refinance Program

The table below contains a summary of the existing and proposed FHA Streamline Refinance program, with changes indicated using strikethroughs and red text. Only the non-credit qualifying version of the FHA program is included, as this is the version most commonly used and the version that is truly "streamlined."

	FHA Non-credit Qualifying Streamline Refinance (Current)	**FHA Non-credit qualifying Streamline Refinance (Proposed)**
Underwriting	• Manually underwritten, requires DE underwriter sign-off.	• Manually underwritten~~, requires DE underwriter sign-off~~.
Interest Rate	• For fixed-rate mortgage *without* a term reduction or with a term reduction of less than 3 years, net tangible benefit to the borrower must be a new combined rate that is 50 bps lower than the original combined rate. • For fixed-rate mortgage with a term reduction of 3 years or more, net tangible benefit to the borrower must be a new combined rate that is below the original combined rate. • Combined rate refers to the interest rate on the mortgage plus the MIP.	• For fixed-rate mortgage *without* a term reduction or with a term reduction of less than ~~3~~10 years, net tangible benefit to the borrower must be a new combined rate that is 50 bps lower than the original combined rate. • For fixed-rate mortgage with a term reduction of ~~3~~10 years or more, net tangible benefit to the borrower must be a new combined rate that is below the original combined rate. • Combined rate refers to the interest rate on the mortgage plus the MIP.
Seasoning Requirement	• On the date of the FHA case number assignment: ○ the Borrower must have made at least six payments on the FHA-insured Mortgage that is being refinanced (where the FHA-insured Mortgage has been modified, the Borrower must have made at least six payments under the modification agreement); ○ at least six full months must have passed since the first payment due date of the Mortgage that is being refinanced; ○ at least 210 Days must have passed from the Closing Date of the Mortgage that is being refinanced; and ○ if the Borrower assumed the Mortgage that is being refinanced, they must have made six payments since the time of assumption.	• On the date of the FHA case number assignment: ○ the Borrower must have made at least six payments on the FHA-insured Mortgage that is being refinanced (where the FHA-insured Mortgage has been modified, the Borrower must have made at least six payments under the modification agreement); ○ at least six full months must have passed since the first payment due date of the Mortgage that is being refinanced; ○ If the Mortgagee originated the loan that is to be streamline refinanced, then at least 360 days must have passed from the Closing Date of the Mortgage that is being refinanced, otherwise at least 210 days must have passed from the

		Closing Date of the Mortgage that is being refinanced; and ○ if the Borrower assumed the Mortgage that is being refinanced, they must have made six payments since the time of assumption.
New Loan Amount	• Cannot include closing costs • The maximum Base Loan Amount for Streamline Refinances is the lesser of: ○ the outstanding principal balance of the existing Mortgage as of the month prior to mortgage Disbursement; plus: ▪ interest due on the existing Mortgage; ▪ Late Charges; ▪ escrow shortages; and ▪ MIP due on existing Mortgage; or ○ the original principal balance of the existing Mortgage (including financed UFMIP); • less any refund of UFMIP.	• ~~Cannot include closing costs.~~ • The maximum Base Loan Amount for Streamline Refinances is the lesser of: ○ the outstanding principal balance of the existing Mortgage as of the month prior to mortgage Disbursement; plus: ▪ interest due on the existing Mortgage; ▪ Late Charges; ▪ escrow shortages; and ▪ MIP due on existing Mortgage; or ○ the original principal balance of the existing Mortgage (including financed UFMIP); • ~~less any refund of UFMIP.~~ • Mortgagee must ensure that either: (i) any funds held in escrow on the original loan are rolled into the escrow account associated with the new loan, or (ii) funds held in escrow for the original loan are netted against the proceeds generated by the new loan upon closing.
Term	• Maximum amortization period is limited to the lesser of (the remaining amortization period of the original loan + 12 years, or 30 years).	• Maximum amortization period is limited to the lesser of (the remaining amortization period of the original loan + 12 years, or 30 years).
Loan Type	• Can be a fixed-rate, ARM, or hybrid ARM.	• Can be a fixed-rate, ARM, or hybrid ARM.
New Payment	• For a streamlined refinance with a term reduction, the combined P&I + MIP of the new mortgage must not exceed that of the original mortgage by more than $50. • There is no requirement for a streamlined refinance without a term reduction.	• For a streamlined refinance with a term reduction, the combined P&I + MIP of the new mortgage must not exceed that of the original mortgage by more than $50. • There is no requirement for a streamlined refinance without a term reduction.

Upfront and Annual MIP	• Upfront MIP of 1.75% if originated after 5/31/2009, otherwise 0.01%. • Annual MIP is based on term, loan amount, and LTV (see below)	• No Upfront MIP. • Annual MIP is based on term, loan amount, and LTV (see below)
Cash Out Option	• No	• No

Payment History	• The Borrower must have made all Mortgage Payments for all Mortgages on the subject Property within the month due for the six months prior to case number assignment and have no more than one 30-Day late payment for the previous six months for all Mortgages on the subject Property.
	• The Borrower must have made the payments for all Mortgages secured by the subject Property within the month due for the month prior to Disbursement.
	• A Borrower who was granted mortgage payment forbearance on the subject Property is eligible for a non credit-qualifying Streamline Refinance and considered to have acceptable Mortgage Payment history provided that, at the time of case number assignment, the Borrower has:
	  ○ completed the Forbearance Plan on the subject Property; and
	  ○ made at least three consecutive monthly Mortgage Payments within the month due on the Mortgage since completing the Forbearance Plan.
		• The Borrower must have made all Mortgage Payments for all Mortgages on the subject Property within the month due for the six months prior to case number assignment and have no more than ~~one~~ two 30-Day late payment for the previous six months for all Mortgages on the subject Property.
		• The Borrower must have made the payments for all Mortgages secured by the subject Property within the month due for the month prior to Disbursement.
		• A Borrower who was granted mortgage payment forbearance on the subject Property is eligible for a non credit-qualifying Streamline Refinance and considered to have acceptable Mortgage Payment history provided that, at the time of case number assignment, the Borrower has:
		  ○ completed the Forbearance Plan on the subject Property; and
		  ○ made at least three consecutive monthly Mortgage Payments within the month due on the Mortgage since completing the Forbearance Plan.

Recoupment Period		• The sum of all fees, closing costs, or expenses, whether included in the UPB of the new loan or paid outside of closing, divided by the reduction in the borrower's monthly P&I plus MIP payment, must not exceed 36. If the loan was originated within 12 months of FHA case number assignment, the recoupment period must not exceed 18 months.

Upfront MIP Refund:

Borrowers who refinance within 36 months of origination are entitled to a partial refund of upfront MIP: 80% is refunded at month 1, and the refund decreases by 2% for each successive month, terminating at 10% in month 36.

FHA Annual MIP:

Originated after 5/31/2009, Mortgages with a term > 15 years

Base Loan Amount	LTV	MIP (bps)	Duration
<= $625,000	<= 90%	80	11 years
	> 90% but <= 95%	80	Mortgage Term
	> 95%	85	Mortgage Term
> $625,000	<= 90%	100	11 years
	> 90% but <= 95%	100	Mortgage Term
	> 95%	105	Mortgage Term

Originated after 5/31/2009, Mortgages with a term <= 15 years

Base Loan Amount	LTV	MIP (bps)	Duration
<= $625,000	<= 90%	45	11 years
	> 90%	70	Mortgage Term
> $625,000	<= 78%	45	11 years
	> 78% but <= 90%	70	11 years
	> 90%	95	Mortgage Term

Originated on or before 5/31/2009, Annual MIP (all mortgage terms):

Base Loan Amount	LTV	MIP (bps)	Duration
All	<= 90%	55	11 years
	> 90%	55	Mortgage Term

Addendum: Providing FHA borrowers with an additional financial incentive to refinance their mortgage through reducing ongoing MIP rate

FHA may also want consider providing an additional financial incentive for borrowers to refinance their loans using the FHA Streamline Refinance program by reducing the annual MIP rate. This consideration could occur after the recommended improvements to process, pricing, and borrower protections have been implemented. FHA could consider three options. First, FHA could apply the reduction in annual MIP rate to all FHA Streamline Refinances. Second, to the extent FHA wanted to provide an additional financial incentive for borrowers with low-balance loans to refinance, they could reduce the annual MIP rate on streamline refinances only when the current UPB is below $175,000. Third, FHA could layer these concepts, providing a modest annual MIP rate reduction for all FHA borrowers and a larger reduction for borrowers with a current UPB below $175,000.

In this note, we quantify the impact of these three options by estimating the incremental refinance-driven payment reduction, the subsequent expected change in default rates, and the expected impact on the MMIF. In order to make the impacts of the three options directly comparable, we have calibrated the amount of annual MIP rate reduction provided under each option to generate the same credit subsidy rate for the full FHA portfolio. By doing so, the aggregate benefits and costs to the MMIF under each option would be the same, but the distribution of annual MIP reduction to borrowers would vary, depending on which option is chosen.

The remaining sections of this note describe (i) the three options for reducing ongoing MIP, (ii) the benefits for eligible FHA borrowers, (iii) the benefits and potential costs for the MMIF, and (iv) an additional consideration for FHA.

Options for Reducing Annual MIP

Option 1: Reduce the annual MIP rate for all streamline refinances by 25 basis points, from 0.85% to 0.60%.[40] Reducing the annual MIP rate to 0.60% for all borrowers who complete a streamline refinance would provide these borrowers with an additional monthly savings and also lower their subsequent default rates. Moreover, it would make the FHA Streamline Refinance more competitive with an FHA-to-Conventional refinance, helping FHA retain some borrowers with lower credit risks and loan-to-value ratios who would otherwise complete an FHA-to-Conventional refinance.

Option 2: For loans with a current UPB at or below $175,000 that streamline refinance, reduce the annual MIP rate by 34 basis points, from 0.85% to 0.51%. Reducing the annual MIP rate to 0.51% for streamline refinances completed by borrowers with low-balance loans, which are typically LMI households, would provide them with an additional monthly savings and lower their subsequent default rates. A single, nationwide UPB limit for reduced annual MIP will incent lenders to focus on borrowers with low balance loans who are refinance-eligible but to-date have been overlooked. Moreover, it would make the FHA Streamline Refinance more competitive with an FHA-to-Conventional refinance for these

loans, helping FHA retain some borrowers who would otherwise complete an FHA-to-Conventional refinance.

Option 3: Reduce the annual MIP rate by 10 basis points (from 0.85% to 0.75%) for loans above $175,000 UPB and 30 basis points (to 0.55%) for loans with a current UPB at or below $175,000. The layered approach would provide some benefit all FHA borrowers, with an additional financial incentive to refinance specifically for borrowers with low-balance loans.

Borrower Benefits

The borrower benefits of the annual MIP reduction created by each of the three options are shown in Table 1. Under option 1, the average FHA borrower who streamline refinances would save $28 per month from the ongoing MIP reduction (about 3% of their original monthly P&I plus MIP payment) and the reduction in their subsequent default rate would be expected to increase by 6 percentage points. The benefits of the annual MIP reduction are similar for borrowers across the entire current UPB distribution—the average borrower in each current UPB category would have their monthly payment reduced by 3% and their default rate reduction would be expected to increase by 6 to 7 percentage points.

Table 1. The benefits of options 1, 2, and 3 for borrowers who streamline refinance.

	Current UPB					
FHA Loans with a Note Rate > 3.50%	**<175K**	**175K-200K**	**200K-225K**	**225K-250K**	**>250K**	**All**
Loan Count	3,144,616	288,398	223,048	164,225	386,850	4,207,137
Average Note Rate	4.61	4.24	4.20	4.17	4.14	4.50
Average Original Loan Amount	117,826	205,730	230,951	256,121	347,970	160,000
Average Remaining Term (months)	250	302	307	311	317	265
Average UPB	97,465	186,883	212,002	236,923	325,934	136,118
Distribution of Loans	75%	7%	5%	4%	9%	100%
MIP (Original)	69	132	150	168	231	96
Option 1						
MIP (Refinanced)	49	94	107	120	165	69
MIP Reduction ($)	20	38	43	48	66	28
MIP Reduction (% of Total)	3%	3%	3%	3%	3%	3%
Default Rate Reduction (percentage points)	6	7	7	7	7	6
Option 2						
MIP (Refinanced)	42	134	152	169	233	68
MIP Reduction ($)	27	0	0	0	0	28
MIP Reduction (% of Total)	4%	0%	0%	0%	0%	3%
Default Rate Reduction (percentage points)	8	0	0	0	0	6
Option 3						
MIP (Refinanced)	45	118	134	150	206	69
MIP Reduction ($)	24	14	16	18	25	28
MIP Reduction (% of Total)	4%	1%	1%	1%	1%	3%
Default Rate Reduction (percentage points)	7	3	3	3	3	6

Under the second option, the benefit of the annual MIP reduction would accrue entirely to borrowers with low-balance loans, who are predominantly low-income and/or lower-wealth households. Borrowers with a current UPB at or below $175,000 who refinance would on average save $27 per month (4% of their original monthly P&I plus MIP payment) and the subsequent default rate reduction for this cohort would be expected to increase by 8 percentage points. In this case, FHA borrowers with a current UPB above $175,000 would receive no benefit.

In the case of the third option, borrowers with a current UPB above $175,000 would receive a modest benefit, as they would on average save $19 per month (1% of their original monthly P&I plus MIP payment) and the subsequent default rate reduction for this cohort would be expected to increase by 3 percentage points. Borrowers with a current UPB below $175,000 would receive a larger benefit, saving on average $24 per month (4% of their original monthly P&I plus MIP payment) and the subsequent default rate reduction for this cohort would be expected to increase by 7 percentage points.

MMIF Benefits and Costs

The impact on the MMIF of including the annual MIP reductions described above in the FHA Streamline Refinance program would be the same for all three options, as the annual MIP rate in each option has been specifically calibrated to generate the same negative credit subsidy rate for the full FHA portfolio. FHA would collect 3.89% of UPB in fees on average from each completed streamline refinance, which is calculated as the product of the average reduced annual MIP rate of 0.60% and the 6.48 average life.

However, the additional financial incentive provided by an annual MIP reduction should translate into an increase in the percentage of FHA borrowers who complete an FHA Streamline Refinance. To capture the effects on an increase in take-up rates created by the reduction in ongoing MIP on the MMIF, we examine three scenarios: a modest increase, a large increase, and a very large increase in take-up rate, as shown in Table 2.

Before we describe our take-up rate scenarios, we review the projected number of streamline refinances expected to be completed if the recommended process improvements and elimination of upfront MIP are adopted. We start with 18% as our baseline take-up rate because 18% of the 7.5 million FHA loans outstanding are the result of an already completed streamline refinance. Therefore, of the 4.2 million refinance-eligible FHA borrowers, we expect 18% (or about 747,000) would complete a streamline refinance even if none of the recommended program adjustments are adopted. That leaves 3.46 million refinance-eligible FHA borrowers, of which we assume another 865,000 are induced to streamline refinance because of the recommended program adjustments. That brings our total to 1.61 million streamline refinances, or about 21% of the current FHA portfolio.

To incorporate the effect of reducing ongoing MIP on take-up rates, we assume the modest-increase scenario results in an additional 175,000 FHA borrowers completing a streamline refinance due to the annual MIP reduction, which takes our total take-up rate to 24%. For the large-increase scenario, we assume an additional 520,000 induced streamline refinances, bringing our total take-up rate to 28%. In the very-large-increase scenario, an additional 865,000 completed streamline refinances, resulting in a total take-up rate of 33%.

Table 2. Refinance-eligible loans and induced streamline refinance take-up rates.

FHA Loan Counts and Take-up Rate Scenarios		
Outstanding Loan Count (as of July 2021 end-of-month)	7,498,614	
Estimate of Eligible Loans	4,207,137	
Eligible Loans that would Streamline Refinance without Adjustments	746,767	18%
Remaining Eligible Loans	3,460,370	
Induced to Streamline Refinance by Recommended Adjustments	865,093	
Total Streamline Refinances	1,611,859	21%
Incremental Take-up under Modest Scenario	175,000	24%
Incremental Take-up under Large Scenario	520,000	28%
Incremental Take-up under Very Large Scenario	865,000	33%

We make one final assumption, that the take-up rate in each scenario is constant across the distribution of eligible current UPB categories. For example, for option 1 and option 3 under the modest-increase scenario, 24% of borrowers in each UPB category shown in Table 1 complete a streamline refinance and receive a reduction in their ongoing MIP rate. For option 2 under the modest-increase scenario, 24% of the borrowers with a UPB at or below $175,000 complete a streamline refinance and receive an annual MIP reduction, whereas the borrowers with a current UPB above $175,000 would be ineligible.

The impact on the fees, default rate, and negative credit subsidy rate for the full FHA portfolio under each scenario is shown in Table 3. The 2022 estimates for fees (7.19%), default rate (5.64%), and negative credit subsidy rate (2.69%) are first adjusted by the projected impact of upfront MIP elimination, process improvements, and enhanced borrower protections for streamline refinances, to yield 6.83%, 5.31%, and 2.55% for these measures respectively.

If by reducing annual MIP the take-up rate of the streamline refinance program increases to 24% (the modest-increase scenario), FHA fees would drop to 6.40%, the projected default rate would be 5.16%, and the negative credit subsidy rate would fall to 2.23%, an incremental loss of 0.33 percentage points (or 12% of the current 2.69% estimate) to the MMIF. If the take-up rate follows the large-increase scenario (a 28% take-up rate), FHA fees and the expected default rate would fall further, and the negative credit subsidy rate would fall to 2.17%, an incremental loss of 0.38 percentage points (or 14% of the current 2.69% estimate). And in the very-large-increase scenario, the negative credit subsidy rate drops by 0.43 percentage points to 2.12%, or 16% of the current 2.69% estimate. Even with a very large increase in take-up rates, the negative credit subsidy rate would remain above FHA's 2% capital requirement, indicating that providing the additional financial incentives using any of the options presented above would have a modest effect on the MMIF.

Table 3. Impact of annual MIP reduction on FHA Fees, Default Rate, and Credit Subsidy Rate under three take-up rate scenarios.

	Fees	Default Rate	Negative Credit Subsidy Rate
Current FHA Streamline Refinance Program	7.19%	5.64%	2.69%
After Recommended Adjustments	6.83%	5.31%	2.55%
Change from Current Program	-0.36	-0.33	-0.14
Annual MIP Reduction, Modest Scenario	6.40%	5.16%	2.23%

Change from Adjusted Program	-0.43	-0.15	-0.33
Annual MIP Reduction, Large Scenario	6.24%	5.01%	2.17%
Change from Adjusted Program	-0.58	-0.30	-0.38
Annual MIP Reduction, Very Large Scenario	6.09%	4.86%	2.12%
Change from Adjusted Program	-0.74	-0.45	-0.43

Figures may not sum due to rounding.

Borrowers who are induced to complete an FHA Streamline Refinance rather than an FHA-to-Conventional refinance would offset some or all of the estimated drops in the negative subsidy rate shown above. If 235,000 FHA borrowers are induced to complete an FHA Streamline Refinance rather than an FHA-to-Conventional refinance, it would offset the cost to the MMIF of eliminating upfront MIP. Similarly, if one of the three options for reducing annual MIP were adopted and the modest increase in take-up rates were realized, then an additional 890,000 FHA borrowers (about 12% of the current FHA portfolio) would need to be induced to choose an FHA Streamline Refinance over an FHA-to-Conventional refinance to bring the MMIF impact to zero. Under the large-increase scenario and the very-large-increase scenario, the figures are 995,000 (13% of the FHA portfolio) and 1.1 million (15% of the FHA portfolio) respectively. Note that the number of retained FHA borrowers is not in addition to the expected streamline refinances calculated in Table 2, but instead must only be part of the figures in Table 2. For example, of the 1.79 million FHA borrowers expected to complete a streamline refinance under the modest-increase scenario, if 1.13 million would have completed an FHA-to-Conventional refinance had the recommended adjustments and ongoing MIP reduction not been adopted, then the program adjustments will have no cost to the MMIF.

Additional Consideration

If FHA adopts any reduction in the annual MIP rate for the FHA Streamline Refinance program, the net tangible benefit requirement for fixed-rate mortgage *without a term reduction or with a term reduction of less than three years* should be adjusted to be *a new interest rate that is 50 bps lower than the original interest rate*. Adjusting the net tangible benefit test to be applied only to the interest rate difference on the new and old mortgage rather than to the combined rate difference, which would reflect the reduction in MIP, will reduce any incentive for loan churning that could be created by the reduced annual MIP rate for streamline refinances that is not matched by a reduced MIP rate for new originations.

[1] Source: Urban Institute, derived using data from eMBS.
[2] This step would align the FHA program with the GSE refinance programs for LMI borrowers and VA's IRRRL program.
[3] The recommended program adjustments include several borrower protections that would reduce or eliminate any incentive for lenders to engage in serial refinancing in order to extract fees, also known as "loan churning."
[4] As noted in https://www.federalreserve.gov/econres/feds/files/2021048pap.pdf, "… from the standpoint of the economy as a whole, rate-and-term refinances uniformly lower the overall likelihood of default, even if no new underwriting is done. Binding capacity constraints during lending booms mean that underwriting rate-and-term refinances starves resources from originating purchase loans and cash-out refinances, for which underwriting is more necessary from the standpoint of the economy as a whole. In 2020, operational frictions related to the pandemic only amplified these capacity constraints and further increased the price of intermediation. Our findings, therefore, reinforce arguments for both streamlined refinances and automatically refinancing mortgage products. Much like during the financial crisis, such products would have substantially strengthened the transmission of low interest rates to households during the 2020 pandemic."
[5] See Do Large-Scale Refinancing Programs Reduce Mortgage Defaults? Evidence From a Regression Discontinuity Design: Working Paper 2015-06 | Congressional Budget Office (cbo.gov).
[6] Source: American Rescue Plan | The White House.
[7] Source: Historical Households Tables (census.gov)
[8] Appendix 4 summarizes the current program and proposed adjustments. See also the FHA Single Family Housing Policy Handbook, available from Housing Handbooks | HUD.gov / U.S. Department of Housing and Urban Development (HUD).
[9] Source: Circular 26-19-22 (va.gov).
[10] There are separate net tangible benefit tests for adjustable-rate mortgages and for refinances with a term reduction of three or more years.
[11] On November 23, 2021, Ginnie Mae and UMBS 2.5s were very close in price (101-24 and 101-25 respectively), whereas Ginnie Mae 3s (103-01) trade about ½ a point behind UMBS 3s (103-16). Source: MBS Dashboard - MBS Prices, Treasuries and Analysis (mortgagenewsdaily.com). For a comparison of prepayment speeds, see https://www.ginniemae.gov/data_and_reports/reporting/Documents/global_market_analysis_sep21.pdf.
[12] With the Freddie Mac PMMS rate at 2.98% as of November 10, 2021, borrowers with a note rate above 3.50% may be able to meet the net tangible benefit test of at least a 0.50% difference between the interest rate plus annual MIP on the new and original mortgage. Note that while severely delinquent loans have been purchased out of MBS and will not be included in Table 1, delinquent loans that remain in MBS pools that do not meet the 12-month performance test have not been excluded. As a result, the actual number of borrowers able to meet the adjusted FHA Streamline Refinance eligibility requirements will be lower than estimated here.
[13] See Inequality During the COVID-19 Pandemic: The Case of Savings from Mortgage Refinancing by Sumit Agarwal, Souphala Chomsisengphet, Hua Kiefer, Leonard C. Kiefer, Paolina C. Medina :: SSRN.
[14] Source: https://www.hud.gov/sites/dfiles/Housing/documents/2021FHAAnnualReportMMIFund.pdf.
[15] See Mortgage Prepayment, Race, and Monetary Policy - Federal Reserve Bank of Boston (bostonfed.org).
[16] A streamline refinance must result in a combined rate (mortgage rate plus MIP) at least 0.5% below the prior combined rate.
[17] None of the loans in Table 2 were originated in the last 12 months, so the 18 month recoupment period would not apply.
[18] For simplicity, total interest costs are calculated as the sum of the interest portion of each monthly payment and is not adjusted to reflect the time value of money.
[19] See the FHA Single Family Housing Policy Handbook, available from Housing Handbooks | HUD.gov / U.S. Department of Housing and Urban Development (HUD).
[20] Source: MMIQtrlyQ32021.pdf (hud.gov).
[21] See, for example, Evaluating the Benefits of a Streamlined Refinance Program - Federal Reserve Bank of Boston (bostonfed.org).
[22] See Do Large-Scale Refinancing Programs Reduce Mortgage Defaults? Evidence From a Regression Discontinuity Design: Working Paper 2015-06 | Congressional Budget Office (cbo.gov).
[23] See Mortgagee Letter (ML) Implementation Process Overview (hud.gov).
[24] Annual MIP is required regardless of LTV, though the term can be reduced, as described in Appendix 4.
[25] For example, borrowers with a representative credit score of 700 or greater would incur a maximum LLPA of 1.50% assuming no additional risk factors, as per display (fanniemae.com).
[26] Source: House Price Index Datasets | Federal Housing Finance Agency (fhfa.gov).
[27] See BUDGET-2021-FCS.pdf (govinfo.gov).
[28] The default rate, net of recoveries = default rate x (1 – recovery rate) x a discount factor, where the discount factor is used to convert future losses into present value terms.

[29] See Do Large-Scale Refinancing Programs Reduce Mortgage Defaults? Evidence From a Regression Discontinuity Design: Working Paper 2015-06 | Congressional Budget Office (cbo.gov).
[30] As defined by the Federal Financial Institutions Examination Council (FFIEC) and sourced from Home Mortgage Disclosure Act (HMDA) 2020 data release.
[31] The conclusion assumes that take-up rates by borrowers in each current UPB bucket are the same.
[32] See Do Large-Scale Refinancing Programs Reduce Mortgage Defaults? Evidence From a Regression Discontinuity Design: Working Paper 2015-06 | Congressional Budget Office (cbo.gov).
[33] See Mortgagee Letter (ML) Implementation Process Overview (hud.gov).
[34] Source: House Price Index Datasets | Federal Housing Finance Agency (fhfa.gov).
[35] The average LTV on new purchase endorsements is 95.5%, as per MMIQtrlyQ32021.pdf (hud.gov) plus 1.75% of upfront MIP.
[36] Source: MMIQtrlyQ32021.pdf (hud.gov).
[37] The loss rate at default = default rate x (1- recovery rate).
[38] FHA realizes the loss in the future, after the default is resolved, and so the loss rate at default must be discounted to the present in order to be included in the credit subsidy rate. Defaults, net of recoveries is the present value of loss rate at default and, since the OMB assumptions include both figures, we can use the ratio to calculate the discount factor used by FHA to convert a future value (loss rate at default) to a present value (defaults, net of recoveries).
[39] As seen in Housing Finance At A Glance: A Monthly Chartbook, September 2021 (urban.org), our estimate of a 2% medium term default rate is representative of historical levels. From 2000 to 2020, Fannie Mae loss severities (after removing the effect of credit enhancement) ranged from 22% to 56%, but vary considerable by vintage. Loans originated from 2005 to 2008 have considerably higher loss severities than other vintages, but now make up only a small portion of the GSE portfolios. Severities on 2009 and later vintages have averaged around 32%, leading to our 68% recovery rate estimate over the medium term. Source: Fannie Mae Statistical Summary Tables.
[40] In each case, the annual MIP rate should follow the current FHA guidelines, which notes if the LTV (based on the current UPB and original home value) is below 90%, annual MIP is paid for 11 years from the date of refinancing rather than to maturity.