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IS THE FUNDING FEE ENOUGH?: A QUANTITATIVE ANALYSIS OF THE VA MORTGAGE PROGRAM

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ABSTRACT

The purpose of this report is to do three things: (i) review the history of the user fee that the VA has implemented in its home-loan guarantee program; (ii) describe the methods used to compute the claims the VA pays for the home-loan guarantee program; and (iii) review the existing data on the revenues and costs of the program. Based on the numerical analysis conducted, we conclude it is possible to reduce the funding fee rate on zero-percent loans by at least one percentage point while maintaining revenues sufficient to cover annual claims made on foreclosed VA mortgages. Since 2012, funding fees collected each fiscal year have exceeded claims paid by the VA. By 2020, the excess funding fee collected reached $2.3 billion. In order to be revenue neutral, The funding fee schedule could reduce the rate on zero-percent down loans to 1.3 percent along with minor reductions on the fees paid on refinances and mortgages with some down payment. The projected reduction in funding fee collections would be approximately $1 billion. If implemented, veterans with zero-down payment mortgages would save more $3,000 in user fees based on the average mortgage in 2020.

JEL Code: H24, C53, G53

1. Introduction

The purpose of this report is threefold. First, we present a review of the legislative history that applies to the VA home loan program. In particular, we are interested in the funding fee, also known as the home loan fee. Beginning in 1966, the United States' Congress implemented a 0.5 percent funding fee as a user fee to pay for the loan guarantee offered to veterans. The loan guarantee is designed to reduce default risk for lenders offering mortgages to veterans. As such,

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the loan guarantee can account for reductions on VA home loans compared with conventional mortgage interest rates. From this legislative review, we see that the sunset provision of the law has repeatedly been amended so that the funding fee rate is to continue at least through 2030. In addition, the funding fee rate has steadily increased over time. The 1966 legislation set the rate at 0.5 percent and that has increased to 2.30 percent in 2022.

Second, we describe the process that the VA uses to compute its claims responsibility. The first goal is to mitigate the loss to the veteran. This means that the time between default on the mortgage and the foreclosure can be several years or even more. Meanwhile, unpaid interest costs are accumulating and the house is losing value. In the worst-case scenarios, the lender share of the losses increase over time because the loan guarantee is capped.

Third, we conduct a numerical analysis to quantify the costs of the funding fee program. There are data on the funding fees collected. However, we could not find numbers on the costs of the home loan guarantees. Consequently, we use existing data to project estimated annual costs of home loan guarantee payments made by the Veterans Administration. Our numerical analysis indicates that the funding fee rate structure generates monies annually that exceed costs. In 2020, for example, the funding fees collected exceed the claims paid out by more than $2.3 billion.

The implication of the numerical analysis is that there could be further costs savings to veterans using the home-loan program by reducing the funding fee structure so that the revenues and costs more closely match. Such a reduction could mean a reduction in VA mortgage rates. Certainly, in a competitive mortgage market, reducing the funding fee would result in savings be passed along to borrowers by servicers. Our policy recommendation is to reduce the funding fee on zero-percent down by one percentage point. Our projections indicate this would save borrowers approximately $1 billion a year in costs added to their mortgage. For the average home purchase, that would be more than $3,000 per veteran.

The VA home loan program is an important source of mortgage lending for veterans. Arnold, Bolton and Crowley (2013) give a thorough description of how changes in the policy have reduced the fixed costs of home ownership for veterans, hinting that the policy has resulted in a larger fraction of veterans to be home owners. Fetter (2013) presents evidence supporting the thesis that veterans' homeownership rates are higher principally through lowering the age at which they can afford homes. Vigdor (2006) goes further, documenting the VA loan program relaxes liquidity constraints for veterans by allowing them to borrow the down payment. Quigely

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(2006) submits evidence suggesting that the credit quality has been declining over time, making these loans more risky.[1]

In this paper, we review the program with an eye towards the fiscal policy implications of the VA home loan program. More specifically, we ask whether the liquidity constraints provided by allowing veterans to borrow up to 100 percent of the selling price is offset by the funding fee. We approach this problem by looking at the past collections relative to the value of home-loan claims. In addition, we provide projected collections and home-loans claims. In this way, we can assess if the riskiness of the borrowers is leading to claims increases. If the answer is no, then the conclusion is that the funding fee rate can be reduced.

The results should be viewed as instigating a conversation regarding the funding fee structure.

2. History of the VA Funding Fee

The VA funding fee is a one-time payment that the Veterans Administration offers on a VA-guaranteed or VA direct home loan. More specifically, the Veterans Administration backs a portion of the loan obtained from a private lender. For private lenders or servicers, the guaranty reduces default risk borne by the private lender. Put another way, such backing applies to properties that servicers, subject to applying loss-mitigation methods, can apply for a gross claim payment from the Veterans Administration. For most VA-guaranteed loans, the maximum guaranty is 25 percent of the value of the unpaid loan balance. The guaranty, therefore, means that the lender's losses on foreclosed properties with VA-guaranteed mortgages are lower compared with losses that apply to foreclosed properties with a conventional mortgage.

So where does the Veterans Administration get the monies used to pay these guaranties on VA-guaranteed loans? One option would be that the monies are a line-item appropriation by Congress. For a Congressional appropriation, the implication is that all United States taxpayers would be responsible for guaranties on foreclosed VA-guaranteed loans. Instead of a line-item, Congress has implemented a user-fee approach. In this way, the borrower is required to put some "skin in the game" by paying a VA funding fee. Over time, we see that the funding fee depends on the size of the borrower's down payment; in other words, the funding fee is reduced when the borrower submits a larger down payment on the property.

[1]See also, Spitzer and Lambie-Hanson (2020) examine the institutional and geographic distribution of these loans.

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The user fee is akin to a one-time insurance premium that borrowers pay to the Veterans Administration. Viewed in this way, the Veterans Administration collects the funding fees, pooling the monies to pay for guaranties on VA-guaranteed loans. In the good state of the world, the borrower does not default, there are no foreclosure costs and no guaranties paid out to servicers. In contrast, there is some probability that the bad state of the world occurs, some borrowers default, properties are foreclosed, and guaranties are paid out. By having skin in the game, the borrower has an equity-stake in the VA-guaranteed mortgage that reduces the risk that the borrower will walk away from the loan. The advantage is that VA-guaranteed loans offer a more attractive mortgage rate to the borrower, since the lender benefits from reduced risk.

2.1 Origins of the funding fee

In 1944, VA-guaranteed mortgages were offered as part of the Serviceman's Readjustment Act. The VA-guaranteed loan was limited to World War II veterans, though benefits were expanded over the next 20 years. It was not until 1966, however, that Congress passed the Veterans Readjustment Benefits Act, extending the home loan program to post-Korean War veterans. By the 1966 Act, Congress implemented the VA funding fee. Initially, the VA funding fee was set at 0.5 percent of the loan value. In 1970, Congress passed the Veterans Housing Act of 1970 in which the guaranteed and direct loan fee collected was eliminated.

2.2 Adjustments to funding fee over time

It is important to note that the Omnibus Budget Reconciliation Act specified that the funding fee would be sunset. Thus, subsequent bills would be required to set a positive funding fee. Indeed, as we look at the legislative developments over time, we see a series of extensions over the past four decades.

Before the sunset provision in the Omnibus Budget Reconciliation Act of 1982 was realized, the United States Congress modified the VA funding fee in the Deficit Reduction Act of 1984. For one thing, the 1984 act stipulated that the VA funding fee be raised to one percent of the total loan value. In addition, the law set the new sunset provision to be the end of Fiscal Year 1987.

In 1987, Congress implemented additional changes in the Veterans' Home Loan Program Improvements and Property Rehabilitation Act of 1987. The VA funding fee had yet another change to its sunset, with the new sunset date set for the end of Fiscal Year 1989. With the 1987 act, Congress modified the exemption language to include a more-clear definition of a surviving spouse exempted from the VA funding fee. Basically, the 1987 act extended the VA-guaranteed mortgages to a larger set of potential borrowers.

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Only two years passed before the next modification to the VA funding fee was implemented. In the Veterans' Benefits Amendment of 1989. Congress specified that the funding-fee schedule would be related to the size of the borrower's down payment. The idea is essentially the same an interest rate buydown; a larger down payment means that the borrower has put more of their own money into the property. With more skin in the game, the borrower buys down a smaller insurance premium. The economic intuition is that the VA housing assistance program treats borrowers with larger down payments as less risky borrowers. Under the Veterans' Benefits Amendment of 1989, the VA funding fee was set at 1.25 percent of the total loan value. With a down payment of at least five percent and not greater than ten percent of the purchase price, the VA funding fee was set at 0.75 percent of the total loan value. For any borrower putting ten percent or more of the purchase price, the VA funding fee was set at 0.5 percent of the total loan value. No sunset provision was specified in the Veterans' Benefits Amendment of 1989. However, the new VA funding fee schedule did not take effect until January 1, 1990. In other words, the one percent VA funding fee that was scheduled to be sunset on September 30, 1989, was extended to be applied to all VA-guaranteed loans until the end of the 1989 calendar year.

We begin to see Congress attending to the veterans' benefits more frequently with respect to the funding fee. One year after the Veterans' Benefits Amendment, the VA funding fee was modified again in the Omnibus Budget Reconciliation Act of 1990. For the period beginning on November 1, 1990 and ending on September 30, 1991, Congress dictated that the VA funding fee would increase to 0.625 percent of the total loan value. It is noteworthy that the funding fee was set to end at the end of the federal government's fiscal year 1991.

By the time the VA funding fee was revisited by the United States' Congress, additional features were considered. Indeed, the next modification to the VA funding fee focused on differentiating veterans by their status; in particular, people were classified as a Selected Reserve. In the Veterans Home Loan Program Amendments of 1992, a VA funding fee schedule was created for Selected Reservists. Specifically, the VA funding fee would be two percent of the total loan value. Following the down-payment schedule introduced in Veterans' Benefits Amendment of 1989, Congress implemented a VA funding fee that was 1.5 percent for Selected Reservists with a down payment of at least five percent, but less than ten percent of the purchase price. For a Selected Reservist whose down payment was at least ten percent of the purchase price, the VA funding fee was set at 1.25 percent. Lastly, the 1992 act set a VA funding fee for refinanced loans equal to 0.5 percent of the total loan value.

We can see a pattern emerging in terms of the statutory changes implemented in budget reconciliation bills with respect to the VA funding fee. In the Omnibus Budget Reconciliation

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Bill of 1993, Title XII was called the Veterans Reconciliation Act of 1993. For loans closed after September 30, 1993 and before October 1, 1998 (in other words, all VA-guaranteed loans in Fiscal Years 1994-1998), the VA funding fee was set at two percent of the total loan value. With a down payment of at least five percent and not greater than ten percent of the purchase price, the VA funding fee was set at 1.5 percent of the total loan value. For any borrower putting down ten percent or more of the purchase price, the VA funding fee was set at 1.25 percent of the total loan value. The Veterans Reconciliation Act of 1993 did not change the VA funding fee on refinancing loans. However, the 1993 Act does specify that three percent of the total loan value will be collected as a loan fee on any additional loan after the initial VA-guaranteed loan was received.

By 1997, the United States Congress amended the sunset provision for home loan fees that apply to VA loans. Another four years were added as the sunset provision, extending the sunset date to October 1, 2002. Furthermore, the VA funding fee was applied to repossessed homes, with the funding fee set at 2.25 percent of the loan value.

Even before the sunset provision was close to being applicable, the United States Congress passed the Veterans Benefits and Health Care Improvement Act in 2000. To avoid annual revisits,the 2000 Act extended home loan fees another six years, so that the sunset was October 1, 2008. The funding fee schedule became more complicated as at least fourteen rows were required to characterize the VA's home-loan fee schedule. One column applied to active-duty veterans while a separate funding fee schedule applied to reservists. We capture the key elements of the VA's funding fee schedule in Table 1 below. Looking beyond October 1, 2008, we see that the Congress had already planned for continuing the funding fee program. As such, the October 1, 2008 extension was not really a sunset provision, but a point in time when the fee schedule would change.

Table 1 VA Funding Fees Enacted in Veterans Benefits and Health Care Improvement Act, 2000

Type of loan	active-duty veteran	Reservist
0 percent down, closed before 10/1/2008	2.00	2.75
0 percent down, closed on or after 10/1/2008	1.25	2.00

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0 percent down, subsequent loan, before 10/1/2008	3.00	3.00
0 percent down, subsequent loan, on or after 10/1/2008	1.25	2.00
5 percent down, but less than 10 percent, before 10/1/2008	1.50	2.25
5 percent down, but less than 10 percent, on or after 10/1/2008	0.75	1.50
10 percent down, before 10/1/2008	1.25	2.00
10 percent down, on or after 10/1/2008	0.50	1.25
interest-rate reduction refinancing loan	0.50	0.50

Before 2008, the United States Congress enacted new legislation with respect to the VA funding fee. The Veterans Benefits Act of 2003 modified the funding fee schedule, modifying the dates and the funding fee rates. Specifically, both the dates and the rates were modified for the VA funding fee. Thus, the funding-fee hike was pushed forward in time and the funding fees were raised. Table 2 provides the schedule for the funding fee according to the Veterans Benefits Act of 2003.

For the Veterans Benefit Act of 2003, we can summarize the legislative changes as follows. For initial loans with zero percent down, the VA home loan rate increases for a ten-month period beginning in January 2004.[2] After peaking during these ten months, the 2003 Act provides for a

[2] Because the Acts use the phrase home loan rate, we will use the home loan rate and funding fee interchangeably.

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two-step increase in the VA funding fee, rising by 15 basis points (1.40 vs. 1.25) for the period after October 1, 2011. Step Two stipulates that the funding fee on loans increases by 30 basis points (3.30 vs. 3.00) for more than seven years, After this period, there is a two-step reduction in the home loan rate prescribed for all loans closed on or after October 1, 2008 in the Veterans Benefits and Health Care Act of 2000. For VA loans with five- or ten-percent down payments, the difference between active-duty veterans and reservists is reduced by the Veterans Benefits Act of 2003. Specifically, reservists see a 50-basis point reduction in the funding fee rate for all loans closing. Note that the funding-fee rate reduction that was scheduled to occur in October 2008 was delayed until October 2011 by the Veterans Benefit Act of 2003.

Overall, the Veterans Benefits Act of 2003 implemented a funding fee hike by temporarily raising the VA funding fee and then deferring funding fee rate reductions that were scheduled to occur in October 2008. There was a decline in the VA funding fee for reservists. Upon enactment, reservists saw a 50-basis point reduction in their VA funding fee. For reservists, however, they paid a higher funding fee for the period between October 2008 and October 2011 since the funding fee reduction was delayed for an additional three years.

In 2004, the United States' Congress passed the Veterans Benefits Improvement Act. The Act called for a cessation of collecting VA funding fees for any veteran rated as "eligible for receiving compensation" as a result of a pre-discharge disability examination. The 2004 Act did not alter the schedule of VA funding fees.

A slight increase in the VA funding fee was implemented with passage of the Veterans Housing Opportunity and Benefits Improvement Act of 2006. The change was to apply only those borrowers

Table 2 VA Funding Fees Enacted in Veterans Benefits Act, 2003

Type of loan	active-duty veteran	Reservist
0 percent down, closed before 1/1/2004	2.00	2.75
0 percent down, closed on or after 1/1/2004 and before 10/1/2004	2.20	2.40
0 percent down, closed on or after 10/1/2004 and before 10/1/2011	2.15	2.40

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0 percent down, closed on or after 10/1/2011	1.40	1.65
0 percent down, subsequent loan, before 1/1/2004	3.00	3.00
0 percent down, subsequent loan, after 1/1/2004 and before 10/1/2011	3.30	3.30
0 percent down, subsequent loan, on or after 10/1/2011, before 10/1/2013	2.15	2.15
0 percent down, subsequent loan, on or after 10/1/2013	1.25	1.25
5 percent down, before 10/1/2011	1.50	1.75
5 percent down, on or after 10/1/2011	0.75	1.00
10 percent down, before 10/1/2011	1.25	1.50
10 percent down, on or after 10/1/2011	0.50	0.75
interest-rate reduction refinancing loan	0.50	0.50

with zero-percent down and with closing dates between October 1, 2006 and September 30, 2007. Basically, for the Federal government's Fiscal Year 2007, the VA funding fee was increased from 3.30 percent to 3.35 percent.

With passage of the Veterans Benefits Act of 2010, additional waivers were implemented. Heretofore, veterans with service-connected disabilities called to active service were not included in the group. The original language stipulated a "but-for" clause pertaining to the receipt of retirement pay. The new language included the receipt of active-service pay in the revised "but-for" clause. What this means is that the VA funding fee waiver is extended to a borrower who is receiving compensation or who, but for receipt of retirement or active service pay, would be entitled to receive compensation. Hence, the waiver is extended to a larger group.

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The next act was the Restoring GI Bill Fairness Act of 2011. In the 2011 Act, changes were made to the VA funding fee schedule that applies to subsequent loans; that is, VA loans made to eligible borrowers for the all but their first application. Two specific changes were implemented with respect to the funding fee. Whereas the existing fee schedule set the VA funding fee for all subsequent loans with zero-percent down at three percent of the loan value for closings before January 1, 2004, the 2011 law modified the language to set the VA funding fee at 3.30 percent of the loan value for all subsequent loans closing before October 1, 2011. In addition, all subsequent loans closing on or after October 1, 2011and before October 1, 2012 were subject to a VA funding fee equal to 2.80 percent of the loan value. Thus, the 2011 Act specified a "temporary" increase in the funding fee applied to subsequent loans for the remainder of Fiscal Year 2011 and a 50-basis point decrease in the VA funding fee for subsequent loans during Fiscal Year 2012.

The United States Congress again addressed the home loan rate in the Veterans Health Care Facilities Capital Improvement Act of 2011, which was passed on October 5, 2011. In this Act, Congress extended the VA funding fee schedule from October 1, 2011 to November 18, 2011. Thus, for zero-percent down initial loans, the VA funding fee remained equal to 2.15 percent of the loan value for approximately an extra six weeks before falling to 1.40 percent. In addition, the funding fee was maintained at 3.30 percent of the loan value for all subsequent loans for approximately six extra weeks. Similarly, the funding fee for VA loans with five percent down and ten percent down remained at the higher rates until November 18, 2011 instead of declining on October 1, 2011 as set in the Veterans Benefits Act of 2003.

By its nature, the Veterans Health Care Facilities Capital Improvement Act of 2011 was designed to deal with short-term changes in the Veterans benefits package. By November 21, 2011, the United States Congress set forth to address benefits over a longer horizon. In a bill designed to amend the Internal Revenue Service (hereafter IRS) code. Specifically, new dates were implemented with respect to the VA funding fee schedule. The key provision was to set a date--October 1, 2016—that applied to any previous legislation that specified end dates at November 18, 2011. It is clear from the historical review that both the Restoring GI Bill Fairness Act and the Veterans Health Care Facilities Capital Improvement Act were enacted in order to maintain the VA funding schedule that would have lapsed without the November amended IRS code.

In 2012, the United States Congress enacted legislation that modified the VA funding fee in two ways. With passage of the Honoring America's Veterans and Caring for Camp Lejeune Families Act of 2012, the first modification applied to the waiver for VA home loans. In particular, the

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waiver for VA loans was extended to veterans designated as “eligible for compensation” based on pre-discharge examinations or reviews. This condition reduces the time that a veteran would have to wait to be receive the waiver. The second modification entailed the VA funding fee schedule, extending the existing schedule to October 1, 2017 from October 1, 2016.

The United States Congress was silent with respect to the VA funding fee for several years. In 2017, the United States Congress enacted the Veterans Access, Choice, and Accountability Act. In the 2017 Act, the home loan fee schedule was extended from October 1, 2017 to September 30, 2024. In the VA Mission Actof 2018, Congress enacted legislation to further extend the date to September 30, 2028. Thus, for the foreseeable future, the VA funding fee will apply to borrowers except for those who can receive a waiver.

In 2019, the United States Congress raised the VA funding fee. With passage of the Blue Water Navy Vietnam Veterans Act of 2019, dates for the funding fee schedule were further extended to October 1, 2029. In addition, the 2019 Act raised the VA funding fee rates. Table 3 reports the rates that were implemented. The VA funding fee increases were primarily applied to the period between 2020 and 2022. In general, the home loan rates were increased from 15 to 25 basis points in the 2019 Act. Finally, the 2019 legislation extended the waiver to veterans who had received a Purple Heart and to their surviving spouses.

The VA funding fee schedule was modified in the Ryan Kules and Paul Benne Specially Adaptive Housing Improvement Act of 2019. Rather than phasing out the temporary VA funding fee increases on January 1, 2022, the 2019 Act extended the temporary schedule to be retired in April 7, 2023. Otherwise, the schedule in Table 3 was maintained.

Further modifications were implemented when the United States Congress passed the Johnny Isakson and David P. Roe, M.D. Veterans Health Care and Benefits Act of 2020. In the 2020 Act, Congress implemented two primary actions. First, dwellings identified as substantially damaged or destroyed by a major disaster declared by the President under section 401 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act could apply for a new VA loan “as if” the loan were an initial loan. This reduced the VA funding feed that apply to subsequent loans. Second, the VA funding fee was extended to October 1, 2030.

Figure 1 is a partial summary of the changes in the VA funding fee over time. In this history, Figure 1 presents the path of the funding fee rate that applies for VA-guaranteed loans with a zero-percent down payment. Over time, we note that Congress has implemented changes to the funding fee rate to coincide with start of a new federal Fiscal Year. Although the fiscal year and calendar year does not perfectly match—the United States Fiscal Year starts on October 1—for

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purposes of this chart, the funding fee rate was assigned to the calendar year in which the change was implemented. Figure 1 provides the reader with a clear sense of the evolution over time; the funding fee rate has been increasing over time. After starting as a user fee set at 0.5 percent, it has risen to 2.30 percent for veterans.

What Figure 1 does not show is the fraction of veterans receiving funding fee waivers. In other words, the "effective" funding fee is much more volatile over time than the stair-step process revealed in Figure 1. The waivers, or exemptions, are available to Veterans receiving disability compensation and extends to surviving spouses. It follows that exemptions will increase during times of active military conflict. If we hold everything else constant, the exemptions will increase because the likelihood of being injured increases. A larger exemption rate means that the funds collected will decline. Unfortunately, I could not find data on the number of borrowers successfully applying for VA loans who also received an exemption.

Why is the exemption rate important when reviewing the funding rate increase over time? We cannot tell from the history of the funding fee rate whether the rate increases were a policy response to an increase in the exemption rate. In other words, a more generous exemption rate policy could induce a response to raise the funding fee. Funding fees collected are related to the product of (one minus) the exemption rate and the funding fee rate.

Table 3 VA Funding Fees Enacted in Blue Water Navy Vietnam Veterans Act, 2019

Type of loan	active-duty veteran	Reservist
0 percent down, closed before 1/1/2020	2.15	2.40
0 percent down, closed on or after 1/1/2020 and before 1/1/2022	2.30	2.30
0 percent down, closed on or after 1/1/2022 and before 10/1/2029	2.15	2.15
0 percent down, closed on or after 10/1/2029	1.40	1.40

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0 percent down, subsequent loan, before 1/1/2020	3.30	3.30
0 percent down, subsequent loan, after 1/1/2020 and before 1/1/2022	3.60	3.60
0 percent down, subsequent loan, on or after 1/1/2022, before 10/1/2029	3.30	3.30
0 percent down, subsequent loan, on or after 10/1/2029	1.25	1.25
5 percent down, before 1/1/2020	1.50	1.75
5 percent down, on or after 1/1/2020 and before 1/1/2022	1.65	1.65
5 percent down, on or after 1/1/2022 and before 10/1/2029	1.50	1.50
5 percent down, after 0/1/2029	0.75	0.75
10 percent down, before 1/1/2020	1.25	1.50
10 percent down, on or after 1/1/2020 and before 1/1/2022	1.40	1.40
10 percent down, on or after 1/1/2022 and before 10/1/2029	1.25	1.25
10 percent down, after 0/1/2029	0.50	0.50
interest-rate reduction refinancing loan	0.50	0.50

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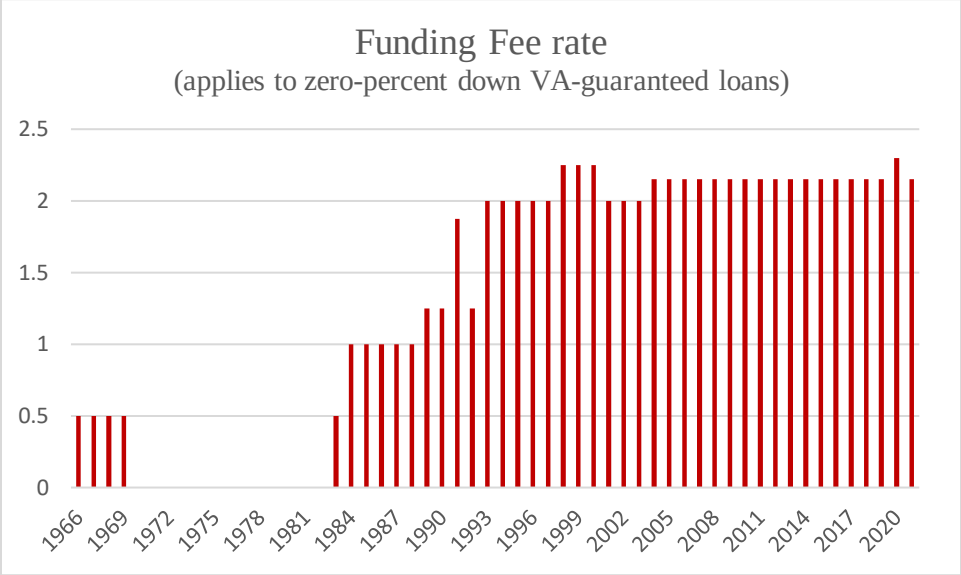
Figure 1



3. In the case of foreclosure

In this section, we lay out the process that goes from mortgage default to foreclosure. It is the foreclosure that triggers the loan guaranty. The purpose for this review is to make clear that the loan guaranty rate is tied to the costs borne by servicers.

The Veterans' Benefits Administration Loan Guaranty Service has oversight responsibility for the home loan default resolution process. The first is to identify those loans that are delinquent. Formally, a mortgage is delinquent after one missed payment. The next step is default, which occurs when at least 61 days have passed without payment. The Loan Guaranty Service monitors the developments with respect to defaults, ensuring that the borrower has access to all loss mitigation options. The goal is to work with borrowers so that some agreement can be reached to resolve the defaulted loans and avoid foreclosure on the property. After 120 days have passed without any payment, Adequacy of Service reviews are conducted.

There is a clear process that applies to servicers when a VA-guaranteed loan is in default. The VA Loan Electronic Reporting Interface, hereafter VALERI, is the primary means by which communications are monitored when a mortgage is in default. Specifically, it is the responsibility of the servicer to report the default after at least 61 days without payment. Also known as the Delinquent Loan Servicing Process, the seven steps that the servicer must perform are:

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- Contact borrower;
- Attempt to collect payments;
- Order property inspections;
- Protect and preserve property;
- Report Electronic Default Notification;
- Send loss mitigation letter;
- Report events to the VA.

Servicer contacts borrower no later than 30 days after the loan payment is missed.[3] Note this means it will be roughly 60 days or more since the last payment was received. Partial payments can be made and there are a set of conditions established under which the servicer can return any payment. If such payments are not accepted, the servicer is directed to inspect, preserve and protect the property. This is to ensure the value is maintained if foreclosure is implemented.

Time is allowed for the borrower to resolve delinquencies. Accordingly, the servicer does not send Electronic Default Notification until 61 days after the loan is delinquent. If, for example, delinquency occurs 30 days after the last payment—that is, when the next payment should have been received—then the Electronic Default Notification occur 91 days since the last payment was received.

Next, the servicer sends the loss mitigation letter to the borrower. According to the VA servicer guide, the loss mitigation letter no later than the 75^{th} day after delinquency. Suppose delinquency occurs 30 days after the last payment, for example, the loss mitigation letter is sent no later than 105 days since the last payment. The loss mitigation process can take a significant amount of time. The VA reviews the adequacy of servicing a loan if the loan is more than 210 days delinquent. What this means is that adequacy of service review comes at least 240 days after the last loan payment was received by the servicer.

A specific set of approaches are considered important actions regarding loss mitigation. Specifically, loss mitigation includes:

- repayment plans—the borrower makes regular installment payment each month plus an added amount to cover the previous missed installment payments;

[3] The interested reader is directed to Section 4 of the U.S. Department of Veterans Affairs report VA Loan Electronic Reporting Interface: VA Servicer Guide, 2009.

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- special forbearance—servicer agrees not to initiate foreclosure, allowing borrower time to repay the missed installment payments;
- loan modifications—borrower is effectively given a fresh start by adding the value of missed installment payments to the loan balance and establishing a new payment schedule;
- additional time—servicer aggress to delay foreclosure so that the borrower's private sale can close and the loan paid off;
- compromise or short sales—the servicer agrees to let the borrower sell the property for a price less than the value of the loan remaining;
- refunding in which the VA buys the loan and takes on servicing responsibilities;
- deed-in-lieu of foreclosure—the borrower voluntarily transfers the home to the servicer and is released from the mortgage.

The law specifies that 120 days are allotted for loss mitigation efforts.[4]

There are additional reporting elements required to deal with reporting on owner's bankruptcy filings, transferring servicer's rights to other servicers, reporting to credit bureaus and reporting other modifications. Our goal here is to offer a description of the process and the time it takes to proceed from a delinquent payment *toward* foreclosure. Because the VA-guarantee is operational, there is a clear set of guidelines that must be met to have a valid loan guaranty claim.

3.1 Alternative resolutions

If the borrower and the servicer cannot successfully resolve the default, the VA prefers two alternatives to foreclosure. One is the compromise sale and the other is the deed-in-lieu of foreclosure. Each resolution specifies how claims against the VA-guaranteed loan are to be calculated.

3.1.1 Compromise sale

A compromise sale is defined as selling the defaulted property to a third party at a price less than the borrower's total eligible indebtedness. The first step in the process is that the servicer must

[4] For a more detailed description of the process involved with delinquent loans, see Chapter 4 of the VA Servicer Handbook M26-4.

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have an appraisal. It is the appraised value that serves as the Notice of Value. The Notice of Value also serves as a measure of the appraised fair market value.

In the case of a compromise sale, the servicer can submit a claim to recoup the difference between the sales price and the total eligible indebtedness subject to the maximum VA loan guaranty. The compromise sale is differentiated from a private sale in which the borrower sells the property at a price sufficient to cover the total eligible indebtedness. With a private sale, there is no claim applied to the loan guaranty. From the VA's viewpoint, a private sale is preferred to a compromise sale.

There are some terms specific to the VA-guaranteed loan that need to be defined as they apply to a compromise sale. The term total eligible indebtedness is a measure of what the servicer is owed from the borrower. Total eligible indebtedness is comprised of the borrower's unpaid balance plus accrued unpaid interest accumulated during the period in which loss mitigation processes are applied plus liquidation costs plus advances on escrow accounts less any credits on the borrower's account. More completely, total eligible indebtedness is computed by the VA and includes 1) unpaid principal balance; 2) accrued unpaid interest; 3) interest on unpaid principal balance; 4) interest on advances; 5) liquidation expenses; and 6) advances. Credits are subtracted from these six items.[5]

Once total eligible indebtedness has been computed, the next step is to compare it against the net value. The VA defines the property's net value based on an appraised fair market value. Because the VA has expenses, there is a cost factor adjustment made. At the time this report is being written, the cost factor is 15.95 percent. This means that the VA subtracts 15.95 percent of the fair market value as representative of its costs for disposing of the property. The net value is then the difference between the fair market value less the percentage of the fair market value less the cost factor. To illustrate this calculation, suppose the fair market value is $200,000. With the cost factor at 15.95 percent, the application of the cost factor is the property's net value is $\$200,000 - \$31,900 = \$168,100$. If the borrower's total eligible indebtedness is not greater than the property's net value, no loan guaranty claim is needed. However, if the borrower's total eligible indebtedness is greater than the property's net value, then the VA loan guaranty claim is submitted.

[5] Suppose the unpaid principal balance is $100,000, accrued unpaid interest on the unpaid principal balances and advances totals $12,000, paid liquidation expenses equal $3,500, advances equal $1,300 and there are $1,200 worth of credits. Total eligible indebtedness is $100,000 + $12,000 + $3,500 + $1,300 - $1,200 = $115,600.

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The claim payment depends on the compromise sales price relative to the property's net value. Suppose total eligible indebtedness is $210,000. In addition, suppose the property sale price is $170,000. If the fair market value is $200,000 and the VA computes the property's net value is $168,100 (see above), then the claim is $\$210,000 - \$170,000 = \$40,000$.[6] In the case in which the sale net proceeds are less than the property's net value, the servicer must obtain pre-approval from the VA. Alternatively, suppose for example, the net sales proceeds equal $165,000. With the property's net value greater than the net sale proceeds, the claim is total eligible indebtedness less the net value; that is, $\$210,000 - \$168,100 = \$41,900$. Because the servicer collects the proceeds and the claim is equal to $\$165,000 + \$41,900 = \$206,900$, there is a loss. Formally, the servicer's loss is $\$210,000 - \$206,900 = \$3,700$.

3.1.2 Deed-in-lieu of foreclosure

A deed-in-lieu of foreclosure is a voluntary transfer to the servicer. In this setting, the servicer may transfer custody of the title to the VA. When deed-in-foreclosure is approved, the servicer is required to submit basic claims through VALERI. Like the compromise sale, total eligible indebtedness and net value of the unpaid balance are important elements used to determine the claim payment by the VA.

Claims available to the servicer depend on whether a deed-in-lieu of foreclosure is "total debt" bid or "net value" bid. The two bids are distinguished by the relationship between total eligible indebtedness and net value. If total net indebtedness is less than net value, the deed-in-lieu is a total debt bid. If the servicer elects to transfer the custody to the VA, the claim is the unpaid balance on the loan at acquisition. The servicer can file a claim to recoup remaining indebtedness. If custody is not transferred, then no claim is permitted. For a deed-in-lieu of foreclosure with a total debt bid, the claim is computed based on the difference between the total eligible indebtedness and the unpaid loan balances.

In contrast, if total eligible indebtedness is greater than net value, then it is called a net value bid. In this case, the VA pays the net value at acquisition of the deed. The servicer is permitted to file a claim to recoup any remaining debt up to the maximum guaranty amount. For a deed-in-lieu of foreclosure with a net value bid, the claim is based on the difference between the total eligible indebtedness and the net value.

[6] Note that the guarantee rate is 25 percent applied against the property's net value of $168,100 equals $42,025.

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3.2 The loan guarantee schedule

Table 4 presents the loan guarantee rate for different classes of loans. In the numerical analysis above, we used a flat 25 percent rate but the actual schedule is more complicated. In particular, the VA has implemented a size test that sets the loan guarantee rate dependent on the loan value. The size test indicates that the VA sees a benefit to offering larger loan guarantees for borrowers asking for smaller loan amounts. In addition, the VA takes into account that there is substantial variation in home prices across the United States. For example, in the last row of Table 4, there is reference to the county loan limit. Because home prices differ so greatly across the country, the VA has tried to account for this variation by tailoring both the entitlements to veterans and the VA-guarantee program to take location-specific prices into account. More concretely, for a veteran with a full entitlement, the loan limit without a down payment is $548,250. However, the loan limit without a down payment increases to $822,375 in certain high-price counties in New York, Los Angeles and other high-price regions in the United States.[7] Overall, the VA summarizes Table 4 details as follows: the VA typically guarantees 25 percent of each VA loan. Only smaller loans may receive larger guarantee rates.

4.3 How are the servicer's losses affected by the policies on VA-guaranteed loans?

By carefully detailing the process of foreclosing on properties financed by VA-guaranteed loan, it is possible to focus on key features that are important for servicers. With these details, we see that the costs borne by servicers depends on both the guaranty rate and the funding fee. Subject to the factors that apply when the servicer submits a claim against a VA-guaranteed loan, the higher the guarantee rate, the larger the claim will be. To illustrate this, consider a case in which the servicer suffers a loss. With a property's net sales proceeds equal to $165,000 and the property's net value greater than the net sale proceeds, the permissible claim is equal to

[7] The entitlement can be partially used in other ways. In an illustration provided by the Veterans Administration, suppose that there is a $40,000 reduction against their entitlement. In addition, the veteran wants to purchase a $500,000 home with VA loan. The maximum entitlement for a home is $0.25*\$548,250=\$137,062.50$. Subtract the $40,000 worth of entitlement already used, leaving $97,062.50. This implies that the maximum loan value that the borrowing limit available for this home purchase is $\$97,062.50*\left(1/0.25\right)=\$388,250$ without a down payment. The borrower would have to have 25 percent down payment for the difference between the home price and the zero-down-payment maximum; in other words, $0.25*\left(\$500,000-\$388,250\right)=\$27,935.50$. See https://www.valoans.com/eligibility/entitlement/ for this illustration and greater detail on the nature of the entitlements for veterans.

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$\$210,000 - \$168,100 = \$41,900$. Because the servicer collects the proceeds and the claim equal to $\$165,000 + \$41,900 = \$206,900$, which is less then total eligible indebtedness, the servicer's loss is $\$210,000 - \$206,900 = \$3,700$. Note that this calculation is performed with a loan guarantee rate equal to 25 percent. In this case, the servicer was permitted to claim $41,900 because it is less than $0.25 * \$168,100 = \$42,025$. If we were to tweak the loan guarantee rate to 20 percent for example, the maximum claim would be $0.2 * \$168,100 = \$33,670$. The servicer's loss would increase from $3,700 to $11,330.[8] Thus, the projected servicer's loss increases, for example, when the loan guarantee rate decreases. Overall, the servicer's projected loss is a decreasing function of the loan guarantee rate.

Table 4 VA Loan Guarantee Rate

Initial loan value	VA Guarantee Rate
If loan value is less than $45,000	50 percent
For loan greater than $45,001, but less than $56,250	$22,500
For loan greater than $56,251, but less than $144,000	40 percent with maximum guarantee equal to $36,000
For loan greater than $144,001, but less than $417,000	25 percent
For loan value greater than 417,000	25 percent of county loan limit, or 25 percent of loan amount whichever is less

Next, the funding fee rate also affects the servicer's projected losses in the case of foreclosure. In the numerical example we just studied, we can see how an increase in the funding fee rate could result in larger losses to a servicer. By construction, total eligible indebtedness is positively related to the unpaid balance. Suppose the $210,000 value is based on a borrower who put zero

[8] We derive projected loss by taking the net sales process of $165,000 and adding the maximum claim allowed at a 20 percent guarantee rate. So, $\$165,000 + \$33,670 = \$198,370$. Since total eligible indebtedness is $210,000, the loss is $\$210,000 - \$198,370 = \$11,330$.

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down on the mortgage. For our hypothetical example, suppose the funding fee rate was two percent for that numerical example~~, Suppose the funding fee rate were two percent~~ and the total eligible indebtedness increased to $212,000. With the net sales proceeds at $165,000 ~~and~~ the permissible claim is equal to $\$42,025$ which is calculated on the basis of 25 percent of $168,000. (Note that the difference between the total eligible indebtedness and the net value yields $\$212,000 - \$168,100 = \$44,000$, which is greater than the maximum guaranty permitted.) For this example property, the projected payments to the servicer would be $\$165,000 + \$42,025 = \$207,025$. Thus, the projected loss is $\$212,000 - \$207,025 = \$4,975$. The upshot is that servicer's loss is positively related to the funding fee.

In this numerical example, the funding fee affects the total eligible indebtedness. If the total eligible indebtedness is "close" to the net value—that is, the difference is less than the maximum loan guaranty offered by the VA—then the permissible claim will increase dollar-for-dollar with the total eligible indebtedness. In short, the project loss will be borne by the servicer and will not, in general, increase with the funding fee rate. More generally, therefore, the projected loss is a non-decreasing function of the funding fee rate for the servicer.

The main conclusion to draw from this section is that there are microeconomic effects that arise from the selection of the funding fee rate and the loan guarantee rate. A lower guarantee rate means that servicers have higher projected losses on foreclosed properties. A higher funding fee rate may have no effect on the projected losses on foreclosed properties. However, for certain cases, an increase in the funding fee rate results in larger projected losses. Because of our simulations regarding the impact of combinations of the funding fee rate and loan guarantee rate on the budget for the VA-guaranteed loan program, we consider how modifications to the combination could affect rates on VA-guaranteed loans and ultimately on the welfare of veterans served by this program.

4. Funding Fee data

The Veteran's Administration has reported its funding fee collections. Table 5 reports the results of a report by the Office of the Inspector General conducted in 2019. The number of VA loans and the funding fees collected are reported for fiscal years 2012 through 2017. The last row reports the sum across this six-year period. The data show a pretty consistent pattern with a slight upward trend in the number of loans issued and the value of the funding fees collected.[9]

[9] The average funding fees collected per VA-guaranteed loan peaked in 2014 at $3,057 per loan. It fell in 2015 to $2,741, rising to $2,807 in 2016 and $2,890 in 2017. Such evidence is consistent with the exemption rate being less than 50 percent. We shall consider the role of the exemption in the next subsection.

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Compared with collections in 2012, funding fees collected were 81 percent higher in 2017. For the 6-year span, more than 3.6 million VA loans were approved and the total value of funding fees collected was more than $9.7 billion.

Table 5 VA Loan Volume and Funding Fee Collections, Fiscal Years 2013-2017

Year	Number of loans	Funding fee receipts
2012	539,884	$1.18 billion
2013	629,312	$1.41 billion
2014	438,398	$1.34 billion
2015	631,142	$1.73 billion
2016	705,474	$1.98 billion
2017	740,389	$2.14 billion
6-year totals	3,684,599	$9.78 billion

Source: Exempt Veterans Charged VA Home Loan Funding Fees, Report 18-03250-130, Department of Veterans Affairs, Office of Inspector General, June 6, 2019.

We use data on funding fees collected to get an idea of the flow of user fees collected and the projected outflows of monies applied as loan guarantees. The primary question in the following section is a macroeconomic/policy one; specifically, are the user fees sufficient to cover the annual flow of loan guarantees paid out the Veterans Administration? The answer to this question bears on the VA home loan program. For example, if the funding fees collected are greater than the loan guarantee payouts, there is an argument for altering the key parameters in the program. To be more specific, if user fees more than cover the projected loan guarantee expenses, one could either lower the funding fee or increase the loan guarantee percentage. The key part of the investigation is to make the best possible projection of the difference between the cost of VA-guaranteed guaranty per year and the user fees collected. If the fees collected from the home loan rate exceed the projected costs of the monies to cover the guaranty, the analysis at least suggests that some revision to the combination of the guaranty rate and the funding fee rate would be revenue neutral for the VA-guaranteed loan program.

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We should note that the Congressional Budget Office (CBO) has conducted an analysis of the VA's mortgage guarantees. The CBO's approach is straightforward. They treat the funding fees collected as a kind of deposit. Over the next 30 years, the loans against which those fees were collected will default. The claims paid out by the VA over time are withdrawals against that initial funding fee deposit. The projected withdrawals are first discounted to their present value and then divided that year's loan value. The result of this division is called the cumulative lifetime default rates.

The CBO constructs a summary measure called the subsidy rate that takes the present value of cumulative lifetime defaults then subtracts the funding fees collected for that year's loans, finally dividing by that year's loan value. If the subsidy rate is positive, then the CBO is projecting that the discounted sum of claims is greater than the funding fees collected. Thus, the federal government is subsidizing the home-loan guarantee program because the user fee cannot cover the expenses. Conversely, if the subsidy rate is negative, then the funding fees are greater than the projected present value of claims. Formally, the CBO follows the Full Credit Report Act (FCRA) and projects the subsidy rate to 1.1 percent. This means that the claims paid by the VA are projected to be greater than amount collected by the funding fee. In contrast, the VA's estimate of the subsidy rate in the Federal Credit Supplement is -0.08 percent. Here, the negative sign indicates that the amount collected from the funding fee is projected to be greater than the claims paid by the program.

What accounts for why there is a projected sign difference in the subsidy rate when comparing the CBO's and the Administration's? The CBO carefully traces the role of both a decline in the funding fees collected and increases in the cumulative lifetime defaults. The number of VA mortgages exempted from the funding fee are expected to be a larger drag over time by the CBO. In addition, the CBO's macroeconomic forecasts of future volatility represent a significant change when compared with the period of stable economic growth followed by large increases in home prices during the pandemic. The intuition is that stable economic growth resulted in fewer annual defaults With housing price increases, claims against the loan guarantee decline as any foreclosure costs are offset by the higher sales price. The bottom line is that future macroeconomic volatility accounts for why the CBO offers such a pessimistic view of the VA's funding fee as a means of fully funding the VA mortgage guaranty program.

In the approach taken in this report, we will focus on the flow of funding fee revenues each and the flow of claims paid by the VA against loan guarantees. We have an annual history of the flows of fees and claims that are indicate the funding is greater than the claims. Such evidence is not contradictory of the CBO's future-looking subsidy, but raises some questions about the

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accuracy of the forecasts. For instance, housing prices have increased at a 5.2 percent average annual rate since 2009. Even with the prolonged period between default and foreclosure and any deleterious effects that could happen to housing stock under the period of loan-loss mitigation, continued housing price increases will reduce claims.

3.1 VA-guaranteed loan guaranty: some math preliminaries on revenues and costs

We start by characterizing the flow of revenues and costs associated with the VA-guaranteedloan guaranty program. By representing revenues and costs in a general form, it is possible to examine how the funding fee rate and the VA-guaranteedloan guarantee rate interact with each other. Ultimately, the equations described here will serve as the source for projections regarding these interactions.

Based on the number of categories present in Tables2 and 3, for example, we can calculate the funding fee for some arbitrary fiscal year, denoted by t. Collections are represented by the following equation:

$$\sum_{j=1}^{J}\left(1-w_{j,t}\right)\left[\, f_{j,t} * lv_{j,t} \,\right] \tag{1}$$

where $0 < w_{j,t} < 1$stands for the fraction of VA-guaranteed mortgages for which an exemption applies for a particular category, $f_{j,t}$is the funding fee rate that applies for the particular category, and $lv_{j,t}$ denotes the dollar value of loans in the particular category.

To illustrate how changes in the variables affect the aggregate funding fees collected, suppose the aggregate value of VA loans is $100 million to active-duty veterans paying 5 percent down in Fiscal Year 2021. Based on the values provided in Table 3, the funding fee rate is 1.65 percent for this group. If the fraction of this group receiving an exemption is 25 percent, then funding fees collected from this category is $(1-0.25)*(\$100\ million*0.165)=\$1,237,500$. The aggregate value of funding fees collected is then the sum across all the categories.

Next, we characterize loan guaranty costs representing these costs by group just as we did for the funding fees collected. The borrower's funding fee category is identified by the down payment and service. For each group of borrowers, some fraction of the loans will default and the loan

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guaranty will be paid out by the Veterans Administration. Let the cost of the VA-guaranteed loan guaranty be represented by the following equation:

$$\sum_{j=1}^{J} d_{j,t}\left[g_{j,t} * lv_{j,t}\right] \tag{2}$$

where $d_{j,t}$ stands for the fraction of loans defaulted by borrowers in funding-fee group j at date t and $g_{j,t}$ is the loan guaranty rate for the VA-guaranteedloan.[10]

With the sums of the products in Equation (1) and Equation (2), we represent the *excess user fees* as the difference between the flow of aggregate funding fees collected (Equation (1)) and the flow of aggregate VA-guaranteed loan claims paid out (Equation (2)). For our purposes, the comparison determines whether the user fee covers the costs of the VA-guaranteedloan guarantee. Or, are extra monies needed to pay for the Veterans Administration mortgage guarantee program? Note that there is a common term in both equations; the loan value is the funding fee base and also the base for determining the costs of the loan guarantee. This fact means that the difference between the revenues and the costs of the VA-guaranteed home loan program are principally affected by a combination of the fraction of exemptions and the size of the funding fee rate and by a combination of the default rate and the loan guarantee rate.

There is one takeaway from math preliminaries represented in Equations (1) and (2). The funding fee rate and the loan guarantee rate are set by policymakers. For example, an increase in the funding fee rate, holding everything else constant, will result in an increase in revenues. Similarly, an increase in the loan guarantee rate, holding everything else constant, results in higher costs for the VA-guaranteedhome loan program. We have two years of data on the claims paid by the VA for its loan guarantee payouts. Table 6 reports the fundings fees collected and the claims paid for Fiscal Years 2016 and 2017. Here, I interpret the claims paid out as equivalent to the realized measure of the cumulative lifetime defaults realized in the given year. The results indicate that the difference between the funding fees collected and the claims paid has been

[10] Equation (2) projects the maximum flow of VA home-loan guarantee costs. The scale variable that is used by the VA to compute the loan guarantee amounts is described in detail in Section 4 of this report. The loan value represents the maximum amount to which the loan guarantee applies. As such, the analysis in this section is a kind of worst-case scenario for computing projected annual revenues relative to projected annual costs of the VA home loan program.

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positive and increasing. In 2016, the funding fee was $1.2 billion greater than the claims paid. By 2020, the difference increased 20 over $2.3 billion.

Table 6 Reported revenues and costs for VA loan guarantee program, 2016-2020

Fiscal Year	Funding Fees collected	Claims paid out (bil of $)	Difference (bil of $)
2016	$1.98 billion	0.743	1.237
2017	$2.14 billion	0.857	1.283
2018	$2.02 billion	0.657	1.364
2019	$2.11 billion	0.592	1.518
2020	$2.79 billion	0.429	2.358

Source: Exempt Veterans Charged VA Home Loan Funding Fees, Report 18-03250-130, Department of Veterans Affairs, Office of Inspector General, June 6, 2019 and Federal Budget various issues.

As we look forward, one has to forecast the fees collected and future claims. In this report, projections are based on a method that depends on the most recent aggregate loan value, the historical average level for claims-to-loan value, the funding fee-to-loan value and the loan-default ration, thus abstaining from relying on time-varying macroeconomic forecasts. With these numerical simulations, we can gain some insight into the funding mechanism for the VA-guaranteedhome loan program. Our goal is to provide some numerical basis that sheds light on a fundamental question: does the user fee pay for the program, or is the United States government subsidizing the VA-guaranteed home loan program?

3.2 Some numerical illustrations—program breakeven calculations

We begin with a straightforward question. Given that the annual funding fees collected have exceed the annual claims on guaranteed home loans, what would the default rate on those guaranteed loans had to have been so that the VA home-loan guarantee would have, on average, broke even each year?

To conduct the numerical analysis, we measure several key ratios. We start by measuring the ratio of the funding fees collected by the total loan volume. Though we do not have an observed exemption rate, the fraction of VA guaranteed home loans that are exempt from paying the funding fee is encoded in the ratio of funding fees collected to total loan volume. With the data

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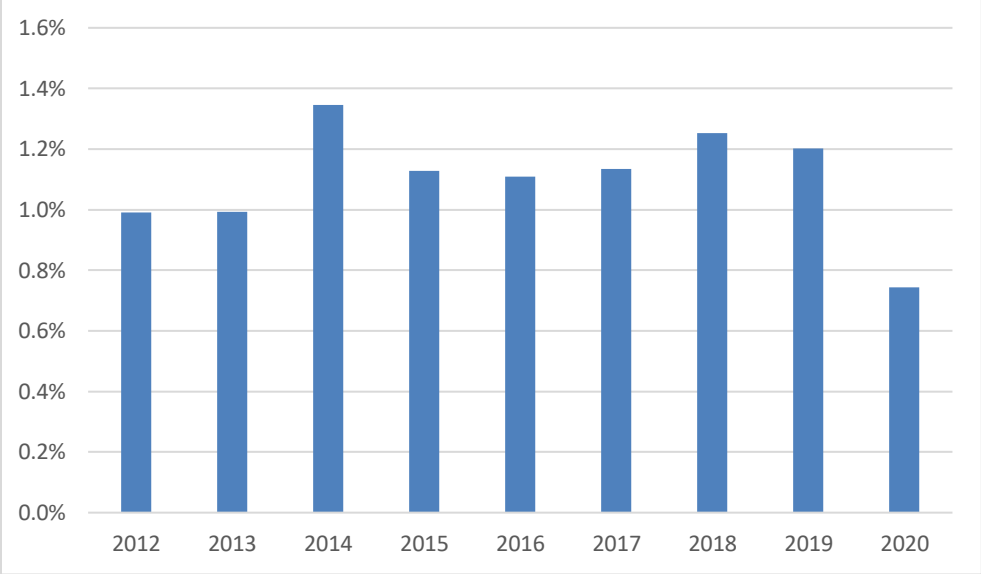
in Tables 4 and 5 and the loan volume reported by the VA for each fiscal year, we summarize those values in Figure 2, which presents

Figure 2 Ratio of total funding fees to aggregate VA Home Loan Volume, 2012-2020



Source: VA reports on aggregate loan value by fiscal year; see reports at https://www.benefits.va.gov/HOMELOANS/Lender_Statistics.asp

the ratio of total funding fees collected divided by aggregate loan value for Fiscal Years 2012 through 2020. The data in Figure 2 show that the funding fee has been between 0.74 percent (2020) and 1.34 percent (2014) of aggregate loan volume. For this nine-year period, the sample mean is 1.1 percent.

Consider a case in which we ignore the scale of the loan volume by applying average percentages reported. We compare the percent of loan volume collected by funding fee with the percent of loan volume paid out as the VA-guaranteed home-loan guarantee. With the home-loan guarantee rate equal to 25 percent, we can solve for the default rate because $d_t g_t = f_t$, where the variables here stand for average rates across set of borrower-type categories. For simplicity, collapse the funding fee schedule to one category. Let $f_t = 0.011$ and $g_t = 0.25$, then $d_t = 0.044$. In other words, the breakeven default rate is 4.4 percent.

In addition, we need to have some measure of the average annual rate at which VA-guaranteed mortgages are foreclosed. Table 6 reports the percentage of VA-guaranteed loans in foreclosure,

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also known as the foreclosure inventory rate for the period 2015 through 2018. For the four years reported, the foreclosure rate on the percent of VA-guaranteed loans is well below the 4.64 percent breakeven default rate. The data do not include the period during which the COVID-19 pandemic significantly disrupted the United States' economy. What the data in Table 7 reveal is consistent with the recent history of funding fees collected being greater than claims spent on foreclosed, guaranteed loans.

Table 7 VA Foreclosure Inventory Rate, 2015-2018

	2015	2016	2017	2018
VA Foreclosure Inventory Rate	1.37 %	1.19 %	0.99 %	0.87 %

Source: Oversight and Resolution of Home Loan Defaults, Office of Inspector General, Department of Veterans Affairs, September 20, 2019.

As a check, let us consider two alternative measures of projected net revenues and compare those with actual data we have on the difference between funding fees collected and claims against VA guaranteed loans. Table 8uses the loan value for the period 2012-2020 and reports the difference between projected revenues and projected loan guaranty costs—that is, projected claims—for the VA home loans. The resulting calculation is called projected net revenues. We start by computing projected net revenues using the actual ratio of funding fees collected-to-loan volume (or actual funding fees collected) to compute the projected net revenues. Also, we project the annual value of VA-guaranteed home-loan claims, using the sample mean of the VA foreclosure Inventory rate for the period 2015-2018, which is 1.105 percent. We assume the VA-guaranteed loan guarantee rate is 25 percent. Based on the parameter value used in our average annual projections, we find that the projected net revenues collected from the funding fee are between $821 million (2014) and $3.095 billion based on 2020 loan values.[11]

[11] Our projected net revenues are the difference between levels that are projected to be collected and projected costs. In other words, the value reported represent the potential *savings* that could be achieved if the funding fee were reduced so that the funding fee rate matched the annual loan guaranty costs.

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Table 8 Projected Net Revenues for VA Home Loan Program, 2012-2020

Year	Projected net revenues (bil of $)	Hybrid-claim projected net revenues (bil of $	Actual net revenues (bil of $)
2012	0.983	0.894	0.368
2013	1.171	1.064	0.311
2014	0.821	0.746	0.424
2015	1.265	1.150	0.856
2016	1.473	1.340	1.237
2017	1.556	1.414	1.283
2018	1.330	1.209	1.364
2019	1.448	1.316	1.518
2020	3.095	2.813	2.358

Source: author's calculations and various issue of the United States' budget reports.

We also compute a second version of the projected claims, referred to in Table 8 as the Hybrid projected net revenues. Here, we take the claims for a fiscal year and divide it by the loan value for that year. This calculation is not a true cumulative default, but it is a hybrid in the sense that captures the flows of claims from all existing VA guaranteed loans including this years and all previous years' outstanding loans. For the period 2016 through 2020, the average claims-to-loan value ratio has been 0.35 percent. The right-hand column, labelled hybrid-claim projections, reports the results of taking the projected revenues and subtracting the projected hybrid claims measure. Compared with the projections reported in the second column, the projected net gains always smaller; this is not surprising since the projected claims are greater in the hybrid approach. Here, we use green to color code cases in which the hybrid projected net revenues are larger than the actual annual values reported in the fourth column. Thus, seven of the nine projections are still larger than the actual.

Lastly, we include the actual net revenues taken from the United States' budget for each fiscal year. The actual net revenue values are reported in red for cases in which the projected net revenue from the second column is greater than the actual net revenue. The projected net revenues in the second column exceed the actual net revenues in seven of the nine years for

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which the comparison is reported. Based on these experiments, we learn that how two possible sources of error affect the quality of the projected net revenue. First, the projected funding fees collections could be too large. Second, the projected claims could be too small. In our case, the simplified summary numerical approach is generating projected revenues that exceed actual funding fees collected in seven of the nine years. In addition, the summary approach is projecting claims that are less than the actual claims in eight of the nine years. Of course, we are using a cohort flow of projected costs for each year as opposed to a cumulative default cost. In other words, our calculation is based on the projected flow of claims against the loans made in a specific year rather than the flow of claims against all outstanding VA mortgages.

3.3 Other breakeven considerations

In this part, we consider two different questions. First, what combinations of the loan guarantee rate and the funding fee rate that would result in the annual value of funding fee collections equal the average value of claims paid out by VA loan guarantees? Second, we consider some specific alternative settings of the funding fee schedule—at least an abbreviated version of the schedule—and an annual measure of the reduction in funding fee collections that would follow if these alternative schedules were implemented.

The challenge is to determine whether there are values of the funding fee that generate a flow of monies large enough to pay the claims generated on foreclosed VA guaranteed loans in a given year. One way is to compute the breakeven level of the loan guarantee rate. Instead of assuming 25 percent, we ask, what would the loan guarantee rate be for VA mortgage such that the projected claims would be equal to the funding fees collected. Here, we use Equations (1) and (2) to compute the breakeven home-loan guarantee rate. Assume the loan foreclosure rate is fixed and set equal to 1.105 percent. Let the ratio of funding fee-to-loan value vary and plot the combination of the funding fee rate and the loan guarantee rate such that the projected flow of net revenues equal zero.For the purposes of this analysis, we consider the average funding fee ratio is between 0.1 percent and 1.2 percent.[12]Figure 3 reports that a higher funding-fee ratio corresponds to a higher VA-guaranteedhome-loan rate; not surprisingly, an increase in the funding rate will generate greater projected revenues so that a larger projected loan guarantee claims can be paid out. We include a horizontal line at 100 percent for reference. Recall that the average funding fee rate between 2012 and 2017 was 1.16 percent. At that funding fee rate,

[12] Formally, let $f_t \in [0.1, 0.12, 0.14, ..., 1.2]$ so that we consider increments in the average funding fee rate of 0.02 percent, or two basis points.

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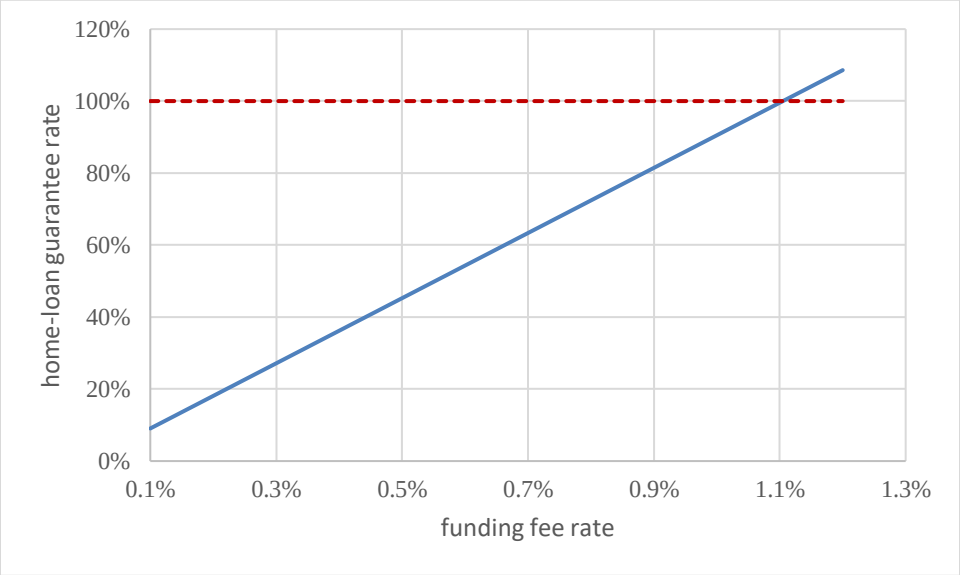
Figure 3 indicates that the Veterans' Administration could, on average, afford to guarantee up to 104.98 percent of the home-loan value. Alternatively, if the average funding fee rate was set at 0.1 percent, the breakeven home-loan guarantee rate would be 9.05 percent. Alternatively, at the current home-loan guarantee rate of 25 percent, the breakeven average breakeven funding fee rate would be 0.28 percent.

Figure 3 Breakeven Combinations of Funding Fee Rate and VA Home-loan Guarantee Rate



It is critical to add an interpretative note to the 0.28 percent breakeven funding fee rate. Remember that the comparison is to the ratio of funding fees collected to loan volume. In other words, the comparison is to a value that already takes into account the exemption and a weighted sum of the funding fees that apply to different levels of down payments. Thus, the 0.28 percent is a complicated *function* of the funding fee schedule and the exemption clause. The implication is that there an infinite number of ways for the Veterans Administration to achieve a collection ratio equal to 0.28 percent, To illustrate, a new law could stipulate that all exemptions are eliminated and the funding fee is set at 0.28 percent for all VA home loans. Or, the funding fee could be set at 0.56 percent for all home loans and 50 percent of the VA home loans are exempted from the funding fee. Neither of these illustrations are intended to be a policy recommendation, but show two ways in which a lower funding fee rate could be implemented.

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Next, we look at an abbreviated funding fee schedule with three categories. The baseline setting matches the average ratio of funding fees collected to loan value. Specifically, we the baseline uses the actual value of 2.3 percent on zero-percent down loans, 0.5 percent on refinance loans, and use 0.8 percent as a summary measure for guaranteed loans with some positive down payment. Using data provided by the CBO, we assume that borrowers put zero-percent down for 50 percent of VA guaranteed loans. In addition, 20 percent of the loans are refinances, and 30 percent have some positive down payment. For these calculations, we assume that 26 percent of the guaranteed loans are exempt from paying the funding fee.

Table 9 reports two separate sets of projected declines in the funding fee. In Part A of Table 9, we assume that the loan value is $200 billion. In Part B, we use the most 2021 data in which the loan value is $350 billion. Recall from Table 6 that annual funding fee collections exceeded annual claims expended by amounts ranging from $310 million to $2.3 billion. Since the 2016, the flow of excess funding fee

Table 9 Funding-Fee Reduction Experiments with 26 percent Exemption Rate

Part A: Loan value = $200 billion

Funding fee rates	Baseline	Experiment 1	Experiment 2	Experiment 3	Experiment 4
0 pct down	2.3	1.8	1.2	0.8	0.5
IRRRL	0.5	0.3	0.3	0.2	0.1
Some pct down	0.8	0.6	0.6	0.4	0.2
Δ funding fee collections		($0.51)	($0.96)	($1.37)	($1.71)

Part B: Loan value equals $350 billion

Funding fee rates	Baseline	Experiment 1	Experiment 2	Experiment 3	Experiment 4
0 pct down	2.3	1.8	1.2	0.8	0.5
IRRRL	0.5	0.3	0.3	0.2	0.1
Some pct down	0.8	0.6	0.6	0.4	0.2

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Δ funding fee collections		($0.517)	($1.03)	($1.37)	($1.76)

Source: author's calculations

collections has consistently been greater than $1.2 billion. The four experiments presented in Table 8 provide reductions in funding fees collected between $500 million and $1.76 billion. Our reason for providing this range of calculations is simple; the projections are not perfectly accurate. Thus, policymakers have choices regarding how much cushion they would like to have regarding the flow of net projected revenues with which they are comfortable.

For the sake of completeness, we report a set of projected reductions in funding fee collections for a case in which the exemption rate for zero-percent down loans is 50 percent. We report the cases in the loan volume is $200 billion a year.

Table 10 Funding Fee Reduction Experiments with 50 percent Exemption Rate

Funding fee rates	Baseline	Experiment 1	Experiment 2	Experiment 3	Experiment 4
0 pct down	2.3	2	1.8	1	0.75
IRRRL	0.5	0.4	0.3	0.3	0.3
Some pct down	0.8	1.3	1.2	0.8	0.5
Δ funding fee collections		($0.72)	($0.87)	($1.39)	($1.61)

Table 10 shows that reductions in the funding fee rates are smaller when the exemption rate is larger.

The findings are useful starting points for discussing a reduction in the funding fee rate. Given the recent history of the funding fee collections relative to VA loan-guarantee claims, there is a reasonable case to lower the rate on zero-percent down loans by one percentage point. Our projections indicate that this would reduce the annual funding fee collections by approximately $1 billion dollars. The implication for veterans is cost savings of roughly $1 billion. With the average home loan around $300,000, a one-percentage point reduction would mean savings equal to $3,000 per borrower with zero-percent down loans.

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There are additional considerations that help to justify a one-percentage point reduction in the funding fee rate. Arguably the weakest argument put forward by the CBO is that the exemption rate will increase over time, accounting for reduction in funding fee collections. Increased volatility could well occur in coming months. However, the federal programs implemented during the COVID-19 pandemic have left household balance sheets in quite good condition. Balance sheet deteriorate might will occur if there is an economic downturn, but the probability of recession is less than 0.1 percent at the time this report is being written.

In addition, the CBO assumes that macroeconomic volatility will add to the claims expended for VA guaranteed loans. It is not at all clear that the CBO has properly taken into account the existing cushion between funding fee collections and annual claims. Moreover, home prices increases are inversely related to claims as selling prices reduce the losses that the mortgage lender will suffer on a house. In other words, rising home prices would allow the mortgage lender to reap some benefits from the sale price. It appears that the CBO's approach is based on pre-COVID price *decreases* that would typically occur when a house that occur when borrowers default on their mortgage loans.

5. Pricing and welfare consequences of the funding fee

In this section, we consider how changes to the funding fee formula for a given loan guarantee rate might affect the rates that servicers charge veterans for VA-guaranteed loans. Using existing research, we can find how sensitive veterans are to changes in these home-loan rates. Finally, existing research can lead us to some measure of the welfare costs of keeping the funding fee rate too high in the sense that it generates excess aggregate revenues for the VA at the given home-loan guarantee rate.

In Table 9, we compute the reductions in funding fees collections projected at different settings of the fee schedule. The projected reductions in funding fee collections are interpreted as the projected savings to consumers; if the funding fee rate were set so that the user costs were just enough to cover the projected guarantee costs borrowers would save user costs. As a reminder, the net revenues collected by the VA in 2020 were more than $2.3 billion. Because there are risks to projecting the size of future claims against guaranteed VA mortgages, perhaps it would be more prudent to reduce funding fee schedules and continue to leave some projected excesses. In other words, customers would not be receiving the full reduction of $2.3 billion savings, but would sharing the risk by paying some level of "excess" user fees.

In order to get a sense of meaning of such savings, we report the size of VA home loans during fiscal year 2020. According to the Veterans Administration, the total value of VA loans was

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$375 billion in fiscal year 2020. If the entire $2.3 billion in excess user fees were passed back to customers, the savings would amount to 0.61 percent of the total loan volume. By allowing for the risks associated with uncertain future claims, a savings of $1 billion in excess user fees passed back to consumers would account for roughly 0.27 percent of total loan volume.

The details of this section are fully developed in the appendix. Using the technical equations developed in this appendix, we can compute a projected impact on the mortgage rate. For the values applied in Equation (9) in the Technical Appendix, we project that the impact on the VA mortgage rate, evaluated at the March 2022 levels, is equivalent to a 2.4 basis-point reduction in the interest rate when the funding fee rate is lowered from 2.30 percent to 1.3 percent for zero-percent-down-payment loans. The bottom line is that by including a richer set of channels, the impact on the VA mortgage rate is just about 2.5 basis points.

There are several additional ways to try to measure the impact that lowering the funding fee rate could have for borrowers. We list several in the following bullet points:

- The average cost savings per loan is straightforward; divide the cost savings by the total number of loans. For example, in 2017, there were 740,339 VA mortgages reported. If we divide $1 billion by the number of VA mortgages, we get $1,350 in cost savings per VA mortgage in 2020.
- For the borrower with zero-down payment, reducing the funding fee rate from 2.30 percent to 1.3 percent would reduce the costs on the average 2020 loan by $\$301,000 * 0.01 = \$3,010$.
- At the 2021 value of the average home loan, the cost savings for a borrower with a zero down payment would be $\$310,174 * 0.01 = \$3,102$.

These are real cost savings to borrowers using VA mortgages. Based on the evidence that the funding fee rate generates revenues that exceed the projected costs of the VA mortgage guaranty program, the user costs can be reduced. Accordingly, cost savings will be realized by these borrowers.

6. Summary and conclusions

The VA mortgage program offers a subsidy to borrowers in the form of a loan guarantee that results in less risk and lower interest rate. The Veterans' Administration has implemented a funding fee, or home loan fee, as a user cost to pay for the costs of the loan guarantee.

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The purpose of this report is twofold. First, we provide a historical review of the home loan program. Interestingly, the provision had a sunset for the funding fee. That sunset provision has been extended in subsequent legislation. At the time of this writing, the sunset provision has been extended through 2030. Second, the report conducts a quantitative analysis of the funding fee. In particular, we look at data on the revenues generated by the home loan fee. Without measures of the costs, projected costs are calculated. The results indicate that the funding fee revenues are much greater than the project costs of the home loan guarantee.

Based on the "excess" revenues generated by the funding fee rate structure, we consider the benefits of reducing the funding fee structure so that revenues and cost are brought in line. Our numerical findings indicate that the funding fee rate could be reduced to about 0.3 percent from its current level of 2.30 percent. Such a decline in the funding fee structure would save borrowers over $1.5 billion a year.

Overall, the analyses presented in this report suggest that borrowers would benefit from a careful assessment of the goals of the funding fee rate structure. At minimum, the rate structure needs to be set with clear, articulated goals that fit into the government's portfolios of subsidies. At present, the numerical evidence suggests subsidies designed for Veterans are also subsidizing other, perhaps unintended, programs through the excess revenues generated by the current funding fee rate structure.

Technical Appendix

To examine the impact that the cost savings would have on the VA mortgage market, we start with some first principles.

Assumption 1: Firms in the VA mortgage market—that is, servicers—seek to maximize profit;

Assumption 2: The market for VA mortgages is characterized as perfectly competitive;

With these two assumptions, we write down the profit function for a representative firm in the VA mortgage market as

$$\pi_t = r_t LV_t - C\left(L_t, K_t . M_t, Z_t\right) \tag{3}$$

where π denotes the profits earned by the firm during period t, r_t is the flow of interest payments on loans made in period t, LV_t stands for the loan volume in period t, and $C(.)$ is the

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cost of producing the loan volume, which requires labor (L_t), capital (K_t), materials (M_t), and all other inputs, including the funding fee rate, represented by a vector denoted by Z_t .

We use Equation (3) as the starting point for a numerical exercise. In particular, consider a case in which the cost function is reduced because the funding fee rate is reduced. We hold every other factor constant. By Assumption 2, the impact on the firm's profits are set equal to zero. In other words, the cost savings are passed along to customers in the form of a reduction in the interest rate. Formally,

$$\Delta\pi = 0 = \Delta r LV - \Delta C(.). \tag{4}$$

Next, divide both sides of Equation (4) by the loan volume, so that the expression is

$$\Delta\pi = 0 = \Delta r - {\Delta C(.)}/{LV}. \tag{5}$$

Note that the second term on the right-hand side of Equation (5) is the ratio of cost savings to the loan value. Based on the projected cost savings to aggregate loan value equal to 0.84 percent. By Equation (5), the result is the percent change in the interest rate. In other words, with the rate on a 30-year VA mortgage at roughly 3.5 percent as of January 2022, the change in interest rate is $3.5*0.0084 = 0.029$. Thus, lowering the funding fee rate by 200 basis points results in an interest rate reduction equal to 2.9 basis points. Note that the analysis here is an upper bound on the size of the interest rate reduction because it assumes that loan volume is constant.

More generally, we would expect that a reduction in the interest rate would induce an increase in the loan volume. With the increase in the loan volume, there is also likely to be an increase in the cost of producing those loans. In our setup, the cost increase would partially offset the cost savings associated with a reduction in the funding fee rate. For the competitive market case, we can write the change in the interest rate that keeps profits constant as

$$dr = \frac{{dC(.)}/{dff}}{LV} + \frac{{dC(.)}/{dLV}}{LV} - \frac{{dLV(.)}/{dr}}{LV} \tag{6}$$

where the final term in Equation (6) represents the interest elasticity of the loan volume. The first term in Equation (6) is the costs savings as a fraction of the loan volume owing to a change in the funding fee rate and the second term stands for the cost increase as a fraction of loan volume that occur because the firm must service more mortgages.

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Based on our results, the first term in equation (6) is equal to 0.84. The last term in Equation (6) can be obtained from the literature. DeFusco and Paciorek (2017) estimate the interest elasticity of mortgage demand to be between -0.016 and -0.052.[13] We choose the midpoint, setting the interest rate elasticity equal to -0.034. From Equation (6), the solution for the change in the interest rate can be written as

$$\Delta r = \frac{dC(.)/dff}{LV} + \frac{dC(.)/dLV/dr}{LV} - \frac{dLV/dr}{LV}, \tag{7}$$

Or, after substitution

$$\Delta r = -0.61 + \frac{dC(.)/dLV/dr}{LV} + 0.034\,\Delta r\,. \tag{8}$$

After simplifying, we get

$$\Delta r = \frac{-0.84}{1.034} + \frac{dC(.)/dLV/dr}{LV}\,. \tag{9}$$

The only problem with this numerical example is that we do not have data on the cost increase response to a change in loan volume as a fraction of loan volume. For a decrease in the interest rate, loan volume will increase resulting a cost increase. Hence, the last term in Equation (9) is positive, implying that change in the interest rate will decrease the more sensitive the cost function is to changes in loan volume.

Estimates of the response of the cost function to loan volume are reported in Chen and Elliehausen (2020) at $10.40 per $100 loans.[14] We convert this to 0.104 as a measure of

[13] See DeFusco, Anthony A. and Andrew Paciorek, 2017. "The Interest Rate Elasticity of Mortgage Demand: Evidence from Bunching at the Conforming Loan Limit," *American Economic Journal: Economic Policy*, February, 9(1), 210-40.

[14] Chen, Lisa and Gregory Elliehausen, 2020. "The Cost Structure of Consumer Finance Companies and Its Implications for Interest Rates: Evidence from the Federal Reserve Board's 2015 Survey of Finance Companies," *Fed Notes,* at https://www.federalreserve.gov/econres/notes/feds-notes/the-cost-structure-of-consumer-finance-companies-and-its-implications-for-interest-rates-20200812.htm .

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$dC(.)/dLV$. We then divide 0.104 by the loan volume. Because the marginal cost is small relative to the volume of mortgage loans, we effectively ignore the last term in our numerical analysis. We apply the values to equation (9), finding that the *percent change* in the interest rate is -0.59.

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