The Economic Cost of WIFIA's Current Loan Portfolio

Update on the Potential Cost of Interest Rate Re-estimates

Version 1.0

As of September 30, 2021



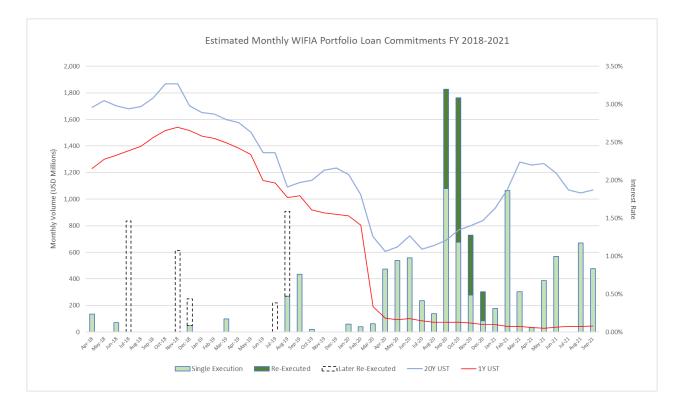
Overview

This presentation updates InRecap's March 2021 analysis, *The Economic Cost of WIFIA's Current Loan Portfolio Part 1: The Potential Cost of Interest Rate Re-estimates* (the "March Analysis") to federal FYE 2021. The March Analysis is included here as Appendix 2.

- The basic evaluation methodology outlined in sections 1 through 3 of the March Analysis remains the same.
- The Program added 14 new loan commitments totaling \$2.5 billion since the March Analysis. Publicly available information indicates that these were consistent with prior loans with respect to borrower (highly rated public water agencies) and tenor (about 20-year weighted average life).
- Since US Treasury (UST) interest rates were slightly higher in this period than the preceding nine months (when the bulk of WIFIA's portfolio was executed), the estimated weighted average interest rate of the portfolio rose to 1.5% from about 1.4% in the March analysis.
- The primary interest rate metric in the analysis, the 20YR UST, was 2.02% on 9/30/2021, down from 2.36% in the March Analysis. However, Treasury rates are still expected to rise to historical levels (about 2.50% average for the 20-YR UST) in the next few years and not return to the unusually low levels of 2020.
- Unrealized re-estimate funding loss on the portfolio was estimated to be \$661 million as of 9/30/2021. Despite the current portfolio's higher weighted average rate, it is slightly more sensitive to UST rate rises than the March Analysis portfolio in terms of potential funding loss amount due to its larger size. The WIFIA portfolio at FYE 2021 remains highly exposed to increased interest rates.
- With data from the EPA appendix of the White House 2022 budget, the scale of potential re-estimate funding losses can be placed in the context of the portfolio's overall required estimated federal resources as of 9/30/2021. Potential funding losses will require future mandatory appropriations that are far in excess of the Program's discretionary appropriations for FY 2018-2021
- Appendix 1 provides further context about recording potential re-estimate funding losses in a Program account with Permanent Indefinite Authority. The issues are illustrated with a simple model.

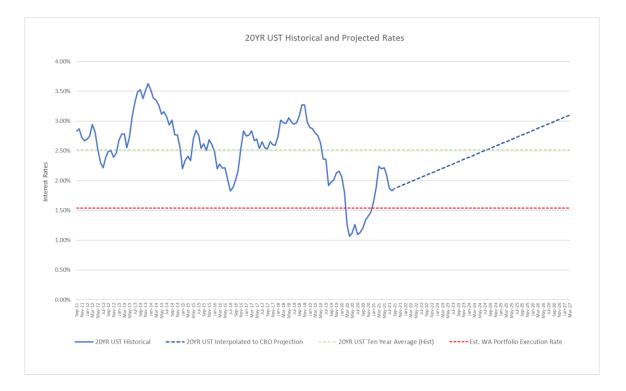
Various conclusions and implications are included on the Conclusion page. Note that this presentation and related analyses are based solely on public and widely available information, but all specific analysis, estimates and conclusions herein are exclusively those of InRecap LLC.

1. WIFIA Loan Commitments FY 2018-2021



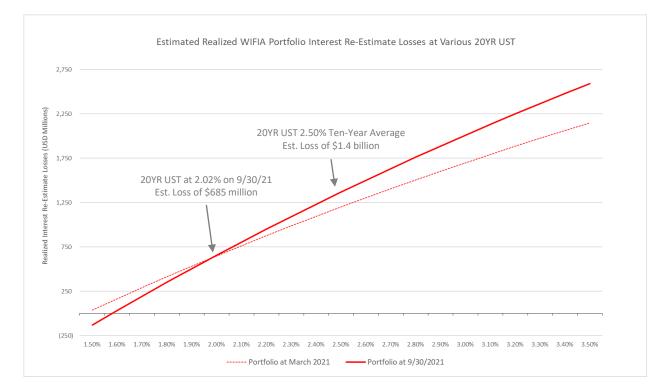
- As of September 30, 2021, WIFIA's portfolio of 59 executed loan commitments totaled \$11.5 billion, of which about \$1.5 billion was
 estimated to have been drawn by FYE 2021. The weighted average commitment rate of the portfolio was approximately 1.5%, up from
 about 1.4% in March 2021.
- There appears to be a slight correlation between loan commitment execution volume and changes in 20YR UST. This may be due to borrowers tending, when possible, to accelerate or delay closing, to fix the WIFIA loan rate at a favorable time.
- The relatively low drawdown percentage (13%) is consistent with (1) water infrastructure's long construction periods, and (2) continuation of very low short-term financing rates (e.g., the 1YR UST) that most WIFIA borrowers have efficient access to.

2. Historical and Projected 20YR US Treasury Rates



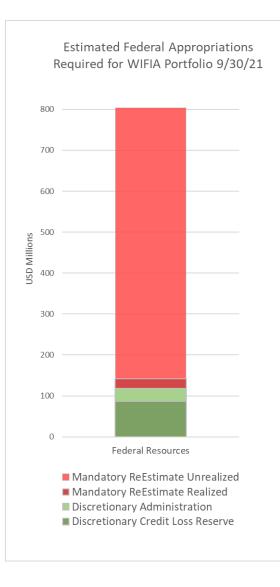
- As described in the March Analysis, under most yield curve conditions, for a typical WIFIA loan with a 35-year term and 20-year WAL the 20YR UST rate will be very close to (1) the loan commitment rate at execution, and (2) the FCRA Single Effective Rate at 90% loan drawdown.
- Due to the volume of execution and resets in the third and fourth quarter of 2020 when 20YR UST hit historic lows, the 1.5% weighted average portfolio rate is about 1% below the historical average of 2.50%.
- Interpolating recent CBO interest rate projections, the 20YR UST should be about 3.1% by March 2027. The straight-line projection
 to this point also results in an average historical and projected rate for the period 9/2011 to 3/2027 of about 2.50%, which is
 consistent with Treasury yield cyclicality and eventual normalization.

3. Estimated Future Interest Re-estimate Losses on Current Portfolio



- Using the methodology described in the March Analysis, the WIFIA portfolio as of 9/30/2021 had unrealized re-estimate funding losses of \$661 million, based on the then-current 20YR UST of 2.02%. Approximately \$24 million of realized re-estimate losses were noted in the EPA appendix of the White House 2022 Budget, for a total of \$685 million.
- Losses will be realized over the next 5-10 years as borrowers draw their loan commitments. If the average 20YR UST rate for these drawdowns is 2.50% (consistent with historical and projected values), the realized funding loss on WIFIA's 9/30/21 portfolio will be about \$1.4 billion. This appears to be the most likely outcome but note that the slope of the loss curve is relatively steep small movements in rates will lead to significantly higher or lower losses. However, unless the 20YR UST *average* during the drawdown period is close to the portfolio's weighted average rate of 1.5% (which would be historically unprecedented) funding losses are inevitable.

4. Estimated Federal Resources Required for Portfolio 9/30/21



What overall appropriations from federal taxpayers have been or will be required for the WIFIA portfolio executed in FY 2018-2021? Estimates on this provide context for the portfolio's expected funding losses.

Discretionary Appropriations

- These estimates are sourced from the EPA appendix to the White House 2022 budget.
- Credit loss reserve of about \$86 million, representing an average 0.75% subsidy rate. This is consistent with the high credit quality and low project risk of WIFIA loans.
- Program administration of about \$8 million per year, or \$32 million for FY 2018-2021 to source and execute the portfolio. Future administrative costs for these already-executed and/or drawn loans will likely be minimal.

Mandatory Appropriations

- Realized re-estimate losses on the \$1.5 billion of drawn loans were estimated to be about \$24 million in the WH 2022 budget. This represents a funding loss factor of about 1.6%, or more than double the credit reserve subsidy rate.
- Unrealized re-estimate losses on the \$10 billion of undrawn commitments were estimated in this analysis using public information, FCRA procedures and standard 'mark-to-market' financial portfolio methodology. The amount as of 9/30/21 was \$661 million, for a loss factor of about 5.8%, by far the largest cost of the WIFIA portfolio.

Conclusions

The conclusions and implications outlined in the March Analysis remain applicable to the WIFIA portfolio at FYE 2021. This update provides further context for WIFIA's re-estimate funding losses in two areas:

1. Scale of Re-estimate Funding Losses

- Data from the 2022 White House budget (published in the summer 2021) has various estimated metrics for the Program as of 9/30/2021. This generally confirms our assumptions about drawdown percentage, credit reserve cost and the fact that realized reestimate losses will require future mandatory appropriations.
- It also reflects a baseline of expectations about the cost of the Program (about 1% of portfolio size) that is an important input into benefit-cost analyses of Program performance and future discretionary appropriations. But the true cost of the Program is actually far greater (about 5-10%) when nearly-certain funding losses are considered. The scale of this difference has the potential to become an agenda-driven or political issue with negative implications for the Program and federal infrastructure loan programs in general. The issue should be taken seriously.

2. Misuse of Permanent Indefinite Authority

- As noted in the conclusions of the March Analysis, additions to the portfolio are unlikely to result in significant re-estimate gains (regardless of interest rate direction) due the nature of WIFIA's borrowers and the Program's precedent of resetting loan commitments. Appendix 1 of this update further clarifies and illustrates this issue. WIFIA has shown no public indication that the Program will change course. Hence, unrealized losses in the current portfolio should be seen as *an indicator of the scale of likely realized losses and required mandatory appropriations*, not as the temporary result of exogenous factors.
- More fundamentally, the scale of re-estimate losses was the result of policy decisions by legislators (e.g., copying TIFIA's penalty-less fixed-rate commitment terms for WIFIA) and the Program (e.g., borrower selection, reset of commitment rates). No doubt the consequences of these decisions were not foreseen, but now that WIFIA has a substantial portfolio and four fiscal years of results, these policy decisions should be revisited *as if they required discretionary appropriations*. While FCRA interest rate re-estimate budgeting automatically assumes that all such re-estimates should be recorded in an account with Permanent Indefinite Authority, that appears to be a *misuse in a case where loan features and borrower selection, not exogenous interest rate movements, will inevitably result in funding losses*. WIFIA and its stakeholders should resist the temptation to ignore or hide the true cost of its loans based on what appears to be a FCRA off-budget loophole. Instead, the Program should provide full transparency about its potential cost to OMB, CBO and Congressional appropriators as the correct basis for benefit-cost decisions involving federal taxpayer resources.

Appendix 1a: Re-estimate Funding Losses Due To Drawdown Optionality and Correlation

Concepts

- FCRA interest rate subsidy re-estimates are inevitable when there is a material time period between the execution of a fixed-rate loan commitment based on US Treasuries and the drawdown and funding of the loan at then-current Treasury rates. For infrastructure projects with long construction phases, the time period between loan commitment execution and funding is likely to be at least several years.
- 2. Treasury interest rates are volatile but tend to mean reversion and are generally cyclical over time. As a result, funding losses (positive subsidy re-estimate) and gains (negative re-estimate) on individual loans should balance out over time on an aggregate net basis in a large-scale, long-term portfolio. This is the rationale for FCRA's special re-estimate account with Permanent Indefinite Authority (PIA). The PIA account separates (1) endogenous program costs (e.g., credit reserve, administration) subject to discretionary appropriation from (2) an exogenous interest rate re-estimate factor, the cost of which will be a mandatory appropriation but should tend to zero over time.
- 3. However, if loan drawdown by the borrower is *optional and correlated to Treasury rates*, the PIA account will not work as intended. In this case, the borrower will be less likely to draw if Treasury rates have fallen since loan execution and more likely to draw if they have risen. Program funding losses will therefore not tend to zero, but instead accumulate in the PIA account regardless of other portfolio characteristics.
- 4. Loan drawdown optionality and correlation to Treasury rates are the result of program design and operation (e.g., offering penalty-less fixed-rate loan commitments to borrowers with near-Treasury alternatives). As such, these factors are not exogenous (they can be influenced by the program itself) and re-estimate losses arising from them should not be accrued under Permanent Indefinite Authority but subject to discretionary appropriations. To do otherwise is to distort loan program subsidy budgeting by recording the true cost of endogenous loan features in an off-budget account.
- 5. WIFIA loan commitments to date appear to have explicit optionality and very strong correlation to Treasury rates. WIFIA's borrowers have universally been highly rated public water agencies with access to the tax-exempt municipal bond market, rates in which (as in all public debt markets) are highly correlated to the Treasury yield curve. More specifically, due the tax-exemption, interest rates for highly rated municipal bonds are almost always near or below Treasury rates all along the curve. Since there is no penalty or make-whole for not drawing a WIFIA loan commitment, these borrowers will compare their WIFIA commitment rate to their current tax-exempt alternatives. If Treasury rates have risen since loan commitment execution, borrowers will be more likely to draw the WIFIA loan. If Treasury rates have fallen, the borrowers are less likely to draw the WIFIA loan and issue in the bond market instead -- unless the WIFIA commitment rate is reset to the current market, as WIFIA did in at least six cases in FY 2020.
- 6. WIFIA's problem with optionality and correlation provides the correct context for the portfolio's estimated realized and unrealized funding losses of \$685 million on 9/30/2021. Unless WIFIA addresses the issue by adding non-correlated loan products to the portfolio, these funding losses will not be balanced by future funding gains, since these are unlikely to be significant regardless of interest rate direction. Significant additional losses are more likely due to new loan commitments being executed or reset at low rates relative to future Treasury market normalization.

Appendix 1b: Illustration Model of Drawdown Optionality and Correlation

The effects of optional and correlated loan drawdown on the PIA re-estimate account can be illustrated with a simple model.

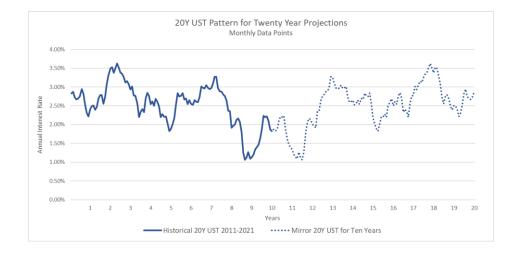
Assumptions

A new loan program will execute \$100 million of loan commitments each month for twenty years. All loans will amortize in accordance with a twentyyear weighted average life schedule. The fixed-rate loan commitment will be set at then-current 20YR UST rate on day of execution.

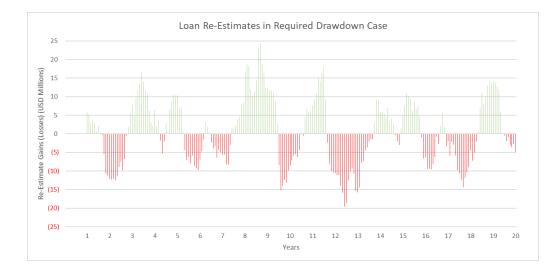
Loan drawdown by borrower will occur (or not) exactly one year after commitment execution. Two cases are considered:

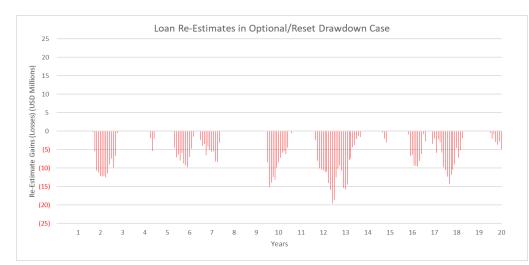
- 1. Required Drawdown: The borrower will draw regardless of then-current UST rates because it (1) is contractually required to do so, or (2) has no financing alternatives that are close to a UST rate at any time. The latter is the usual situation for federal loan programs that are meant to address a lack of cost-effective financing for sound projects that advance a policy objective.
- 2. Optional/Reset Drawdown: The borrower will only draw if the then-current 20YR UST is *higher* than its commitment rate, or the commitment is *reset* downward to the then-current 20YR UST rate. This situation arises when (1) there is no contractual requirement or penalty for not drawing, and (2) the borrower has efficient financing alternatives that are available at UST rates, such as highly rated tax-exempt bonds. This is an unusual situation for a federal loan program because the policy objective is not clear, but it appears to describe WIFIA's current practices and borrowers.

To model a twenty-year UST interest rate pattern that reflects realistic volatility while being completely cyclical, the last ten years (120 months) of 20YR UST rates 2011-2021 are used for years 1 through 10 of the model. This pattern is then 'mirrored' for years 11 through 20 of the model:



Appendix 1c: Individual Loan Drawdown and Re-estimate Losses and Gains





In the Required Drawdown case, loan commitments are drawn monthly, starting one year after the initial commitment.

Re-estimate losses and gains are estimated as the difference between loan principal (\$100 million) and the present value of loan debt service, discounted at then-current 20YR UST. This is approximately FCRA's process.

Re-estimate losses occur when UST rates have risen over the year since commitment, and Reestimate gains when UST rates have fallen. Loss or gain trends of about 3 years occur but reverse to an opposite trend thereafter. The average tends to zero, about a 0.4% gain on each loan.

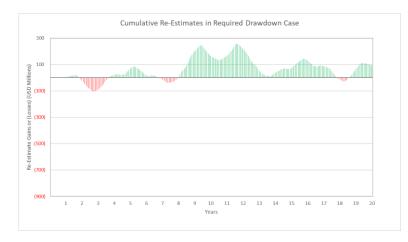
In the Optional/Reset Drawdown case, loan commitments are drawn monthly whenever then-current UST rates are higher than the commitment or the commitment rate is reset downward to the then-current UST rate.

In this case, there are no re-estimate gains because the loan either is not drawn or is reset, zeroing out any re-estimate.

Re-estimate losses are the same as in the Required Drawdown case. The average is about a 4% funding loss on each \$100 million loan.

Appendix 1d: Cumulative Re-estimates

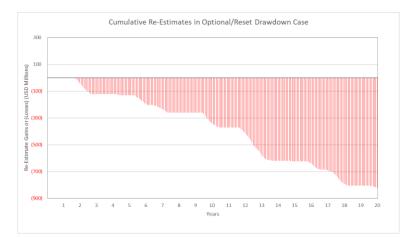
The cumulative impact of interest rate re-estimates illustrates the important difference between the two cases in terms of the program's overall cost budgeting.



In contrast, in the Optional/Reset case, re-estimate funding losses simply accumulate throughout the program's life. For the first years of program operation, the scale of balances is not that different than in the Required Drawdown case (e.g., in years 3 and 9) but this is misleading. The important point is that there are never any reversals and aggregate losses are therefore permanent. Treasury rate reversion and cyclicality will simply determine the rate at which losses accumulate.

Since loan drawdown optionality and correlation to Treasury rates are policy decisions made by the program or legislators (intentionally or not), an account for re-estimates with Permanent Indefinite Authority in this case does not provide better budgeting but instead obscures a major endogenous cost factor. Drawdown optionality and resets are certainly attractive features to borrowers with near-Treasury financing alternatives. If their true cost is hidden, a loan program offering these features may appear to be more cost-effective than it is. In the Required Drawdown case, cumulative re-estimates both rise and fall into net gain and loss balances, reflecting US Treasury rate volatility. The cumulative balances can become relatively large at points due to recent UST trends (e.g., years 9 through 13) but they generally start to reverse to zero within a year. The final balance of \$90 million gain is less than 0.4% of the program's \$24 billion portfolio at that point, simply as a result of this specific interest rate pattern. More importantly, Treasury rate reversion to the mean and cyclicality can be predicted to drive the balances towards zero over the long timeframe of the program.

The Required Drawdown case shows the correct application of Permanent Indefinite Budget authority for interest rate re-estimates. The PIA account will have a useful 'smoothing' function that separates the true cost of the program's endogenous policy factors from temporary and exogenous funding cost factors.



The Economic Cost of WIFIA's Current Loan Portfolio

Part 1: The Potential Cost of Interest Rate Re-estimates

Version 1.0

March 19, 2021



Overview

The US EPA's WIFIA Loan Program has operational since 2017. Although the Program was closely modelled on the US DOT's TIFIA Program, a project finance lender, WIFIA has primarily lent to highly rated public water systems that are financing basic infrastructure projects. These systems can typically borrow in the tax-exempt municipal bond market at rates near or even below the UST rate offered by WIFIA, but a WIFIA loan includes several non-market features that are valuable for financing long-term capital projects. Most importantly, the loan commitment can be flexibly drawn during construction at a UST rate fixed at closing for the full-term financing. In effect, this is a costless interest rate call option on a long-term, fixed-rate loan.

Due to highly rated borrowers' interest in this feature, and the quality of their applications, WIFIA has been able to originate and execute a \$9.03 billion portfolio of 44 loan commitments to date. Unusually for a federal infrastructure loan program, this portfolio has extremely low credit and project risk characteristics.

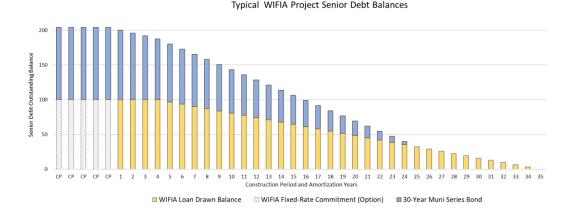
However, the portfolio appears to have significant exposure to interest rate risk through the loans' interest rate option feature.

This presentation outlines the nature and potential cost of the current portfolio's interest rate exposure:

- 1. How the call option is utilized in a typical WIFIA loan for financing a long-term infrastructure project.
- 2. FCRA accounting for interest rate re-estimates when the loan is drawn, and the option is exercised.
- 3. The sensitivity of typical WIFIA loan re-estimate cost to rising UST rates.
- 4. Current portfolio commitment volume and corresponding execution rates .
- 5. Historical and projected 20YR UST rates.
- 6. Potential portfolio interest rate re-estimate cost for current and rising rates.

Various conclusions and implications are included on the final page. Note that this presentation and related analyses are based solely on public and widely available information, but all specific analysis, estimates and conclusions herein are exclusively those of InRecap LLC.

1. WIFIA Loan Fixed-Rate Commitment as Interest Rate Call Option



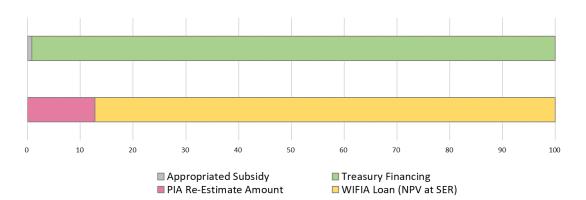
In the absence of the WIFIA alternative, highly rated public water systems will typically finance their long-term capital projects by issuing tax-exempt water revenue series bonds. In order to hedge interest rate exposure during long construction periods, the full amount of the bonds is issued at project inception, with escrowed funds used for construction draws. This will incur negative arbitrage cost.

With a WIFIA loan, a borrower can replace 49% of the bond financing. A WIFIA loan is in effect a privately placed long-term single fixedrate financing, optionally drawable during construction or as permanent financing post-completion. The single rate is fixed at loan execution at the UST rate corresponding to loan weighted average life (WAL). The permanent financing has a maximum term of 35 years; typical WIFIA loan WAL is 20-25 years.

For highly rated borrowers with access to short-term financing alternatives (tax-exempt CP, for example), it is usually most efficient to use the WIFIA loan's fixed rate commitment during construction as an interest rate call option on the permanent financing. Cost savings will usually be maximized by latest possible exercise (absent other factors) and the US government is a riskless counterparty.

Since UST and highly rated tax-exempt bond yield curves are usually close, and the other features of a WIFIA loan are not fundamentally different than a bond, WIFIA's costless interest rate option is the primary value of a WIFIA loan. At a minimum, negative arbitrage cost is avoided. Further value may be realized through WIFIA's current practice of loan 're-execution', which resets the UST rate if rates have fallen significantly, as they did from 2018/2019 to 2020.

2. FCRA Credit Subsidy Cost and Interest Rate Re-estimates



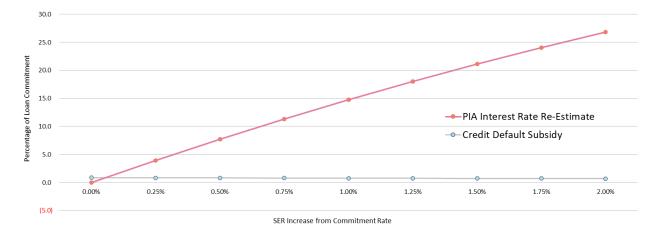
WIFIA Program and Financing FCRA Accounts

Required taxpayer appropriation and budgeting for federal credit programs are determined under FCRA accounting. In contrast to cashbased accounting more generally used by the government, FCRA determines the cost of a loan based on the calculation of the present value (PV) of related cash inflows and outflows, using a discount rate derived from applicable US Treasury zero curves (the single effective rate, or SER). This is the FCRA Credit Subsidy Cost.

WIFIA loan drawdowns are funded by credit subsidy appropriations (primarily for expected credit losses, typically about 0.75% for highly rated borrowers) and intra-governmental borrowing from Treasury at the SER. At loan commitment execution, the PV of scheduled WIFIA loan debt service at the SER is about equal to expected loan funding (since a UST rate set on loan WAL is close to UST zero curve SER). But if UST rates rise between execution and draw, the loan PV will fall. The increase in Credit Subsidy Cost for such interest rate re-estimates is not covered by additional appropriation. Instead, it is recorded in an off-budget sub-account, Permanent Indefinite Authority (PIA).

The PIA sub-account is a practical budgeting device. But interest rate re-estimates do represent an economic cost. The amount is a current estimate of the future government resources required to cover the shortfall between the WIFIA loan's debt service and the repayment of Treasury funding. These resources must be sourced from additional taxes or by cuts in other federal spending.

3. FCRA Subsidy Cost Sensitivity to Rising Interest Rates



Subsidy Re-Estimate SER Sensitivity for Typical WIFIA Loan

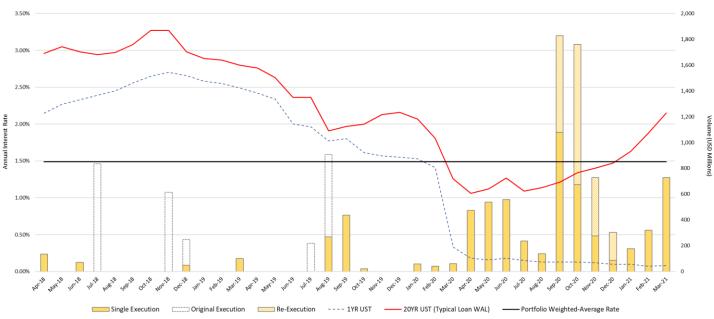
The cost of an interest rate call option in a typical WIFIA loan will be very sensitive to interest rate changes. This is fundamentally due to the long duration of the permanent financing (20 to 25-year WAL, 35-year term) and the low absolute level of current interest rates.

The sensitivity will be reflected in FCRA Credit Subsidy Cost re-estimates. The above chart shows how the Credit Subsidy Cost as a percentage of loan commitment will change as the SER rises for a typical WIFIA loan commitment (WAL 20 years, 35-year term) that is fully funded in a single drawdown shortly after construction completion.

Each 0.10% rise will add about 1.5% to subsidy cost through an interest rate re-estimate. At a 1.00% rise, the Credit Subsidy Cost will be about 15% of loan commitment. This is much higher than the Credit Subsidy Cost appropriated for a typical WIFIA loan, which is less than 0.75%, due to the loan's high credit quality and statutory UST execution pricing.

The single drawdown (option exercise) intensifies the sensitivity relative to drawdowns determined by construction schedule because (1) the time between loan commitment execution and drawdown is maximized, allowing greater opportunity for UST rate change and (2) the re-estimate applies to the full commitment without any averaging effect from prior partial drawdowns.

4. Current WIFIA Loan Portfolio Profile



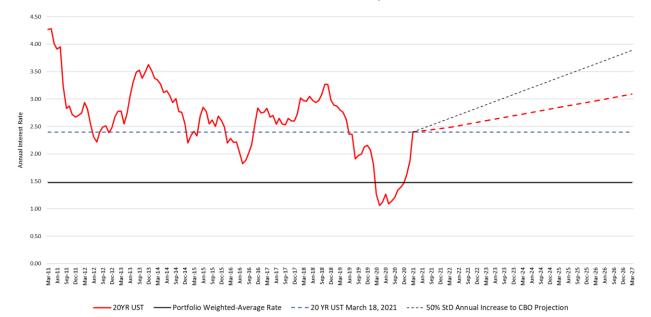
WIFIA Loan Portfolio Commitments and Execution Rates as of March 18,2021

As of March 18, 2021, WIFIA's portfolio of executed loan commitments was comprised of 44 loans totaling \$9.03 billion. 87% of portfolio volume was executed or re-executed in the last twelve months, during all-time interest rate lows.

Assuming a typical WIFIA loan weighted-average life of 20 years, the approximate loan execution rate in a particular month would be tracked by 20YR UST rates. The weighted average execution rate for the portfolio is 1.49%.

There is little public information on loan drawdowns to date. However, since (1) the projects are relatively early in the construction phase and (2) short-term rates since February 2020 are low relative to long-term rates (prompting borrowers to use short-term finance instead of WIFIA loan draws), it is likely that the current portfolio is 90% undrawn (about \$8.1 billion of undrawn loan commitment).

5. Historical and Projected 20YR US Treasury Rates

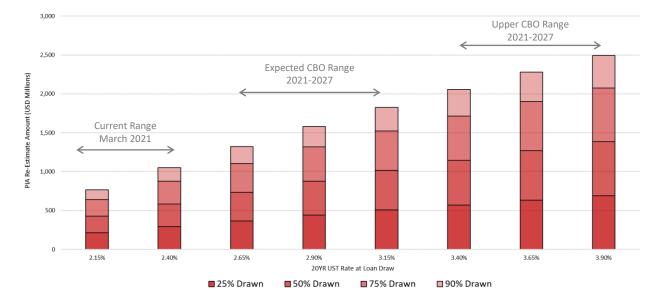


20YR UST Historical and CBO-Projected Rates

Under most yield curve conditions, the 20YR UST rate will be very close to the FCRA SER for a typical WIFIA loan with a 35-year term and 20-year WAL. Hence, projected 20YR UST rates can serve as a proxy for future SER rates used in Credit Subsidy Cost re-estimates when WIFIA loans are 90% drawn, most likely over the next six years.

- The 20YR UST for March 18, 2021 is 2.36% Interpolating from the most recent CBO interest rate projections for the 10YR and 30YR, the 20YR UST will be about 3.1% by March 2027.
- If rates consistently rise during this period by 50% of historical annual single standard deviation, the 20YR UST may be about 3.9% by March 2027.

6. Portfolio Re-estimate Cost in Rising Rate Environment



WIFIA Portfolio PIA Interest Rate Re-Estimate Cost

The factors outlined in the previous sections indicate that WIFIA's current portfolio is highly exposed to rising interest rates. The portfolio will almost certainly incur significant interest re-estimate costs in the next 5-10 years.

- Current 20YR UST rates are about 0.75% higher than the portfolio's weighted average interest rate of 1.50%. If the remaining undrawn commitments were drawn at the SER equivalent, the credit subsidy cost will be about \$950 million, or about 10% of portfolio loan volume.
- If rates rise in accordance with CBO projections over the next six years, the cost may be about \$1.5 billion, depending on the timing of drawdown.
- If rates rise higher than CBO projections, but within historical norms and standard deviations, the cost could exceed \$2 billion, or over 20% of portfolio loan volume.

Conclusions

WIFIA's current portfolio appears to be highly exposed to rising rates. While some exposure to rate change is always a feature of fixedrate loan portfolios, the combination of several factors made the potential cost of interest re-estimates especially significant and concentrated in this case:

- An unexpected applicant pool of highly rated public water systems that have the sophistication and the financial resources to utilize the WIFIA loan fixed-rate commitment as an interest rate call option.
- The decision by WIFIA to allow loan re-executions and reset lower commitment rates. This was deemed necessary to encourage
 highly rated borrowers to eventually draw the loan, which they might not have done otherwise due to their cost-effective, at-market
 bond alternatives. Lower-rated borrowers (project financings, for example) would have had fewer alternatives, making a reexecution less necessary.
- Most importantly, the volume of loan commitment executions and re-executions during a period of all-time interest rate lows. The timing of infrastructure loan execution is largely determined by multiple non-financial factors, but the re-executions were prompted and perhaps accelerated by unusually low long-term rates.

Going forward, there are several consequences and implications to consider:

- The level of exposure will only be mitigated by a significant fall in interest rates from current levels, which appears unlikely. It will not be mitigated by future loan additions if (as is likely) WIFIA continues to lend to highly rated public water systems. Such borrowers will only draw a WIFIA loan if its cost is close to or lower than their bond alternatives, the rate on which is highly correlated to the UST curve. Significant downward re-estimates (which lower the Credit Subsidy Cost) are therefore not likely, regardless of interest rate trends.
- The cost of re-estimates shows up in a relatively technical Permanent Indefinite Authority sub-account. But the significant scale of aggregate re-estimates will become visible as the current portfolio and even new loans (to a lesser extent) appear to be continually 'ratcheting' re-estimates upward as they are drawn.
- The scale of potential cost, relative to actual appropriated funding, may be problematic in view of apparent Congressional intent that WIFIA loans priced at UST WAL should cover their Treasury funding cost and that taxpayers are only at risk for loan defaults.