DBC® Finance

Project Finance Tutorial

2021 Edition
Current as of Version 8.800

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TABLE OF CONTENTS

PLEASE READ FIRST

Knowledge of *Debt/Size and Refund* or successful completion of the *Debt/Size and Refund* Tutorials are prerequisites to this tutorial. Please follow the instructions to set up the *Debt/Size* and *Refund* information. We recommend you read each section carefully. The sequence of commands is carefully planned to ensure a complete review of each feature being discussed.

We recommend that users complete the section describing the "New Money Wrapped around Refunding Deal" before any other sections or examples. The majority of Project Finance requirements are explained in this section. The other samples show extensions of the basic concepts, as well as advanced applications.

** Please note that while the basic Financings described in the two examples include many aspects frequently needed and requested in the industry, your own deals may rarely, if ever, include the same combination of constraints. The purpose of this tutorial is to show "advanced" users as many features of Project Finance as possible, while keeping to the guidelines of a sample issue.

PROJECT FINANCE

❖ INTRODUCTION

This tutorial has been developed to assist a public finance professional in using *DBC Finance* to solve and analyze the problems found in a Financing. These problems are illustrated with two common types of deals: New Money Bonds wrapped around Refunding Bonds and a Senior/Subordinate Bond deal. The tutorial will also discuss definition of common debt service solution objective(s) and/or fund requirement(s), allocating funds/expenses to multiple components, and sending fund earnings from one series to a fund in another, along with many other common needs. This tutorial is written with the assumption that the user understands and has completed the *Debt/Size* and *Refund* training tutorials.

DBC Finance is updated regularly. If your version is more current than the one used in this Tutorial (Version 8.800), review the Release Notes (these are included with every update and can be found in the program by going to Help-Readme Notes). They describe all the revisions and are the only notification of new features available for DBC users. Download the latest version by going to *Help – Check for Update*, and following the instructions. You can also be notified of updates automatically by checking the box next to "Automatic Update from Internet: Check at startup" located in the *Tools - Preferences – Internet Settings* tab.

PROJECT FINANCE OVERVIEW

Project Finance is the module of *DBC Finance* used to combine and blend different Series – both New Money Series and Refund Cases (Financing Components) – for aggregate Debt Service and a blended Arbitrage Yield. In a typical Financing, an Issuer will often define solution constraints and parameters to be applied to an aggregate solution. Here are some of the things Project Finance enables a user to do:

- Apply Revenue Constraints to more than one Financing Component
- Solve for Aggregate Debt Service solutions with Proposed Series and Refund Cases wrapped around Outstanding Debt Service
- Solve Taxable / Tax-Exempt deals, so that the Taxable Bonds matures first and Debt Service is level in Aggregate
- Generate one Escrow for the Escrow Requirements of more than one Refund Case
- Solve more than one Financing Component with Project/Reserve Funds and Expenses calculated on and allocated to any of those Components
- Solve a Project Fund in one Series to include Interest Earned in a Gross Funded Project or Reserve Fund of another Series
- Share negative Arbitrage amongst multiple Escrows defined in one or more Refund Cases so as to maximize Escrow Yield subject to a Yield Limit
- Define escrow solution methodologies to determine the 'best' approach to solving the escrow, then using that selected strategy
- Determine which Financing Components are to be included in reporting
- Report results of multiple Financing Components on a uniform fiscal year basis

As an Issuer often has common constraints and/or Reserves/Expenses applicable to multiple deals, *Project Finance* adds considerable flexibility to the setup of a Financing.

DBC PROJECT FINANCE TERMS AND CONCEPTS

Project Finance Assumptions

This tab includes certain Settings that allow a user to define Project Finance Assumptions as different from individual Financing Components' Assumption (including, Fiscal Date and Sharing Negative Arbitrage between Refundings).

Universal Bond Solutions

A Universal Bond Solutions Component (UBS) allows the user to define Solution Constraints in aggregate. In many Financings, more than one Series are subject to the constraints of the Financing as a whole. UBS allows for definition of aggregate Revenue Constraints, Group Targets, and every other constraint available in the Solution Assumptions of individual Financing Components, as well as consideration of any other UBS defined in the same Financing.

Series Selection

Any of the Financing Components can be linked to a particular UBS Component. The Solution Constraints described in the proceeding tabs apply only to the Series selected here.

Sizing Target

There are a number of ways to size each series selected in the UBS.

"Sized by Series" will size that specific series to that series' defined Sources and Uses.

"Size Globally" can only be used so that the constraint of the target for the series will be released and the constraint of the total target for the whole Universal Bond Solution will be used.

"Size by Group" sizes the contingency for multiple groups of series. Only one series in a size group (all Series under the same Sizing Group) can be set to "Size by Group" and the size of those series will be adjusted to make the entire contingency of the group within one denomination.

"N/A" indicates that the selected series does not require any special help to size itself. "N/A" is typically used in situations where the selected series already has its bond amounts hard coded. "N/A" can also be used in "Fill" solutions, with all but one Series set to "N/A" and the remaining Series "Sized Globally".

"Specified Amount" is used to define a specific target amount for that specific Series.

Target Specifies

How to interpret the specific target amounts per series selection. The choices are similar to those for Target Par in a Series.

Solution Sequence
A Solution Sequence can be defined to determine the order in which Series should mature. For example, to retire Series A bonds then retire Series B bonds regardless of the overall efficiency, a Solution Sequence of "1" for the Series A and "2" for Series B will solve accordingly.

Proportional Group
Solves the bonds of two or more series in the same Proportional Group to be proportional to each other by par.

Proportional Adjustment
Specify Proportional Adjustments (percentage or amount) to help calculate a solution with Proportional Group constraints, by allowing the proportionality to deviate by up to the specified percentage or amount. This adjustment is sometimes necessary because the Proportional Group constraint is not linear, so that it may be difficult to reach a perfectly proportional set of par amounts.

Sizing Group
When more than one Series is constrained to an aggregate Target, a Sizing Group will define the Series to which that Target belongs. Only one Series in a particular Sizing Group can be "Sized by Group".

Maximum Weighted Average Maturity
This column allows for the maximum allowable weighted average maturity of the corresponding Series in years, as computed for IRS Form 8038.

Universal Components
For Financings of several different series and/or refundings, Debt Service Reserve Funds will often be generated for the financing, as a whole. Similarly, multiple New Money issuances may be used to fund one single project fund. A Universal Component (UC) can be used to define a particular project/reserve fund, expense, issuance expenses or other formula, and have that component applied to multiple or specific series located from a central place. The component can be applied in aggregate, then allocated to any of the components, or it can be embedded within each linked component.

Allocation Option
A UC can be calculated and allocated a number of ways.

"Calculate in Aggregate then Allocate" can be allocated to the individual series by a variety of component allocation options to provide maximum flexibility to allocate back to the individual series the values that are computed or specified in aggregate. Additionally, a user can define a "dummy" or a "predefined allocation" component (Component of the same name), depending on whether it has its own sizing definitions. A "dummy" component would not have its own sizing definitions and is used primarily to set or modify auxiliary parameters for the individual component after receiving its allocation. A "predefined allocation" component does have its own sizing definitions that override any allocations specified in the Universal Component level for this series, and in addition, can set or modify auxiliary parameters of the individual component.

"Embed Into Individual Series" will treat the component as if it were defined in each of the individual series.

"N/A" (for Other Formula Component only) tells Finance that the formula will not be embedded or allocated. The main purpose of defining this type of Other Formula is to create intermediate calculations that can be referenced by other Universal Components or by other part of the financing (e.g., Universal Bond Solutions).

The remaining two tabs ("General" and "Requirements/Draws/Formula", depending on type of UC) are similar to the corresponding tabs within a Financing Component.

The Issuance Expenses allow for simple definition of UD and COI, similar to Debt Size Assumptions – Setup, where the "Formula" can be defined to be % of Par, $/1000 in Par, a fixed amount, or a more complicated formula.

A user can also define a Variable Rate Table in the "Advanced" tab of a UC. This Table will apply to any corresponding Reserve or Project Fund.

Universal Escrow

A Universal Escrow is needed when a Financing includes more than one Refunding, but has Escrow Solution Constraints in aggregate. The Constraints defined in a Universal Escrow may override Constraints defined in an individual Refunding Financing Component. A Universal Escrow is defined in the same way as a Global Proceeds Escrow in a Refund Case.

Reporting Options

The Reporting Options in a Financing are similar to those in a Financing Component, with the added ability to include or exclude Components from reports, as needed. As well as the ability to combine multiple series into a single reporting group, treating the individual financing components as one single series.

The next two pages describe the setup that applies to any Financing created in *DBC Finance*.

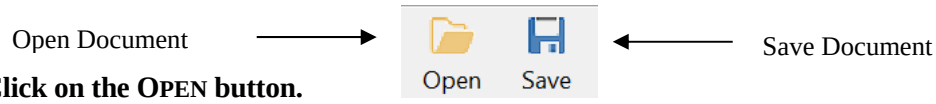
PROJECT FINANCE SETUP

1. OPEN FINANCE

After downloading and installing *DBC Finance*, open the Application.

2. CLICK OPEN DOCUMENT BUTTON

These are the steps needed to create a new datafile in *DBC Finance*.

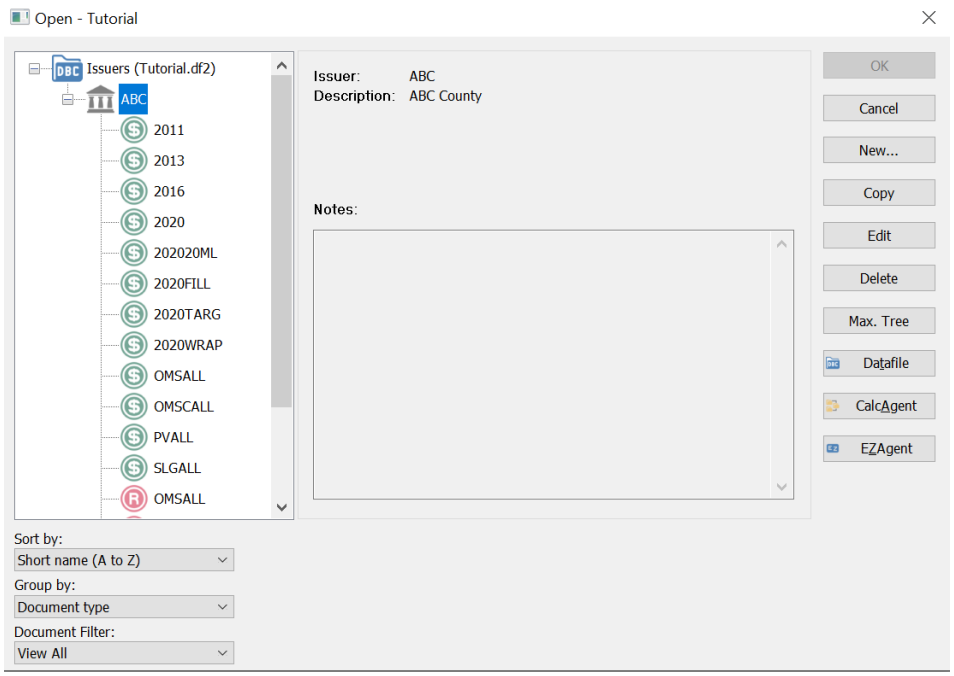


Click on the OPEN button.

3. Open Tutorial.df2 file

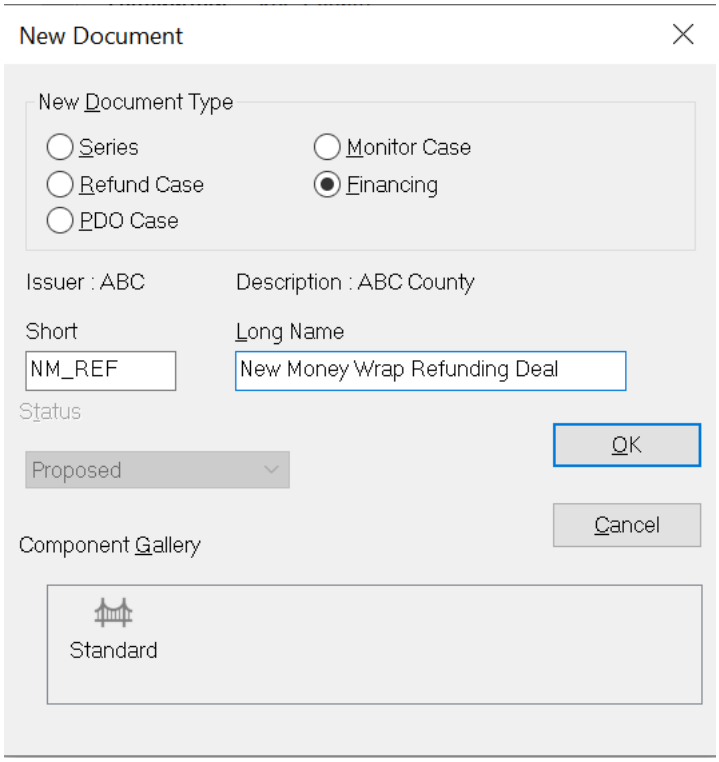
If the tutorial file created from the *Debt/Size* & *Refund* tutorials is not open, select Datafile-Browse Directory and open the Tutorial.df2 file.

4. CREATE THE FINANCING COMPONENTS AND DOCUMENT



Click on Issuer "**ABC**" so it is highlighted. Then click on **NEW**. Create the Financing Components based on the Assumptions on Pages 9-12. Save the Debt/Size and Refund Cases.

Under New Document Type, select "Financing". Enter **"NM_REF"** (short name) and **"New Money Wrap Refunding Deal"** (long name).



Click OK.

NEW MONEY WRAP AROUND REFUND IN PROJECT FINANCE

❖ ASSUMPTIONS FOR PROJECT FINANCE ANALYSIS

The following assumptions concern the structure of a deal that includes a New Money issue wrapped around a Refund Case that funds the defeasance of some of a previously issued Series of Bonds. Use the SHORTNAME:LONGNAME listed for each component.

ACTUAL ISSUE – PF2013NM: SERIES 2013 REFUNDED BONDS

Dated Date	7/1/2013				
Delivery Date	7/1/2013				
First Interest Date	1/1/2014				
Interest Rate / Par Table					
7/01/14	5.00%	310,000	7/01/29	6.50%	720,000
7/01/15	5.10%	330,000	7/01/30	6.60%	765,000
7/01/16	5.20%	345,000	7/01/31	6.70%	815,000
7/01/17	5.30%	365,000	7/01/32	6.80%	870,000
7/01/18	5.40%	380,000	7/01/33	6.90%	930,000
7/01/19	5.50%	405,000	7/01/34	7.00%	995,000
7/01/20	5.60%	425,000	7/01/35	7.10%	1,065,000
7/01/21	5.70%	450,000	7/01/36	7.20%	1,140,000
7/01/22	5.80%	475,000	7/01/37	7.30%	1,220,000
7/01/23	5.90%	500,000	7/01/38	7.40%	1,310,000
7/01/24	6.00%	530,000	7/01/39	7.50%	1,405,000
7/01/25	6.10%	565,000	7/01/40	7.60%	1,510,000
7/01/26	6.20%	600,000	7/01/41	7.70%	1,625,000
7/01/27	6.30%	635,000	7/01/42	7.80%	1,750,000
7/01/28	6.40%	675,000	7/01/43	7.90%	1,890,000
Call Provisions	Callable on 7/1/23 with Call Premium of 2%				

2019 REFUND CASE – PF2019RF: Series 2019 Refund Case

Solution Type	Uniform for Level Savings
Refunded Maturities	Serial Maturities starting 7/1/2020 through 7/1/2039
Funds on Hand	DSRF, $1,500,000
Escrow	SLGS Only (7/1/19 SLGS Rates), Escrow Yield restricted to Arbitrage Yield

PROPOSED REFUNDING ISSUE

Dated Date	7/1/2019			
Delivery Date	7/1/2019			
First Interest Date	1/1/2020			
Interest Rate Scale	7/1/20	2.50%	7/1/33	3.80%
	7/1/21	2.60%	7/1/34	3.90%
	7/1/22	2.70%	7/1/35	4.00%
	7/1/23	2.80%	7/1/36	4.10%
	7/1/24	2.90%	7/1/37	4.20%
	7/1/25	3.00%	7/1/38	4.30%
	7/1/26	3.10%	7/1/39	4.40%
	7/1/27	3.20%	7/1/40	4.50%
	7/1/28	3.30%	7/1/41	4.60%
	7/1/29	3.40%	7/1/42	4.70%
	7/1/30	3.50%	7/1/43	4.80%
	7/1/31	3.60%	7/1/44	4.90%
	7/1/32	3.70%	7/1/45	5.00%
			7/1/46	5.10%

PROPOSED NEW MONEY ISSUE – PF2019NM: Series 2019 New Money Bonds

Dated Date	7/1/2019			
Delivery Date	7/1/2019			
First Interest Date	1/1/2020			
Interest Rate Scale	7/1/20	2.50%	7/1/33	3.80%
	7/1/21	2.60%	7/1/34	3.90%
	7/1/22	2.70%	7/1/35	4.00%
	7/1/23	2.80%	7/1/36	4.10%
	7/1/24	2.90%	7/1/37	4.20%
	7/1/25	3.00%	7/1/38	4.30%
	7/1/26	3.10%	7/1/39	4.40%
	7/1/27	3.20%	7/1/40	4.50%
	7/1/28	3.30%	7/1/41	4.60%
	7/1/29	3.40%	7/1/42	4.70%
	7/1/30	3.50%	7/1/43	4.80%
	7/1/31	3.60%	7/1/44	4.90%
	7/1/32	3.70%	7/1/45	5.00%
			7/1/46	5.10%

UNIVERSAL COMPONENTS

These are the components of the Financing that apply to more than one individual Financing Component (see page 5).

Project Fund ("PROJ")

Funding	Net Funded (GIC); also funded by Interest Earnings of the Debt Service Reserve Fund that will be generated for the Financing in aggregate using Universal Components (see "Universal Components" on page 5). Fund will only be calculated based on both financing components but only allocated to the New Money portion.
Investment	Amount is Excess Proceeds at the Arbitrage Yield
Draws	Generated by Investment Amount; Monthly draw dates, starting 8/1/2019 through 7/1/2020. Draws are weighted so that amounts from 8/1/2019 through 11/1/2019 are double the amounts thereafter.

Reserve Fund

Debt Service Reserve Fund	Gross Funded Balance Requirement is the three pronged test at the Arbitrage Yield
Interest Earnings	Interest earned at Arb. Yield applied to Project Fund

Expenses

Spread	$4.70 Average Takedown, $.20 Mgmt Fee
Underwriter's Discount	.25% of Aggregate Par
Costs of Issuance	$100,000

UNIVERSAL BOND SOLUTION

In order to solve the Financing for an aggregate Target Par, a Universal Bond Solution component (UBS) will be used. The UBS will generate New Money Debt Service while wrapping around the Refunding Debt Service, such that aggregate DS is level and aggregate Par is equal to the target.

Financing Par Amount	$50,000,000
New Money Bond Solution	Difference between Refunding Par and $50,000,000; wrapped around Refunding DS for aggregate level DS

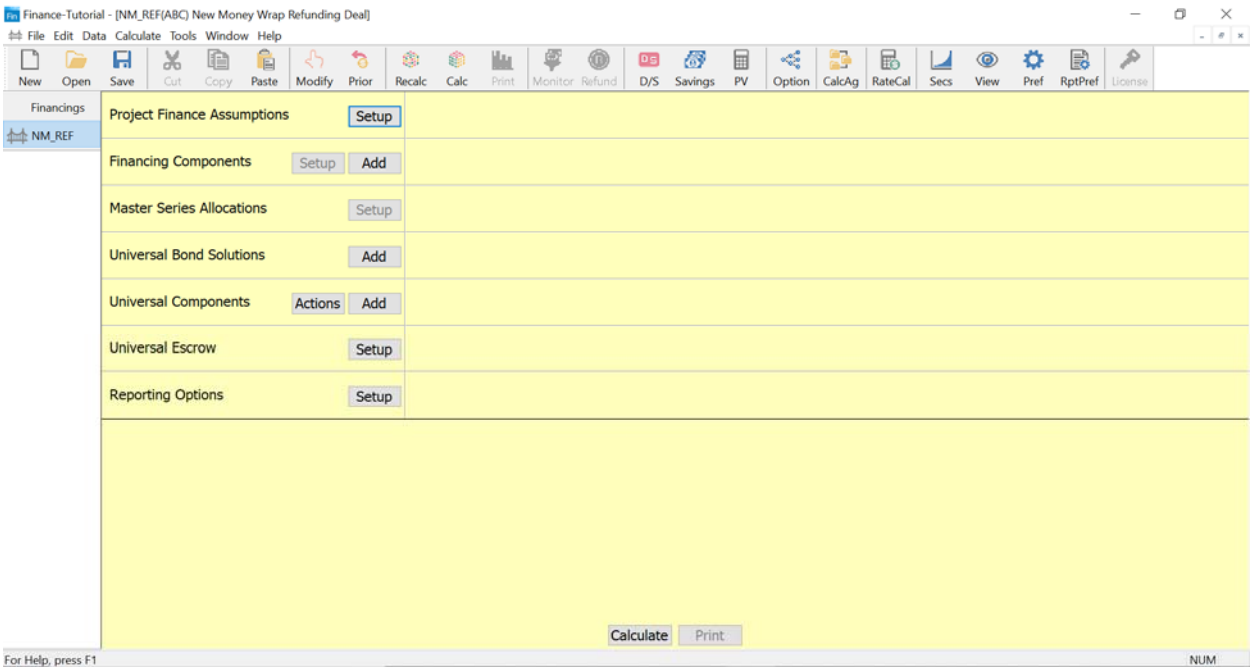
NEW MONEY WRAPPED AROUND REFUNDING

Assumptions/Objectives:

- Both New Money and Refund are included in the Arbitrage Yield
- Universal Bond Solutions Components to define aggregate level Debt Service, with the New Money Debt Service wrapped around Refunding Debt Service solved for level savings
- Universal Components used for the calculation and allocation of an aggregate reserve fund and expenses

❖ DATA MENU

Project Finance Data menu is used to define information related to the corresponding financing components. This information consists of inclusion of the Financing Components in arbitrage and escrow yields, bond solution groups, and contingency groups; funding order of Financing Components; Universal Component calculation and allocations; universal bond solutions; and universal escrow.



❖ FINANCING COMPONENTS

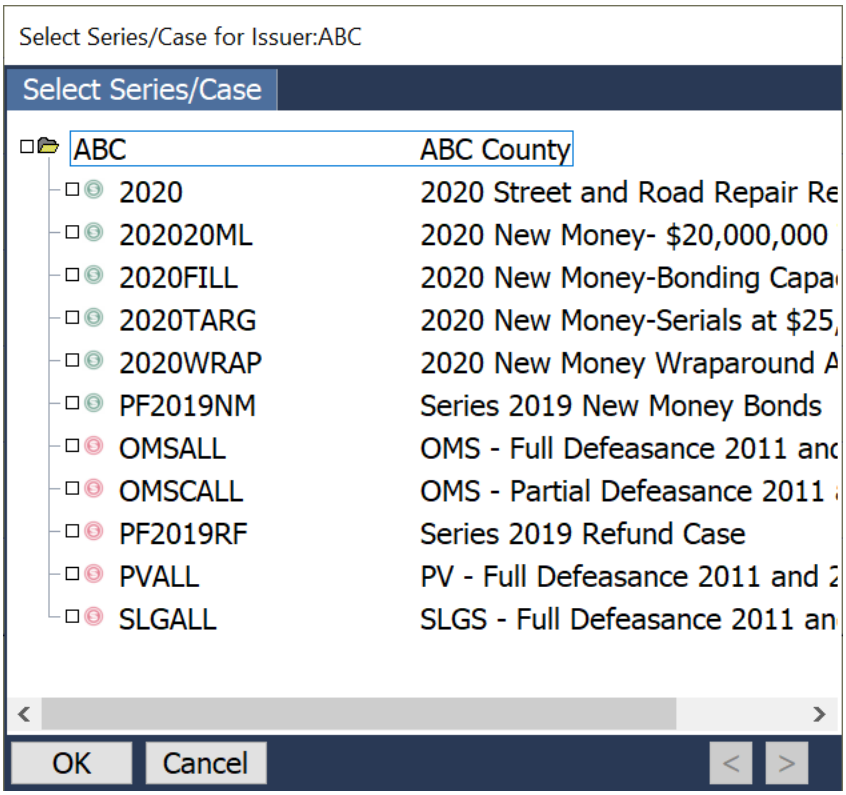
These Series and the Refund Case are to be created in the same issuer generated in the basic Project Finance Setup (pages 6-8).

1. Create Actual Series – **PF2013NM** (short name) and **Series 2013 Refunded Bonds** (long name) using the Assumptions on Page 9.
2. Create the Refund Case – **PF2019RF** (short name) and **Series 2019 Refund Case** (long name) using the Assumptions on Page 10.
3. Enter the Proposed Refunding Bonds and information from the Assumptions on Page 10.
4. Create New Money Series – **PF2019NM** (short name) and **Series 2019 New Money Bonds** (long name using the Assumptions on Page 11.

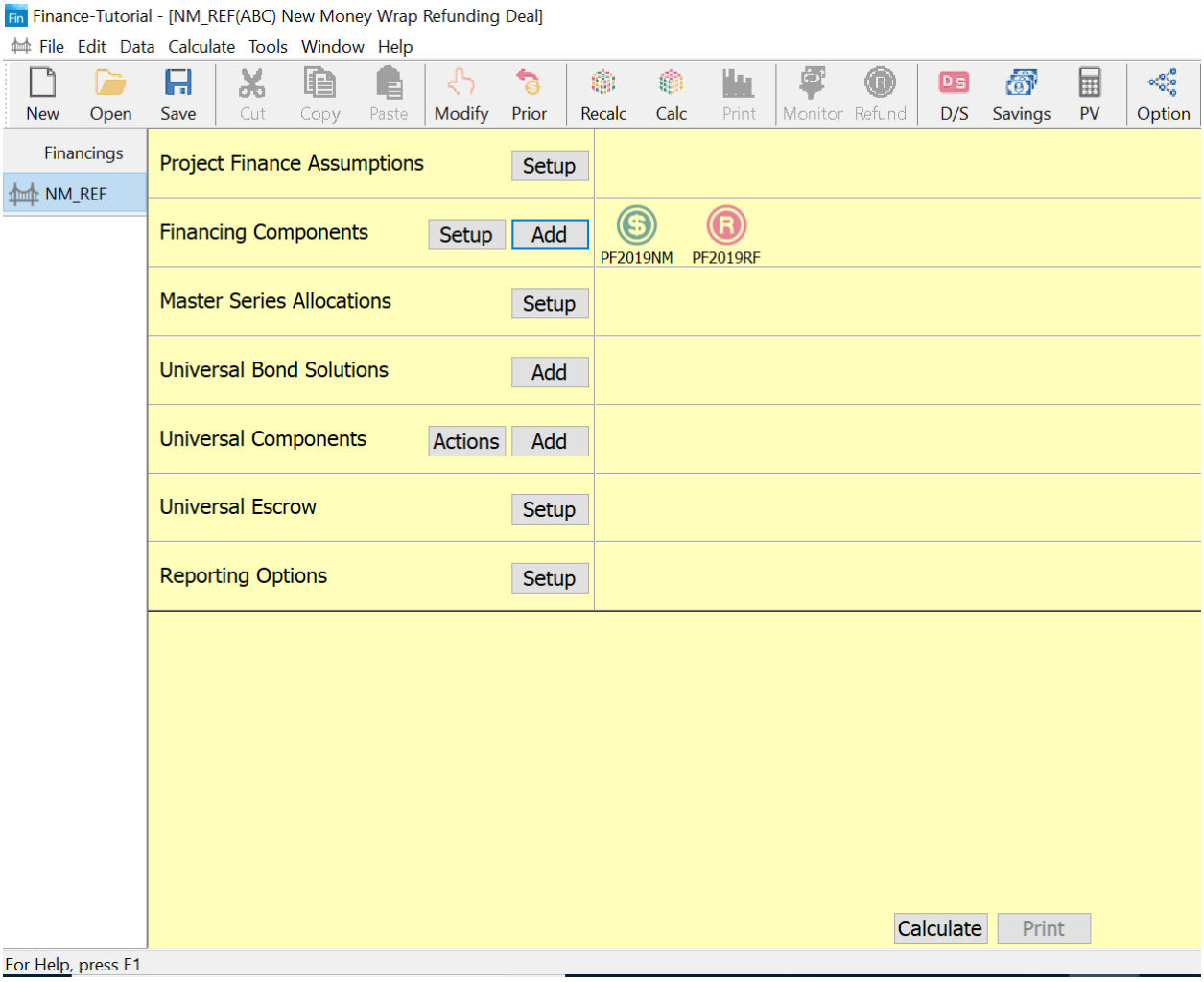
** Do NOT define the Project Fund within the 2019NM. It will be defined as a Universal Component (page 17).

The **ADD** button is used to select the appropriate series for your financing. A Financing can include multiple refund cases and/or proposed series, selected one at a time.

Go to **FINANCING COMPONENTS** and click on **ADD**.



A 'Select Series/Case for Issuer:ABC' dialog box will appear. Select the **PF2019NM** series and the **PF2019RF** refund case and hit OK.



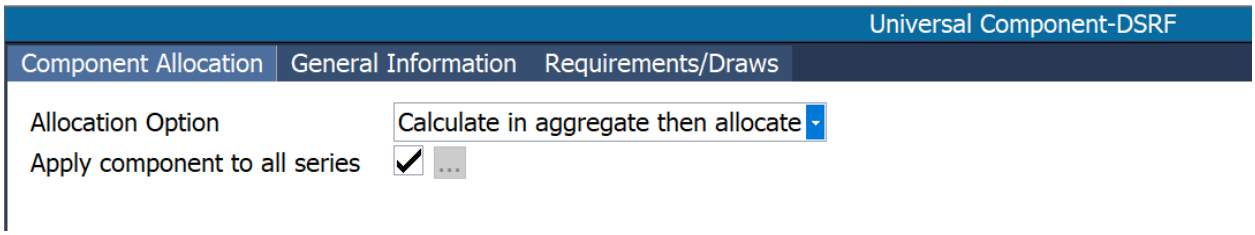
The Project Finance now includes the **PF2019NM** and **PF2019RF** series.

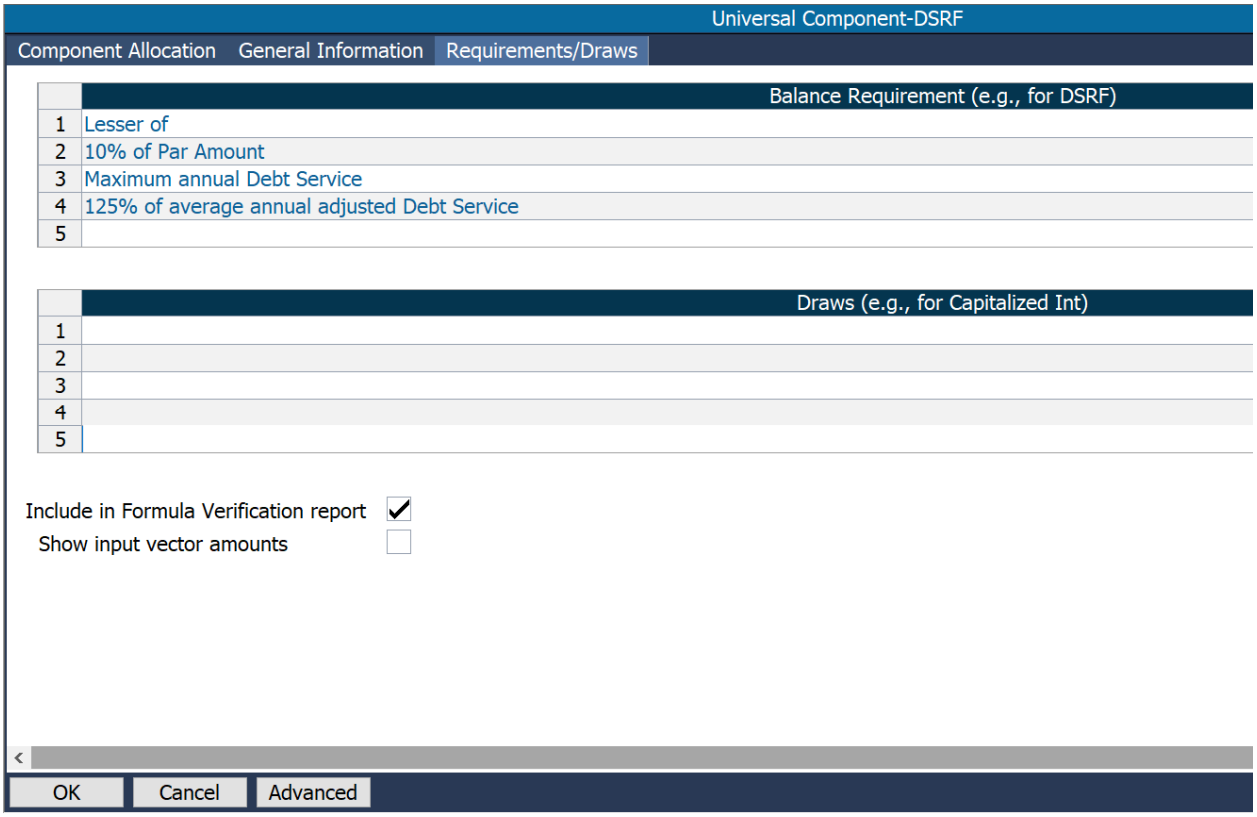
NOTE - Selection of Financing Components for Refund Cases and Proposed series is allowed by default. In order to include one or more Actual Series, the user must make the appropriate selection in the "Other Options" tab of the Project Finance Assumptions – Setup.

UNIVERSAL COMPONENTS

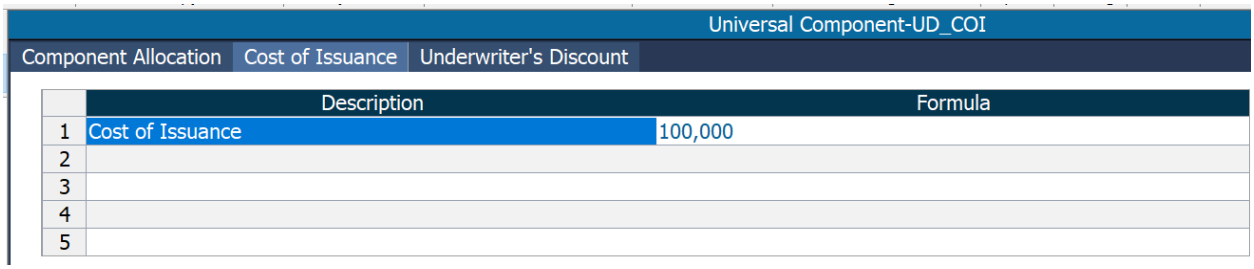
In order to calculate and allocate Expenses, Funds and Formulas to multiple Financing Components, a user can generate Universal Components (UC's). UC's allow you to quickly size Debt Service Reserve Funds, calculate Expenses, allocate Project Draws, etc. based on more than one Series, as well as "calculate in aggregate, then allocate" or "embed into individual series", as needed. For these Universal Components, we will calculate the results in aggregate and allocate to both components proportionally (default).

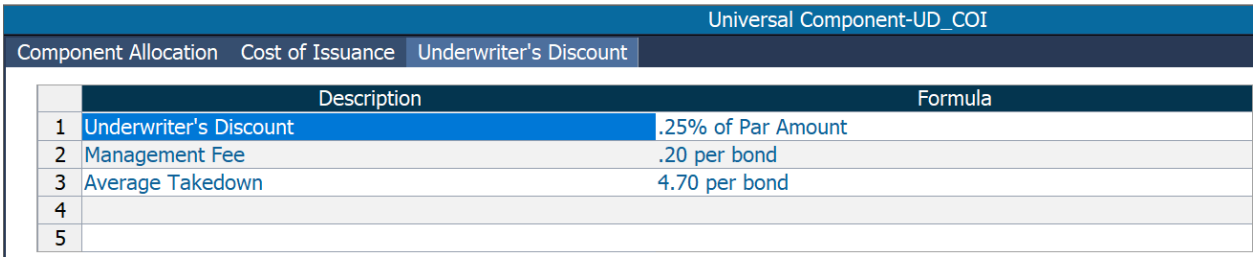
Create the Universal Component for the Debt Service Reserve Fund by clicking on Universal Components – Add. Enter a short name of "DSRF" and a long name of "Debt Service Reserve Fund" and change the Component Type to "Reserve/CAPI Fund". Keep the DSRF "Calculated in aggregate then allocated" to all components. In the Requirements/Draws tab, enter a Balance Requirement of the three pronged test formula:



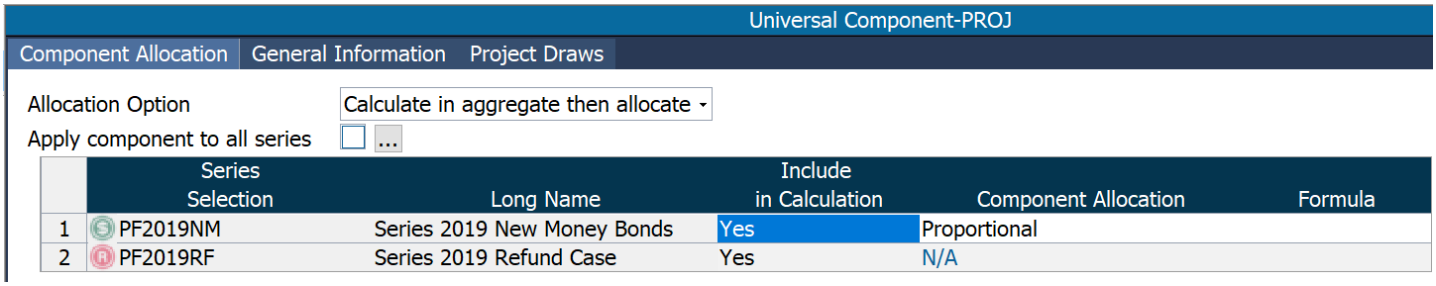


Create the Universal Component for the Issuance Expenses by clicking on Universal Components – Add. Enter a short name of "UD_COI" and a long name of "Underwriter's Discount and Costs of Issuance". Change the Component Type to "Issuance expenses". In the Cost of Issuance tab, enter "Cost of Issuance" into Description, and "100,000" into the Formula. Then, in the Underwriter's Discount tab: enter "Underwriter's Discount" into Description, and ".25% of Par Amount" into the Formula in Row 1; "Management Fee" into Description, and "4.70 per bond" into the Formula in Row 2; and "Average Takedown" into Description, and ".20 per bond" into the Formula in Row 3.

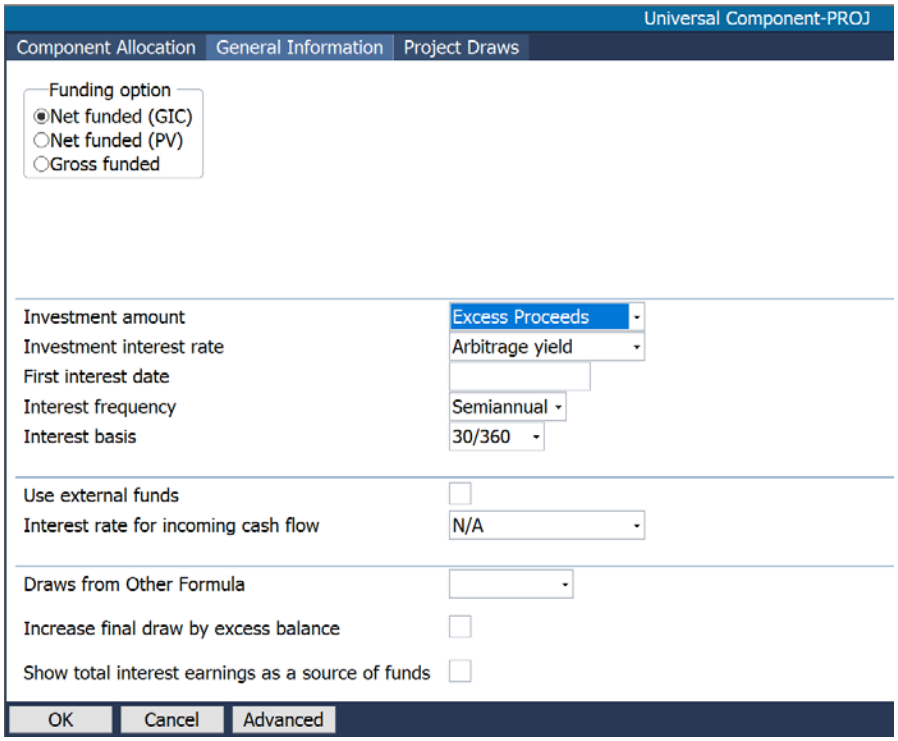


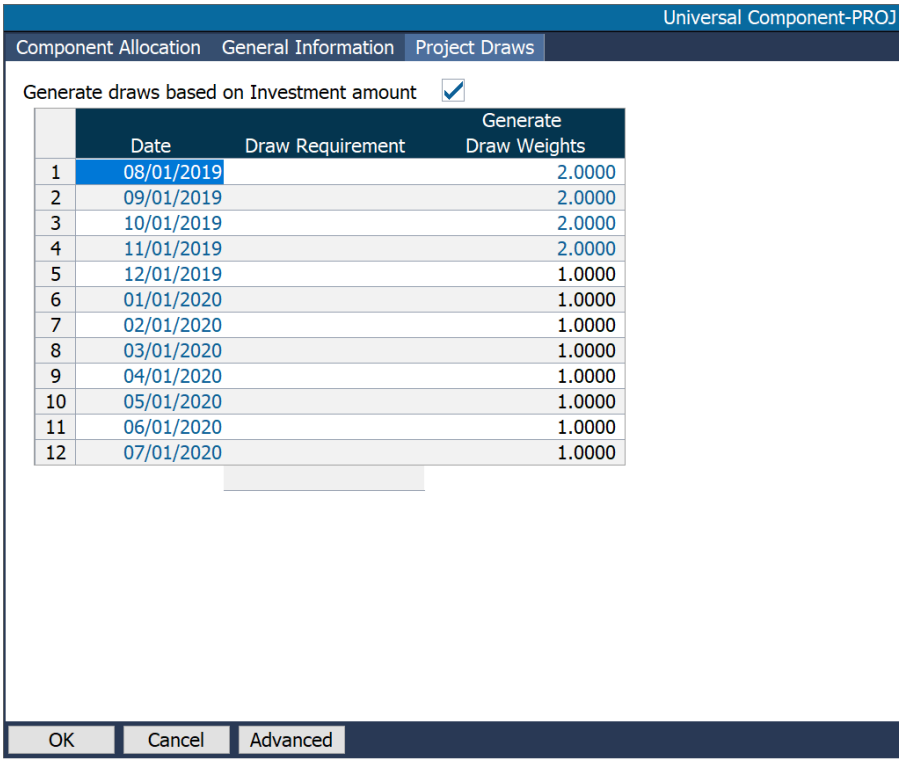


Create the Universal Component for the Project Fund by clicking on Universal Components – Add. Enter a short name of "PROJ" and a long name of "Project Fund". Change the Component Type to "Project Fund". Keep the Project Fund "Calculated in aggregate then allocate" and uncheck the box to "Apply component to all series". Define the grid as below:



In the General Information tab, change the Investment Amount to “Excess Proceeds”. In the Project Draws tab, check the box to “Generate draws based on Investment Amount”. Right-click and hit “Enter Dates” with a First date of “8/1/19” and a Final date of “7/1/20”. Change the first Draw Weights to “2”, and keep the rest at “1”.





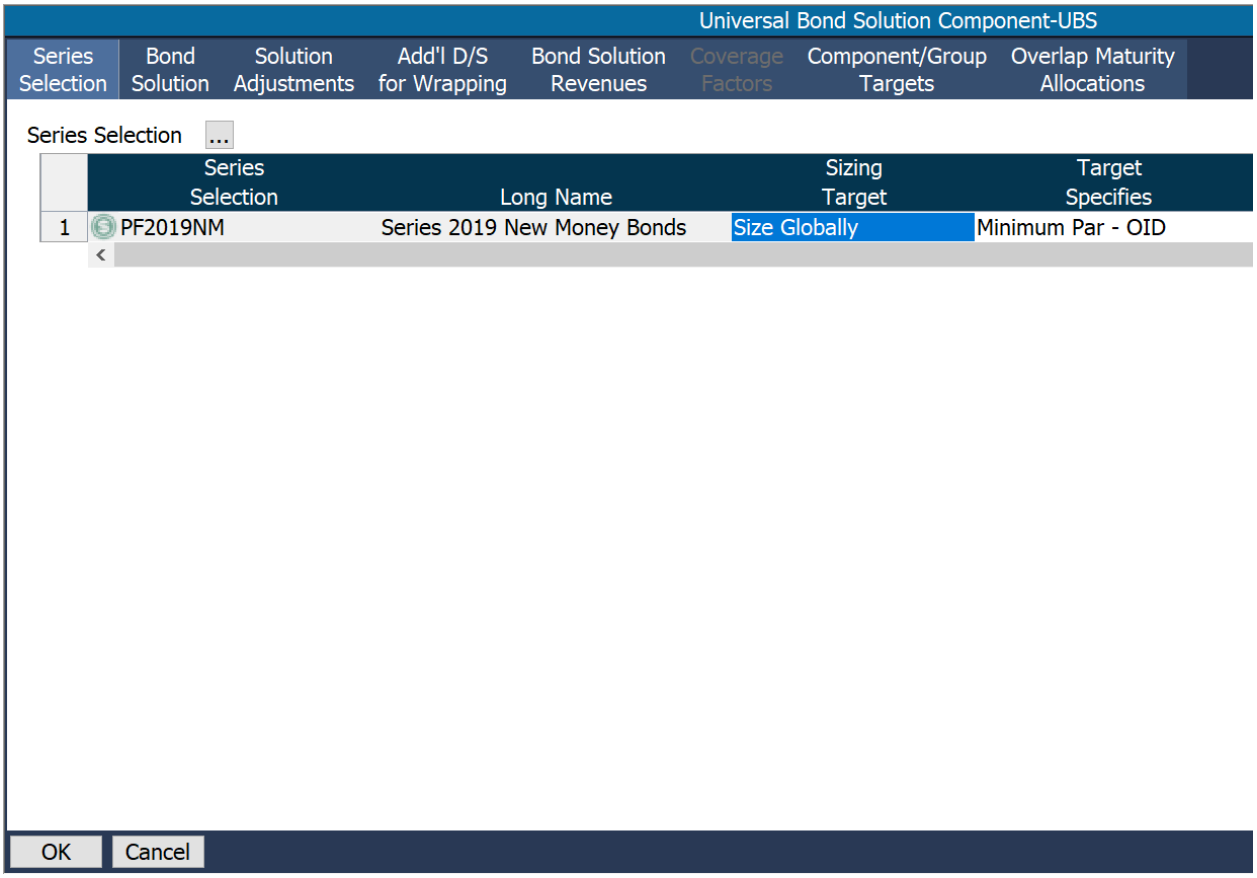
UNIVERSAL BOND SOLUTIONS

In this deal, the New Money bonds are generating funds for a Project Fund. With an overall target defined for the New Money and Refunding, the Excess Bond Proceeds (after the Escrow, expenses, and reserve funds have been funded) will be used for the New Money Project Fund, thereby using all of the proceeds generated from the Bonds. The New Money piece will also wrap around to include the unrefunded bonds.

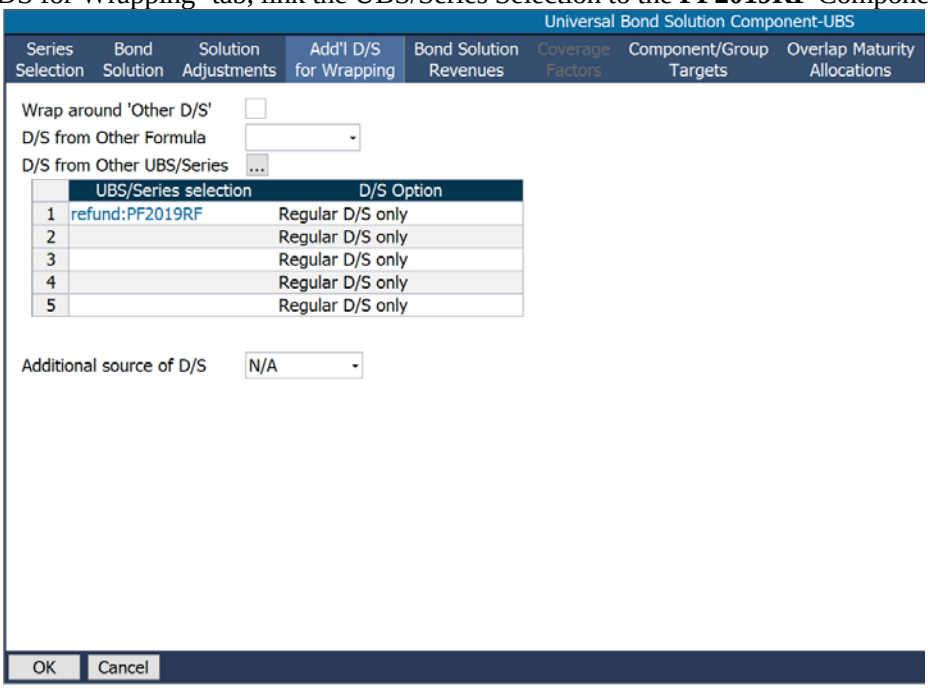
❖ UNIVERSAL BOND SOLUTIONS COMPONENT SOLUTION ASSUMPTIONS

In order to solve this Financing for level savings from the Refunding, and level Aggregate Debt Service when including the New Money, we must create a Universal Bond Solutions Components.

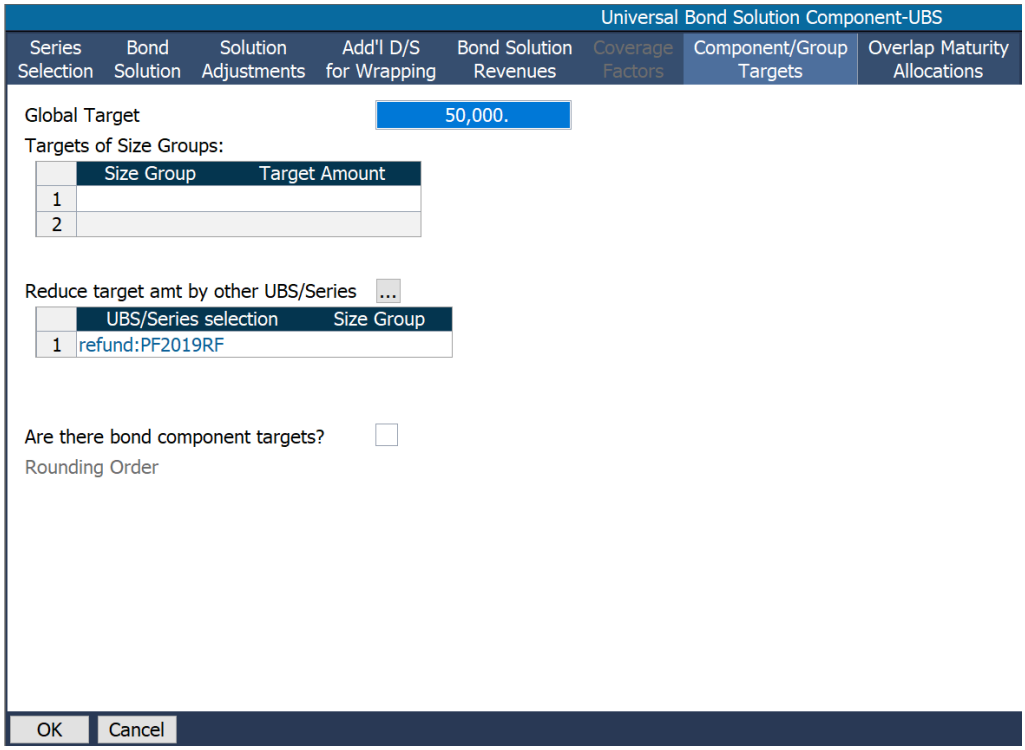
Create the UBS Component for the New Money Series by clicking on Universal Bond Solutions – Add. Link this UBS Component to the New Money Series by selecting **PF2019NM** in the 'Series Selection' window. Set the Sizing Target set to "Size Globally". In the 'Bond Solution' tab, make sure that the Solution Type to "Level". .



In the 'Add'l DS for Wrapping' tab, link the UBS/Series Selection to the **PF2019RF** Component.



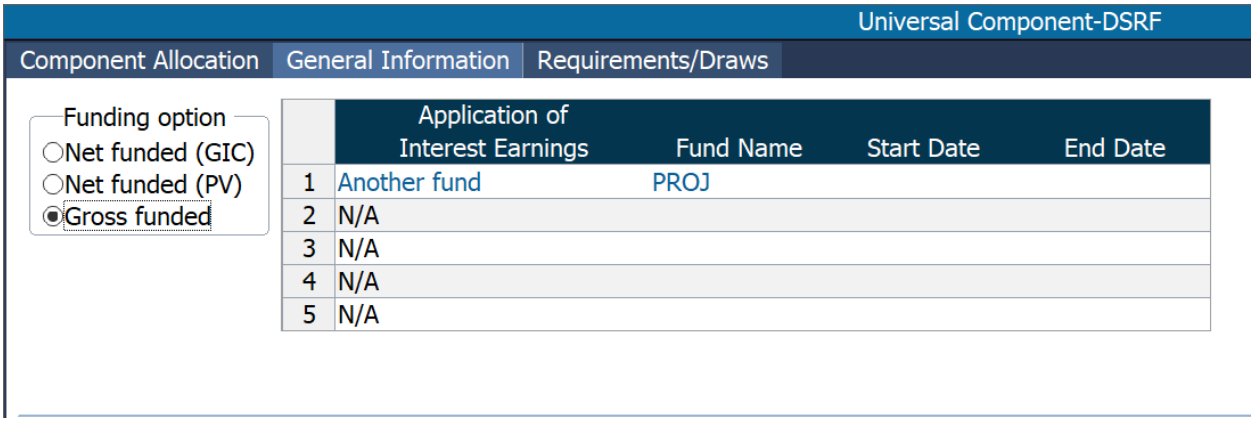
In the Component/Groups Targets tab, enter a Global Target of $50,000 ($50 Million, in thousands). Then link to the **PF2019RF** Refund Case under "Reduce from other UBS/Series".



ALLOCATION OF DSRF EARNINGS

To allocate the Interest Earnings on the DSRF to the Project Fund to be sized by the Excess Proceeds of the $50,000,000, the Application of Interest Earnings can be defined at the Universal Component level. By default, Interest Earnings will be available for Debt Service in any period that is not defined under "Application of Interest earnings".

Open the DSRF from the Universal Components. In the General Information tab, because the DSRF is Gross Funded, you can change the Application of Interest earnings to "**Another fund**", and select **PROJ** under the "Fund name" dropdown.
Click on **OK.**



CALCULATE the Financing and print the following reports:

1. **Sources & Uses (bre)**
2. **Bond Solution**
3. **Universal Bond Solution**
4. **Project Fund (con,agg)**
5. **Reserve Fund (con,sum)**

SOURCES AND USES OF FUNDS

ABC County
New Money Wrap Refunding Deal

Dated Date 07/01/2019
Delivery Date 07/01/2019

Sources:	*Series 2019 New Money Bonds*	*Series 2019 Refund Case*	*Total*
Bond Proceeds:			
Par Amount	30,730,000.00	19,270,000.00	50,000,000.00
Other Sources of Funds:			
2019 DSRF	-	1,500,000.00	1,500,000.00
	30,730,000.00	20,770,000.00	51,500,000.00

Aggregate Par meets the exact target specified in the Universal Bond Solution

Uses:	*Series 2019 New Money Bonds*	*Series 2019 Refund Case*	*Total*
Project Fund Deposits:			
Project Fund	28,495,081.30	-	28,495,081.30
Refunding Escrow Deposits:			
Cash Deposit	-	0.70	0.70
SLGS Purchases	-	19,360,578.00	19,360,578.00
	-	19,360,578.70	19,360,578.70
Other Fund Deposits:			
Debt Service Reserve Fund	1,950,949.36	1,223,390.64	3,174,340.00
Delivery Date Expenses:			
Cost of Issuance	61,460.00	38,540.00	100,000.00
Underwriter's Discount	227,402.00	142,598.00	370,000.00
	288,862.00	181,138.00	470,000.00
Other Uses of Funds:			
Additional Proceeds	(4,892.66)	4,892.66	-
	30,730,000.00	20,770,000.00	51,500,000.00

The New Money issue is solved to net out aggregate Contingency. All Excess Proceeds issued from the New Money Bonds are then used for the Project Fund.

The Sources and Uses report shows the Cash Flow of a deal on Delivery Date. In a Financing, the Breakdown Sources and Uses report will show a column for each Financing Component if set accordingly in Print Preferences (Print – Preferences – Sources & Uses – Style of Breakdown report = Separate series into columns).

BOND SOLUTION

ABC County
Series 2019 Refund Case

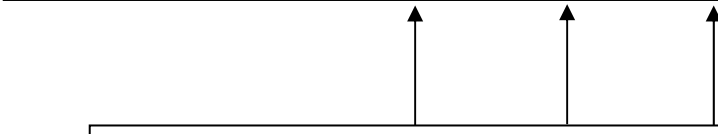
Period Ending	Proposed Principal	Proposed Debt Service	Total Adj Debt Service	Revenue Constraints	Unused Revenues	Debt Serv Coverage
07/01/2020	705,000	1,391,370	1,391,370	1,512,115	120,745	108.67814%
07/01/2021	725,000	1,393,745	1,393,745	1,513,315	119,570	108.57904%
07/01/2022	745,000	1,394,895	1,394,895	1,512,665	117,770	108.44293%
07/01/2023	760,000	1,389,780	1,389,780	1,510,115	120,335	108.65856%
07/01/2024	785,000	1,393,500	1,393,500	1,510,615	117,115	108.40438%
07/01/2025	810,000	1,395,735	1,395,735	1,513,815	118,080	108.46006%
07/01/2026	835,000	1,396,435	1,396,435	1,514,350	117,915	108.44400%
07/01/2027	860,000	1,395,550	1,395,550	1,512,150	116,600	108.35513%
07/01/2028	885,000	1,393,030	1,393,030	1,512,145	119,115	108.55078%
07/01/2029	915,000	1,393,825	1,393,825	1,513,945	120,120	108.61801%
07/01/2030	945,000	1,392,715	1,392,715	1,512,145	119,430	108.57534%
07/01/2031	980,000	1,394,640	1,394,640	1,511,655	117,015	108.39034%
07/01/2032	1,015,000	1,394,360	1,394,360	1,512,050	117,690	108.44043%
07/01/2033	1,055,000	1,396,805	1,396,805	1,512,890	116,085	108.31075%
07/01/2034	1,095,000	1,396,715	1,396,715	1,513,720	117,005	108.37716%
07/01/2035	1,135,000	1,394,010	1,394,010	1,514,070	120,060	108.61256%
07/01/2036	1,180,000	1,393,610	1,393,610	1,513,455	119,845	108.59961%
07/01/2037	1,225,000	1,390,230	1,390,230	1,511,375	121,145	108.71403%
07/01/2038	1,280,000	1,393,780	1,393,780	1,512,315	118,535	108.50457%
07/01/2039	1,335,000	1,393,740	1,393,740	1,510,375	116,635	108.36849%
07/01/2040	-	-	-	-	-	-
07/01/2041	-	-	-	-	-	-
07/01/2042	-	-	-	-	-	-
07/01/2043	-	-	-	-	-	-
07/01/2044	-	-	-	-	-	-
07/01/2045	-	-	-	-	-	-
07/01/2046	-	-	-	-	-	-
	19,270,000	27,878,470	27,878,470	30,249,280	2,370,810	

Uniform Solution Type results in level Unused Revenues (Savings)

UNIVERSAL BOND SOLUTION

ABC County
New Money Wrap Refunding Deal
Universal Bond Solution Component

Period Ending	Proposed Principal	Proposed Debt Service	Existing Debt Service	Total Adj Debt Service
07/01/2020	455,000	1,781,020	1,391,370	3,172,390
07/01/2021	465,000	1,779,645	1,393,745	3,173,390
07/01/2022	475,000	1,777,555	1,394,895	3,172,450
07/01/2023	490,000	1,779,730	1,389,780	3,169,510
07/01/2024	500,000	1,776,010	1,393,500	3,169,510
07/01/2025	515,000	1,776,510	1,395,735	3,172,245
07/01/2026	530,000	1,776,060	1,396,435	3,172,495
07/01/2027	545,000	1,774,630	1,395,550	3,170,180
07/01/2028	565,000	1,777,190	1,393,030	3,170,220
07/01/2029	585,000	1,778,545	1,393,825	3,172,370
07/01/2030	605,000	1,778,655	1,392,715	3,171,370
07/01/2031	625,000	1,777,480	1,394,640	3,172,120
07/01/2032	650,000	1,779,980	1,394,360	3,174,340
07/01/2033	670,000	1,775,930	1,396,805	3,172,735
07/01/2034	695,000	1,775,470	1,396,715	3,172,185
07/01/2035	725,000	1,778,365	1,394,010	3,172,375
07/01/2036	755,000	1,779,365	1,393,610	3,172,975
07/01/2037	790,000	1,783,410	1,390,230	3,173,640
07/01/2038	820,000	1,780,230	1,393,780	3,174,010
07/01/2039	855,000	1,779,970	1,393,740	3,173,710
07/01/2040	2,285,000	3,172,350	-	3,172,350
07/01/2041	2,385,000	3,169,525	-	3,169,525
07/01/2042	2,495,000	3,169,815	-	3,169,815
07/01/2043	2,615,000	3,172,550	-	3,172,550
07/01/2044	2,740,000	3,172,030	-	3,172,030
07/01/2045	2,875,000	3,172,770	-	3,172,770
07/01/2046	3,020,000	3,174,020	-	3,174,020
	30,730,000	57,768,810	27,878,470	85,647,280



New Money is then issued to wrap around the Refunding DS to achieve level Debt Service in aggregate.

PROJECT FUND

ABC County
New Money Wrap Refunding Deal

Date	Deposit	Interest @ 4.317149%	Principal	Debt Service Reserve Fund	Scheduled Draws	Balance
07/01/2019	28,495,081.30	-	-	-	-	28,495,081.30
08/01/2019	-	-	3,648,792.72	-	3,648,792.72	24,846,288.58
09/01/2019	-	-	3,648,792.72	-	3,648,792.72	21,197,495.86
10/01/2019	-	-	3,648,792.72	-	3,648,792.72	17,548,703.14
11/01/2019	-	-	3,648,792.72	-	3,648,792.72	13,899,910.42
12/01/2019	-	-	1,824,396.36	-	1,824,396.36	12,075,514.06
01/01/2020	-	424,746.28	1,331,129.59	68,520.49	1,824,396.36	10,744,384.47
02/01/2020	-	-	1,824,396.36	-	1,824,396.36	8,919,988.11
03/01/2020	-	-	1,824,396.36	-	1,824,396.36	7,095,591.75
04/01/2020	-	-	1,824,396.36	-	1,824,396.36	5,271,195.39
05/01/2020	-	-	1,824,396.36	-	1,824,396.36	3,446,799.03
06/01/2020	-	-	1,824,396.36	-	1,824,396.36	1,622,402.67
07/01/2020	-	133,473.16	1,622,402.67	68,520.49	1,824,396.32	-
	28,495,081.30	558,219.44	28,495,081.30	137,040.98	29,190,341.72	

Average Life (years):	0.4538
Yield To Receipt Date:	4.3081728%
Arbitrage Yield:	4.3171490%
Value of Negative Arbitrage:	1,135.07

With a total of $50 Million in Par for this Financing, the New Money is solved for the difference between the financing target and Refunding Par. The New Money Proceeds that are not used for Expenses or Reserves are then available for the Project Fund.

DEBT SERVICE RESERVE FUND

ABC County
Series 2019 New Money Bonds

The Interest Earned in the DSRF is applied to the Project.

Date	Deposit	Interest @ 4.317149%	Principal	Project Fund	Debt Service	Balance
07/01/2019	1,950,949.36	-	-	-	-	1,950,949.36
01/01/2020	-	42,112.70	-	(42,112.69)	-	1,950,949.36
07/01/2020	-	42,112.70	-	(42,112.69)	-	1,950,949.36
01/01/2021	-	42,112.70	-	-	(42,112.70)	1,950,949.36
07/01/2021	-	42,112.70	-	-	(42,112.70)	1,950,949.36
01/01/2022	-	42,112.70	-	-	(42,112.70)	1,950,949.36
07/01/2022	-	42,112.70	-	-	(42,112.70)	1,950,949.36
01/01/2023	-	42,112.70	-	-	(42,112.70)	1,950,949.36
07/01/2023	-	42,112.70	-	-	(42,112.70)	1,950,949.36
01/01/2024	-	42,112.70	-	-	(42,112.70)	1,950,949.36
07/01/2024	-	42,112.70	-	-	(42,112.70)	1,950,949.36
01/01/2025	-	42,112.70	-	-	(42,112.70)	1,950,949.36
07/01/2025	-	42,112.70	-	-	(42,112.70)	1,950,949.36
01/01/2026	-	42,112.70	-	-	(42,112.70)	1,950,949.36
07/01/2026	-	42,112.70	-	-	(42,112.70)	1,950,949.36
01/01/2027	-	42,112.70	-	-	(42,112.70)	1,950,949.36
07/01/2027	-	42,112.70	-	-	(42,112.70)	1,950,949.36
01/01/2028	-	42,112.70	-	-	(42,112.70)	1,950,949.36
07/01/2028	-	42,112.70	-	-	(42,112.70)	1,950,949.36
01/01/2029	-	42,112.70	-	-	(42,112.70)	1,950,949.36
07/01/2029	-	42,112.70	-	-	(42,112.70)	1,950,949.36
01/01/2030	-	42,112.70	-	-	(42,112.70)	1,950,949.36
07/01/2030	-	42,112.70	-	-	(42,112.70)	1,950,949.36
01/01/2031	-	42,112.70	-	-	(42,112.70)	1,950,949.36
07/01/2031	-	42,112.70	-	-	(42,112.70)	1,950,949.36
01/01/2032	-	42,112.70	-	-	(42,112.70)	1,950,949.36
07/01/2032	-	42,112.70	-	-	(42,112.70)	1,950,949.36
01/01/2033	-	42,112.70	-	-	(42,112.70)	1,950,949.36
07/01/2033	-	42,112.70	-	-	(42,112.70)	1,950,949.36
01/01/2034	-	42,112.70	-	-	(42,112.70)	1,950,949.36
07/01/2034	-	42,112.70	-	-	(42,112.70)	1,950,949.36
01/01/2035	-	42,112.70	-	-	(42,112.70)	1,950,949.36
07/01/2035	-	42,112.70	-	-	(42,112.70)	1,950,949.36
01/01/2036	-	42,112.70	-	-	(42,112.70)	1,950,949.36
07/01/2036	-	42,112.70	-	-	(42,112.70)	1,950,949.36
01/01/2037	-	42,112.70	-	-	(42,112.70)	1,950,949.36
07/01/2037	-	42,112.70	-	-	(42,112.70)	1,950,949.36
01/01/2038	-	42,112.70	-	-	(42,112.70)	1,950,949.36
07/01/2038	-	42,112.70	-	-	(42,112.70)	1,950,949.36
01/01/2039	-	42,112.70	-	-	(42,112.70)	1,950,949.36
07/01/2039	-	42,112.70	-	-	(42,112.70)	1,950,949.36
01/01/2040	-	42,112.70	-	-	(42,112.70)	1,950,949.36
07/01/2040	-	42,112.70	-	-	(42,112.70)	1,950,949.36
01/01/2041	-	42,112.70	-	-	(42,112.70)	1,950,949.36
07/01/2041	-	42,112.70	-	-	(42,112.70)	1,950,949.36
01/01/2042	-	42,112.70	-	-	(42,112.70)	1,950,949.36
07/01/2042	-	42,112.70	-	-	(42,112.70)	1,950,949.36
01/01/2043	-	42,112.70	-	-	(42,112.70)	1,950,949.36
07/01/2043	-	42,112.70	-	-	(42,112.70)	1,950,949.36
01/01/2044	-	42,112.70	-	-	(42,112.70)	1,950,949.36
07/01/2044	-	42,112.70	-	-	(42,112.70)	1,950,949.36
01/01/2045	-	42,112.70	-	-	(42,112.70)	1,950,949.36
07/01/2045	-	42,112.70	-	-	(42,112.70)	1,950,949.36
01/01/2046	-	42,112.70	-	-	(42,112.70)	1,950,949.36
07/01/2046	-	42,112.70	1,950,949.36	-	(1,993,062.06)	-
	1,950,949.36	2,274,085.80	1,950,949.36	(84,225.38)	(4,140,809.76)	

Average Life (years):	27.0000
Yield To Receipt Date:	4.3171495%
Arbitrage Yield:	4.3171490%
Value of Positive Arbitrage:	0.15

DEBT SERVICE RESERVE FUND

ABC County
Series 2019 Refund Case

Date	Deposit	Interest @ 4.317149%	Principal	PROJ	Debt Service	Balance
07/01/2019	1,223,390.64	-	-	-	-	1,223,390.64
01/01/2020	-	26,407.80	-	(26,407.80)	-	1,223,390.64
07/01/2020	-	26,407.80	-	(26,407.80)	-	1,223,390.64
01/01/2021	-	26,407.80	-	-	(26,407.80)	1,223,390.64
07/01/2021	-	26,407.80	-	-	(26,407.80)	1,223,390.64
01/01/2022	-	26,407.80	-	-	(26,407.80)	1,223,390.64
07/01/2022	-	26,407.80	-	-	(26,407.80)	1,223,390.64
01/01/2023	-	26,407.80	-	-	(26,407.80)	1,223,390.64
07/01/2023	-	26,407.80	-	-	(26,407.80)	1,223,390.64
01/01/2024	-	26,407.80	-	-	(26,407.80)	1,223,390.64
07/01/2024	-	26,407.80	-	-	(26,407.80)	1,223,390.64
01/01/2025	-	26,407.80	-	-	(26,407.80)	1,223,390.64
07/01/2025	-	26,407.80	-	-	(26,407.80)	1,223,390.64
01/01/2026	-	26,407.80	-	-	(26,407.80)	1,223,390.64
07/01/2026	-	26,407.80	-	-	(26,407.80)	1,223,390.64
01/01/2027	-	26,407.80	-	-	(26,407.80)	1,223,390.64
07/01/2027	-	26,407.80	-	-	(26,407.80)	1,223,390.64
01/01/2028	-	26,407.80	-	-	(26,407.80)	1,223,390.64
07/01/2028	-	26,407.80	-	-	(26,407.80)	1,223,390.64
01/01/2029	-	26,407.80	-	-	(26,407.80)	1,223,390.64
07/01/2029	-	26,407.80	-	-	(26,407.80)	1,223,390.64
01/01/2030	-	26,407.80	-	-	(26,407.80)	1,223,390.64
07/01/2030	-	26,407.80	-	-	(26,407.80)	1,223,390.64
01/01/2031	-	26,407.80	-	-	(26,407.80)	1,223,390.64
07/01/2031	-	26,407.80	-	-	(26,407.80)	1,223,390.64
01/01/2032	-	26,407.80	-	-	(26,407.80)	1,223,390.64
07/01/2032	-	26,407.80	-	-	(26,407.80)	1,223,390.64
01/01/2033	-	26,407.80	-	-	(26,407.80)	1,223,390.64
07/01/2033	-	26,407.80	-	-	(26,407.80)	1,223,390.64
01/01/2034	-	26,407.80	-	-	(26,407.80)	1,223,390.64
07/01/2034	-	26,407.80	-	-	(26,407.80)	1,223,390.64
01/01/2035	-	26,407.80	-	-	(26,407.80)	1,223,390.64
07/01/2035	-	26,407.80	-	-	(26,407.80)	1,223,390.64
01/01/2036	-	26,407.80	-	-	(26,407.80)	1,223,390.64
07/01/2036	-	26,407.80	-	-	(26,407.80)	1,223,390.64
01/01/2037	-	26,407.80	-	-	(26,407.80)	1,223,390.64
07/01/2037	-	26,407.80	-	-	(26,407.80)	1,223,390.64
01/01/2038	-	26,407.80	-	-	(26,407.80)	1,223,390.64
07/01/2038	-	26,407.80	-	-	(26,407.80)	1,223,390.64
01/01/2039	-	26,407.80	-	-	(26,407.80)	1,223,390.64
07/01/2039	-	26,407.80	1,223,390.64	-	(1,249,798.44)	-
	1,223,390.64	1,056,312.00	1,223,390.64	(52,815.60)	(2,226,887.04)	

Average Life (years):	20.0000
Yield To Receipt Date:	4.3171493%
Arbitrage Yield:	4.3171490%
Value of Positive Arbitrage:	0.05

SENIOR / SUBORDINATE SERIES IN PROJECT FINANCE

❖ ASSUMPTIONS FOR PROJECT FINANCE ANALYSIS

The following instructions and assumptions will show how to structure a deal that fills aggregate debt service to 120% of a revenue constraints that starts at $5,000,000 in 2020 and increases by 1% annually. Senior bonds are solved such that their debt service covers 150% of debt service, with subordinate bonds issued to increase leverage to the limit of 120% coverage.

SENIOR BONDS ISSUE

Dated Date	7/1/2019			
Delivery Date	7/1/2019			
First Interest Date	1/1/2020			
Interest Rate Scale	7/1/20	3.50%	7/1/35	4.25%
	7/1/21	3.55%	7/1/36	4.30%
	7/1/22	3.60%	7/1/37	4.35%
	7/1/23	3.65%	7/1/38	4.40%
	7/1/24	3.70%	7/1/39	4.45%
	7/1/25	3.75%	7/1/40	4.50%
	7/1/26	3.80%	7/1/41	4.55%
	7/1/27	3.85%	7/1/42	4.60%
	7/1/28	3.90%	7/1/43	4.65%
	7/1/29	3.95%	7/1/44	4.70%
	7/1/30	4.00%	7/1/45	4.75%
	7/1/31	4.05%	7/1/46	4.80%
	7/1/32	4.10%	7/1/47	4.85%
	7/1/33	4.15%	7/1/48	4.90%
	7/1/34	4.20%	7/1/49	4.95%

SUBORDINATE BONDS ISSUE

Dated Date	7/1/2019			
Delivery Date	7/1/2019			
First Interest Date	1/1/2020			
Interest Rate Scale	7/1/20	3.80%	7/1/35	4.55%
	7/1/21	3.85%	7/1/36	4.60%
	7/1/22	3.90%	7/1/37	4.65%
	7/1/23	3.95%	7/1/38	4.70%
	7/1/24	4.00%	7/1/39	4.75%
	7/1/25	4.05%	7/1/40	4.80%
	7/1/26	4.10%	7/1/41	4.85%
	7/1/27	4.15%	7/1/42	4.90%
	7/1/28	4.20%	7/1/43	4.95%
	7/1/29	4.25%	7/1/44	5.00%
	7/1/30	4.30%	7/1/45	5.05%
	7/1/31	4.35%	7/1/46	5.10%
	7/1/32	4.40%	7/1/47	5.15%
	7/1/33	4.45%	7/1/48	5.20%
	7/1/34	4.50%	7/1/49	5.25%

UNIVERSAL COMPONENTS

Project Fund

Funding	Net Funded (GIC)
Investment	Investment Rate = 3%; Investment Amount=Excess Proceeds
Draws	Monthly draws, starting 8/1/2019 through 11/1/2020
	Generate draws based on Investment Amount
Allocation	Calculate in aggregate, then allocate to both financing components

Expenses

Cost of Issuance	$70,000
Average Takedown	$6.5 per $1,000 in Par (.065%)
Management Fee	$50,000

Reserve Funds

Type	Debt Service Reserve Fund
Balance Requirement	Lesser of
	Maximum Annual Debt Service
	125% of Average Annual Adjusted Debt Service
	10% of Par Amount
Funding	Gross Funded at 3%
Allocation	Calculate in aggregate then allocate and apply component to both financing components

SENIOR UNIVERSAL BOND SOLUTION

Solution Assumptions

Sizing Target	N/A
Type of Bond Solution	Fill
Revenue Constraints	Starting 7/1/20 of 5ML – 7/1/49 annual increase 1%
Coverage Factor	150%

SUBORDINATE UNIVERSAL BOND SOLUTION

Solution Assumptions

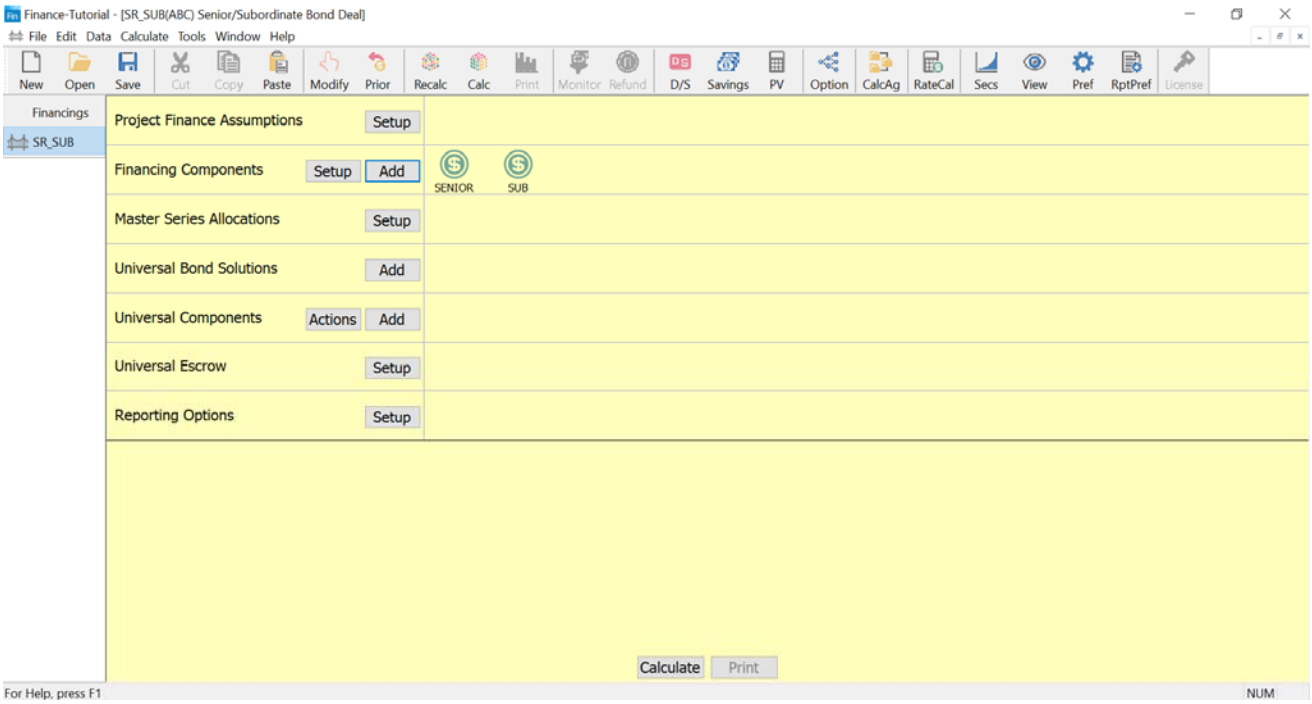
Sizing Target	N/A
Solution Type	Fill
Coverage	120%
Additional DS for Wrapping	DS from other UBS/Series (Senior UBS)
Revenues	Revenues from other UBS/Series (Senior UBS)
Coverage	120%

SENIOR / SUBORDINATE BOND DEAL

Assumptions/Objectives:

- Both Senior and Subordinate Bonds are included in the Arbitrage Yield
- Senior Bond Debt Service filled to 150% Coverage of Revenues
- Subordinate Bond Debt Service wrapped around Senior Bonds to fill to 120% Aggregate Coverage of Revenues

First, create the Senior Series, the Subordinate Series. Go to **Financing Components** and click on **ADD.** Select the **SENIOR** series and the **SUB** series. Click **OK**. Then the Universal Components using the Assumptions on Pages 28-31.



UNIVERSAL COMPONENTS

Similar to the deal with New Money wrapped around Refunding Bonds, in this Senior / Subordinate Bonds Financing, certain Expenses and Funds will be allocated to or embedded in both Series. In this case, Senior Bonds will be solved to fill Debt Service to 150% Coverage of Revenue Constraints, with the Subordinate Bonds filling to 120% Coverage, in aggregate. After Expenses have been paid and Reserves funded, all remaining Bond Proceeds will be used in a Financing Project Fund.

Create the Universal Component for the Debt Service Reserve Fund by clicking on Universal Components – Add. Enter a short name of "DSRF" and a long name of "Debt Service Reserve Fund" and change the Component Type to "Reserve/CAPI Fund". In the Requirements/Draws tab, enter the Balance Requirement laid out on page 30.

Create the Universal Component for the Cost of Issuance by clicking on Universal Components – Add. Enter a short name of "UD_COI" and a long name of "Underwriter's Discount and Costs of Issuance". Change the Component Type to "Issuance expenses". In the Cost of Issuance tab, enter "Cost of Issuance" into Description, and "70,000" into the Formula. Then, in the Underwriter's Discount tab: enter "Average Takedown" into Description, and ".065% of Par Amount" into the Formula in Row 1; and "Management Fee" into Description, and "50,000" into the Formula in Row 2.

Create the Universal Component for the Project Fund by clicking on Universal Components – Add. Enter a short name of "PROJ" and a long name of "Construction". Change the Component Type to "Project Fund". In the General Information tab, define an Investment Amount of "Excess Proceeds" with an Interest Rate of 3% with a Funding Option of "Net Funded (GIC)". As this Construction Fund will be sized by aggregate Additional Proceeds, the Allocation Option should be kept at "Calculate in aggregate then allocate". In the Draws tab, enter monthly draw dates from 8/1/19 through 11/1/20 and check to "Generate draws based on Investment amount".

SENIOR SERIES UNIVERSAL BOND SOLUTIONS ASSUMPTIONS

In this deal, the Senior bonds are generating the funds needed to fill to 150% Coverage of Revenues starting at $5,000,000, increasing 1% annually. As the overall sizing will be determined by the amount needed to generate the appropriate Bond Debt Service, the Subordinate bonds will then fund the remainder needed to cover 120% of Revenue Constraints.

❖ UNIVERSAL BOND SOLUTIONS – SERIES SELECTION

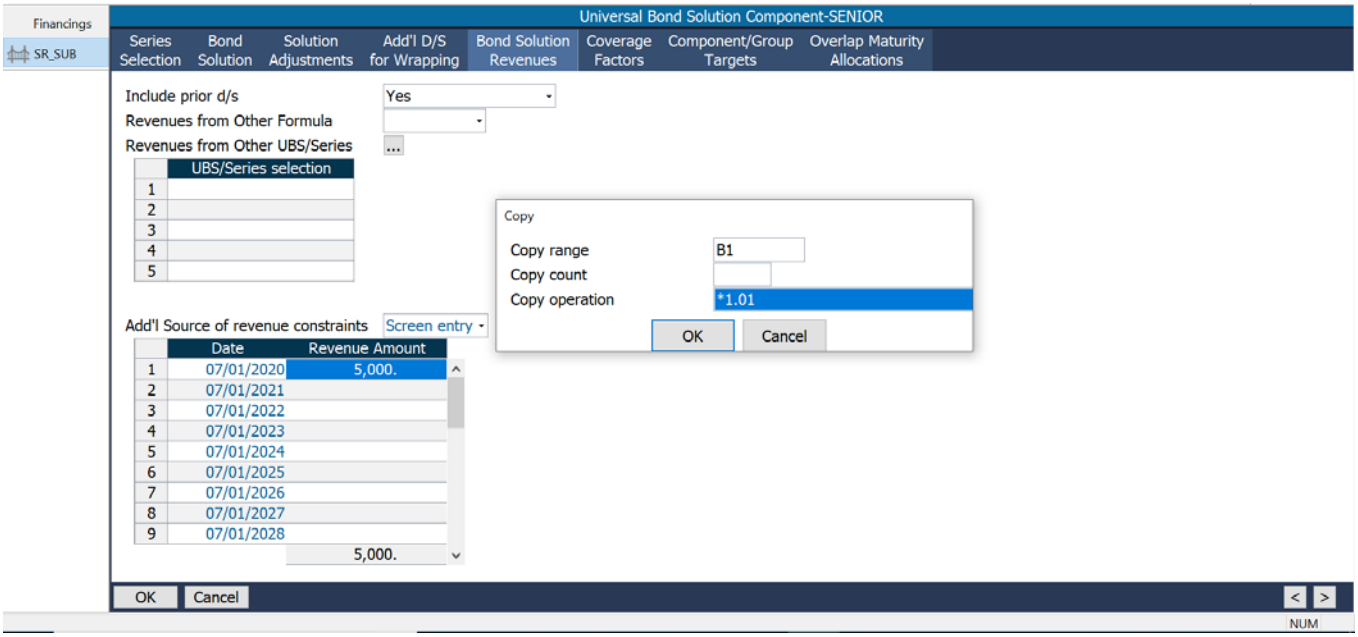
Add a Universal Bond Solutions component, with a short name of "SENIOR" and a long name of "Senior Universal Bond Solution". Select **Senior** in Series Selection. Change the Sizing Target to "N/A", as the size and allocation of Par will be determined by the bonds needed to fill to 150% of revenues.

❖ UNIVERSAL BOND SOLUTIONS – BOND SOLUTION

Select **Fill (maximize proceeds w/ avail revs)** in order to fill to the revenue stream indicated in the next section.

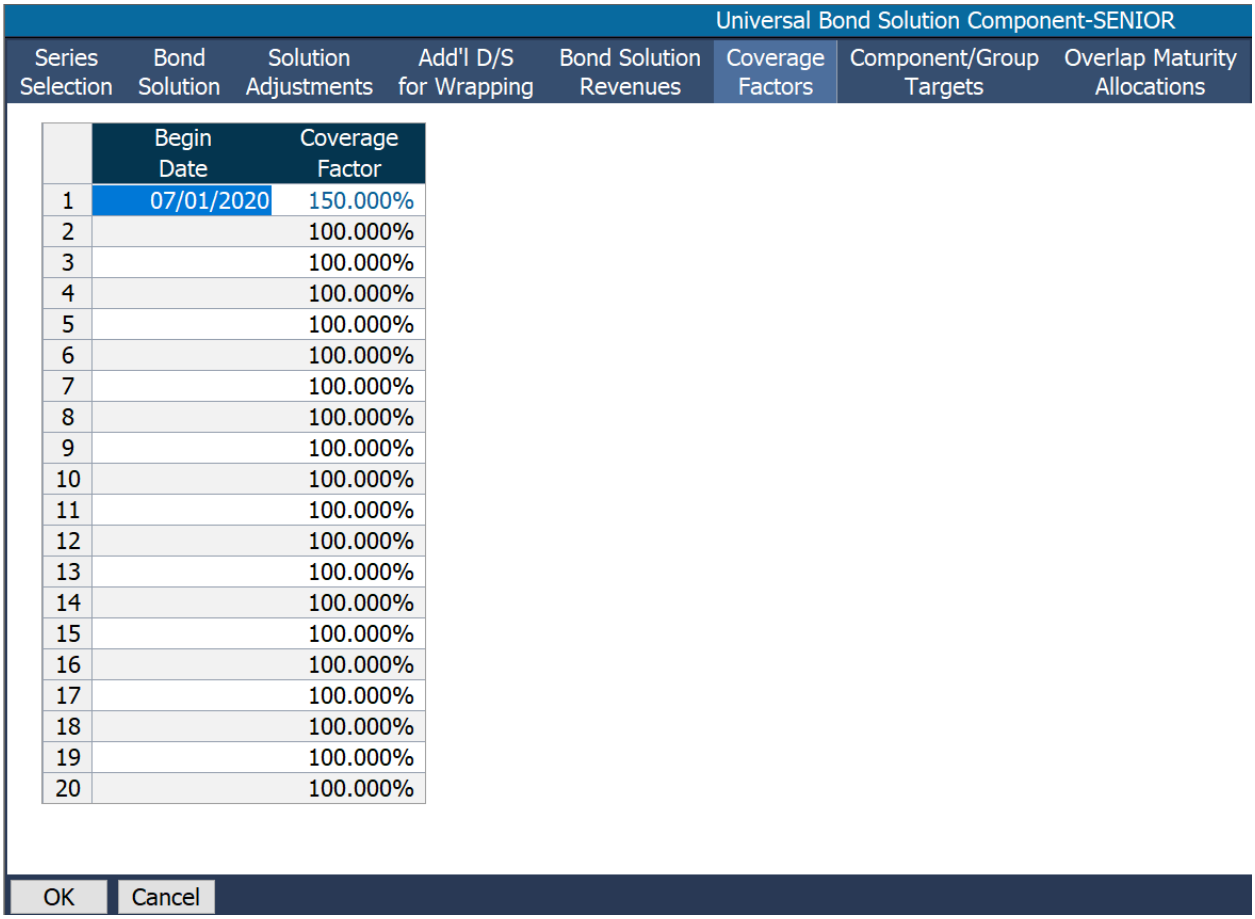
❖ UNIVERSAL BOND SOLUTIONS – BOND SOLUTION REVENUES

Set the "Add'l Source of revenue constraints" to "Screen entry". For this series, enter annual dates of 7/1/2020 through 7/1/2049 (Right mouse click – Enter dates). Enter **'5000'** for the revenue amount for 1/1/20. After entering the dates and first Revenue Constraint in the previous step, right mouse click on the **'5000'** Revenue Amount and select 'Copy Down'. The Copy Operation is '*1.01'. This will generate Revenues that start at 5,000,000 and increase by 1% annually.



❖ UNIVERSAL BOND SOLUTIONS – COVERAGE FACTORS

To have 50% available revenues in each period to cover the debt service which is due in the same period ending, enter the first maturity date **7/1/20** and **150%** for the Coverage Factor. This will solve the Senior Series and leave 50% available revenue.



	Begin Date	Coverage Factor
1	07/01/2020	150.000%
2		100.000%
3		100.000%
4		100.000%
5		100.000%
6		100.000%
7		100.000%
8		100.000%
9		100.000%
10		100.000%
11		100.000%
12		100.000%
13		100.000%
14		100.000%
15		100.000%
16		100.000%
17		100.000%
18		100.000%
19		100.000%
20		100.000%

NOTE – The coverage factor entered will be applied to all subsequent periods. You only need to enter additional Begin Dates if the coverage factor changes over time.

SUBORDINATE LIEN SERIES UNIVERSAL BOND SOLUTIONS ASSUMPTIONS

The **Sub** Series will wrap around the **Senior** bonds for aggregate debt service filled to 120% of revenues. For this setup, you will need another Universal Bond Solution to wrap around the Senior Solution.

❖ UNIVERSAL BOND SOLUTIONS – SERIES SELECTION

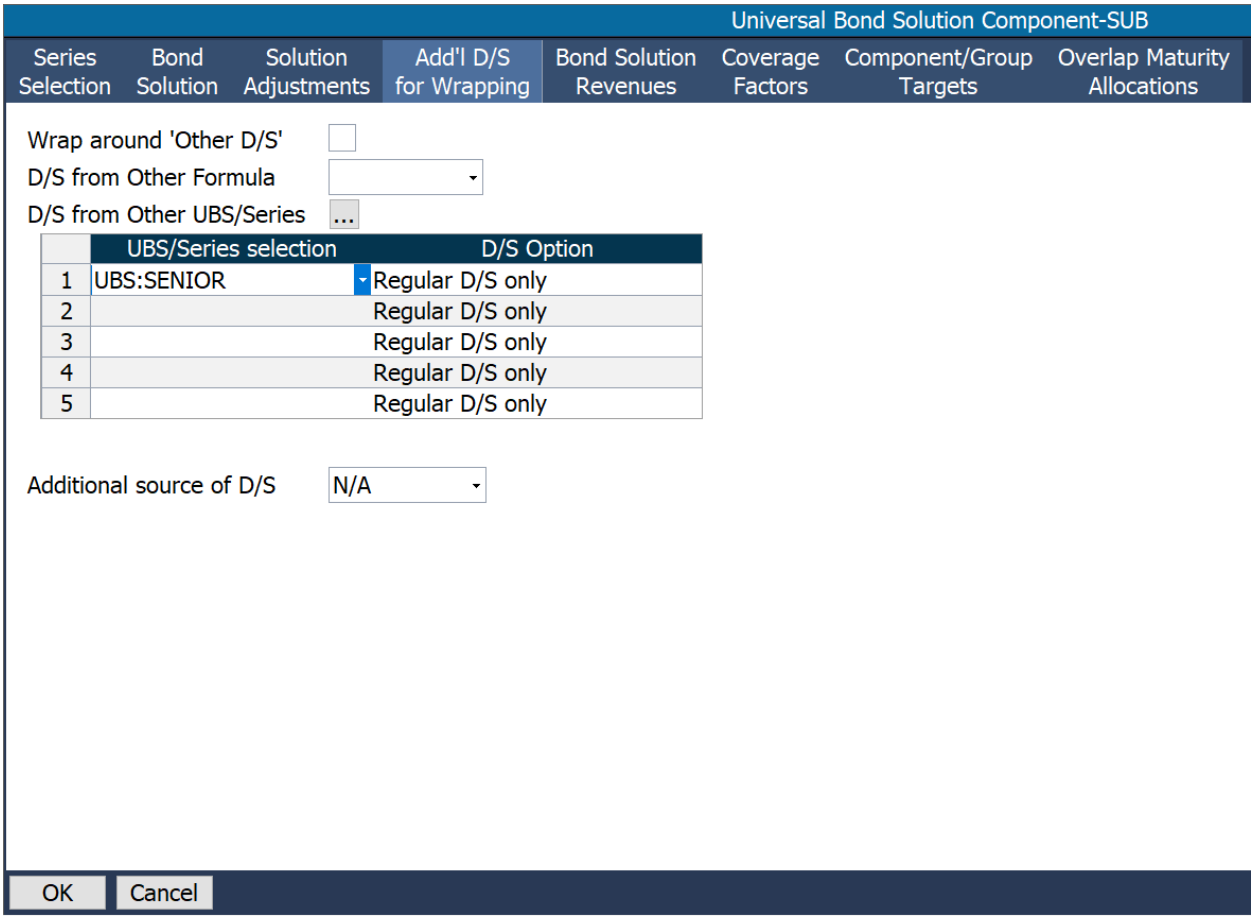
Add a Universal Bond Solutions component, with a short name of "SUB" and a long name of "Subordinate Universal Bond Solution". Select **Sub** in Series Selection. Change the Sizing Target to "N/A", as the size and allocation of Par will be determined by the bonds needed to fill to 120% of Revenues, in aggregate.

❖ UNIVERSAL BOND SOLUTIONS – BOND SOLUTION

Select **Fill (maximize proceeds w/ avail revs)** in order to fill to the revenue stream that will be included from the Senior UBS component.

❖ UNIVERSAL BOND SOLUTIONS – ADD'L D/S FOR WRAPPING

To wrap the Subordinate Lien Series around the Senior Series, you can select the **UBS:SENIOR** from the UBS/Series selection drop-down menu.

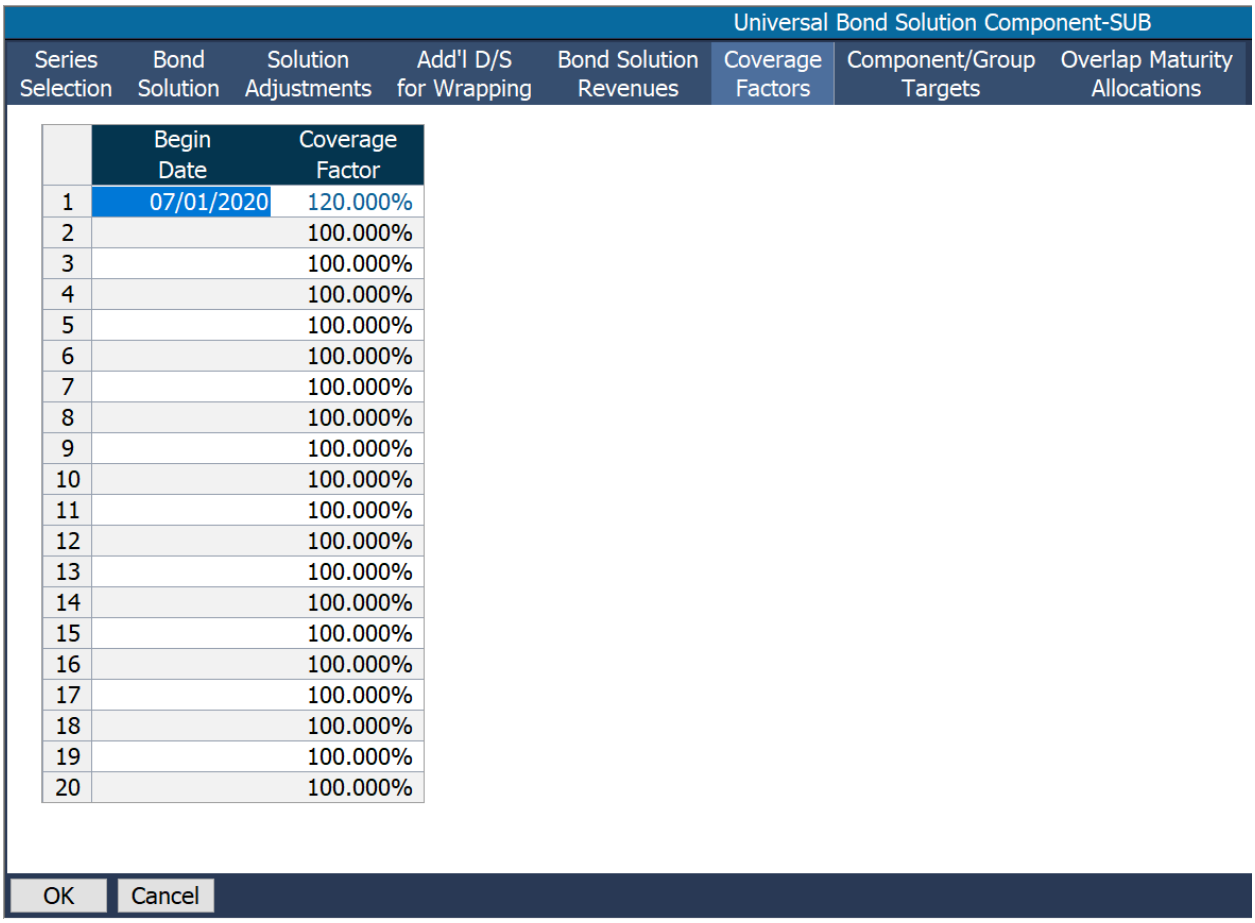


❖ UNIVERSAL BOND SOLUTIONS – BOND SOLUTION REVENUES

The Revenues defined in the Senior Universal Bond Solutions component are used in the Subordinate solution as well.
Select the **UBS:SENIOR** Revenues from the Other UBS/Series selection drop-down menu.

❖ UNIVERSAL BOND SOLUTIONS – COVERAGE FACTORS

To solve the Sub piece so that the wrapped Aggregate Debt Service leaves 20% of the Revenues available, enter **7/1/20** as the begin date and **120%** as the Coverage.



	Begin Date	Coverage Factor
1	07/01/2020	120.000%
2		100.000%
3		100.000%
4		100.000%
5		100.000%
6		100.000%
7		100.000%
8		100.000%
9		100.000%
10		100.000%
11		100.000%
12		100.000%
13		100.000%
14		100.000%
15		100.000%
16		100.000%
17		100.000%
18		100.000%
19		100.000%
20		100.000%

CALCULATE and view the following reports:

1. **Sources & Uses (bre)**
2. **Universal Bond Solution**
3. **Project Fund (con,agg)**

SOURCES AND USES OF FUNDS

ABC County
Senior/Subordinate Bond Deal

Dated Date 07/01/2019
Delivery Date 07/01/2019

Sources:	*Senior Bond Issue*	*Subordinate Bond Issue*	*Total*
Bond Proceeds:			
Par Amount	60,430,000.00	14,565,000.00	74,995,000.00
	60,430,000.00	14,565,000.00	74,995,000.00

Uses:	*Senior Bond Issue*	*Subordinate Bond Issue*	*Total*
Project Fund Deposits:			
Construction	55,813,622.41	13,452,348.34	69,265,970.75
Other Fund Deposits:			
Debt Service Reserve Fund	4,480,403.65	1,079,878.85	5,560,282.50
Delivery Date Expenses:			
Cost of Issuance	56,405.09	13,594.91	70,000.00
Underwriter's Discount	79,568.85	19,177.90	98,746.75
	135,973.94	32,772.81	168,746.75
	60,430,000.00	14,565,000.00	74,995,000.00

In this Financing, The Project Fund is sized by Bond Proceeds remaining after the DSRF, Costs of Issuance and Underwriter's Discount have been funded. Each Issue contributes its proportion of the Construction according to the respective Bond sizes needed for the Coverage of Revenues.

UNIVERSAL BOND SOLUTION

ABC County
Senior/Subordinate Bond Deal
Senior Universal Bond Solution

Period Ending	Proposed Principal	Proposed Debt Service	Total Adj Debt Service	Revenue Constraints	Unused Revenues	Debt Serv Coverage
07/01/2020	645,000	3,332,050	3,332,050	5,000,000	1,667,950	150.05777%
07/01/2021	700,000	3,364,475	3,364,475	5,050,000	1,685,525	150.09771%
07/01/2022	760,000	3,399,625	3,399,625	5,100,500	1,700,875	150.03125%
07/01/2023	820,000	3,432,265	3,432,265	5,151,505	1,719,240	150.09054%
07/01/2024	885,000	3,467,335	3,467,335	5,203,020	1,735,685	150.05819%
07/01/2025	950,000	3,499,590	3,499,590	5,255,050	1,755,460	150.16188%
07/01/2026	1,020,000	3,533,965	3,533,965	5,307,601	1,773,636	150.18827%
07/01/2027	1,095,000	3,570,205	3,570,205	5,360,677	1,790,472	150.15039%
07/01/2028	1,175,000	3,608,048	3,608,048	5,414,284	1,806,236	150.06132%
07/01/2029	1,255,000	3,642,223	3,642,223	5,468,426	1,826,204	150.13982%
07/01/2030	1,340,000	3,677,650	3,677,650	5,523,111	1,845,461	150.18043%
07/01/2031	1,430,000	3,714,050	3,714,050	5,578,342	1,864,292	150.19566%
07/01/2032	1,525,000	3,751,135	3,751,135	5,634,125	1,882,990	150.19788%
07/01/2033	1,630,000	3,793,610	3,793,610	5,690,466	1,896,856	150.00136%
07/01/2034	1,735,000	3,830,965	3,830,965	5,747,371	1,916,406	150.02411%
07/01/2035	1,845,000	3,868,095	3,868,095	5,804,845	1,936,750	150.06986%
07/01/2036	1,960,000	3,904,683	3,904,683	5,862,893	1,958,211	150.15032%
07/01/2037	2,085,000	3,945,403	3,945,403	5,921,522	1,976,120	150.08664%
07/01/2038	2,215,000	3,984,705	3,984,705	5,980,737	1,996,032	150.09235%
07/01/2039	2,350,000	4,022,245	4,022,245	6,040,545	2,018,300	150.17844%
07/01/2040	2,495,000	4,062,670	4,062,670	6,100,950	2,038,280	150.17095%
07/01/2041	2,650,000	4,105,395	4,105,395	6,161,960	2,056,565	150.09420%
07/01/2042	2,810,000	4,144,820	4,144,820	6,223,579	2,078,759	150.15319%
07/01/2043	2,980,000	4,185,560	4,185,560	6,285,815	2,100,255	150.17859%
07/01/2044	3,165,000	4,231,990	4,231,990	6,348,673	2,116,683	150.01626%
07/01/2045	3,355,000	4,273,235	4,273,235	6,412,160	2,138,925	150.05400%
07/01/2046	3,555,000	4,313,873	4,313,873	6,476,282	2,162,409	150.12687%
07/01/2047	3,770,000	4,358,233	4,358,233	6,541,044	2,182,812	150.08480%
07/01/2048	3,995,000	4,400,388	4,400,388	6,606,455	2,206,067	150.13348%
07/01/2049	4,235,000	4,444,633	4,444,633	6,672,519	2,227,887	150.12533%
	60,430,000	115,863,115	115,863,115	173,924,458	58,061,343	

With Revenue Constraints increasing by 1% annually from a 2020 Constraint of $5,000,000, the Senior Bonds are solved to fill to 150% Coverage of Revenues.

UNIVERSAL BOND SOLUTION

ABC County
Senior/Subordinate Bond Deal
Subordinate Universal Bond Solution

Period Ending	Proposed Principal	Proposed Debt Service	Existing Debt Service	Total Adj Debt Service	Revenue Constraints	Unused Revenues	Debt Serv Coverage
07/01/2020	140,000	833,210	3,332,050	4,165,260	5,000,000	834,740	120.04053%
07/01/2021	155,000	842,890	3,364,475	4,207,365	5,050,000	842,635	120.02762%
07/01/2022	165,000	846,923	3,399,625	4,246,548	5,100,500	853,953	120.10934%
07/01/2023	180,000	855,488	3,432,265	4,287,753	5,151,505	863,753	120.14464%
07/01/2024	200,000	868,378	3,467,335	4,335,713	5,203,020	867,308	120.00381%
07/01/2025	215,000	875,378	3,499,590	4,374,968	5,255,050	880,083	120.11633%
07/01/2026	235,000	886,670	3,533,965	4,420,635	5,307,601	886,966	120.06422%
07/01/2027	250,000	892,035	3,570,205	4,462,240	5,360,677	898,437	120.13421%
07/01/2028	270,000	901,660	3,608,048	4,509,708	5,414,284	904,576	120.05842%
07/01/2029	290,000	910,320	3,642,223	4,552,543	5,468,426	915,884	120.11807%
07/01/2030	315,000	922,995	3,677,650	4,600,645	5,523,111	922,466	120.05079%
07/01/2031	340,000	934,450	3,714,050	4,648,500	5,578,342	929,842	120.00305%
07/01/2032	360,000	939,660	3,751,135	4,690,795	5,634,125	943,330	120.11024%
07/01/2033	380,000	943,820	3,793,610	4,737,430	5,690,466	953,036	120.11716%
07/01/2034	410,000	956,910	3,830,965	4,787,875	5,747,371	959,496	120.04012%
07/01/2035	440,000	968,460	3,868,095	4,836,555	5,804,845	968,290	120.02024%
07/01/2036	470,000	978,440	3,904,683	4,883,123	5,862,893	979,771	120.06443%
07/01/2037	500,000	986,820	3,945,403	4,932,223	5,921,522	989,300	120.05789%
07/01/2038	535,000	998,570	3,984,705	4,983,275	5,980,737	997,462	120.01620%
07/01/2039	570,000	1,008,425	4,022,245	5,030,670	6,040,545	1,009,875	120.07436%
07/01/2040	605,000	1,016,350	4,062,670	5,079,020	6,100,950	1,021,930	120.12062%
07/01/2041	645,000	1,027,310	4,105,395	5,132,705	6,161,960	1,029,255	120.05287%
07/01/2042	690,000	1,041,028	4,144,820	5,185,848	6,223,579	1,037,732	120.01084%
07/01/2043	735,000	1,052,218	4,185,560	5,237,778	6,285,815	1,048,038	120.00920%
07/01/2044	775,000	1,055,835	4,231,990	5,287,825	6,348,673	1,060,848	120.06209%
07/01/2045	825,000	1,067,085	4,273,235	5,340,320	6,412,160	1,071,840	120.07071%
07/01/2046	880,000	1,080,423	4,313,873	5,394,295	6,476,282	1,081,987	120.05798%
07/01/2047	935,000	1,090,543	4,358,233	5,448,775	6,541,044	1,092,269	120.04615%
07/01/2048	995,000	1,102,390	4,400,388	5,502,778	6,606,455	1,103,677	120.05673%
07/01/2049	1,060,000	1,115,650	4,444,633	5,560,283	6,672,519	1,112,237	120.00324%
	14,565,000	29,000,330	115,863,115	144,863,445	173,924,458	29,061,013	

Using the same aggregate Revenues, the Subordinate Bonds fill aggregate Debt Service to 120% Coverage.

CONSTRUCTION

ABC County
Senior/Subordinate Bond Deal

Date	Deposit	Interest @ 3%	Principal	Scheduled Draws	Balance
07/01/2019	69,265,970.75	-	-	-	69,265,970.75
08/01/2019	-	-	4,421,144.77	4,421,144.77	64,844,825.98
09/01/2019	-	-	4,421,144.77	4,421,144.77	60,423,681.21
10/01/2019	-	-	4,421,144.77	4,421,144.77	56,002,536.44
11/01/2019	-	626,342.54	3,794,802.23	4,421,144.77	52,207,734.21
12/01/2019	-	-	4,421,144.77	4,421,144.77	47,786,589.44
01/01/2020	-	-	4,421,144.77	4,421,144.77	43,365,444.67
02/01/2020	-	-	4,421,144.77	4,421,144.77	38,944,299.90
03/01/2020	-	-	4,421,144.77	4,421,144.77	34,523,155.13
04/01/2020	-	-	4,421,144.77	4,421,144.77	30,102,010.36
05/01/2020	-	617,323.09	3,803,821.68	4,421,144.77	26,298,188.68
06/01/2020	-	-	4,421,144.77	4,421,144.77	21,877,043.91
07/01/2020	-	-	4,421,144.77	4,421,144.77	17,455,899.14
08/01/2020	-	-	4,421,144.77	4,421,144.77	13,034,754.37
09/01/2020	-	-	4,421,144.77	4,421,144.77	8,613,609.60
10/01/2020	-	-	4,421,144.77	4,421,144.77	4,192,464.83
11/01/2020	-	228,679.91	4,192,464.81	4,421,144.72	0.02
	69,265,970.75	1,472,345.54	69,265,970.73	70,738,316.27	

Average Life (years):	0.7085
Yield To Receipt Date:	3.0009892%
Arbitrage Yield:	4.6244897%
Value of Negative Arbitrage:	771,175.02

With $69,265,970.75 in Additional Bond Proceeds (as shown on the Sources & Uses report) available for investment at 3%, level Draws of $4,421,144.77 can be made from 8/1/2019 through 11/1/2020, monthly.

TAXABLE TAIL SERIES IN PROJECT FINANCE

❖ ASSUMPTIONS FOR PROJECT FINANCE ANALYSIS

For this analysis, we are going to create three series, two of which will be Tax-Exempt called and the third will be Taxable. Use the assumptions below to create the three series.

TAXABLE:TAXABLE BOND ISSUE

Dated Date	7/1/2019			
Delivery Date	7/1/2019			
First Interest Date	1/1/2020			
Interest Rate Scale	7/1/20	4.00%	7/1/35	4.75%
	7/1/21	4.05%	7/1/36	4.80%
	7/1/22	4.10%	7/1/37	4.85%
	7/1/23	4.15%	7/1/38	4.90%
	7/1/24	4.20%	7/1/39	4.95%
	7/1/25	4.25%		
	7/1/26	4.30%		
	7/1/27	4.35%		
	7/1/28	4.40%		
	7/1/29	4.45%		
	7/1/30	4.50%		
	7/1/31	4.55%		
	7/1/32	4.60%		
	7/1/33	4.65%		
	7/1/34	4.70%		

EXEMPT_1:TAX-EXEMPT BOND ISSUE #1

Dated Date	7/1/2019			
Delivery Date	7/1/2019			
First Interest Date	1/1/2020			
Interest Rate Scale	7/1/20	2.15%	7/1/35	2.90%
	7/1/21	2.20%	7/1/36	2.95%
	7/1/22	2.25%	7/1/37	3.00%
	7/1/23	2.30%	7/1/38	3.05%
	7/1/24	2.35%	7/1/39	3.10%
	7/1/25	2.40%		
	7/1/26	2.45%		
	7/1/27	2.50%		
	7/1/28	2.55%		
	7/1/29	2.60%		
	7/1/30	2.65%		
	7/1/31	2.70%		
	7/1/32	2.75%		
	7/1/33	2.80%		
	7/1/34	2.85%		

EXEMPT_2:TAX-EXEMPT BOND ISSUE #2

Dated Date	7/1/2019			
Delivery Date	7/1/2019			
First Interest Date	1/1/2020			
Interest Rate Scale	7/1/20	2.00%	7/1/29	2.45%
	7/1/21	2.05%		
	7/1/22	2.10%		
	7/1/23	2.15%		
	7/1/24	2.20%		
	7/1/25	2.25%		
	7/1/26	2.30%		
	7/1/27	2.35%		
	7/1/28	2.40%		

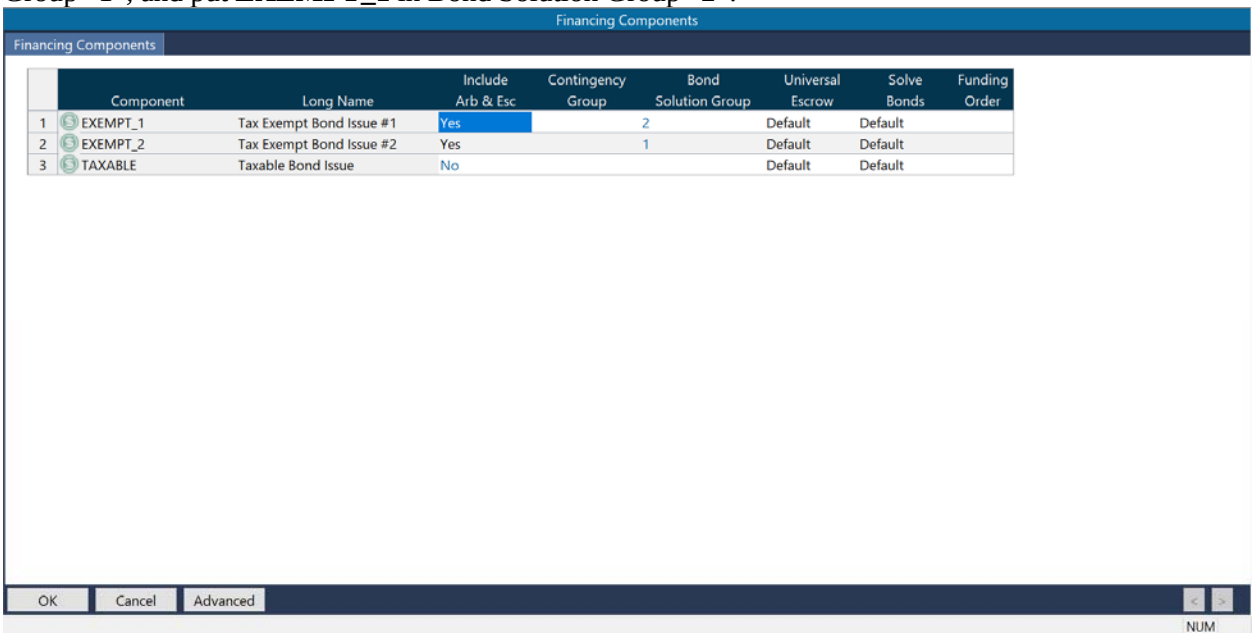
TAXABLE TAIL BOND DEAL

Assumptions/Objectives:

- Only Tax-Exempt Series are included in the Arb Yield.
- Tax-Exempt Series Cost of Issuance + Underwriter's Discount is equal to 2% of Tax-Exempt Par with the remainder allocated to Taxable Series.
- For reporting purposes, all Tax-Exempt series output is to be aggregated to reflect a single series.

First, create the Taxable and Tax-Exempt series using the assumptions on pages 42-43. Go to Financing Components and click on **ADD**. Select the **TAXABLE**, **EXEMPT_1**, and **EXEMPT_2** series. Click OK.

Next go to Financing Components-Setup. Set the "Include Arb & Esc" option to "No" for the Taxable Series. Additionally, since the **EXEMPT_2** series has a shorter final maturity, put it into Bond Solution Group "1", and put **EXEMPT_1** in Bond Solution Group "2":



UNIVERSAL COMPONENTS

Project Funds:

This Financing is going to contain two Project Funds, one for the Taxable Series and one for the Tax-Exempt Series. Create a project fund titled “TXPROJ” (short) “Taxable Project Fund” (long). Uncheck “apply to all components” and select the detail button ... . Select **TAXABLE** is the Series Selection window and hit OK. Enter an investment amount of $40,000,000.

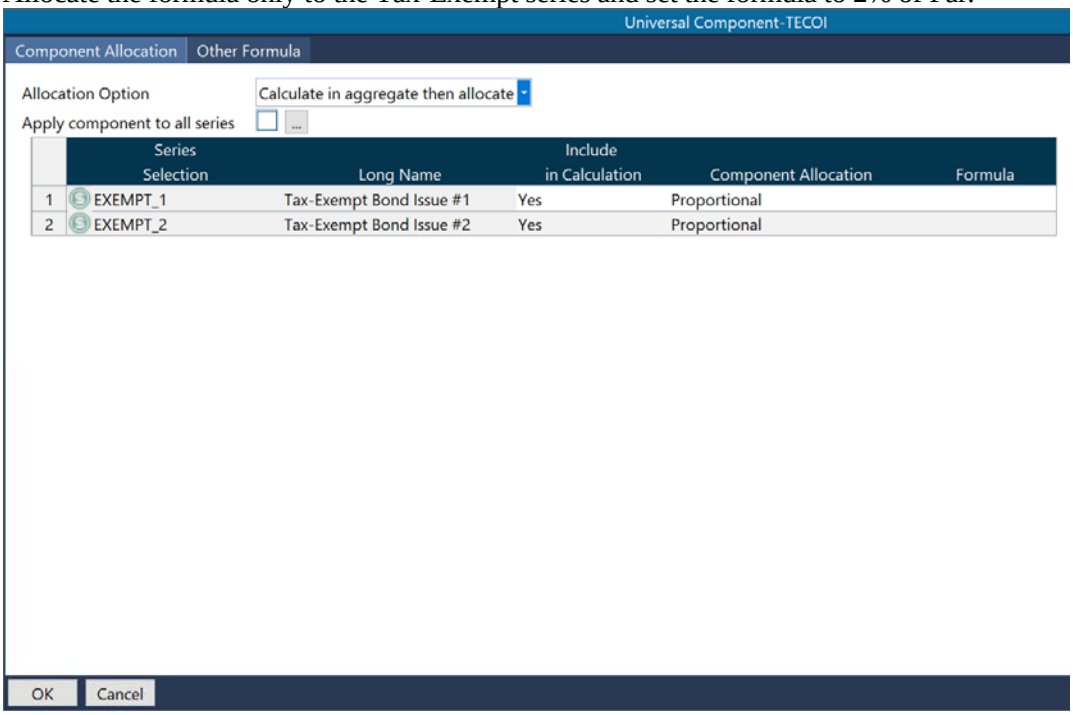
Create a second Project Fund for the Tax-Exempt components titled “TEPROJ” (short) “Tax-Exempt Project Fund (long). For this fund, set the investment amount to $45,000,000. Allocate 25% of the investment amout to the EXEMPT_2 financing component by clicking “specified percent” in the Component Allocation dropdown for EXEMPT_2

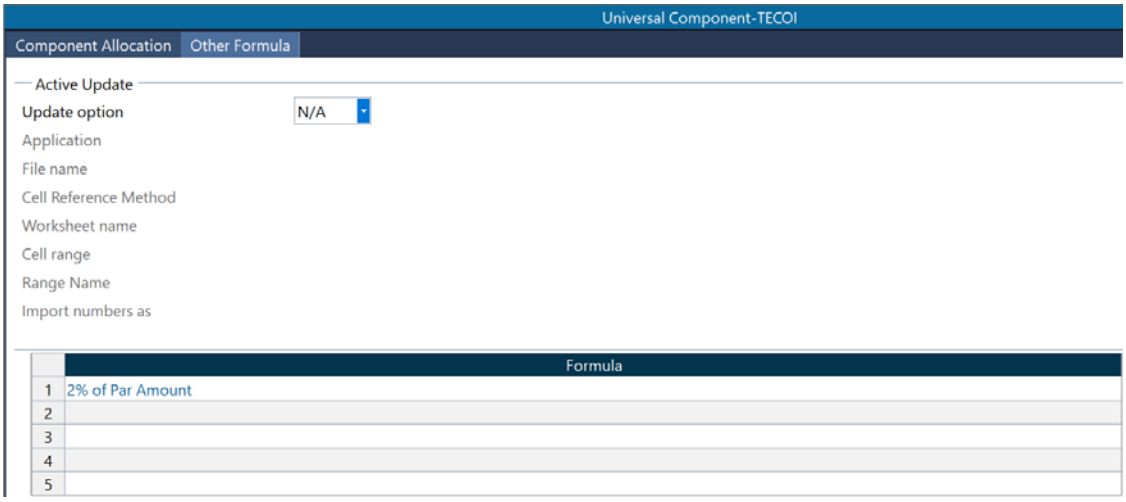
Issuance Expense:

For a Taxable Tail setup to be successful, all Cost of Issuance and Underwriter’s Discount component must be entered into a Project Finance level Issuance Expense. Create a Universal Component titled “COI_UD” (short) “Costs of Issuance & Underwriter's Discount” (long) and set the component type to Issuance Expense. In the Cost of Issuance tab enter Costs of Issuance in the description and 3% of Par in the formula. On the Underwriter’s Discount tab add an Average Takedown of $3.00 per bond and a Management Fee of $100,000.

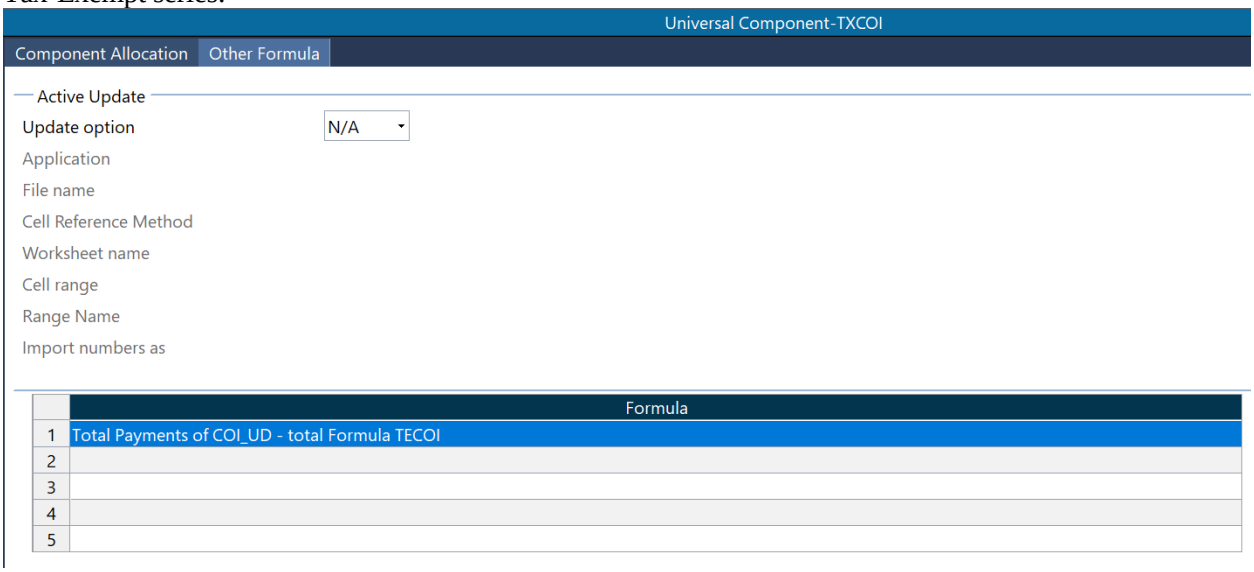
Other Formulas:

In order to achieve the proper allocation of our Costs of Issuance, we must use Other Formulas to calculate the appropriate allocation for our Taxable and Tax-Exempt Series. Create a Universal Component titled TECOI (short) Tax-Exempt Cost of Issuance (long) and set the component option to Other Formula. Allocate the formula only to the Tax-Exempt series and set the formula to 2% of Par.





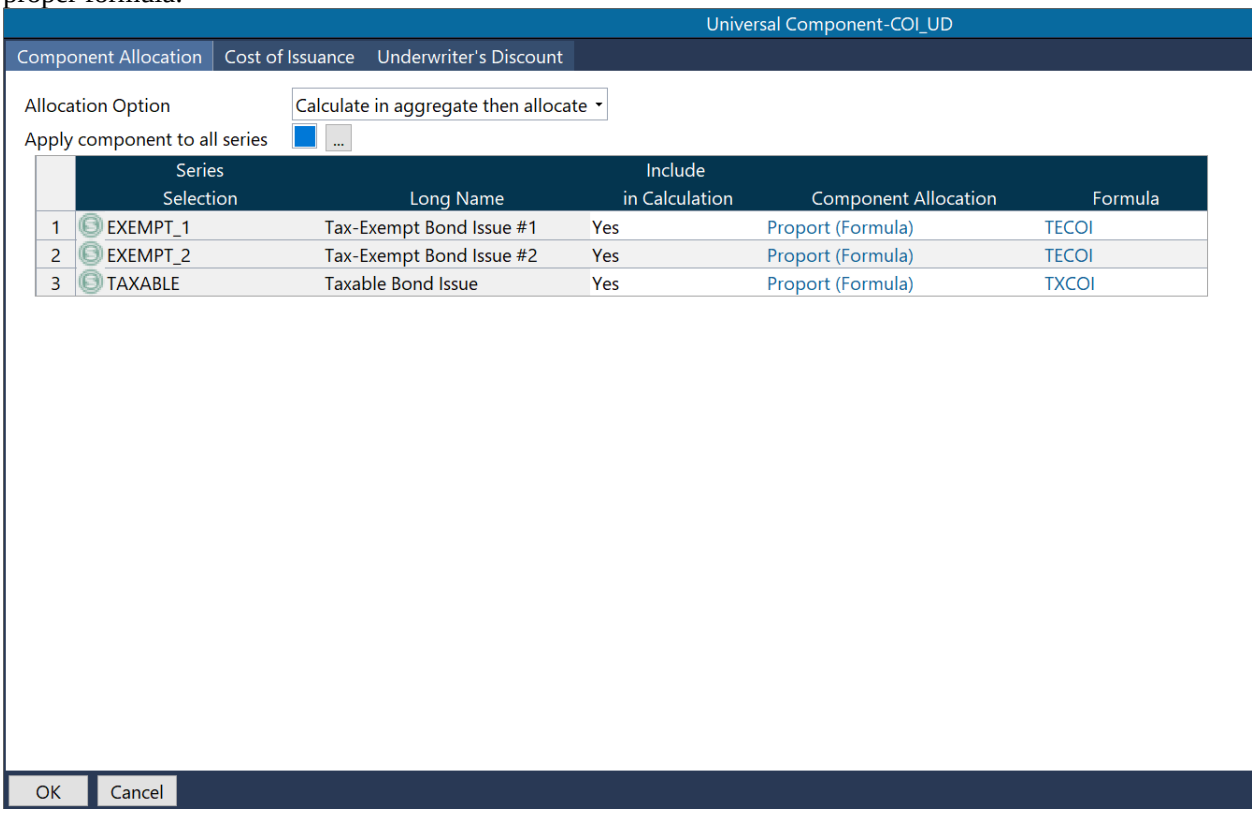
Next, create a second Other Formula to calculate the Taxable allocation. Only allocate this formula to the TAXABLE financing component. This formula needs to result in a value equal to the total Costs of Issuance and Underwriter's Discount entered into the COI_UD formula less the amount that will be allocated to the Tax-Exempt series:



NOTE: Notice how different syntax is used to reference the Issuance Expense Universal Component (total payments of COI_UD) compared to the Other Formula Universal Component (total Formula TECOI). Incorrect syntax will lead to an error during calculation as the program will be unable to find the component you are referencing. For a help in writing formulas and ensuring the correct syntax when referencing individual components, see the NLF Data-fields section of the Help screen which you can access by going to Help-Contents and Index or by hitting the f1 key, then using the search bar.

❖ COMPONENT ALLOCATION

It is important to remember that Other Formulas alone do not affect the bond analysis. In order for the Other Formulas that we have created to be used to define the allocation to each component, we need to link them to the Issuance Expense. By default, Universal Components set to “Calculate in Aggregate and Allocate” will allocate based on the par amount of each series included in the component. In order for the COI_UD Issuance Expense to properly allocate the amounts, we must change the Component Allocation option to allocate proportionally to the formulas that we have created. Uncheck the “Apply component to all series” and hit the detail button. Select all three financing components in the Series Selection window and hit OK. For the “Component Allocation” option, set each series to “Proport (Formula)”, then link each series to the proper formula:



	Series Selection	Long Name	Include in Calculation	Component Allocation	Formula
1	EXEMPT_1	Tax-Exempt Bond Issue #1	Yes	Proport (Formula)	TECOI
2	EXEMPT_2	Tax-Exempt Bond Issue #2	Yes	Proport (Formula)	TECOI
3	TAXABLE	Taxable Bond Issue	Yes	Proport (Formula)	TXCOI

❖ REPORTING OPTIONS-REPORTING GROUP

From the Data Menu, go into Reporting Options-Component Selections. In this screen you have the ability to either remove series from the reports entirely or to aggregate the output of individual series into a single reporting group. Uncheck the option to “Select all components (ignore reporting groups)” and place the two Tax-Exempt Series into reporting group 1. Then, on the Reporting Group Titles tab, set the title for Reporting Group 1 to “Tax-Exempt Bond Issue”.

SOURCES AND USES OF FUNDS

ABC County
Taxable Tail Financing

Dated Date 07/01/2019
Delivery Date 07/01/2019

Sources:	Tax-Exempt Series	Taxable Bond Issue	Total
Bond Proceeds:			
Par Amount	45,920,000.00	42,090,000.00	88,010,000.00
	45,920,000.00	42,090,000.00	88,010,000.00

Uses:	Tax-Exempt Series	Taxable Bond Issue	Total
Project Fund Deposits:			
Tax-Exempt Project Fund	45,000,000.00	-	45,000,000.00
Taxable Project Fund	-	40,000,000.00	40,000,000.00
	45,000,000.00	40,000,000.00	85,000,000.00
Delivery Date Expenses:			
Cost of Issuance	807,118.89	1,833,181.11	2,640,300.00
Underwriter's Discount	111,281.10	252,748.90	364,030.00
	918,399.99	2,085,930.01	3,004,330.00
Other Uses of Funds:			
Additional Proceeds	1,600.01	4,069.99	5,670.00
	45,920,000.00	42,090,000.00	88,010,000.00

Equal to 2% of the $45,920,000 Tax-Exempt Par.

Notice how the Breakdown style of this report is only showing two columns despite there being three financing components. That is the result of the Reporting Group function. The two Tax-Exempt series are aggregated together as one series.

BOND SUMMARY STATISTICS

ABC County
Taxable Tail Financing

Aggregate Tax-Exempt Arb Yield

Taxable Arb Yield

	Tax-Exempt Bond Issue	Taxable Bond Issue	Aggregate
Dated Date	07/01/2019	07/01/2019	07/01/2019
Delivery Date	07/01/2019	07/01/2019	07/01/2019
First Coupon	01/01/2020	01/01/2020	01/01/2020
Last Maturity	07/01/2039	07/01/2039	07/01/2039
Arbitrage Yield	2.722537%	4.659968%	2.722537%
True Interest Cost (TIC)	2.751536%	4.729482%	3.773818%
Net Interest Cost (NIC)	2.765171%	4.732143%	3.796144%
All-In TIC	2.965039%	5.252846%	4.135186%
Average Coupon	2.740781%	4.681850%	3.758177%
Average Life (years)	9.936	11.940	10.894
Weighted Average Maturity (years)	9.936	11.940	9.936
Duration of Issue (years)	8.477	8.857	8.687
Par Amount	45,920,000.00	42,090,000.00	88,010,000.00
Bond Proceeds	45,920,000.00	42,090,000.00	88,010,000.00
Total Interest	12,504,950.00	23,528,635.00	36,033,585.00
Net Interest	12,616,231.10	23,781,383.90	36,397,615.00
Bond Years from Dated Date	456,255,000.00	502,550,000.00	958,805,000.00
Bond Years from Delivery Date	456,255,000.00	502,550,000.00	958,805,000.00
Total Debt Service	58,424,950.00	65,618,635.00	124,043,585.00
Maximum Annual Debt Service	3,573,480.00	3,283,690.00	6,854,822.50
Average Annual Debt Service	2,921,247.50	3,280,931.75	6,202,179.25
Underwriter's Fees (per $1000)			
Average Takedown	1.757663	4.355384	3.000000
Other Fee	0.665706	1.649579	1.136235
Total Underwriter's Discount	2.423369	6.004963	4.136235
Bid Price	99.757663	99.399504	99.586377

DEFINITION OF PROJECT FINANCE TERMS

Financing Components

Financing Components are series brought into a Project Finance Case for a financing. The user has the choice to include components in Arbitrage and Escrow Yields for blending, to group components together for wrapping, and to define bold solution order to series not sized in a Universal Bond Solution.

Master Series

A tool used in Project Finance to allocate funds or expenses to more than one financing component in a financing. The Master Series is most commonly used to allocate Costs of Issuance (COI) and/or Debt Service Reserve Funds (DSRF) to Financing Components. It can also be used to allocate project funds or bonds, but this should only be done with caution and under very particular circumstances.

** With the Universal Components enhancement, Master Series are no longer needed. The options remain in the program for those users with Financings created prior to the enhancement.

Dummy Reserves, Expenses, Project Funds

A "Dummy" fund is a fund with no requirements defined. A Dummy Fund is needed when sizing an aggregate Fund in a Universal Component or Master Series, while sending interest earnings from a financing component to a fund defined in either the same component or another financing component.

Template Series

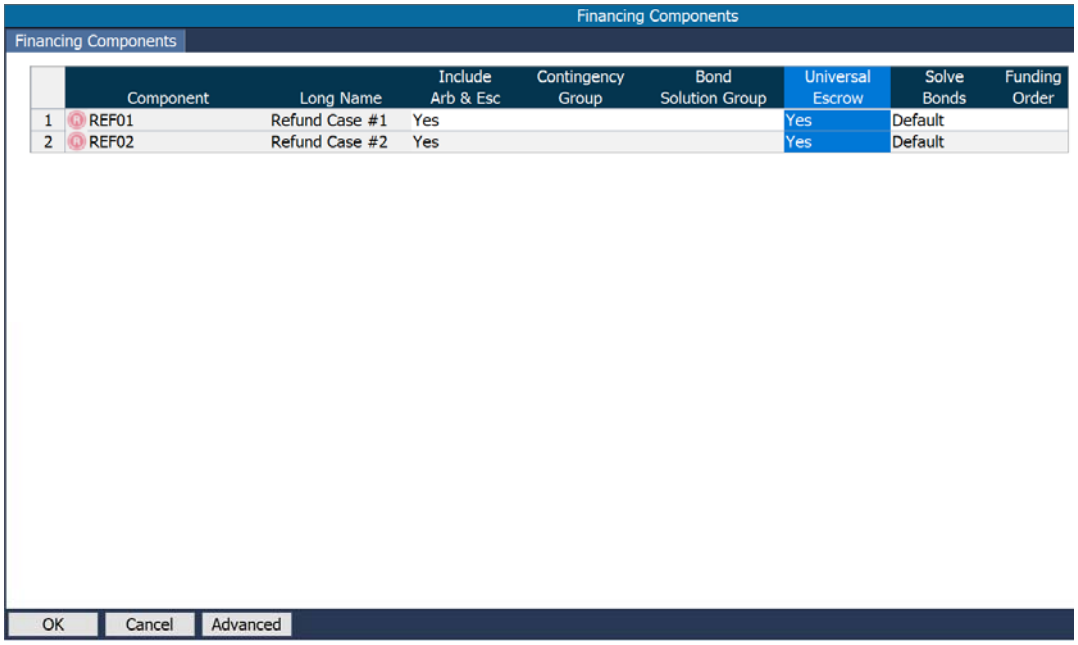
A Template is a pattern for making accurate copies of certain data-fields for a Series structured in Debt/Size (Proposed) or Refund (Proposed Refunding). A Template Series may contain a scale (coupons and yields) or the underwriters discount, for instance, for a set of alternative structures being analyzed. The Template Series is then included by reference in each of those Series being structured.

External Funds

The Application Name for interest earnings from a fund of one financing component to be used in the fund of another financing component named in the Project Financing components. You must also specify 'Yes' in the receiving fund's 'Use External Funds' option.

Universal Escrow

A Universal Escrow is a 'global escrow' at the level of Project Finance. A column in Financing Components-Setup allows the inclusion of each financing component as a part of the Universal Escrow for refunding analysis. The Universal Escrow may be: 1) not used in the analysis, 2) used to cover only requirements that have not been met by the individual series, or 3) used to cover all requirements of the financing components. The selections in Project Finance can override all selections originally specified for the financing components. The escrow cash flows and the proportional cost of the Universal Escrow are allocated to each series, for purposes of the Sources and Uses and Savings. To activate the Universal Escrow, go to Financing Components-Setup:



Universal Components

Universal Components allows the user to define Project Funds, Reserve Funds, Expenses, Issuance Expenses and Other Formulas in a financing without having to use a Master Series. This not only removes an extra layer of inputs, it allows each component to be independently defined so that by using these components in different combinations, one can accomplish many tasks that were previously impossible or very cumbersome to achieve. Additionally, the Master Series requirement of similar Dated and Delivery Dates does not apply to Universal Components.

Universal Bond Solutions

Universal Bond Solutions can be used to shape the aggregate debt service at the Project Finance level. For example, among many other options, the user can:

- Apply revenue constraints and/or target amounts to multiple Financing Components.
- Overlap maturities proportionally by series.
- Amortize principle sequentially by series.

❖ COMMON PROJECT FINANCE WARNINGS AND ERRORS

Warning: Negative arbitrage will not be shared between components.
Negative Arbitrage is not absorbed by other Escrows.

Warning: More than one component in the group 1 uses d/s from related series.
When wrapping, referencing, or wrapping around Other DS in one Financing Component, this Warning will be generated if more than one Financing Component wraps, references, or wraps around that Series.

Warning: [Series A] Maturity mm/dd/yyyy of (bond) XX doesn't exist in (bond) XX of (Series) B.
Often, a Financing will have similar Bond Components across Financing Components. If Bonds are named similarly between two or more Financing Components, a Warning will be generated if the Maturity Structure is not the same.

Warning: Components specify first bond year ending (fiscal) dates which are not compatible – this financing will use the fiscal date mm/dd/yyyy.
If Financing Components have different fiscal dates, the user can determine the fiscal date applicable to the entire Financing in Project Finance Assumptions. Otherwise, the fiscal date of the first Financing Component entered will be used.

Warning: [Series A] The Rate, Yield, Price and Takedown of maturity mm/dd/yyyy in XX do not agree.
Often, a Financing will have similar Bond Components across Financing Components. If two or more Financing Components have similar Maturities with different Rate, Yield, Price and/or Takedowns, Finance generates a Warning.

❖ FINANCING COMPONENTS SETUP

Include Arb & Esc
By default, all Financing Components in a Financing are included in the computation of a blended Arbitrage and (if applicable) Escrow Yield. If the User does not want to include a Series in these calculations, this can be changed to "No". this is most useful for Taxable/Tax-Exempt deals, where the Taxable series are not to be part of Arbitrage.

Bond Solution Group
Each financing component in a specified bond solution group is considered 'related' to every other financing component in the group. There may be more than one bond solution group for a project financing. The label assigned to each bond solution group is user-defined. The user can then define formulas in one Financing Component to refer to a Formula from a Component in the same Group.

Contingency Group
The Contingency Group column in Financing Components – Setup specifies the name of the contingency group to which the financing component belongs. For all financing components belonging to the same contingency group, the positive contingency amount from one financing component may be used to fund another. If this field is left empty, then the component will neither receive additional proceeds from, nor give additional proceeds to, another component. The name assigned to each contingency group is user-defined. Contingency amount is synonymous with the rounding amount or additional proceeds. It is the amount in 'Uses of Funds' required to round the bond issue to the required denomination. In a typical bond sizing for a Series, the contingency amount does not exceed the bond denomination amount.

Universal Escrow
Select the financing components (Cases only) which are to be included in the Universal Escrow analysis (described in PF Terms above). The escrows are then controlled by the assumptions and parameters defined below in Universal escrow and its subsidiary menus.

Solve Bonds
Allow control in a financing over whether the bonds for each financing component should be resolved during calculations.

Funding order
Specify the order in which Project Financing distributes collected external funds to financing components. The first Series in the sequence should have an order of '1', the second should have an order of '2', etc. Funding Order provides the capability to structure 'phased-in financings'. These are to be used in the sizing of a project and/or capitalized interest fund of a second financing component. Any future remaining earnings can then be passed on to the sizing of a third financing component, and so on. In order for a Fund to send its excess earnings to a Fund in another Financing Component, the Component generating the excess earnings must be solved earlier than the Component to which the earnings are sent**.**