USPS Roll Forward Model Excel/VBA
Program Documentation

Roll Forward Model

User’s Manual

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I. OVERVIEW

A. PURPOSE OF THE ROLL FORWARD MODEL

The roll forward model supports rate case filings by providing analyses of estimated accrued costs of the Postal Service by mail class or service for total future accrued costs, which form the basis for proposed changes in rates or fees. The analyses of estimated costs include an explanation of the effect on estimated total cost of projected cost level changes, projected mail volume levels, nonvolume workload factors, the change in the number of work days, the specification of the cost savings which will be realized from gains and improvements in total productivity, the identification of other program costs expected to be incurred in the forecasted test period (typically 2 to 3 years projected forward), and the workyear mix adjustment.

Costs are itemized by major categories or cost segments, such as postmasters, supervisors, city delivery, transportation, etc, and by individual cost elements, or components, within cost segments. The costs for the Postal Service are also categorized as those costs which can be attributed to a class of mail or type of mail service, and any costs which cannot be attributed. For R2005-1, the cost forecasting or "roll forward" (roll forward) model provides for each component the forecasting factors for seven different effects, including the workyear mix adjustment.

B. BACKGROUND AND MODEL UPDATE

The Postal Service has converted and redesigned its roll forward financial modeling system from a mainframe-based COBOL application to a PC-platform using off-the-shelf software. The driving factors for this redesign were to reduce the learning curve needed to use and run the model, to improve maintainability, to increase flexibility, and to give greater visibility to model actions. The new model has been developed with Microsoft Excel as the platform.

II. EXCEL/VBA MODEL DESIGN

A. CAPABILITIES

- Develops future costs by multiplying cost components by a series of factors
- Elements include:
  - cost matrix (input)
  - factors used to adjust cost matrix (input)
  - user specifications on how costs are to be adjusted (input)
  - effects workbook (output)
- Requires user-specified effects list. In R2005-1 there were 7 roll forward effects:
  - Cost Level Change: impact of resource price changes
  - Mail Volume Change: impact of change between current and future year volumes
  - Nonvolume Workload: impact of change due to network or system-wide changes
  - Additional Workday: impact of change due to changes in number & type of work days
  - Cost Reduction Programs: impact of USPS programs resulting in cost savings.
  - Other Programs: impact of all other programs.
  - Corporate Wide Activities: impact of corporate wide activity costs.
  - Service Wide Costs: impact of service wide costs.
  - Workyear Mix Adjustment: changes in mix of employees and overtime use.
- Run Options include:
  - Selected years (creates workbooks for all effects for each year)
- Sequence of Calculations:
  - Base Year cost matrix is input in the initial calculation.
  - Effects workbook generated by model includes a future cost matrix.
  - The cost matrix of the first effect calculated by the model is the input for the succeeding calculation (next effect on the list of effects)
  - The last effect cost matrix generated by the model incorporates cost changes due to all previous effects (as a result of sequential calculations)
  - Sequence of calculations corresponds to the order of effects specified by users in their list of effects.

B. BASIC FEATURES

- PC based program
- Microsoft Excel is the platform (Visual Basic for Applications is an integrated package)
- User specified effects parameters entered by users in model and in separate workbooks called Input Tables (one Input Table workbook for each future year).
- Parameters dictated by the base year are specified in Model.
- Calculations are performed in effects workbooks (model generates formulas contained in workbooks based on user specifications).
- Effects workbooks generated by model are not linked. A new run is required to change results

C. HARDWARE

Recommend run on PC with Pentium IV with 256 Mb of RAM

D. SOFTWARE

Recommend MS Excel 2000 or MS Excel XP

III. EXCEL WORKBOOKS

Four kinds of workbooks are used in running the Excel/VBA Program Model.

A. MODEL/VBA PROGRAM

RFModel.xls contains the VBA program. RFModel.xls worksheets contain various user-specified parameters including the list of effects and base year dictated parameters (examples replicate USPS FY 2005 for R2005-1).

Note: Users are advised to save a backup copy (RFModel.Backup.xls).

B. BASE YEAR COST MATRIX

- USPS Base Year (by2004a_loader.xls - replicates USPS R2005-1).
- PRC Base Year (prc2004a_loader.xls).

C. INPUT TABLES

Workbook containing user specified parameters for one future year.

1. One workbook is required for each future year.

2. Formats are uniform for each year.

3. Input tables included are as follows:

    - R2005RF.FY2005.USPSEnh.xls
    - R2005RF.FY2006BR.USPSEnh.xls
    - R2005RF.FY2006AR.USPSEnh.xls

D. EFFECTS WORKBOOK

The impact of roll forward effects are presented in workbooks generated by the model. The model generates one workbook for each effect for each future year specified by the user.

Each effects workbook includes a worksheet containing the input cost matrix and worksheets presenting cost changes calculated for the effect – one worksheet for each cost segment. Additionally the workbook presents a cost matrix for the future year. Note: The roll forward model does not write a 0 (zero) into the output cost matrix, but leaves the cell blank.

IV. USER SPECIFIED PARAMETERS

The model presents worksheets in which users are required to specify their Base Year, Scenarios, Effects Parameters and Inputs for their runs.

Before editing RFModel.xls worksheets users are advised:

- Not to make format changes (i.e., inserting additional columns). However the model's VBA code allows users to add rows in certain locations (instructions provided below and in the model).

- Items in blue (RFModel.xls) are those parameters read by the VBA program (indicated in bold italics below). These are the parameters that may be altered by users.

A. MODEL/VBA PROGRAM

This section describes user-specified parameters contained in worksheets in the RFModel.xls workbook.

1. Worksheet "Scenarios"

RFModel.xls provides worksheet "Scenarios" in which users are required to provide details of their scenarios.

This worksheet tells the model:

☑ Scenario name (used in RFModel.xls worksheet "RFMenuPage").
☑ Scenario Description (appears in titles of reports generated).
☑ What to name output files (the scenario workbook suffix is part of the effects workbook name).
☑ Directory (where inputs are to be found [input tables] and where outputs will be placed [effects workbooks]).

ID	Scenario Name (Menu Choices)	Scenario Description (Report Titles)	Scenario – Effects Workbook Suffix	Directory Path (Input Tables, Outputs)
1	***PRC Enhanced***	***R2005-1 PRC Enhanced***	***PRCEnh***	***C:\PRC***
2	***USPS Enhanced***	***R2005-1 USPS Enhanced***	***USPSEnh***	***C:\USPS\Enhanced***

In the demo above 3 scenarios have been entered by users. Users may add as many scenarios as they choose. The first blank row of the worksheet tells the model that this is the end of the scenarios list.

The "Scenario Name" list above reappears as a drop-down list of user options in the "RFMenuPage" worksheet (RFModel.xls, "RFMenuPage"). The menu allows the user to select a scenario when preparing a run of the model.

The "Scenario Workbook Suffix" above will appear in the name of each effects workbook created. Each effects workbook name will end with ".scenario.xls" where "scenario" is what the user has entered here.

Scenario Management Procedures

We recommend that users create a new directory for each scenario.

Each scenario folder should contain:

- Input tables
- Outputs (effects workbooks)

By following this procedure the inputs used to create the outputs will be known and available to users after runs are made. Moreover, if outputs get overwritten the user can always recreate them.

As an example of scenario management, for setting up the next rate case we would recommend that users:

1. Set up a directory for the rate case. Underneath establish separate directories for the USPS and for the PRC.

   Note: Your system may have a limit of 247 characters for directory names plus file names. This will not be a problem unless your network has extremely long path names and directory names. Shorten the directory names until the directory plus file name (output scenario workbook) are under this limit, or map a network drive to your directory.

2. Under each of these directories would follow directories for Scenarios 1, 2, 3 etc.

Additionally we recommend that users create separate directories containing:

1. A backup copy of RFModel.xls (RFModel.Backup.xls). This copy of the model will preserve the rate case parameters.
2. A backup copy of base year A matrix workbook.

2. Worksheet "EffectsParameters"

RFModel.xls provides an "EffectsParameters" worksheet in which users are required to enter their roll forward effects specifications.

This portion of the worksheet tells the model:

- ☑ Effect Labels (abbreviations of effect names) for use in RFModel.xls worksheet "RFMenuPage" and in generating output effects workbook names.
- ☑ Effect Name (appears in titles of reports generated).
- ☑ Effect Type (type of factors applied in workbooks generated – see below).
- ☑ Input Matrix Source (points to effects workbook previously generated - symbol corresponds to effect labels).
- ☑ Input Table Worksheet Name (input table worksheet where factors are to be obtained)
- ☑ Input Data Column (column in input table worksheet "EffectsList" where factors are to be obtained)
- ☑ Program Name Column (column in input table worksheets: "CostReductions" (CR), "OtherPrograms" (OP), "CorpWideActivities" (CW), ServicewideCosts (SW), and "WorkyearMix" (MX))
- ☑ Program Amount Column (column in input table worksheets: CR, OP, CW, SW and MX)
- ☑ Component Number Column (column in input table worksheets: CR, OP, CW, SW, and MX)
- ☑ Component Name Column (column in input table worksheets: CR, OP, CW, SW, and MX)
- ☑ Distribution Key Column (column in input table worksheets: CR, OP. CW, SW, and MX)
- ☑ On Component List Column (column in input table worksheets: CR, OP, CW, SW, and MX)

Some columns listed above are not shown in the effects list below due to lack of space. Refer to RFModel.xls worksheet "EffectsParameters" to view the full worksheet.

List of Effects:

Effect Labels (Menu Choices)	Effect Name (Report Titles)	Effect Type	Input Matrix source	Input Table Worksheet Name	Input Data Column	Program Name Column
CL	***Cost Level Change***	***MA***	***SW***	***EffectsList***	***4***	
MV	***Mail Volume Change***	***V***	***CL***	***EffectsList***	***5***	
NV	***Nonvolume Workload***	***M***	***MV***	***EffectsList***	***7***	
AW	***Additional Workday***	***M***	***NV***	***EffectsList***	***9***	
CR	***Cost Reduction Programs***	***A***	***AW***	***CostReductions***		***2***
OP	***Other Programs***	***A***	***CR***	***OtherPrograms***		***2***
CW	***Corpate Wide Activities***	***A***	***OP***	***CorpWideActivities***		***2***
SW	***Servicewide Costs***	***A***	***CW***	***ServicewideCosts***		***2***
MX	***Workyear Mix Adjustment***	***A***	***SW***	***WorkyearMix***		***2***

Notes: The model allows users to enter additional effects (rows) in this section of the worksheet. The first blank row of the worksheet tells the model that this is the end of the list of effects.

The example above replicates USPS R2005-1. Rows have been entered (list of effects) presenting all 9 roll forward effects (section II. A. Capabilities).

When a run including all of the effects in the list of effects is selected, the model generates each effects workbook based on the "Effect Type", "Input Matrix Source" and user parameters specified:

- "Effect Type" - tells the model what formulas to build and place in the effects workbook.

- "Input Matrix Source" - tells the model where to find the cost matrix data (effects workbook containing the input cost matrix).

  Note that the Input Matrix Source for the first effect in the first roll forward year will always be the base year A matrix file. This entry for the first effect (CL) identifies the source of the input cost matrix for runs after the first roll forward year.

- "Input Table Worksheet Name" and "Input Data column", etc. – tell the model where to find user parameters (factors, program names, program amounts, etc.) to place in the effects workbook.

One effects workbook is generated for each effect included in the list of effects.

Effects workbooks are generated sequentially in the order the effects appear in the list of effects.

Note: Once established for a given rate case the RFModel.xls worksheet "EffectsParameters" does not change.

Effect Type

The column "Effect Type" above specifies the type of cost factor treatment to be applied by the model in generating effects workbooks. User options are as follows:

- **M** – The cost for one or all mail classes in a component is multiplied by the factor. The factor is indicated on the EffectsList table. If the factor is to be applied to all classes then an "A" appears in the "Method" column. If the factor is to be applied to only one mail class, then the specified mail class number (usually class 199 representing institutional or other costs) is indicated in the "Method" column (e.g., Nonvolume Workload and Additional Workday use effect type "M").

- **MA** – The cost for all mail classes in a component is multiplied by the given factor, therefore a "Method" column is not needed (e.g., Cost Level uses effect type "MA").

- **V** – There is a vector of factors, one for each mail class. The cost for each mail class is multiplied by the appropriate factor. If a component receives a direct mail volume effect then a "V" appears in the "Method" column, not to be confused with Effect Type "V". If a component receives an indirect mail volume effect then an "I" appears in the "Method" column. See page 18 for additional Mail Volume methods (e.g., Mail Volume uses effect type "V").

- **A** – A cost amount is distributed to mail classes and added to a component. No entry is needed in the "Input Data Column" (e.g., Cost Reductions and Other Programs use effect type "A").

Note: The effect type associated with each effect is a given. These do not change.

Users may review calculations for each effect type by examining reports presented in the various effects workbooks (see section IX. Examples of Model Outputs).

Calculations are performed in these reports (worksheets); Excel allows users to view the formulas (click on a cell or hit "Ctrl" and "~" on the keyboard

simultaneously and the formulas can be seen. Click on "Ctrl" and "~" again to return to the normal view).

Input Matrix Source

The R2005-1 specifications create effects workbooks for 9 roll forward effects.

The column "Input Matrix Source" discussed previously specifies the source (effects workbook) of the cost matrix to be used as input by the model in generating each of these effects.

CL	Cost Level Change effects workbook
MV	Mail Volume Change effects workbook
NV	Nonvolume Workload Change effects workbook
AW	Additional Workday Change effects workbook
CR	Cost Reduction Programs effects workbook
OP	Other Programs effects workbook
CW	Corporate Wide Activities effects workbook
SW	Servicewide Costs effects workbook
MX	Workyear Mix Adjustment effects workbook

Note: RFModel.xls allows users to specify additional effects (not included in the list above).

Input Table Worksheet Name

The column "Input Table Worksheet Name" shown earlier specifies the worksheet of the Input Table workbook to be used. Input Table workbooks (one for each future year) have uniform formats. The R2005-1 Input Tables contain worksheets named as follows:

- EffectsList
- VolAdj
- DistKeys
- CostReductions
- OtherPrograms
- CorpWideActivities
- ServicewideCoss
- WorkyearMix

Note: RFModel.xls allows users to specify additional worksheets (not included in the list above).

Input Table Worksheet Columns

In each input table worksheet listed above the user is required to specify the column(s) to be used from the specified Input Table worksheet. Note: The example shown earlier does not show all column category options required by the model. Refer to RFModel.xls, Worksheet "EffectsParameters" to view the full template.

Additional Specifications

This portion of RFModel.xls worksheet "EffectsParameters" tells the model:

- ☑ Input Table worksheet containing the distribution key definitions.
- ☑ Name of input cost matrix worksheet in output effects workbooks.
- ☑ Input Table worksheet containing the volume adjustment factors
- ☑ Column number of "Used in RF" (Input Table worksheet "DistKeys" column indicating the distribution key is used in the roll forward)
- ☑ Column number of "Component Number" (Input Table worksheet "DistKeys" column indicating the distribution key component number)
- ☑ Column number of "Number of Addends" (Input Table worksheet "DistKeys" column indicating the number of components summed together to make this distribution key)
- ☑ Column number of "Component Number" (Input Table worksheet "EffectsList" indicating the column containing the number for each component)
- ☑ Column number of "Component Name" (Input Table worksheet "EffectsList" indicating the column containing the name of each component)
- ☑ Column number of "Class" (Input Table worksheet "VolAdj" indicating the column containing the mail class number for the corresponding volume adjustment factor)
- ☑ Column number of "Change %" (Input Table worksheet "VolAdj")

Worksheet type	Worksheet Name
Distribution Keys	***DistKeys***
Input Matrix	***InputMatrix***
Volume Adjustment Factors	***VolAdj***
Distribution Keys Table Format	
Used in RF Column	***2***
Component Number Column	***6***
Number of Addends Column	***7***
EffectsList Worksheet Additional Columns Format	
Component Number Column	***2***
Component Title Column	***3***
VolAdj Worksheet Format	
Class Number Column	***1***
Change % (Volume Adjustment Factor) Column	***2***

Note: These items are included for ease of maintenance of RFModel.xls. The parameters should not change during a rate case.

3. Worksheet "InputWorkbooks"

RFModel.xls provides a worksheet in which users are required to enter the names of Input Tables – one workbook for each future year:

- ☑ Year (used in RFModel.xls worksheet "RFMenuPage")
- ☑ Input Table Files (Names of input table workbooks)
- ☑ Preceding Year

Year (Menu Choices)	**Input Tables** (Workbooks of User Specified Parameters)	**Preceding year**
2005	***R2005RF.FY2005.USPSEnh.xls***	***2004***
2006BR	***R2005RF.FY2006BR.USPSEnh.xls***	***2005***
2006AR	***R2005RF.FY2006AR.USPSEnh.xls***	***2005***

In the example above representing the R2005-1 rate case, the user has specified one Input Table each for 2005 and 2 Input Tables for 2006 – before rates and after rates.

The "Preceding Year" tells the input matrix data source for each roll forward year. The preceding year for the first roll forward year is the base year.

Note: We recommend that users include the rate case designation, the fiscal year and the name of the scenario in the names of the input table workbooks.

4. Worksheet "BaseYear"

RFModel.xls provides a worksheet in which users are required to enter the base year file parameters:

- ☑ Directory (directory path for Base Year workbooks)
- ☑ Base Year Workbook Name
- ☑ Base Year workbook input cost matrix worksheet name (Base Year A Matrix).
- ☑ RFModel.xls input cost matrix worksheet name (Base Year A Matrix).
- ☑ Base Year A Matrix Row Offset and Base Year A Matrix Column Offset (offsets [relative to cell A1] on the worksheet containing the base year cost matrix. These tell the model the location of the first cell to read for inputting the cost matrix. The offsets will also apply in reading and writing the future year cost matrix in effects workbooks.

	Base Year		
Directory (for Base Year workbooks)	***C:\ USPS\Enh***		
Base Year workbook name	***by2004a_loader.xls***		
Base Year workbook worksheet name for input cost matarix (A Matrix)	***InputMatrix***		
RFModel.xls input cost matrix worksheet name (A Matrix)	***InputMatrixA***		
Base Year Row Offset (A Matrix)	***3***	Data for the first Component is in row 4	
Base Year Column Offset (A Matrix)	***3***	Data for the first Mail Class is in column 4	

The following cells provide selections for USPS/PRC on main page			
USPS			
PRC			

The above specifications appear in RFModel.xls as set up for replicating USPS R2005-1.

The Base Year options (last 2 lines above) appear in the "RFMenuPage" worksheet (RFModel.xls "RFMenuPage") in a drop down list of user options. These option labels cannot be changed.

B. INPUT TABLES

This sections describes user-specified parameters contained in the input table workbooks.

Input tables provide parameters used as inputs in generating effects workbooks.

The content of input tables (one workbook for each future year) may be customized by users (demo workbooks replicate USPS R2005-1).

Below are worksheets (actually portions of worksheets for use as examples) from input tables. Refer to "Section III. Excel Workbooks" above for input table names.

1. Worksheet "EffectsList"

Input Table worksheet "EffectsList" contains the information needed for all multiplicative effects, including cost level, mail volume, nonvolume workload, and additional workday. This information includes factors and how to apply the effect. The example below shows selected columns. Refer to the input table "R2005RF.FY2005.USPSEnh.xls" for the complete worksheet.

Component Title	Cost Factor	Mail Volume Method	Volume Distribution Key (Indirect)	Nonvolume Workload Factor	Nonvolume Workload Method	Additional Workday Factor	Additional Workday Method
C/S 1 Postmasters							
Postmasters EAS 23 & Below	0.070164000	V		-0.0016670	A	**-0.0034100**	199
Postmasters EAS 24 & Above	0.070164000						
C/S 2 Supervisors & Technicians							
Supervision of Mail Processing & Window							
Supv - Mail Procesing	0.059089000	I	0035	I		I	
Supv - Window Service	0.059089000	I	0040	I		I	

Legend:

FIELD	FIELD NAME	COMMENTS	NOTES
1	Row Sequence		In model - not shown in table above
2	Component Number	As used in base year model.	In model - not shown in table above
3	Component Title	Name of component	
4	Cost Factor	Blank if no effect for this component	**Corresponds to control strings 1 and 2** in the COBOL model. Control string 1 multiplies all non-total classes in a component by the factor in the factor table. Control string 2 multiplies all non-total classes in a group of components by the factor in the factor table.
5	Mail Volume Method	Indicates method for applying mail volume effect. Leave blank of no mail volume effect.	
	Values:		

	V	Regular volume adjustment	**Corresponds to Control String 6** - multiplies cost in independent component by volume growth %
	M	Mix adjustment	**Corresponds to Control String 24** - redistributes cost in independent component leaving total the same.
	I	Indirect	**Corresponds to Control String 21** - Used to give indirect effect to dependent component
	IM	Indirect volume mix adjustment	**Corresponds to Control String 18** - Used to give indirect effect to dependent components leaving total cost the same.
6	Base Year Distribution Key for Indirect Calculations	Contains a value tor dependent components that will receive an indirect effect, leave blank otherwise.	Distribution key component number used to distribute a dependent component in the base year model. The distribution key describes the list of independent components used to develop the weighted percentage change vector for applying the indirect effect.
7	Nonvolume Workload Factor	Leave blank if no direct or indirect effect for this component	
	Values:		
	Factor Value	Nonvolume workload factor	Nonvolume workload factor
	I	Indirect	Indicator that this component gets an indirect effect. For USPS enhanced version, components getting an indirect mail volume effect also get an indirect nonvolume workload and additional workday effect.
8	Nonvolume Workload Method	Method for applying nonvolume workload effect. Leave blank if no direct nonvolume workload effect.	
	A	Apply factor to all classes	**Corresponds to Control Strings 1 & 2**, all non-total class costs are multiplied by factor.
	Class Number	Apply factor to this class only	**Corresponds to Control String 16**, a selected class is multiplied by factor (usually class 199 for institutional or other cost)
9	Additional Workday Method	Leave blank if no direct or indirect effect for this component	
	Values:		
	Factor Value	Additional workday factor	
	I	Indirect	Indicator that this component gets an indirect effect. For USPS enhanced version, components getting an indirect mail volume effect also get an indirect nonvolume workload and additional workday effect.
10	Additional Workday Method	Method for applying additional workday effect. Leave blank if no	

		direct additional workday effect	
	A	Apply factor to all classes	**Corresponds to Control Strings 1 & 2**, all non-total class costs are multiplied by factor, as in cost level effect. An 'A' is used in the PRC version if the component is product specific.
	Class Number	Apply factor to this class	**Corresponds to Control String 16**, when a selected class is multiplied by factor (usually class 199 for institutional or other cost).

2. Worksheet "VolAdj"

Input Table worksheet "VolAdj" provides volume adjustment factors.

These factors are used in calculations for the mail volume effect.

CLASS	% CHANGE
100	
101	-1.9858800%
102	3.2400188%
103	
104	-0.3337490%
105	1.7662713%
106	
107	

Legend:

FIELD	FIELD NAME	COMMENTS
1	Class	
2	% Change	Volume adjustment (growth) factor

3. Worksheet "DistKeys"

Input Table worksheet "DistKeys" contains the list of components use to distribute other components in the Base Year model. The records in this table contain the list of components summed together to make a distribution key. The order for calculating indirect costs is determined by the order of the records in this table. Base Year Model analysts will maintain this table, ensuring that Base Year and Roll Forward Models are consistent. The example below shows selected columns. Refer to the input table "R2005RF.FY2001.USPSEnh.xls" for the complete worksheet.

Row Seq.	***Used in RF***	***Distribution Key Title***	***Distribution Key Contents***	***Component Distributed***	***Component Number***	***Number of Addends***	***Addends Number 01***
11	1	Dist Key - Seg 3 Scheme Training	Sum Mail Proc Shape Keys	0467	0466	3	0968
12	1	Dist Key - Admin Clerks Quality Control	Sum of C/S 3 Mail Mroc & Spec Fixed	0676, 0423	0295	2	0035
13	1	Sum C/S 7 SCS Load and Other Load	Sum C/S 7 SCS Load and Other Load	0015, 0084, 0093, 0102, 0129, 0138	0692	2	0610
14	1	Rural Carriers - All Salaries	Rural Carrier All Labor	0674, 0548, 0556	0072	2	0069
15	1	Dist Key - In-Office Support Other	City Carriers Delivery Activities, Network Travel, and Office	0604	0605	3	0043
16	1	Dist Key - City Delv In-Office	Total C/S 6 excluding CAG K	0013, 0045, 0082, 0091, 0100, 0127, 0136	0606	3	0043

Legend:

FIELD	FIELD NAME	COMMENTS
1	Row Sequence Number	
2	Used in RF	Set to 1 if this distribution key is used in the roll forward model, 0 otherwise
3	Distribution Key Title	Name of this distribution key
4	Distribution Key Contents	Text description of the contents (components summed together) of this key
5	Components Distributed	Components distributed by this key. For information only.
6	Distribution Key Number	The component number for this distribution key
7	Number of Addends	Number of components summed together to make this distribution key.
8-n	Addends 1-N in Key	Lists all components summed together to make this key

4. Worksheet "CostReductions"

Input Table worksheet "CostReductions" provides program amounts.

Cost Reductions Row Seq.	***Cost Reduction Program Name***	***Cost Reduction Program Amount***	***Com-ponent Number***	***Component Title***	**Distribution Key**	**Subtotal Component**	***Comp. 1***
1	Communications Reduction	-40,000	0168	Communications			
2	Highway Transportation Reduction	-81,000	0143	Highway			
3	International Transportation Programs	0	0146	International			
4	Domestic Air Reductions	-78,000	0142	Domestic Air			
5	Alaska Air Reduction	0	0681	Domestic Alaska Air			
6	Mail Proc Direct	-8,628	0035	Mail Processing	0035		
7	Auto Airline SWYB	-5,370	0035	Domestic Air	0142		

Legend:

FIELD	FIELD NAME	COMMENTS
1	Row Seq.	
2	Cost Reduction Program Name	
3	Cost Reduction Program Amount	
4	Component Number	Component that the cost reduction cost will be added to. Leave blank for type 2 (see below).
5	Component Title	Name for the component that the cost reduction will be added to. Leave blank for type 2 (see below).
6	Distribution Key	**Type 1 (control string 7) distributions**: For type 1 distributions, the program amount is distributed to classes of mail using the component identified in the Component Number field. Therefore, this field is not used and should be blank. **Type 2 (control string 8) distributions**: For type 2 distributions, the program amount is first spread to a group of components, and then distributed to classes of mail using each of the listed components. This field is not used and should be blank. **Type 3 (control string 15) distributions**: For type 3 distributions, the program amount is distributed to classes of mail using a distribution key identified in this field. The distributed program cost will then be added to the component listed in the Component Number field. **Type 4 (new) distributions**: For type 4 distributions, the program amount is first spread to a group of components, and then distributed to classes of mail using the distribution key identified in this field.
7	Subtotal Component	**Type 1 and Type 3 distributions**: This field is not used and should be blank. **Type 2 and Type 4 distributions**: For type 2 distributions, the program amount is first spread to a group of components, and then distributed to classes of mail using each of the listed components. The value in this cell indicates the number of a subtotal component, and the amount will be distributed to the 'children' of this subtotal component (the components added

8-n	Components to Distribute Amount	**For Type 2 and Type 4 distributions:** If the Subtotal Component field is empty, then list the components that this Type 2 or Type 4 amount should be spread to. **Type 1 and Type 3 distributions:** These fields are not used and should be blank.

5. Worksheet "OtherPrograms"

Input Table worksheet "OtherPrograms" provides other program amounts.

Other Programs Row Seq.	***Other Program Name***	***Other Program Amount***	***Com-ponent Number***	***Component Title***	**Distribution Key**	**Subtotal Component**	***Comp. 1***
1	Vehicle Service Drivers	72		Vehicle Service Drivers		0258	1
2	Rural Carriers	29,188		Rural Carriers		0072	2
3	Motor Vehicle Supplies & Materials	1,020		Motor Vehicle Supplies & Materials		0099	3
4	Freight on Supplies & Materials	-5	0117	Freight on Supplies & Materials			4
5	Carfare	5		Carfare		0135	5
6	Domestic Air	4,460	0142	Domestic Air			6
7	Highway	46	0143	Highway			7

See Section 4 on 'CostReductions" for the Legend applicable to this worksheet.

6. Worksheet "CorpWideActivities"

Input Table worksheet "CorpWideActivities" provides inputs for corporate wide activities.

Corporatewide Row Seq.	***Corporatewide Program Name***	***Corporatewide Activities Amount***	***Com-ponent Number***	***Component Title***	**Distribu-tion Key**	**Subtotal Component**	***Comp. 1***
1	Contract Cleaners	25	0081	Contract Cleaners			
2	Vehicle Hire	-7		Vehicle Hire		0108	
3	Mail Equipment Shops Personnel	-212	0110	Mail Equipment Shops Personnel			
4	Contract Stations	-127	0111	Contract Stations			
5	Tolls & Ferriage	-50	0113	Tolls & Ferriage			

See Section 4 on 'CostReductions" for the Legend applicable to this worksheet.

7. Worksheet "ServiceWideCosts

Input Table worksheet "ServiceWideCosts" provides inputs for service wide costs.

Service wide Row Seq.	***Servicewide Program Name***	***Servicewide Costs Amount***	***Com-ponent Number***	***Component Title***	**Distribu-tion Key**	**Subtotal Componen t**	***Comp. 1***
1	Annuitant Life Insurance	700	071	Annuitant Life Insurance			
2	Repriced Annual Leave	-29,517	0199	Repriced Annual Leave			
3	CS Retirement Supplemental Liability	10,362	0201	CS Retirement Supplemental Liability			
4	Workers' Comp. Current Liability	65,793	0204	Workers' Comp. Current Liability			
5	Workers' Comp Prior Year	-195,954	0205	Workers' Comp Prior Year			

See Section 4 on 'CostReductions" for the Legend applicable to this worksheet.

8. Worksheet "WorkyearMix"

Input Table worksheet "WorkyearMix" provides employee workyear mix adjustment amounts.

Workye ar Mix Adj. Row Seq.	***Employee Mix***	***Employee Mix Amount***	***Com-ponent Number***	***Component Title***	**Distribution Key**	**Subtotal Component**	***Comp. 1***
1	Mix Adjustment Clerks/Mailhandlers	61,098				0253	
2	Mix Adjustmant City Carriers	23,958					0043

See Section 4 on 'CostReductions" for the Legend applicable to this worksheet.

V. PARAMETERS DICTATED BY THE BASE YEAR

The model provides worksheets presenting parameters dictated by the base year.

The purpose of these parameters is to allow the model to develop the appropriate templates and formulas for use in the effects workbooks (outputs).

Below are excerpts from worksheets in RFModel.xls for replicating the USPS R2005-1 base year.

1. RFModel.xls Worksheet "ComponentsUSPS"

RFModel.xls worksheet "ComponentsUSPS" is used to place component information for the USPS version into the effects workbooks.

Component Number	***Component Name***	***Level***	***C/S No.***	***Parent***	***Subtotal***	***TotOnly***
0001	Postmasters EAS 23 & Below	2	1	0251	FALSE	FALSE
0002	Postmasters EAS 24 & Above	2	1	0251	FALSE	FALSE
0251	***Postmasters***	**1**	**1**		**TRUE**	**TRUE**
0004	Supv - Mail Procesing	3	2	0008	FALSE	FALSE

All components, including cost segment total and subtotal components, will be added in the order they appear on the list.

Legend:

FIELD	FIELD NAME	COMMENTS
1	Component #	
2	Component Name	
3	Level	Information on the hierarchy of components
4	Cost Segment	1-20, use 98 for base year distribution keys, 96 for roll forward-only distribution keys
5	Parent	The component number of the subtotal component that this component is summed into.
6	Subtotal	Value of TRUE if this is a subtotal component; FALSE if not
7	TotOnly	Indicates a component has no data itself, but is a Total (or subtotal) of other components. Used to find cost segment total components in the model.

2. RFModel.xls Worksheet "ComponentsPRC"

RFModel.xls worksheet "ComponentsPRC" is used to place component information for the PRC version into the output effects workbooks.

Component Number	***Component Name***	***Level***	***C/S No.***	***Parent***	***Subtotal***	***TotOnly***
0001	Postmasters EAS 23 & Below	2	1	0251	FALSE	FALSE
0002	Postmasters EAS 24 & Above	2	1	0251	FALSE	FALSE
0251	***Postmasters***	**1**	**1**		**TRUE**	**TRUE**
0004	Supv - Mail Procesing	3	2	0008	FALSE	FALSE

All components, including cost segment total and subtotal components, will be added in the order they appear on the list.

Legend:

FIELD	FIELD NAME	COMMENTS
1	Component #	
2	Component Name	
3	Level	Information on the hierarchy of components
4	Cost Segment	1-20, use 98 for base year distribution keys, 96 for roll forward-only distribution keys
5	Parent	The component number of the subtotal component that this component is summed into.
6	Subtotal	Value of TRUE if this is a subtotal component; FALSE if not
7	TotOnly	Indicates a component has no data itself, but is a Total (or subtotal) of other components. Used to find cost segment total components in the roll forward model.

3. RFModel.xls Worksheet "MailClasses"

RFModel.xls worksheet "MailClasses" presents mail classes. Classes will appear in the output effects workbooks in the order they appear on the worksheet "MailClasses".

Class Name	Class #	Level	Parent	Subtotal	TotOnly	Display
First-Class Mail						**1**
Single Piece Letters	101	5	103	FALSE	FALSE	2
Presort Letters	102	5	103	FALSE	FALSE	2
Total Letters	103	4	109	TRUE	TRUE	3
Single Piece Cards	104	5	108	FALSE	FALSE	2
Presort Cards	105	5	108	FALSE	FALSE	2
Total Cards	108	4	109	TRUE	TRUE	3
Total First-Class	109	3	162	TRUE	TRUE	1

Legend:

FIELD	FIELD NAME	COMMENTS
1	Class Name	Text name of mail class, subclass, or special service
2	Class Number	Mail class number from the Base Year A matrix.
3	Level	Used to build subtotals and class totals and for display on reports.
4	Parent	The component number of the subtotal class that this class is summed into.
5	Subtotal	TRUE if this is a subtotal for a class or subclass, FALSE otherwise
6	TotOnly	Indicates a class line has no data itself, but is a Total (or subtotal) of other classes.
7	Display	Numeric value to describe how to format the class on the output effects workbooks.

There are four types of display formats available:

	1	Bold, left
	2	non-bold, 1 indent
	3	non-bold, 2 indents
	4	Bold, 1 indent

4. RFModel.xls Worksheet "CostSegments"

RFModel.xls worksheet "CostSegments" presents cost segment names.

Cost Segment Number	Cost Segment Name
1	Postmasters
2	Supervisors & Technicians
3	Clerks and Mailhandlers
4	Clerks, CAG K Post Offices
5	(Reserved)
6	City Delivery Carriers, Office
7	City Delivery Carriers, Street
8	Vehicle Service Drivers
9	(Reserved)
10	Rural Carriers
11	Custodial and Maint Srvcs

Cost segment names (dictated by the Base Year) are used to build header information in the output effects workbooks.

VI. LIMITS

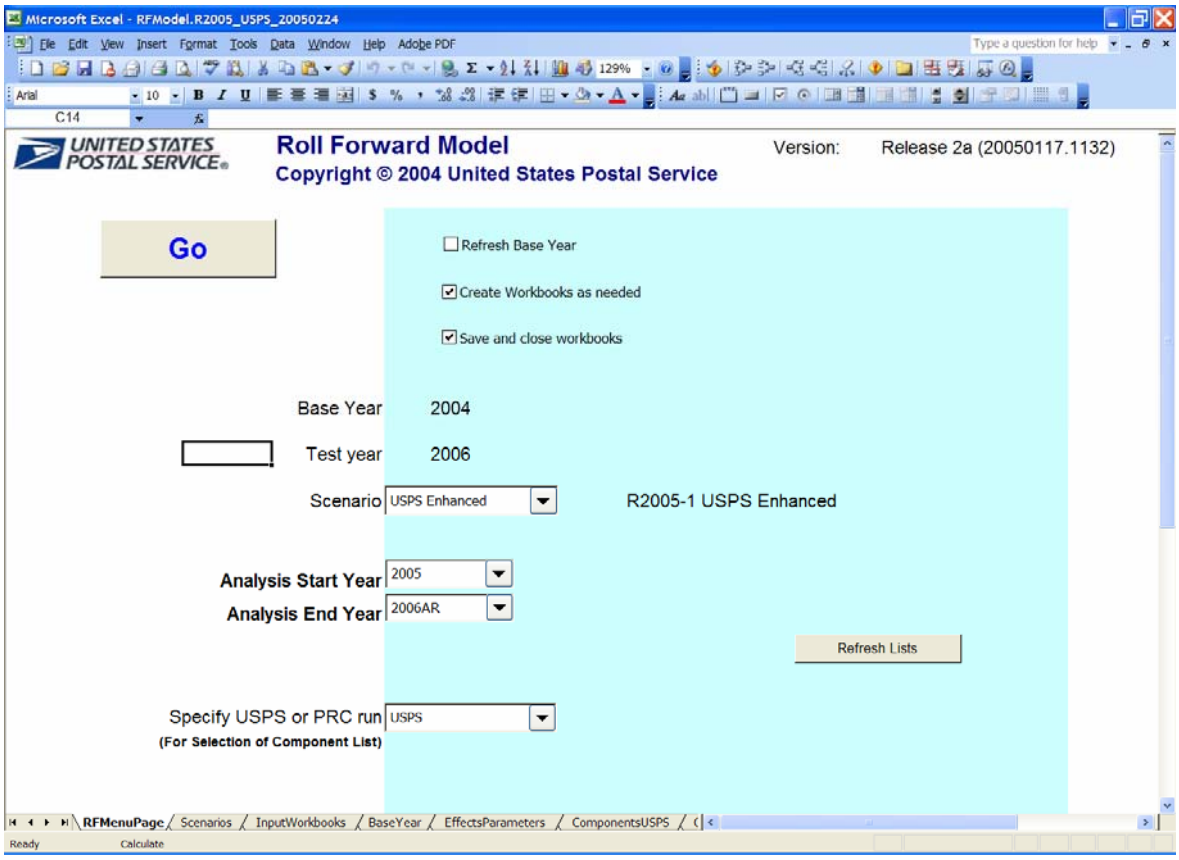
RFModel.xls worksheet "Limits" presents maximum numbers (limits) for selected variables. These values are used in the VBA code of the roll forward model. The limits can be increased in this worksheet (for ease of maintaining RFModel.xls).

Value	Variable Name	Description
200	MaxClass	Maximum number of classes, subclasses, and special services.
100	MaxCS	Maximum number of cost segments
1000	MaxCompon	Maximum number of components actually used in all cost segments
20	MaxEffects	Maximum number of effects allowed
8	MaxYears	Maximum number of years allowed in one run
100	InputClassStart	First class (column) of input matrix that needs to be read
150	MaxDKComp	Maximum number of addends, or components that may be summed to make a distribution key.
1600	MaxComps	Highest allowed component number
100	MaxDefs	Maximum number of Distribution Key definitions allowed in DistKeys worksheet
198	TotVVClass	Class number for total attributable (Volume variable) cost
199	OtherClass	Class number for other (institutional) cost
200	TotClass	Class number for total accrued cost
200	MaxCROP	Maximum number of cost reductions or other programs lines allowed in the input table worksheet
50	Max2Comp	Maximum number of components to that a cost reduction or other program amount may be spread to (Type 2, or control string 8)
20	LastCostCS	Last cost segment containing cost component data as opposed to distribution key data.

VII. RUNNING THE MODEL

A. Executing a Run

RFModel.xls worksheet 'RFMenuPage" is replicated below.



Basic Menu Selection

1. Choose a Scenario
2. Make the appropriate year selections for the analysis
3. Specify USPS or PRC run
4. Check "Save and close workbooks"
5. Check "Create workbooks as needed"
6. Click on "Go"

B. Example Run

For example purposes, we add or update selected parameters (examples provided replicate USPS R-2005) as follows:

We add a new scenario (RFModel.xls worksheet "Scenarios"):
Scenario Name: ***USPS Enhanced***
Scenario Description: ***R2005-1 USPS Enhanced***
Effects workbook suffix: ***USPSEnh***
Directory Path for input tables and outputs: ***C:\ USPS***

We review the Base Year parameters (RFModel.xls worksheet "BaseYear"):
Directory for Base Year workbook: ***C:\ USPS***
Base Year workbook name: ***by2004a_loader.xls***

We add new input table names (RFModel.xls "InputWorkbooks"):

Input Table workbook names

R2005RF.FY2005.USPSEnh.xls
R2005RF.FY2006BR.USPSEnh.xls
R2005RF.FY2006AR.USPSEnh.xls

On RFModel.xls "RFMenuPage" click on "Refresh Lists" because a new scenario has been entered and it has to be brought into the drop down selection list.

Example Run: Select Years

As an example of executing a hypothetical run generating outputs for selected years we:

- Select the scenario "**USPS Enhanced"** (item 2 below from RFModel.xls worksheet "Scenarios"):

ID	Scenario Name (Menu Choices)	Scenario Description (Report Titles)	Scenario – Effect Workbook Suffix	Directory Path (Input Tables, Outputs)
1	***PRC Enhanced***	***R2005-1 PRC Enhanced***	***PRCEnh***	***C:\PRC***
3	***USPS Enhanced***	***R2005-1 USPS Enhanced***	***USPSEnh***	***C:\USPS***

- Select "Analysis Start Year" of **2001** and an Analysis End Year" of **2006AR**.

- Specify a **USPS run** (RFModel.xls Worksheet "ComponentsUSPS").

- Check the option "Save and close workbooks". If we do not select this option then we will have to manually save the output effects workbooks.

- Check "Create workbooks as needed" (because we are running a new scenario we will be creating new output files i.e., effects workbooks).

- Review our directories to make sure the input tables and base year A matrix workbook (the input files) are actually in the directories we specified (directory path – see RFModel.xls worksheet "Scenarios" for input tables; see RFModel.xls worksheet "BaseYear" for Base Year). If not we place copies in these directories.

- Click on "Go" to execute the run.

For this hypothetical example the list of effects we specified (RFModel.xls worksheet "EffectsParameters") includes only 2 effects as follows (this is for example purposes only and would not normally be done. The R2005-1 roll forward run has 9 effects):

Effect Labels (Menu Choices)	Effect Name (Report Titles)	Effect Type	Input Matrix source	Input Table Worksheet Name	Input Data Column
CL	***Cost Level Change***	***MA***	***MV***	***EffectsList***	***4***
MV	***Mail Volume Change***	***V***	***CL***	***EffectsList***	***5***

We specified input tables (RFModel.xls worksheet "InputWorkbooks") as follows:

Year (Menu Choices)	**Input Tables** (Workbooks of User Specified Parameters)	**Preceding year**
2005	**R2005RF.FY2005.USPSEnh.xls**	**2004**
2006BR	**R2005RF.FY2006BR.USPSEnh.xls**	**2005**
2006AR	**R2005RF.FY2006AR.USPSEnh.xls**	**2005**

We specified the base year input A matrix workbook as "**by04a_loader.xls**" (RFModel.xls worksheet "BaseYear").

This example, specifying an "Analysis Start Year" of **2005** and an Analysis End Year" of **2006AR,** would generate effects workbooks for the scenario "USPS Enhanced" in the following sequence:

1. **2005 Cost Level Change effects workbook** = **Base Year cost matrix (by04a_loader.xls) modified by 2005 parameters** as specified (Effect Type MA; Cost Factor in column 4 of EffectsList worksheet from R2005RF.FY2005.USPSEnh.xls)

2. **2005 Mail Vol. Change effects workbook** = **2005 Cost Level Change effects workbook's future cost matrix modified by 2005 parameters** as specified (Effect

Type V; Mail Volume Method in column 5 of EffectsList worksheet from R2005RF.FY2005.USPSEnh.xls).

3. **2006BR Cost Level Change effects workbook** = **2006BR Mail Vol. Change effects workbook's future cost matrix modified by 2006BR parameters** as specified (Effect Type MA; Cost Factor in column 4 of EffectsList worksheet from R2005RF.FY2006BR.USPSEnh.xls).

4. **2006BR Mail Vol. Change effects workbook** = **2006BR Cost Level Change effects workbook's future cost matrix modified by 2006BR parameters** as specified (Effect Type V; Mail Volume Method in column 5 of EffectsList worksheet from R2005RF.FY2006BR.USPSEnh.xls).

5. **2006AR Cost Level Change effects workbook** = **2006AR Mail Vol. Change effects workbook's future cost matrix modified by 2006AR parameters** as specified (Effect Type MA; Cost Factor in column 4 of EffectsList worksheet from R2005RF.FY2006AR.USPSEnh.xls).

6. **2006AR Mail Vol. Change effects workbook** = **2007AR Cost Level Change effects workbook's future cost matrix modified by 2006AR parameters** as specified (Effect Type V; Mail Volume Method in column 5 of EffectsList worksheet from R2005RF.FY2006AR.USPSEnh.xls).

Each effects workbook generated by the model has the following elements in its name:

- Year (RFModel.xls worksheet "InputWorkbooks")
- Effect (RFModel.xls worksheet "EffectsParameters")
- Scenario suffix (RFModel.xls worksheet "Scenarios")

The **2006AR Mail Vol. Change effects workbook** in the example above (the last iteration - item 6) would be named:

FY2006ARMV.USPSEnh.xls where:

- **FY2006AR** refers to the year.

- **MV** refers to the effect.

- **USPSEnh** refers to the scenario.

This file would be created in the directory specified by the user in RFModel.xls worksheet "Scenarios".

The user would need to refer to RFModel.xls worksheet "EffectsParameters" in order to learn the sequence of calculations performed in generating the workbook. The model saves itself after each run preserving this worksheet (overwrites itself). Users need to rename the model before changing any parameters if they want to

save a particular copy for future reference (i.e., do a save as) and keep it in the folder for the particular scenario.

C. Run Check List (setting up a new run)

Once the parameters for a rate case have been established, relatively few parameters need to be updated when making new runs.

Update RFModel.xls Worksheet "Scenarios" as necessary for a new run:

- ☑ Scenario Name (used in RFModel.xls worksheet "RFMenuPage").
- ☑ Scenario Description (appears in titles of reports generated).
- ☑ Effects workbook suffix (what to name output files)
- ☑ Directory path for input tables and outputs (where input tables are to be found and where outputs will be placed [effects workbooks]).

Update RFModel.xls worksheet "BaseYear" as necessary for a new run:

- ☑ Directory for Base Year File (where base year input A matrix is to be found)
- ☑ Base Year Workbook Name

Update RFModel.xls worksheet "Scenarios" as necessary for a new run:

- ☑ Input Table workbook names

On RFModel.xls "RFMenuPage" click on "Refresh Lists" when a new scenario has been entered because it has to be brought into the drop down selection list.

Before making any run, make sure the input tables and base year workbook (the input files) are actually in the directories specified (directory path - see RFModel.xls worksheet "Scenarios" for input tables; see RFModel.xls worksheet "InputWorkbooks" for Base Year).

D. Additional Options

The model provides the user with additional options in the menu above:

- Refresh Base Year
- Refresh Lists
- Create Workbooks as Needed

Refresh base year – The model establishes (reads in) the base year cost matrix (user parameter) in the first run of the session and does not refresh this parameter

in subsequent runs unless the "Refresh Base Year" option is selected. In exercising this option the user would need to: 1) specify the name of the substitute cost matrix file (RFModel.xls worksheet "InputWorkbooks") and 2) check the checkbox "Refresh Base Year" in the menu above before making a run using a substitute cost matrix as input. As an example this option would be necessary if the Base Year analyst provided a new run of base year costs.

Refresh lists – The model establishes the effects list drop-down selections (user parameter) in the first run of the session and does not refresh the drop-down selections in subsequent runs unless the "Refresh lists" option is selected. In exercising the option the user would need to: 1) enter a new scenario in RFModel.xls worksheet "Scenarios"; change the list of effects in RFModel.xls worksheet "EffectsParameters" (for example, enter some additional effects to the existing list); or change the list of years in RFModel.xls worksheet "InputWorkbooks", and 2) check the checkbox "Refresh Lists" in the menu above.

Create workbooks as needed – Instructs the model to generate original workbooks (effects workbooks not previously generated) as needed. If this option is left unchecked the model will not create original workbooks, and will give you an error if the effects workbooks for the specified scenario do not already exist in the specific directory.

The model will always update any existing effects workbooks in the directory (whether this option is checked or not) if the "Save and close workbooks" option is checked.

E. Updating Effects workbooks

There are 2 fundamental outputs (effects workbooks) generated by RFModel.xls:

- Originals
- Updates

Originals result when a scenario is run for the first time.

Updates result when the model reruns the same scenario (output files have the same names as the originals and are in the same directory). Updates, if saved, will overwrite original files and the content of the original files will no longer exist.

Updates should be used with care. Our recommendations for Scenario management are covered in previously (see the section on RFModel.xls worksheet "Scenario").

F. Extended Check List (setting up a new rate case)

Update RFModel.xls worksheet "EffectsParameters" as necessary for a new rate case:

- ☑ Effect Labels (abbreviations of effect names) for use in RFModel.xls worksheet "RFMenuPage" and in generating output effects workbook names.
- ☑ Effect Name (appears in titles of reports generated).
- ☑ Effect Type (type of factors applied in workbooks generated – see below).
- ☑ Input Matrix Source (points to effects workbook previously generated - symbol corresponds to effect labels).
- ☑ Input Table Worksheet Name (input table worksheet where factors are to be obtained)
- ☑ Input Data Column (column in input table worksheet "EffectsList" where factors are to be obtained)
- ☑ Program Name Column (column in input table worksheets: "CostReductions" (CR), "OtherPrograms" (OP), "CorpWideActivities" (CW), "ServicewideCosts" (CW), and "WorkyearMix" (MX))
- ☑ Program Amount Column (column in input table worksheets: CR, OP, CW, SW, and MX)
- ☑ Component Number Column (column in input table worksheets: CR, OP, CW, SW, and MX)
- ☑ Component Name Column (column in input table worksheets: CR, OP, CW, SW, and MX)
- ☑ Distribution Key Column (column in input table worksheets: CR, OP, CW, SW, and MX)
- ☑ On Component List Column (column in input table worksheets: CR, OP, CW, SW, and MX)
- ☑ Input Table worksheet containing the distribution key definitions.
- ☑ Name of input cost matrix worksheet in output effects workbooks.
- ☑ Input Table worksheet containing the volume adjustment factors
- ☑ Column number of "Used in RF" (Input Table worksheet "DistKeys" column indicating the distribution key is used in the roll forward)
- ☑ Column number of "Component Number" (Input Table worksheet "DistKeys" column indicating the distribution key component number)
- ☑ Column number of "Number of Addends" (Input Table worksheet "DistKeys" column indicating the number of components summed together to make this distribution key)
- ☑ Column number of "Component Number" (Input Table worksheet "EffectsList" indicating the column containing the number for each component)
- ☑ Column number of "Component Name" (Input Table worksheet "EffectsList" indicating the column containing the name of each component)

- ☑ Column number of "Class" (Input Table worksheet "VolAdj" indicating the column containing the mail class number for the corresponding volume adjustment factor)
- ☑ Column number of "Volume Adjustment Factor" (Input Table worksheet "VolAdj")

Update RFModel.xls worksheet "InputWorkbooks" as necessary for a new rate case:

- ☑ Year (used in RFModel.xls worksheet "RFMenuPage")
- ☑ Input Table workbook names
- ☑ Preceding Year

Update RFModel.xls worksheet "BaseYear" as necessary for a new rate case:

- ☑ Base Year workbook Input Cost Matrix worksheet name (Base Year A Matrix).
- ☑ RFModel.xls input cost matrix worksheet name (Base Year A Matrix).
- ☑ Base Year A Matrix Row Offset and Base Year A Matrix Column Offset (offsets [relative to cell A1] on the worksheet containing the base year cost matrix. These tell the model the location of the first cell to read for populating the input cost matrix. The offsets will also apply in reading and writing the future year cost matrix in effects workbooks.

Check to make sure the parameters dictated by the Base Year are updated as necessary:

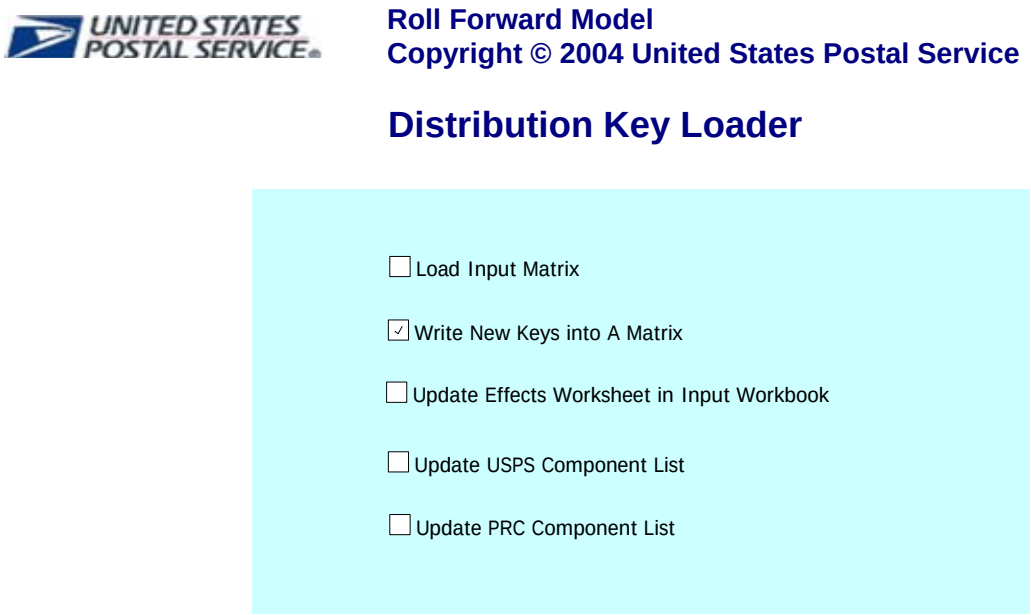
- ☑ RFModel.xls worksheet "ComponentsUSPS"
- ☑ RFModel.xls worksheet "ComponentsPRC"
- ☑ RFModel.xls worksheet "MailClasses"
- ☑ RFModel.xls worksheet "CostSegments"

VIII. ROLL FORWARD DISTRIBUTION KEY LOADER MODULE

Distribution keys used specifically in the roll forward model must be entered into the Base Year A matrix before running the roll forward model. While the CRA Model is undergoing redesign, these distribution keys are entered into the Base Year A workbook using a separate Excel/VBA module called RFLoader.xls. The loader module is used to enter the distribution keys, and then update the Base Year A matrix with the values for the distribution keys. The RFLoader module is also used to place the information about the roll forward distribution keys into the the ComponentsUSPS and ComponentsPRC worksheets that go into the roll forward model, and the EffectsList worksheet in each input table workbook.

NOTE: The RFLoader must be used to place the roll forward distribution keys into the Base Year A matrix before the cost matrix is loaded into the roll forward model. The updated ComponentsUSPS and ComponentsPRC worksheets must also be placed into the roll forward model before running the model. Each input table EffectsList worksheet is also updated with the information on the new distribution keys before running the roll forward model.

The menu for the loader is shown below.



The name and location of the workbooks to be updated are entered in RFLoader.xls worksheet "Locations", as shown below.

LOCATIONS FOR INPUT AND OUTPUT WORKBOOKS

A Matrix Workbook Name	by04a.xls
A Matrix Directory (Default)	C:\R2005\USPS\FY2005InputTables
Output Workbook Name	by04a_loader.xls
Name of Worksheet	InputMatrix
Workbook Containing Effects Worksheet	R2005RF.FY2005.USPSEnh.xls
Directory for Workbook	
Output Workbook Name	R2005RF.FY2005.USPSEnh.RF.xls
Name of Effects worksheet	EffectsList
Workbook Containing Components Worksheets	Components.FY2004.xls
Directory for Workbook	
Output Workbook Name	Components.FY2004.RF.xls
Name of USPS Worksheet	ComponentsUSPS
Name of PRC Worksheet	ComponentsPRC

NOTES:

If Effects or Component List directory left blank then files will be read from default directory
If output filename left blank, output file will overwrite input file
Output files will be in the same directory as the input files
Don't forget to update both the USPS and PRC versions.

IX. EFFECTS WORKBOOKS

Effects workbooks are files (outputs) generated by the model.

A. NAMING CONVENTIONS

Each effects workbook generated by the model has the following elements in its name:

- Year (RFModel.xls worksheet "InputWorkbooks")
- Effect Label (RFModel.xls worksheet "EffectsParameters")
- Scenario (RFModel.xls worksheet "Scenarios")

For example an effects workbook might be named as follows

FY2006BRMV.USPSEnh.xls where:

FY2006BR refers to the year.

MV is the label that refers to the effect.

USPSEnh refers to the scenario.

This file (effects workbook) would appear in the directory specified by the user in **RFModel.xls**, worksheet "Scenarios".

The user would need to refer to RFModel.xls worksheet "EffectsParameters" in order to learn the sequence of calculations performed in generating the workbook. The model saves itself after each run preserving the workbook (overwrites itself). Users need to rename the model before changing any parameters if they want to save a particular copy for future reference (i.e., do a save as).

B. CONTENTS

Each effects workbook contains the following:

- One worksheet containing the input cost matrix
- Worksheets containing cost changes for each cost segment (outputs)
- One worksheet providing the future year cost matrix (output)

The worksheets containing the input cost matrix and the future year cost matrix do not provide row and column headers (labels) because they are intended for use by

the model. A report writer module has been developed for allowing users to obtain custom (user specified) reports.

Worksheets containing cost changes for cost segments are formatted for use as reports. The Report Writer module will add additional formatting to this report, generate additional reports, and set up the reports for printing.

X. EXAMPLES OF MODEL OUTPUT

Example 1

R2005-1 USPS Enhanced - FY2005
Change Report
Table 2. Cost Level Change
C/S 1 Postmasters

			Postmasters EAS 23 & Below	Postmasters EAS 24 & Above	**C/S 1 Postmasters**
	Component		1	2	**251**
	Factor		0.070164	0.070164	Total CS01
	Mail Class, Subclass, or Special Service				
1	**First-Class Mail**				
2	Single Piece Letters	101	7,703	0	7,703
3	Presort Letters	102	5,443	0	5,443
4	Total Letters	103	13,146	0	13,146
5	Single Piece Cards	104	226	0	226
6	Presort Cards	105	203	0	203
7	Total Cards	108	429	0	429
8	**Total First-Class**	109	13,575	0	13,575
9	**Priority Mail**	110	1,662	0	1,662
10	**Express Mail**	111	321	0	321
11	**Mailgrams**	112	0	0	0
12	**Periodicals**				
13	Within County	113	27	0	27
14	Outside County	117	790	0	790
15	**Total Periodicals**	123	817	0	817
16	**Standard Mail**				
17	Enhanced Carr Rte	126	2,013	0	2,013
18	Regular	127	4,763	0	4,763
19	**Total Standard Mail**	135	6,776	0	6,776
20	**Package Services**				
21	Parcel Post	136	467	0	467
22	Bound Printed Matter	137	219	0	219
23	Media Mail	139	143	0	143
24	**Total Package Services**	141	829	0	829
25	**U.S. Postal Service**	142	0	0	0
26	**Free Mail**	147	0	0	0
27	**International Mail**	161	536	0	536
28	**Total All Mail**	162	24,517	0	24,517
29	**Special Services**				
30	Registry	163	21	0	21
31	Certified	164	237	0	237
32	Insurance	165	46	0	46
33	COD	166	4	0	4
34	Money Orders	168	89	0	89
35	Stamped Cards	159	1	0	1
36	Stamped Envelopes	169	8	0	8
37	Special Handling	170	3	0	3
38	Post Office Box	171	293	0	293
39	Other	172	202	0	202
40	**Total Special Services**	173	903	0	903
41	**Total Volume Variable**	198	25,420	0	25,420
42	**Other Costs**	199	114,021	3,378	117,399
43	**Total Costs**	200	139,442	3,378	142,820

An example of a worksheet containing cost changes for a cost segment is provided immediately above. The report is the result of calculations performed in the worksheet.

Excel allows users to see formulas and data sources. Formulas and data sources used in the worksheet above are shown below (selected cells). Toggle back and forth between the formula view and normal view using "Ctrl" and "~".

R2005-1 USPS Enhanced - FY2005
Change Report
Table 2. Cost Level Change
C/S 1 Postmasters

			Postmasters EAS 23 & Below	Postmasters EAS 24 & Above	**C/S 1 Postmasters**
	Component		1	2	**251**
	Factor		0.070164	0.070164	Total CS01
	Mail Class, Subclass, or Special Service				
1	**First-Class Mail**				
2	Single Piece Letters	101	=InputMatrix!$CZ$4* $D$5	=InputMatrix!$CZ$5* $E$5	=SUM($D9,$E9)
3	Presort Letters	102	=InputMatrix!$DA$4* $D$5	=InputMatrix!$DA$5* $E$5	=SUM($D10,$E10)
4	Total Letters	103	=SUM(D$9,D$10)	=SUM(E$9,E$10)	=SUM($D11,$E11)
5	Single Piece Cards	104	=InputMatrix!$DC$4* $D$5	=InputMatrix!$DC$5* $E$5	=SUM($D12,$E12)
6	Presort Cards	105	=InputMatrix!$DD$4* $D$5	=InputMatrix!$DD$5* $E$5	=SUM($D13,$E13)
7	Total Cards	108	=SUM(D$12,D$13)	=SUM(E$12,E$13)	=SUM($D14,$E14)
8	**Total First-Class**	109	=SUM(D$11,D$14)	=SUM(E$11,E$14)	=SUM($D15,$E15)
9	**Priority Mail**	110	=InputMatrix!$DI$4* $D$5	=InputMatrix!$DI$5* $E$5	=SUM($D16,$E16)
10	**Express Mail**	111	=InputMatrix!$DJ$4* $D$5	=InputMatrix!$DJ$5* $E$5	=SUM($D17,$E17)
11	**Mailgrams**	112	=InputMatrix!$DK$4* $D$5	=InputMatrix!$DK$5* $E$5	=SUM($D18,$E18)
12	**Periodicals**				
13	Within County	113	=InputMatrix!$DL$4* $D$5	=InputMatrix!$DL$5* $E$5	=SUM($D20,$E20)
14	Outside County	117	=InputMatrix!$DP$4* $D$5	=InputMatrix!$DP$5* $E$5	=SUM($D21,$E21)
15	**Total Periodicals**	123	=SUM(D$20,D$21)	=SUM(E$20,E$21)	=SUM($D22,$E22)
16	**Standard Mail**				
17	Enhanced Carr Rte	126	=InputMatrix!$DY$4* $D$5	=InputMatrix!$DY$5* $E$5	=SUM($D24,$E24)
18	Regular	127	=InputMatrix!$DZ$4* $D$5	=InputMatrix!$DZ$5* $E$5	=SUM($D25,$E25)
19	**Total Standard Mail**	135	=SUM(D$24,D$25)	=SUM(E$24,E$25)	=SUM($D26,$E26)

Column headers in the effects workbooks are from RFModel.xls worksheet "ComponentsUSPS". Row headers are from RFModel.xls worksheet "MailClasses".

The example from the effects workbook above would be contained in effects workbook FY2005CL.USPSEnh.xls and would be generated using:

- Effect type: MA
- Input cost matrix source: Base year A matrix (by04a_loader.xls) because this effects workbook is the first workbook to be generated by the model

- the first roll forward year and the effect is first in the effects list below. In this example, the entry under Input Cost Matrix Source below (OP) is not used.

- Input Table name: R2005RF.FY2005.USPSEnh.xls
- Input Table worksheet: EffectsList
- Input Table column: 4
- Sequence for calculations (1st in order of effects list below):

We can identify the parameters above by reviewing the run specifications and user-specified parameters for the run in RFModel.xls (including the list of effects as shown below).

Effect Labels (Menu Choices)	Effect Name (Report Titles)	Effect Type	Input Matrix source	Input Table Worksheet Name	Input Data Column	Program Name Column
CL	***Cost Level Change***	***MA***	***SW***	***EffectsList***	***4***	
MV	***Mail Volume Change***	***V***	***CL***	***EffectsList***	***5***	
NV	***Nonvolume Workload***	***M***	***MV***	***EffectsList***	***7***	
AW	***Additional Workday***	***M***	***NV***	***EffectsList***	***9***	
CR	***Cost Reduction Programs***	***A***	***AW***	***CostReductions***		***2***
OP	***Other Programs***	***A***	***CR***	***OtherPrograms***		***2***
CW	***Corpate Wide Activities***	***A***	***OP***	***CorpWideActivities***		***2***
SW	***Servicewide Costs***	***A***	***CW***	***ServicewideCosts***		***2***
MX	***Workyear Mix Adjustment***	***A***	***SW***	***WorkyearMixAdj***		***2***

Example 2

R2005-1 USPS Enhanced - FY2005
Change Report
Table 3. Mail Volume Change
C/S 1 Postmasters

			Mail Volume Factor	Postmasters EAS 23 & Below	Postmasters EAS 24 & Above	**C/S 1 Postmasters**
	Component			1	2	**251**
	MV Type			Mail Vol	--	Total CS01
	Mail Class, Subclass, or Special Service					
1	**First-Class Mail**					
2	Single Piece Letters	101	-0.01986	-2,333	--	-2,333
3	Presort Letters	102	0.0324	2,690	--	2,690
4	Total Letters	103	0	356	0	356
5	Single Piece Cards	104	-0.00334	-12	--	-12
6	Presort Cards	105	0.017663	55	--	55
7	Total Cards	108	0	43	0	43
8	**Total First-Class**	109	0	399	0	399
9	**Priority Mail**	110	-0.0028	-71	--	-71
10	**Express Mail**	111	-0.00023	-1	--	-1
11	**Mailgrams**	112	-0.02485	0	--	0
12	**Periodicals**					
13	Within County	113	0.008597	4	--	4
14	Outside County	117	0.002905	35	--	35
15	**Total Periodicals**	123	0	39	0	39
16	**Standard Mail**					
17	Enhanced Carr Rte	126	0.077753	2,387	--	2,387
18	Regular	127	0.053657	3,898	--	3,898
19	**Total Standard Mail**	135	0	6,285	0	6,285
20	**Package Services**					
21	Parcel Post	136	-0.02744	-196	--	-196
22	Bound Printed Matter	137	0.032366	108	--	108
23	Media Mail	139	-0.00972	-21	--	-21
24	**Total Package Services**	141	0	-108	0	-108
25	**U.S. Postal Service**	142	0.258401	0	--	0
26	**Free Mail**	147	0.02385	0	--	0
27	**International Mail**	161	0.025797	211	--	211
28	**Total All Mail**	162	0	6,754	0	6,754
29	**Special Services**					
30	Registry	163	-0.11905	-39	--	-39
31	Certified	164	-0.00398	-14	--	-14
32	Insurance	165	-0.17406	-122	--	-122
33	COD	166	-0.10254	-7	--	-7
34	Money Orders	168	-0.01789	-24	--	-24
35	Stamped Cards	159	-0.12439	-1	--	-1
36	Stamped Envelopes	169	0	0	--	0
37	Special Handling	170	0.006835	0	--	0
38	Post Office Box	171	0.0285	128	--	128
39	Other	172	0.089324	275	--	275
40	**Total Special Services**	173	0	195	0	195
41	**Total Volume Variable**	198	0	6,949	0	6,949
42	**Other Costs**	199	0	0	--	0
43	**Total Costs**	200	0	6,949	0	6,949

An example of a worksheet containing mail volume changes for a cost segment is provided immediately above. The report is the result of calculations performed in the worksheet.

Excel allows users to see formulas and data sources. Formulas and data sources used in the worksheet above are shown below (selected cells). Toggle back and forth between the formula view and normal view using "Ctrl" and "~".

R2005-1 USPS Enhanced - FY2005
Change Report
Table 3. Mail Volume Change
C/S 1 Postmasters

			Mail Volume Factor	Postmasters EAS 23 & Below	Postmasters EAS 24 & Above	**C/S 1 Postmasters**
	Component			1	2	**251**
	MV Type			Mail Vol	--	Total CS01
	Mail Class, Subclass, or Special Service					
1	**First-Class Mail**					
2	Single Piece Letters	101	-0.01985879972	=InputMatrix!$CZ$4* $D9	--	=SUM($E9,$F9)
3	Presort Letters	102	0.03240018753	=InputMatrix!$DA$4* $D10	--	=SUM($E10,$F10)
4	Total Letters	103	0	=SUM(E$9,E$10)	=SUM(F$9,F$10)	=SUM($E11,$F11)
5	Single Piece Cards	104	-0.00333748991	=InputMatrix!$DC$4* $D12	--	=SUM($E12,$F12)
6	Presort Cards	105	0.01766271302	=InputMatrix!$DD$4* $D13	--	=SUM($E13,$F13)
7	Total Cards	108	0	=SUM(E$12,E$13)	=SUM(F$12,F$13)	=SUM($E14,$F14)
8	**Total First-Class**	109	0	=SUM(E$11,E$14)	=SUM(F$11,F$14)	=SUM($E15,$F15)
9	**Priority Mail**	110	-0.0028003612	=InputMatrix!$DI$4* $D16	--	=SUM($E16,$F16)
10	**Express Mail**	111	-0.00023306402	=InputMatrix!$DJ$4* $D17	--	=SUM($E17,$F17)
11	**Mailgrams**	112	-0.0248478756	=InputMatrix!$DK$4* $D18	--	=SUM($E18,$F18)
12	**Periodicals**					
13	Within County	113	0.00859680786	=InputMatrix!$DL$4* $D20	--	=SUM($E20,$F20)
14	Outside County	117	0.00290515896	=InputMatrix!$DP$4* $D21	--	=SUM($E21,$F21)
15	**Total Periodicals**	123	0	=SUM(E$20,E$21)	=SUM(F$20,F$21)	=SUM($E22,$F22)
16	**Standard Mail**					
17	Enhanced Carr Rte	126	0.07775296033	=InputMatrix!$DY$4* $D24	--	=SUM($E24,$F24)
18	Regular	127	0.05365681767	=InputMatrix!$DZ$4* $D25	--	=SUM($E25,$F25)
19	**Total Standard Mail**	135	0	=SUM(E$24,E$25)	=SUM(F$24,F$25)	=SUM($E26,$F26)

Column headers in effects workbooks are from RFModel.xls worksheet "ComponentsUSPS". Row headers are from RFModel.xls worksheet "MailClasses".

The example from the effects workbook above would be contained in effects workbook FY2005MV.USPSEnh.xls and would be generated using:

- Effect type: V
- Input cost matrix source: CL (output cost matrix from effects workbook FY2005CL.USPSnh.xls in Example 1).
- Input Table name: R2005RF.FY2005.USPSEnh.xls

- Input Table worksheet: EffectsList
- Input Table data column: 5
- Sequence for calculations (2nd in order of list of effects below):

We can identify the parameters above by reviewing the run specifications and user-specified parameters for the run in RFModel.xls (including the effects list as shown below).

Effect Labels (Menu Choices)	Effect Name (Report Titles)	Effect Type	Input Matrix source	Input Table Worksheet Name	Input Data Column	Program Name Column
CL	***Cost Level Change***	***MA***	***SW***	***EffectsList***	***4***	
MV	***Mail Volume Change***	***V***	***CL***	***EffectsList***	***5***	
NV	***Nonvolume Workload***	***M***	***MV***	***EffectsList***	***7***	
AW	***Additional Workday***	***M***	***NV***	***EffectsList***	***9***	
CR	***Cost Reduction Programs***	***A***	***AW***	***CostReductions***		***2***
OP	***Other Programs***	***A***	***CR***	***OtherPrograms***		***2***
CW	***Corpate Wide Activities***	***A***	***OP***	***CorpWideActivities***		***2***
SW	***Servicewide Costs***	***A***	***CW***	***ServicewideCosts***		***2***
MX	***Workyear Mix Adjustment***	***A***	***SW***	***WorkyearMixAdj***		***2***